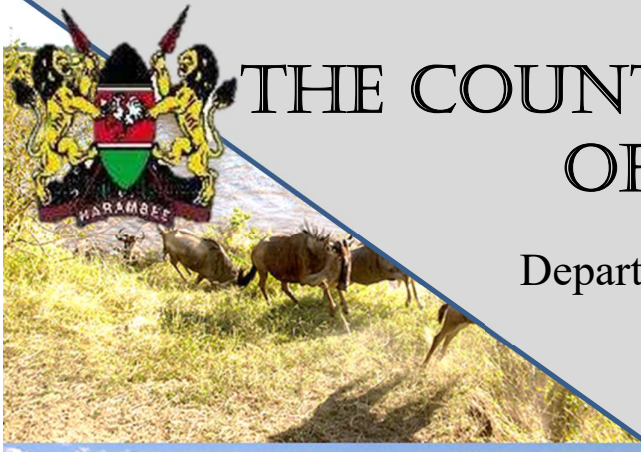
# THE COUNTY GOVERNMENT OF NAROK

Department of Environment, Water, Energy, Natural Resources and Climate Change



# Narok County Climate Change Action Plan 2023 – 2027

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## PREFACE

Kenya's economy is highly dependent on the natural resource base, and thus is highly vulnerable to climate variability and change. Rising temperatures and changing rainfall patterns, resulting in increased frequency and intensity of extreme weather events such as droughts and flooding, threatening the sustainability of the country's development. In order to safeguard sustainable development, the Government of Kenya has made several efforts to tame the ranging effects of climate change.

Climate change has a potential to reverse all the efforts made by the government of Kenya to mitigate impacts of climate change. As such every stakeholder has a part to play to increase and build synergy in fights against changes in our climate system. In view of this, the international community has realized the need to unite in its efforts to combat predicted effects.

At the national level, Kenya has expended significant efforts to forge a comprehensive framework to address climate issues responding to the development of the international climate change regime since the 1990s. In 2010, the Ministry for Environment and Mineral Resources launched the National Climate Change Response Strategy (NCCRS), complemented by the 2013-2017 National Climate Change Action Plan (NCCAP). In 2016, the country ratified her first climate change legislation and in 2017, it developed a national climate change framework policy and had a National Climate Change Action Plan (NCCAP) 2018 – 2022.

At the county level, County Government have made a lot effort in measures to aid in increasing adaptive capacity for her citizens. These measures are not limited to development and strengthening of physical structures but also in our county development plans, policies and laws in all sectors of our great county of Narok. By development of this plan, the county government shall endeavor to harness emerging opportunities for the benefits of the people of Narok County.

Every effort shall be taken to green our county using proposed interventions in this plan.

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**H.E Patrick K Ntutu**
**The Governor - County Government of Narok**

## ACKNOWLEDGEMENT

This Climate Change Action Plan is produced by the County Government of Narok, it's the first ever document of its own kind. The document has been developed through a participatory and collaborative processes involving different stakeholders in the national government, county government, faith-based organization, chamber of commerce, community-based organizations and members of the community.

The leadership and guidance of H.E. The Governor of Narok County Hon Patrick K ole Ntutu provided useful insights and guidance in the development of this report, for which as the department, we are very grateful. We are deeply convinced that this report will inform the implementation of climate priorities and actions. it will also guide the development of the climate action plan and mainstreaming climate change into the county integrated development plan (CIDP). We recognize the cabinet for their partnership and collaborative efforts through provision of the necessary data and their human and technical support in development of this document.

We are also indebted by the support and guidance offered to us by our county assembly through committee of environment and that of county delegated legislation for their expedience in climate agenda. They have offered immense support in terms of political goodwill, approving budgets and giving ample working environment for executing our mandate.

We also recognize the efforts and support awarded to us by the county secretary Mr. Mayiani Tuya and the legal office for their tireless efforts of providing legal guidance and all other support we needed from them.

To the team from the department of environment water energy and natural resource under my leadership: Mr. Willy Loigero – Chief Officer, the Technical team led by Mr. Liaram Molai – Director Environment and Natural resource, Mr Peter Runanu, Ms. Daisy Chebet and their secretariat led by Mr. Joshua Maloi, Ms. Anne Mootian and Ms. Meikan Naanyu please receive my sincere gratitude for not letting me down in executing our mandate and in the development of this important documents.
Special thanks go to our partners from world bank, National Treasury, MMWCA and many others. We recognize your efforts especially your financial support during this process.
To the community, stakeholders and partners; thank you for being our most valued, esteemed and dear stakeholders. You have walked with us by honoring our humble invitation and giving your contributions and through the whole process

**Hon. Rotich Kiplagat – CEC Member**
**Department of Environment, Water, Energy, Natural Resources and Climate Change**

**CCCAP TASK FORCE (PRESENT THE DETAILS OF THE TASK FORCE)**

1. Hon. Rotich Kiplangat, CECM Environment, Energy, Water, Natural Resources and Climate Change
2. Willy Loigero, Chief Officer, Environment, Energy, Water, Climate Change and Natural Resources
3. Liaram Molai, Director, Environment, Energy, Climate Change and Natural Resources
4. Daisy Chebet, National Drought Management Authority
5. Peter Runanu, Kenya Meteorology Department
6. Joshua Maloi, Narok County Climate Change Unit
7. Anne Nairuko Mootian, Narok County Climate Change unit
8. Naanyu Meikan, Narok County Climate Change Unit

## Table of Contents

Table of Figures



Tables

**ACRONYMS**

| | |
|---|---|
| ASAL | Arid and Semi-Arid Lands |
| CBNRM | Community Based Natural Resource Management |
| CCCF | County Climate Change Fund |
| CCD | Climate Change Directorate |
| CCU | Climate Change Unit |
| CECM | County Executive Committee Member |
| CFA | Community Forest Association |
| CIS | Climate Information Services |
| CSA | Climate Smart Agriculture |
| CSO | Civil Society Organisation |
| DRM | Disaster Risk Management |
| EWS | Early Warning System |
| FLLoCA | Financing Locally Led Climate Action |
| GCF | Green Climate Fund |
| GHG | Greenhouse Gas |
| GoK | Government of Kenya |
| HA | Hectares |
| KCCWG | Kenya Climate Change Working Group |
| KEFRI | Kenya Forestry Research Institute |
| KFS | Kenya Forest Service |
| KMD | Kenya Meteorological Department |
| KWS | Kenya Wildlife Service |
| NAP | National Adaptation Plan |
| NCCAP | National Climate Change Action Plan |
| NC-CCAP | Narok County Climate Change Action Plan |
| NCCRS | National Climate Change Response Strategy |
| NDA | National Designated Authority |
| NDC | Nationally Determined Contribution |
| NDMA | National Drought Management Authority |
| NEMA | National Environment Management Authority |
| REDD+ | Reducing Emissions from Deforestation and Degradation plus |
| UNDP | United Nations Development Programme |
| UNFCCC | United Nations Framework Convention on Climate Change |

**DEFINITION OF TERMS**

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| **Adaptation** | Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects which moderates harm or exploits beneficial opportunities. |
| **Adaptive Capacity** | The ability or potential of a system to respond successfully to climate variability and change and includes adjustments in both behavior and in resources and technologies**.** |
| **Capacity building** | In the context of climate change, the process of developing the technical skills and institutional capability, particularly among vulnerable communities and emerging economies and sectors to enable them to effectively address the causes and impacts of climate change**.** |
| **Carbon market** | A market-based instruments such as cap-and-trade emission trading schemes which help in pricing carbon emissions and keep the costs of climate action low. A cap-and -trade scheme enables emitters to trade allowances for the right to emit up to their allowed limit. The term comes from the fact that carbon dioxide is the predominant greenhouse gas, and other gases are measured in units called "carbon dioxide equivalents." |
| **Carbon Sequestration** | The process of removing carbon from the atmosphere and depositing it in a reservoir or "sink", such as soil or trees. |
| **Climate** | The average pattern for weather conditions occurs over a long-time period (over 30 yrs.). Weather refers to the atmospheric conditions at a specific place at a specific point in time. Climate has always varied because of natural causes. Increasingly, however, human increases in GHG emissions causing changes in climate as well. |
| **Climate Change** | A change in the climate system which is caused by significant changes in the concentration of greenhouse gases as a consequence of human activities and which is in addition to natural climate change that has been observed during a considerable period. |
| **Climate Finance** | Monies available for or mobilized by government or non-government entities to finance climate change mitigation and adaptation actions and interventions. |
| **Climate Resilience** | Adaptive capacity for a socio-ecological system to absorb stresses and maintain functions in the face of external stresses imposed upon it by climate change. |
| **Conference of the Parties** | The supreme governing body of an international convention. It comprises representatives of all State Parties and accredited observers. Scope of the COP is to review the implementation of Convention and any other legal instruments that the COP adopts and take decisions necessary to promote the effective implementation of |

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| | the Convention. In this context refers to United Nation Framework Convention on Climate Change (UNFCCC). |
| **Deforestation** | The decrease in forest areas across the world that are lost for other uses such as agricultural croplands, urbanization, or mining activities |
| **Disaster** | A disaster is the tragedy of a natural or human made hazard (a hazard is a situation which poses a level of threat to life, health, property, or environment). It is a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources. |
| **Ecosystem** | The interactive system formed from all living organisms and their abiotic (physical) and can comprise the entire globe. |
| **Emission** | In relation to a greenhouse gas, means emissions of that gas into the atmosphere where the emissions are attributable to human activity. |
| **Erosion** | The process of removal and transport of soil and rock by weathering, mass wasting, and the action of streams, glaciers, winds, and underground water |
| **Intergovernmental Panel on Climate Change (IPCC)** | Established in 1988 by the World Meteorological Organization and the UN Environment Programme, the IPCC surveys worldwide scientific and technical literature and publishes assessment reports that are widely recognized as the most credible existing sources of information on climate change. The IPCC also works on methodologies and responds to specific requests from the UNFCCC's subsidiary bodies. The IPCC is independent of the UNFCCC. |
| **Low Carbon Development Pathway** | A development plan or strategy that encompasses low-emission economic growth. Transitioning to this pathway means taking actions, where possible, to encourage GHG emissions that are lower than business-as-usual practice; and reducing the human causes of emissions by moving toward a resource efficient economy that is as low-carbon as possible and enhancing carbon sinks. |
| **Maladaptation** | Defined by the UNFCCC as any changes in natural or human systems that inadvertently increase vulnerability to climatic stimuli |
| **Mitigation** | Efforts that seek to prevent or slow down the increase of atmospheric greenhouse gas concentrations by limiting current or future emissions and enhancing potential sinks for greenhouse gases;. |
| **National Adaptation Plan** | A document prepared by developing countries that identifies urgent and immediate needs for adapting to climate change. |

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| **National Climate Change Action Plans** | National plans of action, prepared at five-year intervals, that set out in detail the requirements and costs for the design and implementation of the various climate change interventions required for Kenya to attain low carbon climate resilient development. |
| **Public Private Partnerships (PPPs)** | Public-Private Partnerships are an association between government and private sector through which private financing is utilized to perform a public function, at a profit to the private sector. |
| **Participating Institutions** | National or international institutions that have made contributions to the Fund |
| **Sustainable development** | Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. |
| **Technology Transfer** | A broad set of processes covering the flows of expertise, experience and equipment for mitigating and adapting to climate change among different stakeholders. |
| **United Framework Convention on Climate Change (UNFCCC)** | An international treaty signed by 195 countries that entered into force in 1994. The objective of the Convention is "…stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system |
| **Vulnerability** | The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude and rate of climate variation to which a system is exposed, its sensitivity and its adaptive capacity. |
| **Ward** | has the meaning assigned to it under Article 89 of the Constitution; |
| **Ward Climate Change Fund Planning Committee** | the ward climate change fund Committee established under section 16 of this Act; |

## Executive Summary

Climate change has increased the frequency and magnitude of extreme weather events in Kenya causing loss of lives, diminished livelihoods, reduced crop and livestock production, and damaged infrastructure, among other adverse impacts. An example is the torrential rains and severe flooding from March to May 2018 that devastated communities that were already struggling to recover from a prolonged drought. Climate change is likely to negatively impact Kenya's future development and achievement of the goals of *Kenya Vision 2030* – the long-term development blueprint – and the Government's Big Four agenda for 2023-2027 that focuses on ensuring food and nutrition security, affordable and decent housing, increased manufacturing and affordable healthcare.

Kenya takes climate change seriously, as demonstrated by the enactment of the Climate Change Act (Number 11 of 2016). This Act requires the Government to develop five-year National Climate Change Action Plans (NCCAP) to guide the mainstreaming of adaptation and mitigation actions into sector functions of the National and County Governments.

**NC-CCAP 2023-2027 aims to further Kenya's development goals by providing mechanisms and measures to achieve low carbon climate resilient development** in a manner that prioritises adaptation. This plan builds on the first Action Plan (2013-2017) and provides a framework for Kenya to deliver on its Nationally Determined Contribution (NDC) under the Paris Agreement of the United Nations Framework Convention on Climate Change (UNFCCC). NCCAP 2023-2027 guides the climate actions of the National and County Governments, the private sector, civil society and other actors as Kenya transitions to a low carbon climate resilient development pathway. The NCCAP consists of this Volume I, the Volume II: Adaptation Technical Analysis Report, and Volume III: Mitigation Technical Analysis Report.

### Kenya's Changing Climate

Kenya is an equatorial county in East Africa with a complex and variable climate ranging from warm and humid in the coastal regions to arid and very arid in the interior. The central and western highlands, bisected by the Rift Valley, have a temperate climate with medium to high rainfall and are the productive zones with high to medium agricultural potential (about 18% of Kenya's land area). Low and unevenly distributed rainfall over much of the country means about 82% of Kenya receives less than 700 mm of rain per year. Twenty-three of Kenya's 47 Counties are considered as arid or semi-arid lands (ASALs). Kenya is frequently affected by weather-related disasters, particularly droughts, which have a profound impact on Kenya's economy and people's well-being.

Kenya's climate is already changing. Surface temperatures across Africa have increased by 0.52°C over the past 100 years, and from 1950 onward climate change has changed the magnitude and frequency of extreme weather events. The frequency of cold days, cold nights and frost has decreased; while the frequency of hot days, hot nights and heat waves has increased. Temperature increase has been observed across all seasons, but particularly from March to May.

Rainfall patterns have also changed. The long rainy season has become shorter and drier, and the short rainy season has become longer and wetter, while overall annual rainfall remains low. The long rains have been declining continuously in recent decades, and droughts have become longer and more intense and tend to continue across rainy seasons. The frequency of rainfall events causing

floods has increased in East Africa from an average of less than three events per year in the 1980s to over seven events per year in the 1990s and 10 events per year from 2000 to 2006, with a particular increase in floods. Droughts and heavy rainfall have become more frequent in the last 30 years.

The current trend of rising annual temperatures is expected to continue in Kenya in all seasons. The precipitation projections are more uncertain and suggest that by the end of the 21st century East Africa will have a wetter climate with more intense wet seasons and less severe droughts. The proportion of rainfall that occurs in heavy events is expected to increase.

**Climate Change Impacts in Narok County**

Heat, drought and floods are impacting Kenyans, and human health is increasingly at risk. Kenya's economy is very dependent on climate-sensitive sectors such as agriculture, water, energy, tourism, wildlife, and health. The increasing intensity and magnitude of weather-related disasters in Kenya aggravates conflicts, mostly over natural resources, and contributes to security threats.

The economic cost of floods and droughts is estimated to create a long-term fiscal liability equivalent to 2%-2.8% of GDP each year. Specifically, the estimated costs of floods are about 5.5% of GDP every seven years, while droughts account for 8% of GDP every five years.

**Floods** have led to the greatest loss of human lives in Kenya. The floods in early 2018 claimed over 183 lives, displaced more than 225,000 people including over 145,000 children, and closed over 700 schools. The economic impacts of floods are severe; in 2018, rain and flooding wiped out resources worth billions of shillings. Roads and infrastructure were destroyed, seasonal crops across an estimated 8,500 hectares of land were destroyed and over 20,000 livestock drowned.

**Droughts** are typically large-scale disasters in Kenya destroying livelihoods, triggering local conflicts over scarce resources, and eroding the ability of communities to cope. The 2014-18 drought was declared a national emergency in February 2017 and at that point in time affected 23 ASAL Counties. At least 3.4 million Kenyans were severely food insecure and an estimated 500,000 people did not have access to water.

**Rising sea temperatures** off the coast of Kenya have triggered mass coral bleaching and mortality on coral reef systems over the past two decades. This impacts the abundance and composition of fish species and negatively impacts coastal fisheries.

**Kenya's Contribution to Climate Change**

Kenya has little historical or current responsibility for global climate change; the country's

GHG emissions represent less than 1% of total global emissions. Adaptation is the priority for Kenya, but climate action also needs to reduce greenhouse gas emissions that are projected to increase because of population and economic growth. 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% by 2030 relative to the business as usual scenario. The forestry sector has large potential to reduce greenhouse gas emissions in Kenya because forests act as "sinks" through carbon sequestration.

**Priority Climate Change Actions**

NC-CCAP 2023-2027 takes cognisance of the impacts of climate change on Kenya's socioeconomic sectors. It identifies strategic areas where climate action is linked to the Big Four agenda, recognising that climate change is likely to limit the achievement of these pillars. For example, food security is threatened through climate change-driven declines in agricultural productivity, health is impacted by an increase in vector-borne diseases, including malaria and cholera; housing and manufacturing are impacted by damage to infrastructure (including homes, business, schools and hospitals) caused by flooding and storm events.

| **Narok County's Climate Change Action Plan 2023-2027** | | | |
|---|---|---|---|
| **Aim: To further County's sustainable development by providing mechanisms and measures to achieve low carbon climate resilient development in a manner that prioritises adaptation.** | | | |
| **Disaster (Drought and Floods) Risk Management** | **Food and Nutrition Security** | **Water and the Blue Economy** | **Forestry, Wildlife and Tourism** |
| **Reduce risks to communities and infrastructure resulting from climate-related disasters such as droughts and floods.**<br>✦ Increase number of households and entities benefiting from devolved adaptive services<br>✦ Improve ability of people to cope with drought<br>✦ Improve ability of people to cope with floods and increase resilience of infrastructure<br>✦ Improve coordination and delivery of disaster risk management activities to effectively deal | **Increase food and nutrition security through enhanced productivity and resilience of the agricultural sector in as lowcarbon manner as possible.**<br>✦ Improve crop productivity through the implementation of climate-smart actions<br>✦ Improve crop productivity by increasing the acreage under irrigation<br>✦ Increase productivity in the livestock sector through implementation of priority climate-smart actions<br>✦ Enhance productivity in the fisheries sector through implementation of | **Enhance resilience of the Blue Economy and water sector by ensuring access to and efficient use of water for agriculture, manufacturing, domestic, wildlife and other uses**<br>✦ Increase annual per capita water availability through the development of water infrastructure<br>✦ Climate proof water harvesting and water storage infrastructure and improve flood control<br>✦ Promote water efficiency (monitor, reduce, re-use, and recycle)<br>✦ Develop green infrastructure | **Increase forest cover to 10% of total land area; rehabilitate degraded lands, including rangelands; increase resilience of the wildlife and tourism sector**<br>✦ Afforest and reforest degraded and deforested areas in Counties<br>✦ Implement initiatives to reduce deforestation and forest degradation<br>✦ Restore degraded landscapes (ASALs and rangelands)<br>✦ Promote sustainable timber production on privately-owned land |

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| with drought, floods, landslides, disease outbreaks and other disasters | priority climate-smart actions<br>✦ Diversify livelihoods to adjust to a changing climate | ✦ Improve climate resilience of coastal communities | ✦ Conserve land areas for wildlife |

| **Health, Sanitation and Human Settlements** | **Manufacturing** | **Energy and Transport** |
|---|---|---|
| **Mainstream climate change adaptation into the health sector; and increase the resilience of human settlements, including improved solid waste management in urban areas**<br>✦ Reduce incidence of malaria and other vector-borne disease<br>✦ Promote recycling to divert collected waste away from disposal sites.<br>✦ Climate proof landfill sites<br>✦ Control flooding in human settlements<br>✦ Promote green buildings | **Improve energy and resource efficiency in the manufacturing sector**<br>✦ Increase energy efficiency<br>✦ Improve water use and resource efficiency<br>✦ Optimise industrial and manufacturing processes<br>✦ Promote industrial symbiosis in industrial zones | **Climate-proof energy and transport infrastructure; encourage electricity supply based on renewable energy; encourage the transition to clean cooking; and develop sustainable transport systems**<br>✦ Promote the transition to clean cooking with alternative clean fuels such as LPG in urban areas, and clean biomass (charcoal and wood) cookstoves and alternatives in rural areas<br>✦ Increase renewable energy for electricity generation<br>✦ Climate proof energy and transport infrastructure<br>✦ Develop an affordable, safe and efficient public transport system, including a Bus Rapid Transit System in Nairobi<br>✦ Reduce fuel consumption and fuel overhead costs, including electrification of the Standard Gauge Railway<br>✦ Promote low-carbon action in the aviation and maritime sectors |

The seven priority climate action areas, their strategic objectives and main actions are set out in the table above. The detailed descriptions in NCCAP 2023-2027 include information on the problem being addressed, the action needed to address the problem, expected results, County-level indicators, alignment with the Big Four Agenda, alignment with Sustainable Development Goals (SDGs), and relevant institutions to deliver the actions.

Adaptation actions are prioritised in NCCAP 2023-2027 because of the devastating impacts of

droughts and floods, and the negative effects of climate change on vulnerable groups in society including women, older members of society, persons with disabilities, children, youth, and members of minority or marginalised communities. These actions are undertaken, where possible, in a way to limit greenhouse gas emissions to ensure that the country achieves its mitigation NDC. The climate change actions will be mainstreamed in the Third Medium Term

Plan and in Country Integrated Development Plans, ensuring that strategic climate change actions are taken up across the country and in all sectors.

Delivering the NC-CCAP

The Climate Change Act, 2016 sets out institutional structures and responsibilities that guide the oversight and management of NC-CCAP 2013-2027. The National Climate Change Council, chaired by His Excellency the President of the Republic of Kenya and co-chaired by the Deputy President, is responsible for overall coordination of climate change affairs, including guiding the implementation of NCCAP 2023-2027.

The Cabinet Secretary responsible for climate change affairs submits the action plan to the Council for approval, and reports to the Council and Parliament on the status of the implementation of this NCCAP. The Climate Change Directorate, established in the ministry responsible for climate change affairs, coordinates the implementation of NCCAP 2023-2027, including related monitoring and reporting.

State departments and national public entities are required to establish climate change units to integrate NCCAP 2023-2027 into strategies and implementation plans, and to report to the Council on an annual basis on performance and implementation.

County Governments are responsible for integrating and mainstreaming climate change actions into their 2023-2027 County Integrated Development Plans, designating a County Executive Committee member to coordinate climate change affairs, and reporting annually to the County Assemblies on the implementation of climate change. County governments are expected to establish climate change units that will oversee the implementation of climate actions.

# CHAPTER 1: BACKGROUND AND CONTEXT

This Chapter Summarizes the different steps in the participatory climate action planning process that led tothe development of the CCCAP, and how women, youth, ethnic minorities, people living withdisabilities and other marginalized and vulnerable groups were enabled to be active participants in this process.

## 1.1 Background and Context

Climate change has increased the frequency and magnitude of extreme weather events in Kenya that have led to loss of lives, diminished livelihoods, reduced crop and livestock production, and damaged infrastructure, among other adverse impacts.

As a county, The Narok County government takes climate change seriously, as demonstrated by the enactment of the Narok County Climate Change Fund Act, 2021. This law created a fund to be funded by the government and partners in creating resilience among its citizens. In this law The county's contribution was set to be three percent of its development budget, the highest in the country. This law also provides mechanisms and measures to transition to a low carbon climate resilient development. This pathway emphasizes sustainable development and prioritizes adaptation, recognizing the importance of increasing the climate resilience of vulnerable groups including women, youth, people with disabilities, and marginalized and minority communities.

The National Climate Change Action Plan (NCCAP) 2018 – 2022 and Section 11 of the aforementioned statute provides for the development of Narok County Climate Change Action Plans (NC-CCAP) and programs to prescribe measures and mechanisms to mainstream adaptation and mitigation actions into sector functions of County Governments. The Act requires that the County Executive Committee Member (CECM) responsible for climate change affairs review and update the NC-CCAP in every five-year period.

NC-CCAP 2023 – 2027 is Narok's first action plan on climate change which was majorly derived from the NCCAP 2018 – 2023 and from a Participatory Climate Risk Assessment Report carried across the county in all the 30 wards. NCCAP 2018-2022 is a framework for Kenya to deliver on its Nationally Determined Contribution (NDC) under the Paris Agreement of the United Nations Framework Convention on Climate Change (UNFCCC).

### 1.1.1 Purpose and process of the NC-CCAP

Narok County pride itself as a food basket for the country with the highest production of Beef, Wheat, Barley and Potatoes. The county has four agro-climatic zones namely; humid, sub-humid, semi-humid to arid and semi-arid. Two-thirds of the county is classified as semi-arid (Narok CIDP 2018- 2017). Temperatures range from 20° C (January- March) to 10° C (June-September) with an average of 18° C.

Weather in Narok county is majorly influenced by the winds converging at the equator creating a low pressure zone (inter tropical convergence zones) giving rise to bi-modal rainfall pattern. The county experiences long rains between March to May while the short rains are experienced between October to December.

Rainfall ranges from 2,500 mm in wet season to 500 mm during the dry season. The period between March to May season receives high intensity rainfalls that support growth of vegetation which is food for wild animals. This climatic characteristic has been influencing the migration of wildebeest into Kenya from Serengeti in June in search of vegetative food and return migration to Serengeti in November after the vegetation diminishes. The seasons are also important to farmers in planning for planting and harvesting.

This action plan primarily depended on the NCCAP 2018 -2022 and the Data gathered through a vigorous participatory climate risk assessment across the county in all the 30 wards. This plan was subjected to the following processes to ascertain quality, objectivity and its comprehensiveness.

**Step 1: Review of Key Documents**

This step was used to review the county policies and plans including the county integrated development plan, county spatial plan, the county climate change policy among other strategic documents and laws.

This step was also used to review National Government policies, laws and guidelines among them include NCCAP 2018 – 2022, National Determined Contributions, Climate Change Act, 2016 among many others. Also academic literature was reviewed to check approaches of different scholars in giving climate solutions.

**Step 2: Collecting Public Input**

This step was carried out to provide stakeholders and community representatives at the ward levels with an opportunity to review and respond to the findings of the county climate risk analysis. Also the ward leadership was also oriented through this documents to give their inputs.

**Step 3: Drafting the County Climate Change Action Plan**

After the community and stakeholders gave their inputs and validated the PCRA report, the first draft of this document was developed at this stage.

**Step 4: Validation Workshop for the CCCAP**

This document was then validated with the key stakeholders including the directors of county departments, those in the MDA and other relevant organizations and stakeholders in the county with relevant knowledge in the priorities identified in the PCRA report.

**Step 5: Public Feedback**

The document was then shared with a wider stakeholder for further inputs. Among them was selected members of the public considering the different spectrum of the communities i.e. women, pwds, youth, indigenous groups among others

**Step 6: Development of Second Draft of CCCAP**

After collection of all the inputs, a second draft was developed at this stage. This document was then ready to be presented to the cabinet for adoption as a county plan. At this stage the cabinet was also oriented through the document to facilitate their understanding before approving the document.

**Step 7: Presentation of the CCCAP to the County Executive Committee**

This document together with the PCRA report were presented to the cabinet by the CECM in charge of climate change through a cabinet memo.

**Step 8: Presentation of the CCCAP to the County Assembly**

In accordance to section 12 of the Narok County Climate Change Fund Act, 2021 this document was then shared with the county assembly committee of environment which was to ensure that the check and balance between the assembly and the executive were maintained as envisaged in our constitution.

### 1.1.1.1 Objective

The main objective of this document was to guide the county and its partners in investing low carbon investments and offering climate solutions to the citizens and the globe. In achieving this, this document will also be aiming

i. To consolidate data on Climate change related actions and investments by all stakeholders at the County and Ward level

ii. To highlight progress, challenges, opportunities and lessons learnt

iii. To enhance stakeholder awareness and involvement in Climate change activities for improved action.

### 1.1.2 Underlying Climate Resilience Context

Impacts of Climate Hazards in the County

Narok County is one of Kenya's back born for the National Determined Contribution (NDC). The County is home to the biggest carbon sink in East Africa- The Mau Forest Complex, The Loita Forest, Enoosupukia Forest among others. Over 60% of the population in the county resides in the semi-arid areas. Environmental shocks and stresses brought about by droughts compound poverty and affect the poor disproportionately because the poor are found in marginal and vulnerable areas.

This results in loss of livestock and wildlife as well as displacement of communities in search of water and pasture thus creating climate migration (transhumance migration) which further worsens the quality of life for the local communities. Adverse change in the weather pattern has resulted in reduced yields; which in turn have discouraged investors in the agricultural sector and would be adversely affected hindering the realization of Vision 2030 development goals. Narok County and Narok Town in particular has experienced increased frequency of flooding in the past decade with flash floods being experienced every rainy season -unpredictable phenomenon that result perennial flooding unlike in the past when the frequency was every five years. The flooding events lead to loss of lives, livestock and destruction of property which affects the livelihoods of the pastoral and business community especially in town.

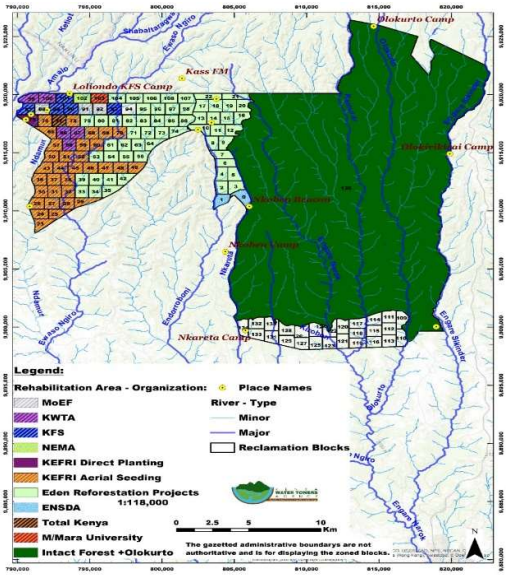



Figure 1 Maasai Mau Forest. Kenva Water Towers

Other hazards include windstorms which are known to cause havoc in areas such as Suswa Olokurto and some parts of Narok South and West especially in open spaces and mudflow along Enoosupukia-Suswa – Lake Magadi Landscape. Areas prone to fire outbreaks include Maasai Mara and Maasai Mau forest where they are reported to cause serious ecological damage. Forest fires have been reported to cause serious deforestation in parts of Maasai Mara and parts of Maasai Mau where they razed important ecosystems endemic to lions. Irreparable damage has also been caused to homesteads and other establishment as a result of fire outbreaks. Human Wildlife conflict is also a notable hazard in the Maasai Mara Ecosystem due to prolonged drought in the area.

Pastoralist, agro-pastoralist and agriculturalists in Narok County will be amongst the most vulnerable due to the impacts of climate change. Increasing climate variability (changes duration, seasonality and increase in temperature) and extreme events (droughts and floods) will affect livestock and agriculture production, incomes, and food security of these communities in the County.

## 1.2 Differentiated Climate exposure and Vulnerability of key groups and livelihoods in the County

Spatial variation in precipitation and temperature in the county is wide due to the sparse geographical area of the county. The current climate supports a variety of crop farming such as wheat, barley, potatoes as a cash crop and fodder and pasture for livestock, while maize and beans are grown mainly for subsistence. Other crops grown are horticultural crops such as African leafy vegetables (ALVs) and kales. Livestock rearing in the county include goats, sheep and cattle on small scale.

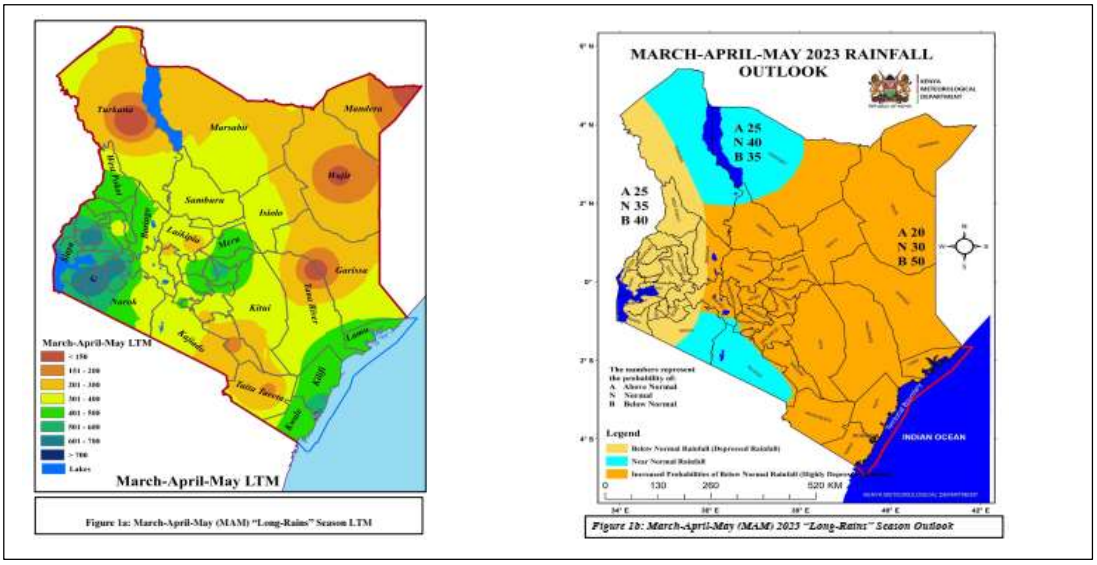



*Figure 2 National Rainfall Differences between MAM LTM and MAM 2023 Forecast, KMD 2023*

Differentiated climatic trends indicate that Narok County may receive slightly enhanced annual rainfall in some pockets as indicated in the Long Term Mean (Averages). Consecutively dry days within and between rainy seasons are expected to increase by an average of 4 days suggesting a marginal increase in incidences of prolonged dry periods with likelihood of crop failure and reduced quantities of water from natural sources. The maximum number of running rainy days will average 5 days which indicates risks of floods, flash floods, infrastructure destruction and crops.

## 1.3. Brief Overview of Climate Change Actions in the County

### 1.3.1 Mainstreaming of NCCAP in County Actions

One of the outstanding achievements within the National Climate Change Action Plan 2018 - 2022 period was the enactment of the Climate Change Act in May 2016. This law provides a regulatory framework for an enhanced response to climate change and promotes a mainstreaming approach to enhance action toward a low carbon climate-resilient development pathway.

Part III, section 19 of the Act provides for mainstreaming of climate change actions into The County Government functions and states that subject to the Act and the Constitution, County Governments may enact legislation that further defines the implementation of its obligations under this Act, or

other climate change functions relevant to the County or such other related purposes.

In the spirit of the Climate Change Act 2016 requirement for the Counties to enact Climate Change Legislative Framework, Narok County has enacted Narok County Climate Change Act, 2021 and Climate Change Fund Regulation and Policy, 2021.

### 1.3.2 Climate Change in CIDP

Narok County has captured and budgeted 3% of its total development budget for Climate Change Mitigation and Adaptation measures for FY 2023-2024. Narok County has also mainstreamed Climate Change resilience measures across all Departments in the County.

### 1.3.3 Other key climate actions/strategies in the County

These include other measures such as prioritizing climate resilient development in the County, promoting Climate Change mitigation through measures such as reducing emissions and protecting forest areas and planting trees and lastly Climate Change Adaptation through measures such as promoting livelihood diversification to enhance resilience.

# CHAPTER 2: POLICY ENVIRONMENT

## 2.1 National Policy Context

### 2.1.1 The National Perspective

Climate change has increased the frequency and magnitude of extreme weather events in Kenya that have led to loss of lives, diminished livelihoods, reduced crop and livestock production, and damaged infrastructure, among other adverse impacts. An example is the severe drought experienced from 2018 to 2022 that devastated communities that were already struggling to recover electioneering period. Climate change is likely to negatively impact Kenya's future development and achievement of the goals of *Kenya Vision 2030* – the long-term development blueprint – and the Government's Big Four agenda for 2018-2022 which focuses on ensuring food and nutrition security, affordable and decent housing, increased manufacturing and affordable healthcare.

Kenya takes climate change seriously, as demonstrated by the enactment of the Climate Change Act (Number 11 of 2016). This is the first climate change-dedicated legislation in Africa, and provides a regulatory framework for an enhanced response to climate change. It provides mechanisms and measures to transition to a low carbon climate resilient development. This pathway emphasizes sustainable development and prioritizes adaptation, recognizing the importance of increasing the climate resilience of vulnerable groups including women, youth, people with disabilities, and marginalized and minority communities.

Section 13 of the Climate Change Act, 2016 provides for the development of National Climate Change Action Plans (NCCAP) to prescribe measures and mechanisms to mainstream adaptation and mitigation actions into sector functions of National and County Governments. The Act requires that the Cabinet Secretary responsible for climate change affairs review and update the NCCAP in every five-year period.

NCCAP 2018-2022 is Kenya's second action plan on climate change. This plan builds on the first Action Plan (2013-2017) where considerable progress was made, including establishing climate change funds in five Counties, expanding geothermal power, establishing the National Climate Change Resource Centre, and improving the legal and policy framework (see Section 1.4 for more details). NCCAP 2018-2022 is a framework for Kenya to deliver on its Nationally Determined Contribution (NDC) under the Paris Agreement of the United Nations Framework Convention on Climate Change (UNFCCC).

Climate change is a shared responsibility between the National Government and the County Governments. The National Government led and guided the process to develop NCCAP 2018 - 2022 working with County Governments.

The implementation of the plan is coordinated by the two levels of government in line with the Constitution of Kenya (2010). NCCAP 2018-2022 coincides with the second generation of County Governments, who are responsible for several devolved functions where action will contribute to the achievement of this climate change action plan and the Big Four agenda.

NCCAP 2018-2022 guides the climate actions of the National Government, the County Governments, the private sector, civil society and other actors as Kenya transitions to a low carbon climate resilient development pathway.

### 2.1.2 National Legal and Policy Framework

The Government of Kenya (GOK) has demonstrated a renewed commitment to the ASAL regions, through launching the Economic Recovery Strategy in 2003, which, for the first time, recognized 'the important contribution the ASALs can make to national development'. The Government of Kenya is committed to putting in place a holistic policy framework that facilitates and fast-track sustainable development of the region. This is in a bid to reducing levels of inequality concerning the rest of Kenya and realizing its potential for the benefit of affected counties and the country.

Kenya has assented to several international and regional instruments governing diverse aspects of climate change, which are currently being implemented. The United Nations Convention to Combat Desertification (UNCCD) is one of the key international instruments that promotes sustainable management and utilization of drylands while the United Nations Framework Convention on Climate Change (UNFCCC) of 1997 (Kyoto Protocol, 1997), seeks to address climate change through periodic and successive binding global agreements (such as the Kyoto protocol and presently the Paris Agreement) that detail, among others, adaption measures to respond to both current and future impacts of climate change.

Further, the Sustainable Development Goals (SDGs) are a set of development goals that aim at fostering sustainable development across diverse sectors of world economy. Those SDGs of particular interest to Narok County include SDGs 1 (No poverty), 2 (zero hunger), 3 (good health and well-being), 6 (Water and sanitation), 7 (Affordable and clean energy), 8 (Decent work and economic growth), 13 (Climate Action), 15 (Life on Land), 17 (partnership for the goals).

**The Sendai Framework for Disaster Risk Reduction (2015-2030)**

The Sendai Framework for Disaster Risk Reduction (Pearson & Pelling, 2015) seeks for a reduction in disaster risk and losses in lives and livelihoods while the African Union (AU) Policy Framework for Pastoralism in Africa aims to secure, protect and improve the lives, livelihoods, and rights of African pastoralists (Africa Union, 2013). In the East Africa Community (EAC) region, EAC Climate Change Policy has been developed to guide Partner States on the preparation and implementation of collective measures to address climate change in the region.

**The Constitution of Kenya, 2010**

The Constitution of Kenya, 2010 asserts the aspiration of all Kenyans for a governance based on the essential values of, among others, human rights, equality, and social justice. These aspirations particularly resonate well with pastoralists, agro-pastoralists and agriculturalists in Narok County. The constitution creates an Equalization Fund whose provisions are buttressed by objects of which include, among others, to protect the marginalized, including pastoralists and to ensure equitable sharing of national resources throughout Kenya. Most importantly, the Constitution devolved units, the counties, which are tasked with the implementation of crop and livestock production, water and sanitation services, disaster management (concurrent function), soil and water conservation, and many other functions; all of which contribute to climate Change Mitigation and Adaptation in Narok County.

**The National Climate Change Response Strategy (NCCRS, 2010)**

The National Climate Change Response Strategy (NCCRS, 2010) was key in Kenya's history, which laid the foundation for strengthening nationwide actions towards climate change adaptation and mitigation of greenhouse gas (GHG) emissions. The National Climate Change Action Plan (2013-2017) sets plans for the implementation of the NCCRS, including prioritized actions needed to achieve climate-resilient and a low carbon pathway development (Government of Kenya, 2010).

**The Climate Change Act (2016)**

The Climate Change Act (2016) provides the regulatory mechanisms to implement climate change resilience and low carbon actions in both public and private sector development activities and has enshrined the National Climate Change Action Plan (Council, 2010) – to be developed in 5-year cycles and aligned with the MTPs – as its principal implementation instrument. The latest NCCAP, covering the period 2018–2022, identifies a series of actions for government and other stakeholders, with a particular focus on adaptation. The National Policy on Climate Finance (2018) provided a clear direction on mechanism for enhanced mobilization of climate finance from all sources: private, public, multi-lateral Agencies, bilateral, philanthropic, among others to finance Kenya's updated National Determined Contribution (NDC) and NCCAPs. The policy recommended the development of green fiscal incentive policy to catalyze the private sector to finance transition to a low carbon- climate resilient-green development path. It requires the County governments to integrate the provisions of the Act.

**The National Adaptation Plan (2015-2030)**

The National Adaptation Plan aims to integrate climate change into national and the County level development planning and budgeting, as well as enhance the resilience of vulnerable populations to climate shocks through adaptation and DRR.

**The County Government Act (2012)**

The County Government Act 2012 (Government of Kenya, 2012) mandates counties to develop a County Integrated Development Plan (CIDP), the County Spatial Plan (CSP) as well as Cities and Urban Areas Plan which shall be the basis for the County budgeting and expenditures.

**The National Land Policy (2009)**

The National Land Policy 2009 provides for guiding principles that resonate with sustainable rangeland management including, among others, equitable access to land; conservation of ecologically sensitive areas, elimination of gender discrimination in land relations; and encouragement of traditional dispute resolution mechanisms. To secure community rights to land, the policy mandates the Government to enact legislation which shall *inter alia*, provide a framework for the recognition and registration of community rights to land and resources found thereon. Pending which, any unregistered community land shall be held in trust by the County Government for the community in question.

**The Community Land Act (2016)**

The Community Land Act (Kenya Law) 2016 sets a framework for ownership, protection, management, utilization, rights, benefits sharing, disputes resolutions, and penalties regarding community land. Furthermore, communities have powers to set rules for administration and management of communal land, establish measures to protect critical ecosystems and habitats, and facilitate access, public participation and co-management of resources by communities. The Environment and Land Court Act 2011 mandates the court to mainstream Alternative Dispute Resolution (ADR) in its proceedings.

**The Environmental Management and Coordination Act (EMCA) of 1999**

The Environmental Management and Coordination Act (EMCA) of 1999 (amended in 2015 to align with the Kenya constitution, 2010) creates the County Environment Committee comprising, inter alia,

representatives of pastoralists within the County in question (EMCA 2015," 2017). The national environment provides for ASALs and rangelands are found in several sections such as provisions for forest ecosystems, provision for ASALs, provision for land resource, provision for biodiversity and wildlife resources, and provision for livestock resources.

**The Water Act, 2016**

The Water Act, 2016 provides for, inter alia, the regulation, management, and development of water resources and services throughout the country. The Water Services Trust Fund shall provide grants to counties (in addition to the Equalization Fund) to extend water services in marginalized areas or those considered to be underserved or not to be commercially viable. Representation of pastoralists on the Basin Water Resources Committee is also a requirement.

**The Wildlife Conservation and Management Act, 2013**

The Wildlife Conservation and Management Act, 2013 calls for devolution of wildlife conservation and management, wherever possible, to landowners where wildlife occurs while recognizing the rights of communities living adjacent to protected areas.

### 2.1.3 County Enabling Legal & Policy Framework

This Section analyses county's existing policy, legal and regulatory framework for climate change. This include county climate change acts, CCCF Act and Regulations, CIDPs, sectoral policies, spatial plans, etc.

**i. Narok County Climate Change Fund Act, 2021**

The object and purpose of this Act is to establish a Climate Change Fund to facilitate and coordinate financing of Climate Change Adaptation and Mitigation activities and to establish a county climate change framework and structures to: Mainstream climate change programs into development planning, decision making and advisory on climate change in the county; Co-ordinate, collate and disseminate information on climate change to the public to create awareness and preparedness; Establish a climate change fund, financial mechanism and governance framework for climate change response and risk mitigation; Co-ordinate support from National Government climate change policy and legislative framework and co-ordinate the collection and dissemination of climate change information to the public to create awareness and preparedness.

**ii. Narok County Climate Change Policy, 2022**

The main goal of the Policy is to ensure that climate change is mainstreamed in the economically and socially vulnerable sectors and to steer Narok County towards climate resilience and green development pathway. This will be achieved through: Pursuing sustained economic growth by appropriately addressing the challenges of climate change; Integrating the climate change policy into other related county policies and the CIDP; Facilitating and strengthening Kenya's role as a responsible member of the international community in addressing climate change challenges; Focusing on pro-poor and gender sensitive adaptation while promoting mitigation to the highest extent possible in a cost-effective manner; Ensuring water, food and energy security of the county in the face of challenges posed by climate change; Minimizing the risks arising from expected increase in frequency and intensity of extreme events: flash floods, droughts etc.; Strengthening inter-departmental, inter-agency decision making and coordination mechanisms on climate change; Facilitating effective mobilization and utilization of natural, human, technical and financial resources available both nationally and internationally; Development of

appropriate economic incentives to encourage public and private sector investment in both adaptation and mitigation measures; Enhancing the awareness, skills and institutional capacity of relevant stakeholders in implementing climate change adaptation and mitigation measures and promoting conservation of natural resources and long-term sustainability.

# CHAPTER 3: PRIORITY CLIMATE CHANGE ACTIONS

## 3.1 Identification of strategic climate action priorities in the PCRA

### 3.1.1 Reduce risks to communities and infrastructure resulting from climate related disasters such as droughts and floods.

| **Strategic Objective 1: Reduce risks to communities and infrastructure resulting from climate related disasters such as droughts and floods.** | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Issue/problem:** Frequent dry spells, sporadic rainfalls, increase pest incidences, crop pest and diseases, human disease and livestock diseases. The long rain season (March – May) is wetter than the short rains (October - November) have national and county economic consequences and extensive socio-economic effects at the household and community levels, especially for vulnerable groups, such as women, older members of society, persons with disabilities, children under 5 years, youth, and members of marginalised and minority at community level. | | | | | | | | | | | | | | | | | | |
| ***Vision 2030*** | | | | | | | | | | | | | | | | | | |
| ***SDGs1 – No poverty; 2 – resilient community; 3 – Healthy lives; 4 – Education; 5 – Gender equality; 6 – Sustainable water management; 8 – Sustained economic growth; 9 – Resilient Infrastructure; 10 – Reduced inequalities; 11 – Sustainable livelihood; 13 – Climate proof infrastructures*** | | | | | | | | | | | | | | | | | | |
| County level Indicators:<br>▪ Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population<br>▪ Proportion of departments that adopt and implement local disaster risk reduction strategies in line with county strategies<br>▪ Number of households receiving relief assistance | | | | | | | | | | | | | | | | | | |
| | | | | | | | **Planned Targets and indicative budget (Ksh.M)** | | | | | | | | | | **Total Budget (Ksh M) *** |
| | | | | | | | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | | **Year 5** | | | |
| **Actions** | **Baseline** | **Expected Results by 30th June 2027** | **Adaptation/ Mitigation** | **Indicators** | **Responsibility** | **Target** | Target | **Costs** | **Targe** | **costs** | **Targe** | **Costs** | **Targe** | **costs** | **Targe** | **costs** | |
| **1.Increase number of households and entities benefiting from devolved adaptive measures** | 16,000 HH have access to climate fund through the CBOs, NGOs, Government Agencies | Number of households better able to cope with climate change because of receiving benefit from County Climate Change Funds increased from 10,000 households in 2023 to 60,000 households in 2025. | Adaptation | | National government, | 15000 House Holds | | | | | | | | | | | | |
| | | Climate Change Funds address local adaptation priorities that are identified and monitored by community committees comprise | Climate risk: | Number of households receiving adaptive fund | County Government, | | 3,000 | 15 | 3,000 | 15 | 3,000 | 15 | 3,000 | 15 | 3,000 | 15 | 75 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | d of women and men. | | | | | | | | | | | | | | | |
| | | *Note: number of beneficiaries increases because the expanded scope of programmes means that more Kenyans are eligible for support* | extreme weather events, including droughts and floods | | CCU | | | | | | | | | | | | - |
| **2. Improve ability of people to cope with drought** | ✦ 15% of population of Narok county have access to drought early warnings and other climate information from relevant government agencies | ✦ Drought early warning systems improved, including the promotion of people-centred systems at the national and county levels. | Adaptation Climate risk: high temperatures and lack of rain leading to loss of crops and animals (livelihoods), water scarcity, low attendance at schools, hygiene issues especially for women and girls | Number of HH with adapted coping mechanisms | County Gov't, | All wards in the county | | | | | | | | | | | - |
| | | ✦ Number of recipients of climate information services that use the information in their risk management decisions increased from 100,000 to 200,000. | | | National Gov't, | | **120** | **2** | **120** | **2** | **120** | **2** | **120** | **2** | **120** | **2** | 10 |
| | | ✦ Water harvesting and storage (*see expected results under* | | | NGOs, CCU | | | | | | | | | | | | - |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *Climate Action 3 – Water).* | | | | | | | | | | | | | | | |
| **3. Improve ability of people to cope with, and infrastructure to withstand, floods** | ✦ Earth roads | ✦ Flood early warning systems improved, taking advantage of widespread access to mobile technology that provides an avenue for disseminating information. | Adaptation Climate risk: heavy rainfall and flooding leading to damage to and loss of infrastructure (houses, roads, health clinics, schools); loss of property and livelihoods; increase in water-borne diseases such as cholera | Number of early warning systems installed, Number of people accessing mobile network, Roads rehabilitated, | County gov't, KENHA, KERRA, CCU | All people | | | | | | | | | | | - |
| | ✦Coping mechanism in place. | ✦ Implement the existing 11 integrated flood management plans; for example, water storage, drainage networks, reforestation and rehabilitation of riparian areas, construction of dams, and land use restrictions. | | | | | | | | | | | | | | | |
| | ✦ 80% of roads in the county are all weather roads | ✦ Dam Safety Control System established including a needs assessment, and development of safety manuals and codes of practice. | | | | | 6 | 20 | 6 | 20 | 6 | 20 | 6 | 20 | 6 | 20 | 100 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ✦ Increase the number of Water Resources Users Associations (WRUA) from the current 8 WRUAS to at least 16 WRUA, which are community-based organizations that are rights-based groups with female and male membership. | | | | | | | | | | | | | | | | - |
| | | ✦ Water and flood control including dams/dykes, drainage systems, and water storage *(see expected results under Climate Action 3 – Water).* | | | | | | | | | | | | | | | | - |
| **4. Improve coordination and delivery of disaster risk management** | Availability of county disaster coordinating structures. | Improve the coordination of disaster risk management (including floods, droughts, disease outbreaks, landslides and other disasters) by enacting and implementing the Disaster Risk Management Act | Enabling | Number of dams, gabions, bridges, contours, constructed. Rehabilitation and reclamation of riparian lands. | National gov't, County Gov't, Red Cross, Data Resource authority, ENSDA, Kenya Meteorological Dept, Media, KENHA, KERA, Finance, NDMA, DRU,CCU, NC-CCSC | All | | | | | | | | | | | | - |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | that includes the establishment of: | | | | | | | | | | | | | | | | |
| | Availability of the Narok county disaster reduction unit | ✦ National Disaster Risk Management Authority to coordinate disaster response. | | Outbreak of diseases. | | | | | | | | | | | | | | - |
| | Availability of the Narok county climate change steering committee | ✦ Engendered County Disaster Risk Management Committees to coordinate disaster response at the County level. | | | | | 30 | 5 | 30 | 5 | 30 | 5 | 30 | 5 | 30 | 5 | | 25 |
| | Availability of the disaster coordinating agencies in the county | ✦ Disaster Risk Management Fund to provide funds for disaster preparedness, mitigation of disaster impacts, and disaster recovery measures, particularly for vulnerable groups. | | | | | | | | | | | | | | | | - |
| | **Enabling (finance)** | county emergency fund, draft disaster management bill | ▪ Contingencies Fund allocations to address urgent and unforeseen needs | Enabling | Enactment of the disaster management bill. | County Government, Ministry of Finance and Planning, NDMA, NGO, CCU. | All sub-counties | | | 1 | 20 | | | | | | | 20 |
| | **Enabling** | | | | | | | | | | | | | | | | | - |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **(technology)** | Weather information from KMD, Automatic Weather Stations, | ▪ Expertise developed to customize and manage satellite generated vegetation condition index used for drought early warning and response | Enabling | Number of; Automatic Weather Stations, Early Warning Systems, Computing systems. | County Government, Development partners, KMD, NDMA, and NGOs, CCU. | All wards. | 6 | 5 | 6 | 5 | 6 | 5 | 6 | 5 | 6 | 5 | 25 |
| **Enabling (capacity development)** | Public awareness, Training, Capacity building | ▪ Research on migration as an adaptation strategy | Enabling | Number of; persons trained, institutions involved in training, resource materials developed | National Government, County Government, Development partners, NGOs, Pastoralists organizations, CCU | All wards | 30 | 4 | 30 | 4 | 30 | 4 | 30 | 4 | 30 | 4 | 20 |

### 3.1.2 Increase food and nutrition security by enhancing productivity and resilience of the agricultural sector in as low carbon manner as possible

| **Strategic Objective 2: Increase food and nutrition security by enhancing productivity and resilience of the agricultural sector in as low carbon manner as possible** | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Issue/Problem: Climate change is negatively impacting agricultural productivity and resilience of value chain actors, including households. An increase in the severity and frequency of climate change-related disasters such as droughts and floods poses threats to food security and negatively impacts small-scale and large-scale farmers, pastoralists and fisher communities.** | | | | | | | | | | | | | | | | | |
| ***Big 4 Pillar: Food Security*** | | | | | | | | | | | | | | | | | |
| ***SDGs: 2 – Zero hunger; 1 – No poverty; 5 – Gender equality; 10 – Inequality reduction; 12 – Sustainable consumption and production; 13 – Climate action; 15 – Life on land*** | | | | | | | | | | | | | | | | | |
| County-level Indicators: | | | | | | | | | | | | | | | | | |
| ✦ GDP growth of agricultural sector | | | | | | | | | | | | | | | | | |
| ▪ Livestock deaths from drought / number of livestock slaughtered attributable to drought<br>▪ Agricultural land under irrigation (acreage) | | | | | | | | | | | | | | | | | |
| GHG emissions in the agriculture, forestry and other land use sector | | | | | | | **Planned Targets and indicative budget (Ksh.M)** | | | | | | | | | | **Total Budget (Ksh M) *** |
| | | | | | | | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | | **Year 5** | | |
| **Action** | **Baseline** | **Results by 30th June 2027** | **Adaptation / Mitigation** | **Indicators** | **Responsible** | **Target** | Target | **Costs** | **Target** | **costs** | **Target** | **Costs** | **Target** | **costs** | **Target** | **costs** | |
| **1. Improve crop productivity through the Implementation of CSA interventions** | ✦ Number of institutions /value chain actors and households harvesting water for agricultural use/production stands at 24,000. | ✦ Number of institutions/value chain actors and households harvesting water for agricultural use/production increased to 500,000 | Adaptation | • Number of institutions/value chain actors and households harvesting water for agricultural use/production | County Governments, CoG, Ministry of Agriculture and Irrigation (MAI), Ministry of | Farmers | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 5 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ✦ Agricultural pre- and post-harvest losses is at 40% | ✦ Agricultural pre- and post-harvest losses reduced from 40% to 15%. | Addresses climate risk: | • Measure of Agricultural pre- and post-harvest losses | | Business community | 1 | 0.5 | 1.0 | 0.5 | 1.0 | 0.5 | 1.0 | 0.5 | 1.0 | 0.5 | 2.5 |
| | ✦ Number of beneficiaries accessing climate-oriented crop insurance is 280,000 farmers | ✦ Number of beneficiaries accessing climate-oriented crop insurance increased from 280,000 farmers to 350,000 farmers. | increased temperatures and changes in precipitation lead to declines in crop production and yields | • Number of beneficiaries accessing climate-oriented crop insurance | | | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 15 |
| | ✦ Number of farmers accessing appropriate agricultural inputs subsidies is 23,900 | ✦ Number of farmers accessing appropriate agricultural inputs subsidies increased from 23,900 to 31,130 farmers. | Adaptation | • Number of farmers accessing appropriate agricultural inputs subsidies | | | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 15 |
| | ▪ 1,500 ha of reclaimed land | ▪ Number of households and acreage under sustainable land management (SLM) increased for agricultural production: | Addresses climate risk: | • Number of households and acreage under sustainable land management (SLM) | Water and Sanitation (MWS), WRA, Kenya Forest Service, KMD, Kenya Agriculture and Livestock Research | Farmers | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 15 |
| | ▪ Area under integrated soil nutrient management stands at 1,200 acres | - Support the reclamation of 6,000 ha of degraded land | land degradation | | | | | | | | | | | | | | 0 |
| | ▪ Farm area under conservation agriculture stands 3000 acres | - Area under integrated soil nutrient management increased by 25,000 acres | Mitigation | | | | | | | | | | | | | | 0 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ▪ Total area under agroforestry at farm level stands at 500acres | - Farm area under conservation agriculture increased to 25,000 acres, incorporating minimum/ no tillage | GHG emission reductions of 0.55 $MtCO_2e$ by 2027 (conservation tillage) | | | | | | | | | | | | | | | 0 |
| | | - Total area under agroforestry at farm level increased by 20,000 acres | GHG emission reductions of 1.66 MtCO2e by 2027 (agroforestry) | | | | | | | | | | | | | | | 0 |
| **2. Increase crop productivity through improved irrigation** | ✦ Acreage under irrigation is 20,200 ha | ✦ Acreage under irrigation increased from 20,200 ha to 48,600 ha | Addresses climate risk: changes in precipitation negatively impact rain-fed crop production | • Measure Acreage under irrigation | Organisation (KALRO), Private sector, World Agroforestry Centre, International Livestock Research Institute (ILRI), Farmer organisations, Fisher organisations, Pastoralist organisations | Livestock Farmers | 1 | 0.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 6.5 |
| | ✦ Production efficiency from irrigated fields stands at 50%. | ✦ Production efficiency from irrigated fields increased from 50% to 90% | Adaptation | • Measure production efficiency | | | 1 | 0.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 6.5 |
| **3. Improve productivity in the livestock sector through the Implementation of** | ▪ 1,000 ha of rangelands re-seeded in all ASALs wards. | ▪ Productivity of pastoralists improved: | Addresses climate risk: | • Measure livestock Productivity among livestock farmers | County Governments, CoG, Ministry of Agriculture and Irrigation (MAI), Ministry of | | 1 | 0.5 | 1.0 | 0.5 | 1.0 | 0.5 | 1.0 | 0.5 | 1.0 | 0.5 | 2.5 |
| **CSA interventions** | ▪ 350 customers/ beneficiaries accessing climate-oriented livestock insurance | - 1,000 hectares of rangelands re-seeded in all ASAL wards | land degradation Mitigation | • Number of Biogas technology employed among the livestock farmers | Water and Sanitation (MWS), WRA, Kenya Forest Service, KMD, Kenya Agriculture and Livestoc | | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 15 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | k Researc h | | | | | | | | | | | | | | |
| | ▪ Animal disease control and surveillanc e such as increase vaccination coverage for FMD, Sheep and goat pox, PPR, CBPP stands at 20% | - Annu al ASALs water harvesting and storage increased via small dams and water pans and through large multipurp ose dams. | GHG emission reductio ns of 0.40 $MtCO_2e$ by 2027 (dairy) | | | | | | | | | | | | | | | | 0 |
| | ▪ Small dams - | - Improved animal disease control and surveillan ce | | | | | | | | | | | | | | | | | 0 |
| | ▪ Water pans | - Increa se the number of customers/ beneficiari es accessing climate-oriented livestock insurance | | | | | | | | | | | | | | | | | 0 |
| | ▪ Multipur pose dams - | ✦ Increase efficiency in dairy sector through CSA applicatio n in the dairy sector | | | | | | | | | | | | | | | | | 0 |
| | ❖ Efficiency in dairy sector through CSA application in the dairy sector including solar panels for milk coolers, wind power, animals feeds storage facilities stands at 5% | ✦ Manure manageme nt improved through the adoption of biogas technolog y by 8,000 household s and at least 20 abattoirs | | | | | | | | | | | | | | | | | 0 |
| | ❖ Manure manageme nt improved through the adoption of biogas technology -1,190 households | | | | | | | | | | | | | | | | | | 0 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ✦ 3,000 households supported to adopt diversified adaptive enterprises/ value chains for sustained livelihoods and nutrition security. | ✦ At least 10,000 households supported to adopt diversified adaptive enterprises /value chains for sustained livelihoods and nutrition security | Adaptation | - Number of households supported to adopt diversified adaptive enterprises | Organisation (KALRO), Private sector, World Agroforestry Centre, International Livestock Research Institute (ILRI), Farmer organisations, Fisher organisations, Pastoralist organisations | | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 15 |
| **5. Diversify livelihoods to adjust to a changing climate** | ✦ Value chains 6, farmers/pastoralist common interest groups are 600 | ✦ Small-scale famers, pastoralists and fisher communities are supported to transition to specialised and market-oriented output in 13 priority value chains, including drought-tolerant values chains | Livelihoods diversification | - Number of pastoralists supported to transition to specialised and market-oriented output | | | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 15 |
| | Downscaled climate information | Implement strategies and procedures in the proposed NC-CISP to the ward level. *Linked to Action 1: Disaster Risk Management and Enabling Action T4* | | | | | | | | | | | | | | | |
| **Relevant Institutions:** County Governments, CoG, Ministry of Agriculture and Irrigation (MAI), Ministry of | | | | | | | | | | | | | | | | | |
| Water and Sanitation (MWS), WRA, Kenya Forest Service, KMD, Kenya Agriculture and Livestock Research | | | | | | | | | | | | | | | | | |
| Organisation (KALRO), Private sector, World Agroforestry Centre, International Livestock Research Institute (ILRI), Farmer organisations, Fisher organisations, Pastoralist organisations. All sectors identify actions to realise the strategic objective. | | | | | | | | | | | | | | | | | |

### 3.1.3 Enhance resilience of the water sector by ensuring adequate access to and efficient use of water for agriculture, manufacturing, domestic, wildlife, and other uses.

| |
|---|
| **Strategic Objective 3: Enhance resilience of the water sector by ensuring adequate access to and efficient use of water for agriculture, manufacturing, domestic, wildlife, and other uses.** |
| **Issue/problem: Access to and quality of water is expected to decline because of climate change (such as drought).** |
| ***Big 4 Pillars: Food Security, Health, Affordable and Decent Housing, and Manufacturing*** |

| *SDG 6: Clean water and sanitation; 14 – Life below water; 1 – No poverty; 2 – Food security and nutrition; 3 – Good health; 9 – Sustainable Infrastructure; 10 – Inequality reduction; 12 – Sustainable consumption and production* | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Indicators: | | | | | | | | | | | | | | | | | | | |
| ▪ Water storage per capita<br>▪ Water coverage<br>Per capita water availability | | | | | | | | | | | | | | | | | | | |
| | | | | | | | **Planned Targets and indicative budget (Ksh.M)** | | | | | | | | | | | **Total Budget (KshM) *** |
| | | | | | | | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | | **Year 5** | | | | |
| **Action** | **Baseline** | **Expected Results by 30th June 2023** | **Adaptation/ Mitigation** | INDICATORS | RESPOSIBILITY | TARGET | Target | **Costs** | **Target** | **costs** | **Target** | **Costs** | **Target** | **costs** | **Target** | **costs** | | |
| **1. Increase annual per capita water availability through the development of water infrastructure (mega dams, small dams, water pans, untapped aquifers)** | Households with access to piped water (No.) **4,885** | ▪ Increase annual per capita water availability (harvested, abstracted and stored): | Adaptation | Additional boreholes, dams and pans | No of boreholes, dams pans constructed | Department of environment and water | 12 | 72 | 12 | 72 | 12 | 72 | 12 | 72 | 12 | 72 | 360 |
| | | - County hydrogeological survey undertaken to identify major strategic aquifers | Addresses climate risk of high temperatures and changing precipitation patterns causing water shortages | Water catchment protection and conservation | | | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 30 |
| | Households with access to portable water (No.)756 | - Two locations identified and mapped for direct artificial groundwater recharge to increase the supply of ground water | | | No of urban HH connected with tap water | Community | 1 | 0.2 | 1 | 0.2 | 1 | 0.2 | 1 | 0.2 | 1 | 0.2 | 1 |
| | Permanent rivers (No.)10 | - Five ground water surveys to establish abstraction levels against recharge | | Number of Hydrogeological surveys conducted | No water catchments protected and conserved | Stakeholders | 12 | 1.2 | 12 | 1.2 | 12 | 1.2 | 12 | 1.2 | 12 | 1.2 | 6 |
| | Shallow wells (No.)300 Boreholes (No.)262 Protected springs 120 Water pans (No.)360 Dams (No.)5 | - County sub-catchment management plans developed and plans implemented to assist local communities to protect wetlands, lakes, and other water catchment areas | | Water harvesting and storage | Amount of water harvested in mitres cube | Partners | | | | | | | | | | | 0 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Check dams 22 | ▪ The annual number of climate-proofed water harvesting, flood control and water storage infrastructure increased to at least 200, through: | Adaptation | No of gabion and water pans, dams | environment and water | Indigenous people alternative source of livelihood | 5 | 10 | 5 | 10 | 5 | 10 | 5 | 10 | 2 | 4 | 44 |
| **2. Ponds livelihoods system Climate proof water harvesting and water storage infrastructure and improve flood control** | | - Integrated catchment approach and ecosystem based adaptation structural/ mechanical design, e.g. | Addresses climate risk of high temperatures and changing precipitation patterns causing water shortages | No check dams | Community | | 3 | 9 | 3 | 9 | 3 | 9 | 3 | 9 | 3 | 9 | 45 |
| | Ponds - 220 | structural catchment protection, especially in the upper catchments | | No. of EWS developed | Development Partners | Public institutions | 6 | 5 | 6 | 5 | 6 | 5 | 6 | 5 | 6 | 5 | 25 |
| | Storage tanks at public institutions approximate 300 | - Development of flood early warning systems in areas susceptible to floods. *Linked to Climate Action 1: Disaster Risk Management* | | Provision of water storage facility | CSOs, NGOs, CBOs | | 12 | 1.2 | 12 | 1.2 | 12 | 1.2 | 12 | 1.2 | 12 | 1.2 | 6 |
| **3. Increase gender responsive affordable water harvesting-based livelihood resilience programmes** | water harvesting, including: - 1,000 farm 220 fish ponds installed - Livelihood systems improved on 500 ha | ▪ Enhanced household water access and food security through water harvesting, including: | Adaptation | | environment and water | Registered groups | 12 | 0.5 | 12 | 0.5 | 12 | 0.5 | 12 | 0.5 | 12 | 0.5 | 2.5 |
| | | - 1,000 farm ponds installed | Addresses climate risk of high temperatures and changing precipitation patterns causing | No of fish ponds | Community | | | | | | | | | | | | 0 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | water shortages | | | | | | | | | | | | | | |
| | | - Livelihood systems improved on 500 ha of degraded land through the development of water pans and ponds | | No of training forums | Development Partners | Public institutions | 12 | 1.5 | 12 | 1.5 | 12 | 1.5 | 12 | 1.5 | 12 | 1.5 | 7.5 |
| | | Water utility creditworthiness index developed as well as tool kits on commercial lending to the water and sanitation sector to attract Public-Private-Partnerships | | Volume of water harvested in mitres cubic | CSOs, NGOs, CBOs | | 12 | 1.2 | 12 | 1.2 | 12 | 1.2 | 12 | 1.2 | 12 | 1.2 | 6 |
| **4. Promote water efficiency (monitor, reduce, re-use, recycle and modelling)** | Reduce water wastage and non-revenue water from the current 43% to 20 %. | ▪ Reduce water wastage and non-revenue water from the current 43% to 20% through, for example: | Adaptation | Volume of water recycled | environment and water | Household | 12 | 1.5 | 12 | 1.5 | 12 | 1.5 | 12 | 1.5 | 12 | 1.5 | 7.5 |
| | | - Innovation in water tracking and leakages identification and reporting | Addresses climate risk of water shortages | Volume of re-used | Community | Public institution | 12 | 1.5 | 12 | 1.5 | 12 | 1.5 | 12 | 1.5 | 12 | 1.5 | 7.5 |
| | | - Awareness programme for water efficiency | | | Development Partners | | | | | | | | | | | | 0 |
| | | | | | CSOs, NGOs, CBOs | Private institution | | | | | | | | | | | 0 |
| **5. Improve access to good quality water** | 58% of the population in Narok have a fair access to good quality water | ▪ Number of people and entities accessing good quality water for domestic, agricultural and industrial use from increased 58% to 65% through: | Adaptation | No of HH with access to safe drinking water | environment and water | County wide | 12 | 2 | 12 | 2 | 12 | 2 | 12 | 2 | 12 | 2 | 10 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | - Large-scale installation of water meters | Increases resilience | | Community | | | | | | | | | | | | | 0 |
| | | - Regular inspection of water quality | | | Development Partners | | | | | | | | | | | | | 0 |
| | | | | | CSOs, NGOs, CBOs | | | | | | | | | | | | | 0 |
| **Relevant Institutions:** County Governments, CoG, Ministry of Water and Sanitation (MWS, National Treasury and Planning, Attorney General, Ministry of Tourism and Wildlife, Kenya Forest Service, | | | | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | | | | 558 |

**3.1.4 Increase forest/tree cover to 10% of total land area; rehabilitate degraded lands, including rangelands; increase resilience of wildlife.**

| **Strategic Objective 4: Increase forest/tree cover to 30% of total land area; rehabilitate degraded lands, including rangelands; increase resilience of wildlife.** | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Issue/Problem: Unplanned development (such as agricultural expansion, settlement, and infrastructure development) and reliance on biomass for cooking leads to deforestation and forest degradation, with negative impacts on wildlife and increased GHG emissions.** | | | | | | | | | | | | | | | | | | |
| ***Big 4 Pillar: Food Security*** | | | | | | | | | | | | | | | | | | |
| ***SDG 15 – Life on land; 5 – Gender Equality; 6 – Sustainable Water; 7 – Sustainable Energy; 13 – Climate Action*** | | | | | | | | | | | | | | | | | | |
| ***Indicators*** | | | | | | | | | | | | | | | | | | |
| ✦ Forest cover as a % of total land area | | | | | | | | | | | | | | | | | | |
| ✦ Area of land used for private forestry | | | | | | | | | | | | | | | | | | |
| ✦ Proportion of land that is degraded over total land area | | | | | | | | | | | | | | | | | | |
| Elephant deaths as a result of drought | | | | | | | | | | | | | | | | | | |
| | | | | | | | **Planned Targets and indicative budget (Ksh.M)** | | | | | | | | | | | **Total Budget (Ksh M) *** |
| **Actions** | **Baseline** | **Expected Results by 30th June 2023** | **Adaptation/ Mitigation** | **Indicators** | **Responsibility** | **Target** | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | | **Year 5** | | | |
| | | | | | | | Target | **Costs** | **Targe** | **costs** | **Targe** | **Costs** | **Targe** | **costs** | **Targe** | **costs** | | |
| **1. Afforest and reforest degraded and deforested areas in Counties** | 16 pc of the county's land mass is under forest area (approximating to 5100 sq. KM) | ▪ An additional 10,000 ha of land afforested or reforested (including agroforestry), aiming to plant one million trees per County per year through such initiatives as: | Adaptation | Increase in ha of forest cover. | KFS, KWTA, NEMA, NCG | To plant 1000000 trees | 3 | 10 | 3 | 10 | 3 | 10 | 3 | 10 | 3 | 10 | 50 |
| | | - Annual County Tree Planting Day | Reduces exposure by increasing surface cover | | MWCA, WRTI, KWS, NATURE KENYA, | | | | | | | | | | | | 0 |
| | 10% of school land established woodlots | - Revived Green Schools Programme – 10% of school land areas planted with trees | | Number of schools with Green Schools Programme | KFS, KWTA, ENSDA, NCG, CBOS, CFAs, WRUAs, NEMA, CCU | 1500 to have establish greening areas | 300 | 7.5 | 300 | 7.5 | 300 | 7.5 | 300 | 7.5 | 300 | 7.5 | 37.5 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 6 nurseries established with stakeholders | - Increased tree nurseries and production and availability of seedlings | Mitigation | Rate of production of tree seedlings | | Farmers, Community | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 15 |
| | | 500 ha planted with assorted tree species | - Tree planting (with appropriate species, including indigenous species) | GHG emission reductions of 2.0 $MtCO_2e$ by 2023 | % of tree cover | | | **6** | **1** | **6** | **1** | **6** | **1** | **6** | **1** | **6** | **1** | 5 |
| | | 3 forest management plans developed | - Forest management and planning | | | | | | | | | | | | | | | 0 |
| | | Signing of the Transition Implementation Plans (TIPs) | - Silviculture interventions | | | | | | | | | | | | | | | 0 |
| | | | - Promotion of agroforestry - *linked to climate change priority 1: Food and Nutrition Security* | | | | | | | | | | | | | | | 0 |
| | | | - Fast-tracking the signing and implementation of respective Transition Implementation Plans (TIPs) | | | | | | | | | | | | | | | 0 |
| **2. Reduce deforestation and forest degradation** | According to current reports forest cover has reduced from 16.7% to 16% this imply that much effort on protecting the forest has to be put in place. | Deforestation and forest degradation reduced through enhanced protection of additional 100,000 million ha of natural forests through such initiatives as: | Adaptation | Increase Survaillance and Patrols of forests | KWTA, NEMA, NCG, MMWCA, WRTI, KWS, NATURE KENYA, CCU | natural forest | 3 | 1.5 | 3 | 1.5 | 3 | 1.5 | 3 | 1.5 | 3 | 1.5 | 7.5 |
| | | - Community/participatory forestry management | Reduces exposure by increasing surface cover | Rehabilitate degraded forest lands though afforestation | | CFAs | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 15 |
| | | - Limiting access to forests | | Training community on the need to embrace REDD+ | | Farmers, | 6 | 9 | 6 | 9 | 6 | 9 | 6 | 9 | 6 | 9 | 45 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | - Preventing disturbances through improved enforcement and monitoring | Mitigation | | | Community members, WCCPC | | | | | | | | | | | | 0 |
| | | - Developing alternative technologies to reduce demand for biomass (such as clean cooking and efficient charcoal production) | GHG emission reductions of 2.0 $MtCO_2e$ by 2023 | | | | | | | | | | | | | | | 0 |
| | | - Carbon stock enhancement (enrichment planting) in existing forests | | | | | | | | | | | | | | | | 0 |
| | | - Financial innovations including payments through ecosystem services and carbon markets | | | | | | | | | | | | | | | | 0 |
| | | - Development of the REDD+ architecture through multistakeholder engagement including a national strategy and investment plan, safeguards information system, and National Forest Monitoring System and Forest Reference Level for improved forest monitoring and measurement | | | | | | | | | | | | | | | | 0 |
| **3. Restore degraded forest landscapes (ASALs and rangelands)** | 50000 Ha of Narok land Mass rests on lands that need restoration and rehabilitation. | Restoration of up to 50000 ha of forest on degraded landscapes (ASALs, rangelands), through such initiatives as the GCF Dryland Resilience Project, including: | Adaptation | Area of land under restoration | KFS, NEMA, KWTA, WORLD VISION, WWF, MMWCA, WRTI, KWS, NATURE KENYA, Community, Department of Tourism and Wildlife at NCG, The Green Belt moveme | 5000 ha of degraded lands | 10000 ha | 50 | 10000 ha | 50 | 10000 ha | 50 | 10000 ha | 50 | 10000 ha | 50 | | 250 |
| | 70% of landmass in Narok County lies in ASAL | - Enhanced natural generation of degraded lands through conservation | Reduces exposure by increasing surfac | | | Private land owners | | | | | | | | | | | | 0 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | and sustainable management | e cover | | nt, CBOs CCU | | | | | | | | | | | | | |
| | | - Ecosystem-based adaptation through rangeland and forest landscape restoration and sustainable management. (sites include rangelands, woodlands/forests, wetlands, and croplands). | | | | Conservancies | | | | | | | | | | | | 0 |
| | | - Process to initiate restoration processes on 33% of land area in seven Counties. | Mitigation | | | | | | | | | | | | | | | 0 |
| | | - Analysis of priority landscapes and existing restoration successes | GHG emission reductions of 5.4 $MtCO_2e$ by 2023 | | | | | | | | | | | | | | | 0 |
| | | - -Economic analysis of restoration options and identification of financing options to scale up landscape restoration | | | | | | | | | | | | | | | | 0 |
| **4. Promote sustainable timber production on privately-owned land** | 20,000 ha of landmass is under on farm forestry by individual on private practises | ▪ Area under private sector-based commercial and industrial plantations increased from 20,000 ha to at least 100,000 ha | Mitigation GHG emission reductions of 1.0 MtCO 2e by 2030 | Area of land in private sector under tree plantation | KFS, NEMA, NCG, WORLD VISION, KWTA, MMWCA, WRTI, KWS, CFAs, NCNRN, NGOs, CBOs, community, Private sector, CCU | 100,000 ha of privately owned lands, idle government lands, WCCPC | 6 | 9 | 6 | 9 | 6 | 9 | 6 | 9 | 6 | 9 | 45 |
| **5. Conserve land areas for wildlife** | ✦ 2980 km2 of landmass in Narok west and Transmara west is under the Maasai Mara Game Reserve and conservancies | ✦ Conserve 5,000 hectares of wildlife habitats to support a broad range of wildlife and plants under changed conditions | Adaptation | Area of land under available for wildlife | NEMA, KWTA, KFS, NCG, WORLD VISION, KWS, MWCA, CCU | To conserve 3,000ha of land for wildlife | 600 ha | 72 | 600 ha | 72 | 600 ha | 72 | 600 ha | 72 | 600 ha | 72 | 360 |
| | ✦ Human wildlife Conflict report, 2018 | ✦ Human wildlife conflict reduced by | Builds resilience: increa | Number of cases report | | Reduce human wildlife conflict by 50% | 4 wards | 6 | 4 wards | 6 | 4 wards | 6 | 4 wards | 6 | 4 wards | 6 | 30 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 50% from 2018 baseline | ses area for wildlife | ed on human wildlife conflict | | | | | | | | | | | | | | |
| | ✦ the National Wildlife Dispersal Corridor Report, 2017 | ✦ 20% of dispersal areas and migratory pathways secured for wildlife that have been identified in the National Wildlife Dispersal Corridor Report | Addresses climate risk: increased likelihood of human-wildlife | number of endangered species | | Secure wildlife dispersal areas and migratory pathways | 1 Assessment | 1.5 | 1 Assessment | 1.5 | 1 Assessment | 1.5 | 1 Assessment | 1.5 | 1 Assessment | 1.5 | 7.5 |
| | | | conflict | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | | | | |
| **Enabling action (technology)** | GPS (Global Positioning System) telemetry tracking Wild Applications | ▪ MRV (Magnetic Resonance Venography) technologies, including remote sensing and global positioning systems, computer tagging and tracking systems | Enabling | Number of technologies used | WWF, KWS, WRTI, Conservancies, CCU | Advance on technology. | | | 3 | 15 | | | | | | | | 15 |
| | | | | | Department of Tourism and Wildlife at NCG | | | | | | | | | | | | | 0 |
| **Enabling action** | There are several policies and regulations; | ✦ Develop standards and regulations, including social and environmental safeguards, for sustainable forestry management (voluntary moving to regulated) | | Number of regulations and policies, strategies, guidelines and laws enacted | | | 2 Documents Developed/ Revised/ Ammended | | 2 Documents Developed/ Revised/ Ammended | | 2 Documents Developed/ Revised/ Ammended | | 2 Documents Developed/ Revised/ Ammended | | 2 Documents Developed/ Revised/ Ammended | | 125 |
| **(policy and regulatory)** | ✦ Climate Change Act | ✦ Develop guidelines and standards for establishment of green zones as required by the 2016 Forest Act. This requires linkage with county physical planning and development control functions | Enabling | | KFS, KWTA, NEMA, WORLD VISION, CCU | To enforce the mentioned policies and regulations. | | | | | | | | | | | | 0 |
| | ✦ Maasai Mara National Reserve Manageme | ✦ Develop adaptation strategy for tourism sector | | | | | | | | | | | | | | | | 0 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | nt Plan 2023-2032 | | | | | | | | | | | | | | | | | | |
| | ✦ Greater Maasai Mara Ecosystem Management Plan. 2023-2032 | ✦ Develop wildlife climate change strategy that includes the impacts of climate change on wildlife, human-wildlife conflict, locations suitable for harvesting flood waters and drilling of boreholes | | | | | | | | | | | | | | | | | 0 |
| | ✦ Narok County Spatial Plan 2023-2032 | ✦ Land use planning and zoning to segregate and identify forest areas for conservation | | | | | | | | | | | | | | | | | 0 |
| | ✦ Environmental Act, 2017 | ✦ Mainstream climate change into environment audits, environmental impact assessments and strategic environmental assessments | | | | | | | | | | | | | | | | | 0 |
| | ✦ Energy Plan 2022-2027 | | | | | | | | | | | | | | | | | | 0 |
| | ✦ National Black Rhino Strategy and Action Plan | | | | | | | | | | | | | | | | | | 0 |
| **Enabling action (capacity development)** | National Government Ministries Department And Agencies (MDAs, School of governments, fouth schedule of the Kenyan Constitution,2010, County Government Act, 2013 | ▪ Build the capacity of county level institutions for the efficient transfer and implementation of the devolved function with respect to community forests | Enabling | Number of devolved functions transferred | MDAs, | County Government employees | | | 1 | 5 | | | | | | | | | 5 |
| | | | | Number of staffs trained on devolved functions | | | 5 | 1.25 | 5 | 1.25 | 5 | 1.25 | 5 | 1.25 | 5 | 1.25 | 5 | 1.25 | 6.25 |
| **Relevant Institutions:** County Governments, CoG, MEF, MAI, National Treasury and Planning, Ministry of | | | | | | | | | | | | | | | | | | | 1018.75 |
| Tourism and Wildlife, KFS, KWS, NEMA, NDMA, KEFRI, KWCA, Community Forestry Associations (CFAs), Community Institutions, Tea industry, Farmer organisations, Private sector, civil society, WRA. All sectors identify actions to realise the strategic objective. | | | | | | | | | | | | | | | | | | | |

### 3.1.5 Mainstream climate change adaptation into the health sector; and increase the resilience of human settlements, including improved solid waste management in urban areas

**Strategic Objective 5: Mainstream climate change adaptation into the health sector; and increase the resilience of human settlements, including improved solid waste management in urban areas**

**Issue/problem: Kenya's improvements in malarial control, water-borne diseases, respiratory diseases, infant mortality and malnutrition are vulnerable to set backs from climate change. Inappropriate waste management can have negative health impacts and contribute to GHG emissions.**

***Big 4 Pillars: Linked to Health and Housing***

***SDG 3 – Good Health; 5 – Gender Equality; 6 – Clean water and sanitation; 9 – Sustainable Infrastructure; 11- Sustainable Cities; 12 – Sustainable consumption and production; 13 – Climate Action***

National-level Indicators

- ✦ Malaria incidence per 1,000 population
- ✦ Percentage of urban solid waste regulatory collected and well managed
- ✦ Proportion of urban population living in slums, informal settlements or inadequate housing

| Action | Baseline | Indicators | Responsibility | Target | Planned Targets and indicative budget (Ksh.M) | | | | | | | | | | Total Budget (Kshs M) * |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | | |
| | | | | | Target | Costs | Target | costs | Target | Costs | Target | costs | Target | costs | |
| **1. Reduce the incidence of malaria and other vector borne disease** | Community Health Volunteers (CHPs) | Number of motivated CHPs | Department of Health at the County | County wide | 200 | 0.3 | 200 | 0.3 | 200 | 0.3 | 200 | 0.3 | 200 | 0.3 | 1.5 |
| | Health Facilities in Every Ward | The number of uptake of malarial drugs | Community Health Volunteers | Community Members | | | | | | | | | | | 0 |
| | 105 Community Health volunteers Trained on Intergrated Case management of childhood illneses | No of Community Health Volunteers offering ICMCI services | | Lactating/ expectant mothers | 21 | 0.315 | 21 | 0.315 | 21 | 0.315 | 21 | 0.315 | 21 | 0.315 | 1.575 |
| | Low (55%) LLINS uptake at Health facilities in Narok county | Percentage of LLINS uptake at health facilities | NCG - DOH, MOH | Infacts/ children | | | | | | | | | | | 0 |
| 2. improve water sanitation and hygiene at household level through open defacation free strategy | 741 villages certified as open defaction free | No of villages certified as Open Defacation free | NCG - DOH,ENV and Water, MOH | Community | | | | | | | | | | | 0 |
| | | | | Road Users | 6 | 1 | 6 | 1 | 6 | 1 | 6 | 1 | 6 | 1 | 5 |
| | | | | Households | | | | | | | | | | | 0 |
| **3. Promote recycling to divert collected waste away from disposal sites.** | Waste Management Sites(WMS)/Dumpsite | Number of waste segregation bins available in towns | Department of Environment | Community | 600 | 6 | 600 | 6 | 600 | 6 | 600 | 6 | 600 | 6 | 30 |
| | Land (Quarries) Mines | Amount of weight collected | NEMA Public Health Department of Public Works | Road Users | | | | | 6 | 1.5 | | | | | 1.5 |
| | | Number of land mines reclaimed | | Households | | | | | 1 | 1.5 | 1 | 0.15 | 1 | 1.5 | 3.15 |
| 3.Increase Access to improved sanitation Facility | 35% of Schools with access to improved sanitation facility | No of Improved sanitation facility constructed in schools | NCG - DOH, MOH, Development Partners | Community | 300 | 2 | 300 | 2 | 300 | 2 | 300 | 2 | 300 | 2 | 10 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 40 % of health facilities with access to improved sanitation facility | No.of Public sanitary facilities along the Major highway. | NCG - DOH, MOH, Development Partners | Households | 6 | 2 | 6 | 2 | 6 | 2 | 6 | 2 | 6 | 2 | 10 |
| 3. Climate proof landfill sites | Waste Management Sites(WMS)/Dumpsite | The number of WMS fenced and maintained | Department of Environment | Municipality | 6 | 1.5 | 6 | 1.5 | 6 | 1.5 | 6 | 1.5 | 6 | 1.5 | 7.5 |
| | | | NEMA | Lands and Physical Planning | | | | | | | | | | | 0 |
| | | | Public Health | Quarry mines | | | | | | | | | | | 0 |
| | | | Department of Public Works | | | | | | | | | | | | 0 |
| **Enabling Action (policy and regulation)** | ✦ Municipal solid waste management strategy | Existence of county waste management plan and regulations | Department of Environment | | | | 2 | 10 | | | | | | | 10 |
| | ✦ Narok County Environmental Management Act, 2017 | Amendment of the Narok County Environmental Management Act, 2017 | NEMA | | | | | | 1 | 10 | | | | | 10 |

### 3.1.6 Promote energy and resource efficiency in the manufacturing sector

| **Strategic Objective 6: Promote energy and resource efficiency in the manufacturing sector** | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Issue/Problem: Resource (including water, electricity, and other inputs) scarcity because of climate change; and inefficient energy use in the manufacturing sector (such as charcoal production and cement production) increases GHG emissions** | | | | | | | | | | | | | | | | | |
| ***Big 4 Pillar: Manufacturing*** | | | | | | | | | | | | | | | | | |
| ***SDG 9 – Industry, innovation and infrastructure; 1 – Zero poverty; 3 – Good health; 5 – Gender equality; 6 – Clean water and sanitation; 7 – Affordable and clean energy; 10 – Reduce inequalities; 12 - Responsible consumption and production; 13 – Climate action; 15 – Life on land*** | | | | | | | | | | | | | | | | | |
| County-level indicators | | | | | | | | | | | | | | | | | |
| ▪ GHG emission reduction through adoption of energy efficiency and energy conservation practices | | | | | | | **Planned Targets and indicative budget (Ksh.M)** | | | | | | | | | | **Total Budget (Ksh M) *** |
| ▪ Number of industrial parks adopting waste diversion practices | | | | | | | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | | **Year 5** | | |
| **Action** | **Baseline** | **Expected Results by 30th June 2023** | **Adaptation/ Mitigation** | **Indicator** | **Responsible** | **Target** | Target | **Costs** | **Targe** | **costs** | **Targe** | **Costs** | **Targe** | **costs** | **Targe** | **costs** | |
| **1. Increase energy efficiency** | ✦ Energy Efficient technologies in local markets | ✦ Increase the number of companies participating in energy efficiency initiatives | Mitigation | Number of assessments for companies and household | EPRA | Households | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ✦ County Energy Plan (2022 – 2027) | ✦ Minimum Energy Performance Standards developed for five more appliances, and existing testing facilities up-scaled to include these five appliances | GHG emission reductions of 0.45 $MtCO_2e$ by 2027 (energy efficiency) | lds with energy efficient technologies | State Department of Energy | Hotels | 6 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 45.0 |
| | | | | | County Department of Energy | Companies | | | | | | | | | | | 0.0 |
| | | | | | County Department of Environment CCU | Schools | | | | | | | | | | | 0.0 |
| **2. Improve water use and resource efficiency** | Water Companies | ▪ Number of companies participating in water efficiency initiatives increased | Adaptation | ▪ Number of companies participating in water efficiency initiatives | EPRA | Water utilities, | 6 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 45.0 |
| | Effective water metering system | | Addresses climate risk: water scarcity water scarcity caused by increased temperature and changing precipitation patterns | Amount of water used per meter | State Department of Energy County Department of Energy County Department of Environment CCU | Business community Mara Hoteliers Association Car Wash Businesses Jua Kali Sector Car Owners Investors Leather Tannery | 6 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 45.0 |
| | Water Suppliers | | | | Water Companies | Sugar Factory | | | | | | | | | | | 0.0 |
| | | | | | | Tea Factory | | | | | | | | | | | 0.0 |
| | | | | | | Coolants | | | | | | | | | | | 0.0 |
| 3. Optimise manufacturing and productio | - Availability of boilers | Promote optimisation of manufacturing processes | Mitigation | No. of Energy audits conducted | Research institutions | Households | 6 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 45.0 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| n processes | - Availability of energy efficient Jikos (40%) | Promote a sustainable charcoal system by encouraging the uptake of efficient kiln technologies to increase yields to 30-42%, and establishing a charcoal certification and labelling scheme | | Number of Energy efficient technologies in the inventory | -GIZ / NGOs | Hotels | 6 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 6.0 | 9.0 | 45.0 |
| | Biogas technology | | | | -NCNRN, Action Africa Help | Companies | | | | | | | | | | | 0.0 |
| | Biomass Technology | - In crease energy efficiency in Jikos from 40 – 50% | | | -NEMA | Schools | | | | | | | | | | | 0.0 |
| | | | | | -NCG Department of Energy | Existing SMEs | | | | | | | | | | | 0.0 |
| | | - | | | -KFS | Boda boda associations | | | | | | | | | | | 0.0 |
| | | | | | -CFAs | SACCOs | | | | | | | | | | | 0.0 |
| | | | | | CCU | Community | | | | | | | | | | | 0.0 |
| | | | | | | | | | | | | | | | | | 0.0 |
| **Relevant institutions and organisations:** County Governments, CoG, Ministry of Industry, Trade and | | | | | | | | | | | | | | | | | 0.0 |
| Cooperatives (MITC), Ministry of Water and Sanitation, KIRDI, Kenya Bureau of Standards (KEBS), NEMA, KIRDI, Private sector, Charcoal producers, Academia, Civil society, Youth organizations. All sectors identify actions to realise the strategic objective. | | | | | | | | | | | | | | | | | 0.0 |
| | | | | | | | | | | | | | | | | | 225.0 |

### 3.1.7 Establish efficient, sustainable world-class transport systems and logistic services that can withstand the expected impacts of climate change

| **Strategic Objective 7: Establish efficient, sustainable world-class transport systems and logistic services that can withstand the expected impacts of climate change** | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Issue/Problem: Operational inefficiency, heavy traffic congestion, heavy fuels, and high fuel consumption lead to high levels of GHG emissions.** | | | | | | | | | | | | | | | | | |
| ***Big 4 Pillar: Manufacturing, Food and Nutrition Security, Health*** | | | | | | | | | | | | | | | | | |
| ***SDG 9 – Industry, innovation and infrastructure, 1 – Zero poverty; 3 – Health, 7 – Sustainable cities and communities, 10 – Reduced inequality; 12 – Sustainable consumption and production; 13 – Climate action*** | | | | | | | | | | | | | | | | | |
| County-level Indicator: | | | | | | | **Planned Targets and indicative budget (Ksh.M)** | | | | | | | | | | **Total Budget (Ksh M) *** |
| ▪ Freight moved by road - % | | | | | | | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | | **Year 5** | | |
| **Action** | **Baseline** | **Expected Results by 30th June 2023** | **Adaptation / Mitigation** | **Indicator** | **Responsible** | **Target** | Target | **Costs** | **Target** | **costs** | **Target** | **Costs** | **Target** | **costs** | **Target** | **costs** | |
| **Reduce fuel consumption and fuel overhead costs** | Existence of 5 weighbridge | Roadmap for the improvement of heavy-duty truck efficiency developed, including increased use of low- | Mitigation | Existence of a roadmap for the improvement of heavy-duty truck efficiency | Department of transport, KENHA, KURRA, KERRA, | All Major Roads in the county | | | | | 1.0 | 4.0 | | | | | 4.0 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | rolling resistance tyres, super structure fittings etc., vehicle standards. | | | | | | | | | | | | | | | | |
| | National air quality regulations of 2014 | Increase the number of weighbridge to 10 by 2027 | GHG emission reductions of 0.24 MtCO2e by 2027 | -No. of Surprise checks conducted | Departments of Roads, NTSA, Traffic police, NEMA, NCG Department of Environment, CCU, KURA, KENHA, KERRA, NCG Transport Department, KEBS, CCU | County Department of Transport | | | 6.0 | 1.5 | | | | | | | 1.5 |
| | Narok County Environment Management Act, 2017 | Domesticate the air quality regulations | GHG emission reductions of 0.82 MtCO2e by 2022(freight) | -No. of mobile weighbridge | | Community | | | | | 1 | 5 | | | | | 5.0 |
| | | | GHG emission reductions of 0.32 MtCO2e by 2030 (trucks) | - Assessment of vehicle Road worthiness | | Hospitals, schools, | 1 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 7.5 |
| | | | | No. of vehicles serviced | | Motorists | 1 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 7.5 |
| **Climate proof transportation infrastructure** | ✦ Narok County Climate Information Service plan | ✦ Climate information used in infrastructure planning and transport resilience plans developed | Adaptation | Existence of county climate information service | KMD, KENHA, NEMA, NCA, Public Works, Municipality, Urban Planning, NCG Environment, Public health, Procurement, WRA, CCU | Road Contractors, | 1 | 1 | | | | | | | | | 1.0 | |
| | | ✦ Feasibility study in regard to constructing roads that systematically harvest water and mitigate floods | Addresses climate risk of damage to infrastructure from extreme weather events | | | WCCPC | | | | | | | | | | | - | |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | undertaken | | | | | | | | | | | | | | | | | |
| | | ✦ Climate proofing roads | | Feasibility study reports in regard to constructing roads that systematically harvest water and mitigate floods | | | | | 1 | 2 | | | | | | | | | 2.0 |
| | | ✦ Adoption of Narok County Climate Information Service Plan (NCCISP) by 2024 | | | | | | | | | | | | | | | | | - |
| | | ✦ Provision of accessible sanitary facilities along the highways | | No. of climate proofed infrastructure (roads) | | | | | 10 | 20 | | | | | | | | | 20.0 |
| | | ✦ Encourage use of non-motorized means of transport | | | | | | | | | | | | | | | | | - |
| | | ✦ Construct more walking and cycling paths | | Audit on the road status | | | | 1 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 7.5 |
| | | ✦ Construction of Climate proofed air strips, | | | | | | | | | | | | | | | | | - |
| | | ✦ Construction of climate proofed railway, Service lane, parking | | | | | | | | | | | | | | | | | - |

56.0

# CHAPTER 4: DELIVERY MECHANISMS FOR CCAP

## 4.1 Enabling Factors

### 4.1.1 Enabling Policy and Regulation

There is an enabling Policy and Regulation Framework in Narok. The specific policy documents include: The Narok County Climate Change Fund Act, 2021, Narok County Climate Change Fund Regulation, 2021 and the Narok County Climate Change Policy, 2022

### 4.1.2 Mainstreaming in the CIDP

Narok County has captured and budgeted 3% of its total development budget for Climate Change Mitigation and Adaptation measures for FY 2023-2024. Narok County has also mainstreamed Climate Change resilience measures across all Departments in the County.

### 4.1.3 Multi-stakeholder participation processes

The Narok County Climate Change Action Plan 2023-2027 was developed after a comprehensive and participatory climate risk assessment across all the 30 wards in Narok County through consultations at the ward level

### 4.1.4 Finance - County Climate Change Fund

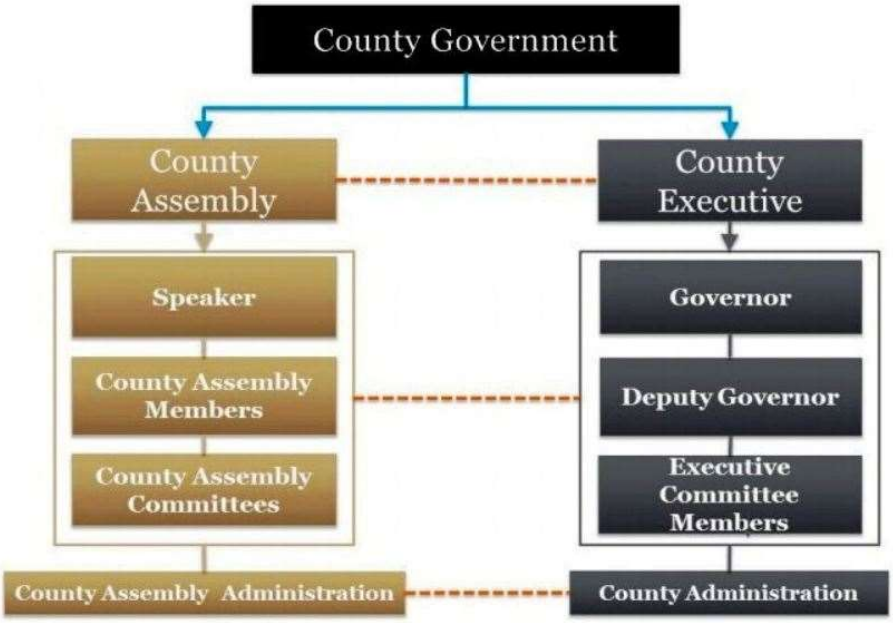
The CECM responsible for finance shall establish a "Narok County Climate Change Fund" for financing climate change related projects. The County Climate Change Fund to be incorporated in the County Annual budgets. The CECM finance shall cause timely availability and accessibility of the funds for expenditure. The fund administrator shall cause access to the fund pursuant to financial statutory requirements for expenditure. The allocation of County Climate Change Fund to various projects in the Ward and County levels shall be done by the County Climate Change Planning Committee using an agreed criterion to be developed by CECM Climate Change

**Table 1: The County Pathways to Climate Finance**

| Focus Area | Description |
|---|---|
| Sources of Climate Finance | International, national and county public finance<br>International, national and county private finance<br>Carbon finance<br>Voluntary Climate Finance |
| Intermediaries | International organizations<br>Multilateral Banks e.g., World Bank<br>Bilateral agencies e.g.,<br>National and County agencies<br>National and County financial institutions |
| Economic and Financial Instruments | Power purchase agreements<br>Warrantees<br>Guarantees<br>Insurances<br>Carbon offset flows<br>Grants<br>Concessional loans<br>Capital: Debt and equity financing |

| | |
|---|---|
| Financial Planning Systems and Institutional arrangements | Expenditure and budgetary frameworks, without budget codes.<br>County government coordinating agency of all climate change activities.<br>Climate change units in public entities. |
| Uses and Users of Climate Finance | Adaptation<br>Mitigation<br>Government<br>Development partners<br>Private sectors<br>Non-governmental organizations (NGOs) |

### 4.1.5 Governance – Narok County Government Structures




### 4.1.6 Governance - Climate Change Planning Committees

The Narok County Climate Change Act, 2021 requires that Governor to designate a member of the County Executive Committee to coordinate climate change affairs. This is consistent with the approach that all departments and agencies will mainstream climate change actions and only require coordination. The County Executive Committee Member (CECM) responsible for coordinating climate change affairs is also responsible for coordinating the implementation of this Policy. This Policy recognizes the County Executive Committee Member (CECM) currently responsible for Water, Environment, Natural Resources and Energy as the in-charge of the unit for Climate Change affairs in The County of Narok. In addition, the CEM liaises with the County multi-sectoral Disaster Preparedness Unit, Development Partners and Civil Society, among others.

The Narok County Climate Change Fund act, 2021 established the County Climate Change Steering Committee (CCCSC) outlining its administrative structure. The County Executive Committee Member (CECM) shall chair the Committee, while the Chief Officer in-charge of climate change matters shall be Secretary to the Committee.

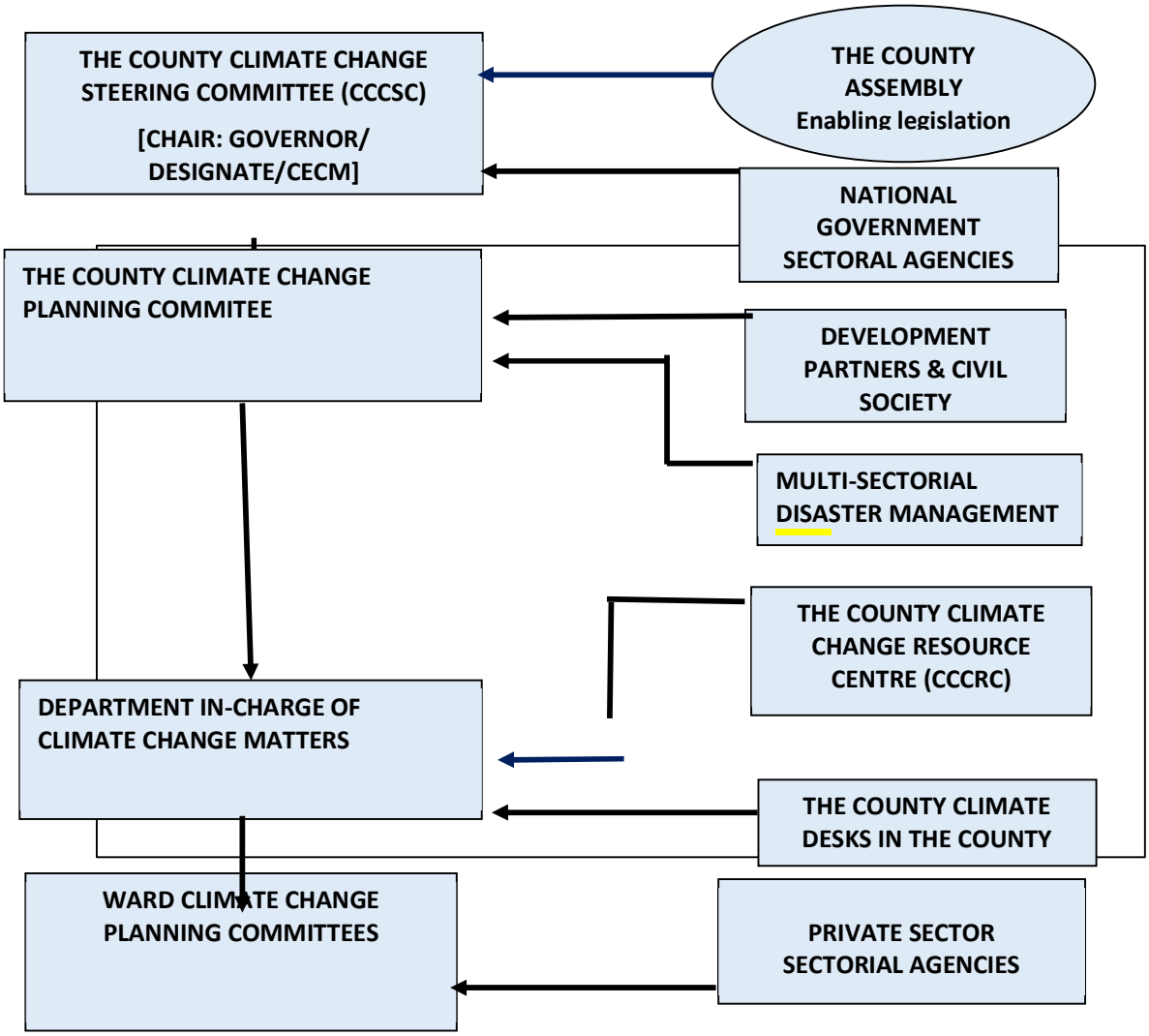



*Figure 3 Institutional Coordination Structure*

### 4.1.7 Resilience Planning Tools

Resource/Hazard Mapping

A Resource Map is visual illustration prepared by a community to provide an understanding of the demography, places and resources (land, rivers, hills, field, vegetation and habitation) present in their locality, as well as the use of these resources. A resource map is also used to gather the community's perception and knowledge of their surrounding and to identify their resources and risks.

Mapping as a tool was introduced to the participants. They visualized their area and drew the resource map below with some observations as noted below

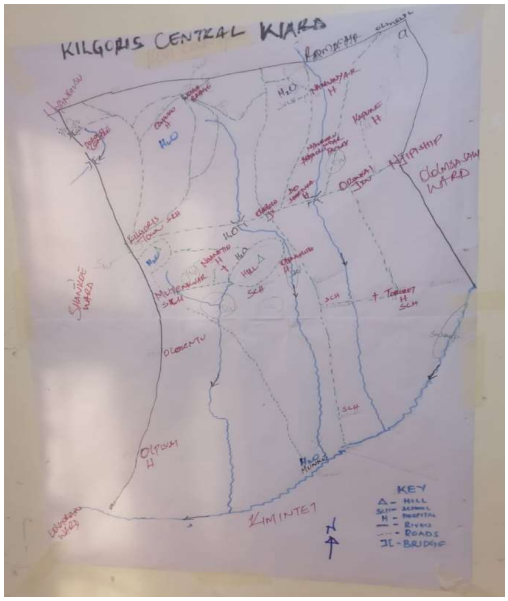



*Figure 4 Resource Map*

## 2.2 Historical Timeline/Profile

The Historical Timeline is a group exercise that chronologically lists people's recollection of key events and changes in the history of their community. It reveals trends and leads to discussions about people's past activities and changes in the community and possibly the broader societal context. The Historical Timeline facilitates people's learning from the past, as well as recognition of and appreciation of their accomplishments (e.g. livelihoods and coping mechanisms) and resourceful asset use (e.g. existing knowledge, relationships, land). For climate resilience purposes, facilitated discussion about environmental and climate changes and their effects on the community can draw attention to positive and negative trends and lessons learned over time.

*Table 1 Significant historical events recorded in A particular ward in Narok County central ward*

| Time (years) | Event | Effects | Coping strategy (During those days) | Visualize on the adaptation strategies (Current & Future) |
|---|---|---|---|---|
| 1960 | Floods | Destruction of property<br>Loss of livestock<br>Destruction of social amenities like sewerage and water pipes<br>Outbreak of water borne diseases | Migration, creation of dykes, bridges and climate resilient infrastructure | Intensive water harvesting, reclamation of galleys, building dykes and sand dams |
| 1963 | Celebration of independence | freedom | Acceptance to change, enforcement of laws | Getting rid of corruption, ensuring food security, embrace national hood |

| | | | | |
|---|---|---|---|---|
| 1967 | Flooding | Destruction of property<br>Loss of livestock<br>Destruction of social amenities like sewerage and water pipes<br>Outbreak of water borne diseases | Migration, creation of dykes, bridges and climate resilient infrastructure | Getting rid of corruption, ensuring food security, embrace national hood |
| 1972 | Community clashes | Destruction of property, loss of lives and livestock raiding | Hiding, peace reinforcement | Mitigate drought that leads to shortage of natural resources that propagates to clashes<br>Peace building among communities |
| 1978 | Death of President Jomo Kenyatta | Clashes between maasai and kipsigis | Destruction of property and loss of lives and cattle raiding | Peace building among communities |
| 1997/ 1998 | El-nino | Destruction of property, crops,<br>soil erosion, diseases outbreak, and<br>life loss,<br>Increase death rate | Relief food from government<br>Introduction of ARVS | Construction of proper water ways, bridges, dykes |
| 2000 and 2006 | Drought | Livestock loss, high rates of malnutrition | Dependency on relief food | Drought mitigation measures,<br>Drought resistant crops<br>Improved farming practices like irrigation<br>Destocking and minimum livestock rearing |
| 2007/ 2008 | Post-election violence | Massive loss of lives and high rates of cattle rustling | Hide of vulnerable members of the society<br>like children, elderly and women | Peace building and national unity |
| 2010 | Promulgation of the new constitution | Peace building | Improved economic growth,<br>Less cases of corruption<br>New way of governance<br>Devolution happening and channeling resources to | Peace building, Guarding the Kenya constitution 2010 |

| | | | | |
|---|---|---|---|---|
| | | | counties | |
| 2013 | General election | Devolution implemented | Job creation through counties | Peace building Protection of natural resource Economic growth |
| 2017 | Community clashes | Cattle rustling, loss of lives and property | Hides vulnerable members of the community Reinforce county security | Reinforce county security Promote peace and unity among communities |
| 2019 | Floods | Destruction of property, crops, soil erosion, diseases outbreak, and life loss, Increase death rate | Relief food from government Introduction of ARVS | Construction of proper water ways, dykes and resilience weather bridges |
| 2020-2022 | Outbreak of COVID-19 | Loss of lives, destruction of livelihood, poor economy growth | Embrace government mitigation measures to curb the spread of the virus Enforcement of Natembeya curfew | Promote high level of hygiene, Avoid crowds Practice social distance Embrace WHO recommendation |

## 2.3. Seasonal Calendar

A seasonal calendar is a participatory tool to explore seasonal changes (it helps people explore and understand how ecological, social, and economic aspects of their lives and wellbeing change throughout the year. Specific variables can be used to help people explore agro-ecological and climatic variations that may better inform their own planning, decision-making and risk mitigation and disaster preparedness initiatives. The tool reveals annual and cyclical patterns in a community that deepen people's understanding of the effects of changes throughout the year. Possible patterns and seasonal correlations that people may learn from include: climate (rain fall and temperatures), crop sequences (pests and diseases), food availability, forage patterns, workloads (agriculture and nonagriculture), work type and load differences (between men, women, and children), social events, migration, income and expenditures, credit requests and repayment, clean water availability, and disease prevalence. The Seasonal Calendar also calls people's attention to the similarities and differences in livelihood-, community- and gender-specific workloads.

The participants come up with social- economic activities undertaken throughout the year as shown in the table below.

***Table 2 Seasonal activity calendar for A particular ward in Narok County central ward***

| Activity | | Months | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| 1 | Church gathering | x | | | x | | | | | | | | x |
| 2 | School openings | x | | | | x | | | | x | | | |
| 3 | Livestock trade | x | x | | | | | | | | | | |
| 4 | Marketing (Long season) | x | x | | | | | | | | | | |
| 5 | Land preparatio n (short season) | | x | x | | | | | x | x | | | |
| 6 | Form 1 admission | | x | | | | | | | | | | |
| 7 | Planting | | | x | x | | | | | x | x | | |
| 8 | Weeding | | | | x | | | | | | | x | |
| 9 | Cultural activities | | | | x | | | | x | | | | x |
| 10 | School closing | | | | x | | | | x | | | x | |
| 11 | Pest control | | | | x | x | | | | | | x | |
| 12 | Diseases outbreak | | | | x | | x | x | | | | | |
| 13 | Vaccinatio n | | | | x | | | | x | | | | |
| 14 | Family gatherings | | | | | | | | | | | | x |
| 15 | Harvesting (short rains) | | | | | | | x | | | | | |

## 2.4. Venn Diagram - Institutional and Social Network Analysis

The Venn Diagram is a participatory tool that helps to understand the community's perceptions about organizations, individuals, programs, the power structure and the decision-making processes in the community. A Venn Diagram shows the relative importance of various institutions in the community, relationships and linkages among them, weaknesses with respect to decision making processes, development of the community by institutions, duplication of efforts and gap identification between institutions, objectives, and felt needs of community, and concentration of power within the ward.

Key organizations working in A particular ward in Narok County central ward were mapped and assigned circles of different sizes based on their perceived importance, their roles and how the community feel about the activities implemented by the organizations in response to their needs. Big circles represented organizations that are important to the community and with the most roles in provision of safety nets; and the circles closest to the middle point/residents of the universal set represented organizations that the community feel that their interventions/activities respond to their social needs.


*Figure 5 A particular ward in Narok County Central Ward Venn Diagram*

## 2.5. Leaky Bucket

Leaky bucket is a useful tool for understanding how a local economy works. The tool enables the participants to identify and quantify the main flows of money coming into and out of their community. In turn, this process often leads to revealing economic opportunities, which may help community members improve their household and community well-being. By imagining the community's economy as a bucket with money flowing in and out, people can understand the importance of retaining money within the community. They can start to identify ways of increasing the flow of income into the community and preventing the leakage of money out of the community which happens when goods and services are purchased outside.

This tool was used by the participants to identify opportunities for income generation and their spending at a household level. They identified where most of their expenses fell, helping them to analysis what is important for them and their vulnerability relative to their income. It helped them to identify their resilience in case of a climate disaster.

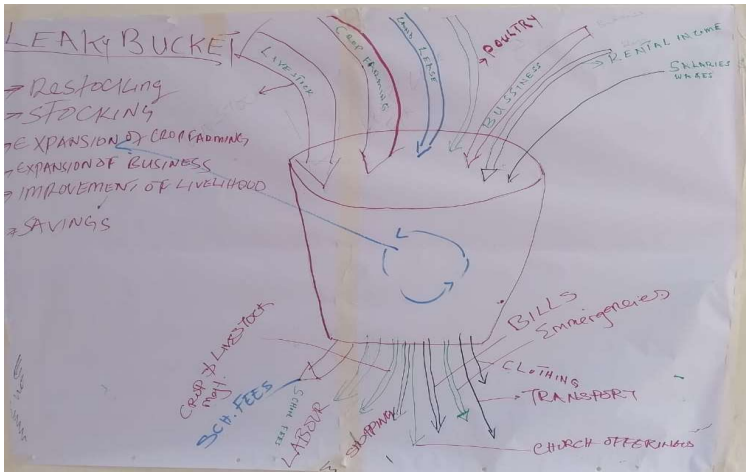



*Figure 6 A particular ward in Narok County Central Leaky Bucket*

## 2.6 Access and Control

This tool helps to analyse who has the authority over assets access and control in the household between men and women.

*Table 3 Evaluation of Access and Control of asset in A particular ward in Narok County central ward*

| ASSET | MEN | | WOMEN | |
|---|---|---|---|---|
| | Access | Control | Access | Control |
| Land | ✓ | □ | □ | X |
| Cows | ✓ | □ | □ | X |
| Goats | ✓ | □ | □ | X |
| Sheep | ✓ | □ | □ | X |
| Chicken | ✓ | X | □ | □ |
| House | ✓ | ✓ (50%) | □ | □ (50%) |
| Farm | ✓ | ✓ | □ | X |

2.7 Daily Clock

The Daily Activity Clock illustrates all the different kinds of activities carried out in one day. It is particularly useful for looking at relative workloads between different groups of people in the community, e.g., women, men, rich, poor, young and old. Comparisons between Daily Activity Clocks show who works the longest hours, who must divide their time for a multitude of activities, and who has the most leisure time and sleep. This knowledge is helpful in determining who should be targeted by an activity and assess the potential and actual impact of the activity on beneficiaries' workload. The tool also illustrates the distribution of labour within a household/community.

*Table 4 Tabulation of daily activities of based on daily clock*

| TIME | MEN | WOMEN |
|---|---|---|
| 5.00am | Sleeping | Fetching water |
| 6.00am | sleeping | Cooking, taking breakfast |
| 7.00am | Looking after livestock | Cleaning utensils, house |
| 8.00am | Taking breakfast | cleaning |
| 9.00am | Farming/business | Milking cows |
| 10.00am | Farming/ business | milking |
| 11.00am | Farming/ tea break | Cooking tea/taking milk to cooler/looking for vegetables |
| 12.00Noon | Farming/ tea break | Cooking lunch |
| 1.00pm | Taking cows for water/eating lunch/betting | Serving/feeding children |
| 2.00pm | Taking a shower & preparing to go to town/visiting friends | Cleaning utensils/washing children & clothes/taking a shower |
| 3.00pm | In town/friends/catching up/playing pool/lotto/draft | Fetching water/checking/watering cattle/looking for vegetables |
| 4.00pm | Still in town | Shopping centre for shopping |
| 5.00pm | Taking tea/beer & watching world cup/games<br>Locking livestock | Cooking tea for children/collecting firewood |
| 6.00pm | Still watching worldcup/betting | Bringing cows home and Milking |
| 7.00pm | Watching news in town | Cooking dinner & watching news |
| 8.00pm | Eating dinner | Eating dinner |
| 9.00pm | Watching news | Watching news /cleaning utensils |
| 10.00pm | Sleeping | sleeping |

## 2.8 Wealth Ranking

Wealth ranking is a participatory exercise where participants rank households in the community according to their evaluation of each household's resources. The ranking from this exercise is like a weighted average of the household's resources and it is important to note that higher weights are implicitly given to resources considered socially more important by the participants and may not align with a ranking of households based on a survey of assets.

The wealth ranking tool is essential in assessing the capacity of the community in building climate change resilience. The more the wealthier the society is, the abler they are able to adapt to the impacts of climate change and recover from a climate disaster/hazard

Table 5 Perception wealth scale to measure wealth in A particular ward in Narok County central ward

| Indicator | Rich class | Middle class | Poor |
|---|---|---|---|
| Land | >55ha 25% | >25ha 45% | < 5ha 30% |
| Cows | >100 20% | >50 55% | <2 25% |
| Sheep | >100 | >50 | <5 |
| Goats | >50 | >25 | <2 |
| Poultry | >100 | >50 | <10 |
| Maize | >50ha | >25ha | <2ha |
| Sugar cane | >50ha | >25ha | <1ha |

## CHAPTER 5: MEASUREMENT, REPORTING AND VERIFICATION

There shall be established an upgraded early warning systems to enable monitoring of climatic events to make reliable projections of climate change scenarios, seasonal forecasts and inter-annual forecasts.

The Monitoring &Evaluation Framework shall be clearly linked to the planned outcomes and outputs of the CCCIS adopted by all concerned stakeholders. The Framework shall specify performance indicators and targets for each action priority and strategic action and will propose accountabilities for the actors that are tasked to implement them. Each County Department and Agencies for which specific accountabilities shall be identified, to ensure enforcement of the relevant action priorities and measures, using means and mechanisms at its disposal or to be identified as part of the process of development of costed CCCIS to follow.

In addition to monitoring and enforcement against the Framework, the implementation of the NaCCCAP shall undergo an independent external evaluation in midterm. Recommendations made thereof shall feed into the revision process for this Action Plan and the amendment of the resulting legislation instruments. Such revisions shall be conducted based on thorough public participation consultation processes and reviews of the results at that point in time

Reporting mechanism begins at ward level where the, ward planning committee reports the achieved information to the county planning committee after being informed by the county climate change Unit. At this level, the NaCCCAP is discussed through rigorous meeting by the county steering committee which is also informed by the County Climate Change Unit. The county Executive Committee Member- Environment received the discussed proposals and presents them for discussions at the county assembly being steered by Chief Officer in Charge of Environment. Then the final discussed draft is presented to the county Governor who intern presents to the national government through the council of governors.

The reporting pathways that shall apply in the implementation of this policy are outlined below

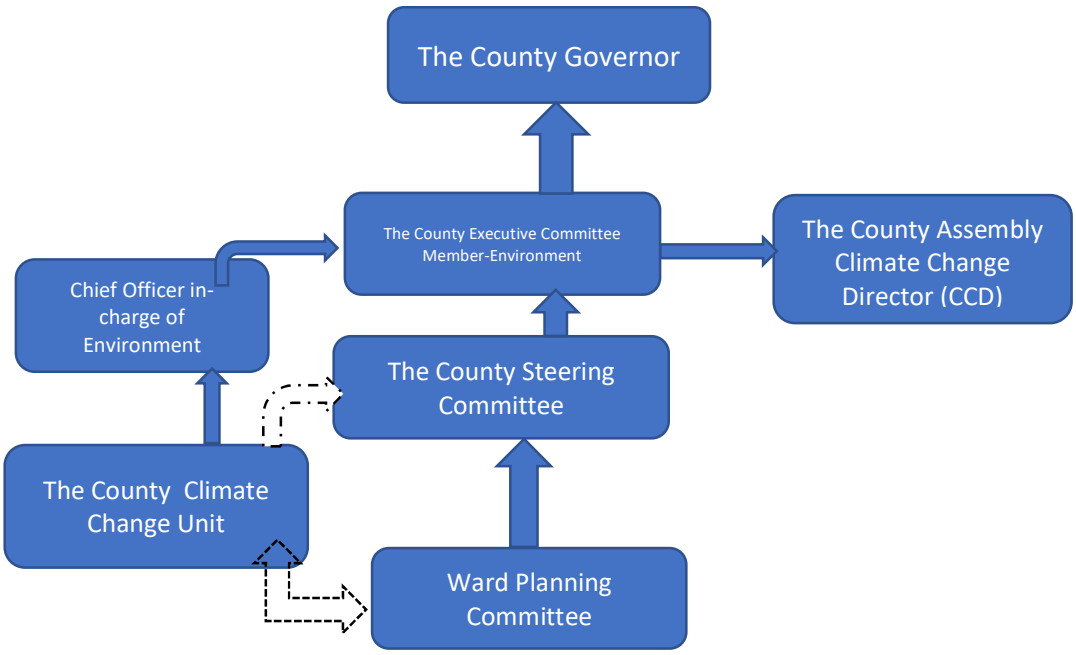



*Figure 7 County Reporting Structure*

4.1.1 Institutional Roles and Responsibilities

| | Enabling Actions | Coordinating Institution and Relevant Partners | Expected Results (Process Indicator) |
|---|---|---|---|
| C2 | Establish Community Education, Business and Information Centres in selected wards, building on the model established in Narok County, to improve access to information and reduce climate vulnerability. The Centres will be managed by Ward Climate Change Planning Committees. The Centres will provide focused services for women, youth and minority and marginalised groups. | CCD<br>CoG<br>Narok County Government | **By 30th December 2025** – Narok Community, Education, Business and Information Centre established.<br><br>**By 30th June 2027** – Two additional Community, Education, Business and Information Centres established. |
| C3 | Strengthen the capacity of County Government departments to implement the Climate Change Act, including training of staff of climate change units on reporting, climate finance. | CCD<br>National Treasury and Planning and Planning<br>State Departments | **By 30th December 2025** – Climate change is mainstreamed in MTP sector plans.<br>**By 30th June 2027** – All state departments providing annual reports with gender disaggregated information. |
| C4 | Build the capacity of the County Government, including:<br>- Strengthening of Climate Change Coordination Units.<br>- Gazettement of County Environment Committees and other supportive structures.<br>- Coordination of climate change programmes across Counties.<br>- Training of Ward Climate Change Planning Committees | CCD<br>National Treasury and Planning<br>CoG<br>County Governments | **By 30th December 2020** – Five County Governments reporting on a pilot basis.<br>**By 30th June 2023** – All County Governments providing annual reports on climate change with gender-disaggregated information. |

## CHAPTER 6: IMPLEMENTATION AND COORDINATION MECHANISMS

### 6.1 Coordination mechanism

#### 6.1.1 Directorate of Climate Change

i. Formulation of climate change legislation and policy;
ii. Formulation of climate change plans and actions and report to the county climate change steering committee;
iii. Give guidelines on implementation of climate change programs in the county.

#### 6.1.2 County Climate Change Steering Committee

(a) exercise oversight over activities of the Fund;
(b) develop a Climate Finance Framework for the County;
(c) facilitate and monitor the implementation of the Climate Finance Framework at the ward level;
(d) to compile the list of approved projects and prepare the County Climate Finance Budget;
(e) develop a Climate Finance research priority needs list for the county;
(f) co-ordinate research and development for Climate Finance in the County;
(g) pre-qualify research consultants for Climate Finance research in the County in accordance to the PPOA Act;
(h) assign and coordinate technical assistance from County departments to projects funded under this Regulations;
(i) ensure appropriate need based allocation of the moneys available in the Fund with regard to the projects received from the Ward

Planning Committee;

(j) co-ordinate and implement curriculum for capacity building for Climate Change Awareness and Climate Finance in the County;
(k) ensure compliance of the Fund administration to the Public Finance Management principles under article 201 of the Constitution of Kenya;
(l) ensure that projects approved for funding conform to the Climate Finance Framework;
(m) mobilize funding for projects, programs and activities listed in the Climate Finance Framework;
(n) facilitate coordination of climate finance projects and programs with other programs in the county;
(o) develop eligibility criteria for climate finance projects;
(p) facilitate capacity building of ward planning committees; and
(q) facilitate the coordination of Climate Finance projects and programs with other programs in the County.

#### 6.1.3 Climate Change Unit

**Functions**

(a) implement climate change legislation and policy;
(b) implement climate change plans and actions and report to the county climate change steering committee;
(c) advise the county climate change steering committee on matters relating to legislation, policy, coordination, and monitoring climate change governance;
(d) be responsible for coordination and monitoring of climate change governance;
(e) provide technical support on climate change matters to county departments and agencies;

(f) establish and manage a county climate change database and registry for dissemination of information and knowledge on climate change;
(g) develop and implement low carbon emission strategies;
(h) prepare and submit operational and statutory reports to the relevant authorities with the approval of the steering committee;
(0) develop, perform any other function related to climate change as may be assigned by the county climate change steering committee; and
(i) Ensure that coordinate and implement climate change related research and innovations;
(j) develop guidelines for climate change projects eligibility criteria with the approval of the steering committee;
(k) ensure need-based allocation of the monies available in the climate change fund with regard to the projects received from the ward planning committee;
(l) formulate monitoring and evaluation tools for projects financed by the county climate change fund;
(m) facilitate public participation at ward level in formulation of climate change programs and plans;
(n) receive project proposals from the ward and develop technical components of the proposals, budgets and work plans for consideration by the steering committee;
(1) all county plans and programmes are climate proofed

### 6.1.4 Ward Climate Change Planning Committee

(a) consult with the community on the relevant Climate Finance activities;
(b) facilitating public participation at the Ward level;
(c) receiving project proposals from the community at the ward level;
(d) developing the technical components of project proposals;
(e) procuring goods and services for projects, including the development of procurement plans for each project;
(f) monitoring the implementation of projects at the ward level;
(g) preparing the budget at the ward level;
(h) preparing the Ward level project reports; and
(i) any other duty assigned by the steering committee.

### 6.2 Implementation Matrix

| Action | Results by 30th June 2023 | Adaptation / Mitigation | Coordinating Institution and Relevant Partners | Expected Results (Process Indicator) |
|---|---|---|---|---|
| **1. Improve crop productivity through the Implementation of CSA interventions** | ✦ Number of institutions/value chain actors and households harvesting water for agricultural use/production increased to 500,000<br>✦ Agricultural pre- and post-harvest losses reduced from 40% to 15%.<br>✦ Number of beneficiaries accessing climate-oriented crop insurance from increased from 2,800,000 farmers to 3,500,000 farmers.<br>✦ Number of farmers accessing appropriate agricultural inputs subsidies increased from 239,000 to 311,300 farmers. | Adaptation<br>Addresses climate risk: increased temperatures and changes in precipitation lead to declines in crop production and yields | Department of Agriculture<br>Department of Water<br>KMD | Improved yield<br>Food secure community<br>Improve livelihood |
| | ▪ Number of households and acreage under sustainable land management (SLM) increased for agricultural production:<br>- Support the reclamation of 60,000 ha of degraded land<br>- Area under integrated soil nutrient management increased by 250,000 acres<br>- Farm area under conservation agriculture increased | Adaptation<br>Addresses climate risk: land degradation<br>Mitigation<br>GHG emission reductions of 0.55 $MtCO_2e$ by 2027 (conservation tillage)<br>GHG emission reductions of 1.66 $MtCO_2e$ by 2027 | Department of Agriculture<br>Department of Environment and Forestry | |

| | | | | |
|---|---|---|---|---|
| | to 250,000 acres, incorporating minimum/no tillage<br>- Total area under agroforestry at farm level increased by 200,000 acres | (agroforestry) | | |
| **2. Increase crop productivity through improved irrigation** | ✦ Acreage under irrigation increased from 202,000 ha to 486,000 ha<br>✦ Production efficiency from irrigated fields increased from 50% to 90% | Adaptation<br>Addresses climate risk: changes in precipitation negatively impact rain-fed crop production | Department of Agriculture<br>MoWS<br>KFS<br>Kenya Agriculture and Livestock Research<br>NDMA | |
| **3. Improve productivity in the livestock sector through the** | ▪ Productivity of pastoralists improved:<br>- 10,000 hectares of rangelands re-seeded in 23 ASAL counties<br>- Annual ASALs water harvesting and storage increased by 25% from 16 million cubic metres | Adaptation<br>Addresses climate risk: land degradation | Department of Agriculture and livestock<br>NDMA<br>KALRO<br>Kenya Agriculture and Livestock Research<br>MoWS<br>NEMA<br>WRA<br>WRUAs<br>NGOs | |
| **Implementation of CSA interventions** | Number of customers/ beneficiaries accessing climate-oriented livestock insurance increased from 18,000 to 105,750 farmers | | Department of (AL&F)<br>KMD<br>NEMA<br>NGOs | |
| | ✦ Efficiency in dairy management improved for 267,000 households<br>✦ Manure management improved through the adoption of biogas technology by 80,000 | Mitigation<br>GHG emission reductions of 0.40 $MtCO_2e$ by 2027 (dairy) | Department of Livestock<br>NGOs<br>Environment and climate change | |

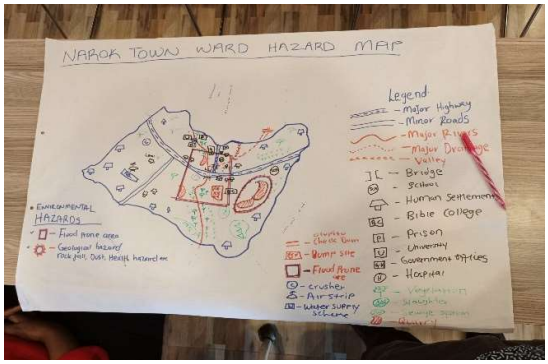
| | | | | |
|---|---|---|---|---|
| | households and at least 200 abattoirs | | | |
| **4. Improve productivity in the fisheries through Implementation CSA interventions** | ✦ Insurance packages piloted and developed for the fisheries sub-sector.<br>✦ Aquaculture production increased:<br>- Number of fish ponds increased by 500<br>- Number of farmers using low-carbon (recirculating) aquaculture systems increased from 20 to 180 | Adaptation<br>Addresses climate risk: Increased temperatures impact fish farming by drying of ponds | Department of Agriculture & Fisheries | |
| **5. Diversify livelihoods to adjust to a changing climate** | ✦ At least 52,150 households supported to adopt diversified adaptive enterprises/value chains for sustained livelihoods and nutrition security<br>✦ Small-scale famers, pastoralists and fisher communities are supported to transition to specialised and market-oriented output in 13 priority value chains, including drought-tolerant values chains | Adaptation<br>Livelihoods diversification | Department of Fisheries<br>Cooperative<br>MOH<br>KMD<br><br>Department of Environment and Forestry<br><br>NDMA | |
| **Enabling Action – technology and knowledge management** | ▪ Number of counties developing and implementing Climate Information Service plans increased from 9 to 47. *Linked to Action 1: Disaster Risk Management and Enabling Action T4* | Enabling | Department of Economic Planning<br>KMD | |
| **Relevant Institutions:** County Governments, CoG, Ministry of Agriculture and Irrigation (MAI), Ministry of Water and Sanitation (MWS), WRA, Kenya Forest Service, KMD, Kenya Agriculture and Livestock Research Organisation (KALRO), Private sector, World Agroforestry Centre, International Livestock Research Institute (ILRI), Farmer organisations, Fisher organisations, Pastoralist organisations. All sectors identify actions to realise the strategic objective. | | | | |

## CHAPTER 7: ANNEX

### 7.1 Photo Gallery

#### 7.1.1 Field Work Activities

*Figure 8 A visit by the FLLoCA team to Narok County,*



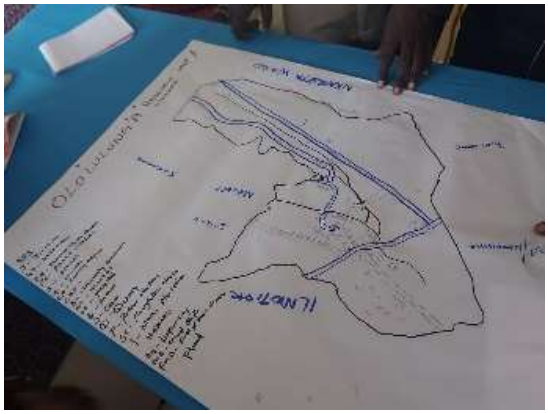




*Figure 9 During PCRA Data Collection by the CCU team, Some of the tools used to Collect Data*

*Figure 10 During PCRA Data Collection by the CCU team, Some of the tools used to Collect Data*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