BARINGO COUNTY CLIMATE CHANGE ACTION PLAN 2023–2027

BCCCAP



2023

FORWARD

Climate change is a global concern that is considered to be the most serious threat that is directly affecting humanity, Flora and Fauna; it is also a global challenge to sustainable development with adverse impact on environment, human health, food security, economic activities, natural resources and physical infrastructure.

Baringo County government has noted some of the main climate change impacts as witnessed in the recent past, like: increase in temperatures resulting in prolonged dry spells and drought; unpredictable and erratic rainfall; intensity & increased frequencies in floods; landslides etc.

Communities have, therefore, become extremely susceptible and vulnerable to these impacts of a changing climate because most livelihoods and economic activities are reliant on climate-sensitive natural resources; inadequate resilience measures and also inadequate capacity to prepare adapt and recover from the impacts. This has resulted to devastating consequences on environment, society and economic activities, leading to reduced food and livestock production, scarcity of potable water, increased spread of diseases and pests, and increased conflict (human/human and human/wildlife) over the diminishing common natural resources.

This Baringo County Climate Change Action Plan (BCCCAP) is therefore designed to set out measures/actions that enhance adaptive capacity and resilience of communities to climate change effects while promoting low carbon growth for sustainable development in the county.

The collective contributions of the National and County Governments, the private sector, the civil society, faith-based organizations, other non-state actors, and individual citizens of this great County to this BCCCAP will be of importance in the achievement of the expected outcomes from the strategies.

OFFICE OF H.E THE GOVERNOR
BARINGO COUNTY GOVERNMENT
29 MAY 2023
P. O. Box 53 - 30400, KABARNET

His Excellency the Governor
GOVERNOR –BARINGO COUNTY

ACKNOWLEDGEMENT

I am indeed very grateful to the CCU/Core Team, for coordinating the ward level data collection visits which were geared towards the development of Participatory Climate Risk Assessment (PCRA) Report and the subsequent Baringo County Climate Change Action Plan (BCCCAP) 2023-2028.

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Finally, I would like to convey my sincere thanks to the National treasury, FLLoCA Programme Climate Change coordinating unit and other line departments of the National government for their financial support through the CCIS grant and Guidance in the development of the Baringo County Climate Change Action plan (BCCCAP)

Hon. Richard Tamar.
CECM -Department of Water & Irrigation, Environment & Climate Change, Natural Resources and Mining

Definition of terms

Adaptation means 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 refers to the ability of systems, institutions, humans, and other organisms to adjust to potential damage, take advantage of opportunities, or respond to consequences.

Carbon credit or offset is a financial unit of measurement that represents the removal of one tonne of carbon dioxide equivalent from the atmosphere. Carbon credits are generated by projects that deliver measurable reductions in greenhouse gas emissions.

Carbon market is a market created from the trading of units of greenhouse gas emissions

Climate change refers to a change in the climate system that is caused by significant changes in the concentration of greenhouse gases due to human activities, and which is in addition to the natural climate change that has been observed during a considerable period.

Global warming refers to the observed or projected gradual increase in global surface temperature. It is one of the consequences of climate change.

Greenhouse gases (GHGs) are gases that absorb and emit radiant energy within the thermal infrared range. The main GHGs measured in a GHG inventory are, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulphur hexafluoride (SF_6) and nitrogen trifluoride (NF_3).

Mitigation refers to human interventions to prevent or slow down atmospheric GHG concentrations by limiting current or future emissions, and/or enhancing potential sinks for greenhouse gases.

$MtCO_2eq$ or $MtCO_2e$ is an abbreviation for million Tonnes of carbon dioxide equivalent. It is the amount of GHG emissions expressed as an equivalent of concentrations of carbon dioxide.

REDD+ is the acronym for 'Reducing Emissions from Deforestation and Forest Degradation,' It is a mitigation mechanism that creates financial value for the carbon stored in forests by avoiding deforestation, and increasing the carbon stock in existing forests.

Resilience refers to the capacity of social, economic and environmental systems to cope with a hazardous event, trend, or disturbance. It is manifested through responding or reorganizing in ways that assert the essential function, identity, and structure of the system, while also maintaining the capacity for adaptation, learning and transformation

Vulnerability refers to the propensity or predisposition to be adversely affected. It encompasses a variety of concepts and elements, including sensitivity or susceptibility to harm, and lack of capacity to cope and adapt.

Abbreviations and Acronyms

ASAL - Arid and Semi-Arid Land

CCCF - County Climate Change Fund

CCU - County Climate Change Unit

CECM - County Executive Committee Member

CFA - Community Forestry Association

CIDP - County Integrated Development Plan

CS - County Secretary

CSA - Climate Smart Agriculture

GCF - Green Climate Fund

CCCAP - County Climate Change Action

GDC - Geothermal Development Corporation

GIS - Geographic Information Service

KWS - Kenya Wildlife Service

NAP - National Adaptation Plan

NDA - National Designated Authority

NDA - Nationally Determined Contribution

NDE - National Designated Entity

NDMA - National Drought Management Authority

NEMA - National Environment Management Authority

PCRA – Participatory Climate change risk assessment

REDD+ - Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing

SDG - Sustainable Development Goal

UNCBD - United Nations Convention on Biological Diversity

UNFCCC - United Nations Framework Convention on Climate Change

VAT - Value Added Tax

WRA - Water Resources Authority

WRUA - Water Resource Users Association

CHAPTER ONE

1.1 Background

Climate change is a significant threat to Kenya's future development, including achievement of the Kenya Vision 2030 goals, and the Government's Big Four Agenda that focuses on enhanced food and nutrition security, affordable housing, increased manufacturing, and universal healthcare.

Current data demonstrates that the climate in Kenya and globally is changing at an unprecedented rate and that unparalleled levels of human induced greenhouse gases (GHGs), especially carbon dioxide, emissions are causing an increase in global temperatures that creates changes in the earth's weather patterns. It is now clear that climate change has become an impediment to sustainable development in the County and urgent action is required.

Baringo County like the rest of the world is vulnerable; it has noted some of the main climate change effects as witnessed in the recent past, like increase in temperatures resulting in prolonged dry spells and drought; unpredictable and erratic rainfall; intensity and increased frequencies in floods; landslides etc. Examples: flooding of Rivers Perkerra, Waseges, Molo/Molok, Loboi in the flood plains, flooding in Kapcheluguny (Emining Ward), Landslides in Sangarau (Marigat ward), Morop and parts of Sirwa. Rising water levels in lakes Baringo and Bogoria since 2013 to date attributed mainly to hydro-meteorological variables due to climate change that have led to increased moisture availability has caused major concerns to the county's socio-economic development.

The County's economy is highly dependent on the natural resource base, making it highly vulnerable to climate variability and change. These manifestations of climate change constitute a serious threat to natural systems on which the County's sustainable development and future prosperity depends.

The Baringo County Climate Change Action Plan 2022-2027(BCCCAP2022-2027) presents actions that the County will implement to address climate change. This action plan articulates the implementation plan for climate change response informed by the climate change needs and response assessment. The plan specifies measures and mechanisms for the achievement of low carbon climate resilient sustainable development which, mainstream climate change into county development plans, programmes, strategies and projects. It focuses on adaptation to and

mitigation of climate change; enhancing research, capacity building and knowledge management on climate change and climate change response; enhancing public awareness for effective participation in climate change response; monitoring, evaluation and periodic review to integrate learning and best practice in the implementation of the County Climate Change Action Plan.

1.2 Rationale for a County Climate Change Action Plan

Baringo County Government recognizes the impacts that climate change has posed on the livelihoods of the communities. For this reason the following policy and legal framework were developed; Baringo County Climate Change Act 2022, the BCCCAMP 2023-2027 and the Baringo County climate change policy 2020 to enhance response to climate change (adaptation) and mechanisms and measures to transition to low carbon climate resilient development (mitigation). It further emphasizes the realization of the goals of the Paris Agreement and sustainable development goals (SDG's), while prioritizing adaptation, and recognizing the importance of enhancing the climate resilience of vulnerable groups, including children, women, youth, persons with disabilities, the elderly, and marginalized and minority communities.
Section 19 of the Kenya climate change Act 2016, provides for the county governments that, in performance of its functions, integrate and mainstream climate change actions, interventions and duties set out in the Act.
Section 23 of the Baringo County Climate Change Bill 2021, provide for the formulation of a County Climate Change Action Plan reviewed after a period of five years, by the County climate change steering Committee through a participatory process involving stakeholders.
This Plan will position the County to achieve the socio-economic and ecological benefits accrued from the transition to a low carbon climate resilient growth as well as enable a coordinated, rational and effective actions to the Local, Regional, National and global challenges and opportunities that climate change presents.
The plan will further provide for the development and implementation of specific, detailed and costed climate change interventions in achieving resilience to climate change variability, and promoting low carbon development to safeguard the wellbeing of its citizens, their property, and the County's prosperity in the face of a changing climate.

1.3 Guiding principles

The formulation of this action plan initiated within the framework of the National Climate Change Action Plan (NCCAP, 2018-2022), Baringo County Climate Change Bill 2021 and the County Integrated Development plan 2018-2022 and Annual Development Plans through the following guiding principles:

- **Principle of sustainable development:** In every development practice, every developer is to ensure a wise use of natural resources.
- **Partnership:** Building partnerships, collaboration and synergies among various stakeholders from the public, government, non-governmental organizations, civil society and private sector, as well as vulnerable communities and populations including women, persons living with disabilities and youths to achieve effective implementation of climate change actions.
- **Fairness and Equity:** ensuring a fair and equitable effort and cost in the delivery of climate change actions for all the actors.
- **Social inclusion of special needs and indigenous people:** this will involve prioritization of the special needs, indigenous people and geographic areas that are particularly vulnerable to the adverse effects of climate change. This includes, but is not limited to, minority groups/marginalized, vulnerable groups such as women, children, the elderly and persons living with disabilities. Towards this end, an affirmative action approach will be adopted in the implementation of this Policy
- **Integrity and transparency:** the mobilization and utilization of financial resources shall be with integrity and transparency in order to eliminate corruption and achieve most optimal results in climate change responses.
- **Cost effectiveness:** the selection of climate change interventions/actions will take into account available alternatives in order to identify appropriate choices that provide most benefit to the society at least cost e.g. energy saving stoves.

1.4 Approaches used in developing the BCCCAP 2023–2027

The department of Water, Irrigation, Environment, Natural Resources, Climate Change and Mining coordinated the development of BCCCAP 2023- 2027 through the County Climate change technical committee appointed by the County Executive member for Water, Irrigation,

Environment, Natural Resources, Climate Change and Mining on 16th November, 2021. The Baringo County Climate change Bill 2021 conferred committee roles and powers to formulate the BCCCAP 2023-2027.

The County Climate Change Directorate (CCCU) led the technical analyses, and further organized extensive consultations to ensure that BCCCAP 2023-2027 reflected the inputs and priorities of a wide range of stakeholders through a one-day stakeholder validation workshop.

1.5 The position of Baringo

Baringo County is bounded by Turkana County and West Pokot County to the North, Samburu County and Laikipia County to the East, Nakuru County and Kericho County to the South, Uasin Gishu County to the South West and Elgeyo Marakwet County to the West. It covers an area of 8,655 km^2. Baringo County lies between Latitudes 00 degrees 13" South and 1 degree 40" north and Longitudes 35 degrees 36" and 36" degrees 30" East.

1.5.1 Temperature Change Trends and Projections

The maximum temperature of the area increased from 30.8^0 C in 1985 to 31.5^0 C in 1987, but dropped to 30.3^0 C in 1989 before it vaults up to 31^0 C in 1991. The maximum temperature of the area fluctuated steadily between 1992 (30.7^0 C) and 2001 (31.4^0 C) and increased to 30.1^0 C in 2004. The maximum temperature of the area vaults up to 32^0 C in 2015 and 32.2^0 C in 2016. Changes in time explained a 10.2% variation in the maximum temperature in the area. A unit change in time causes the maximum temperature to slightly change by 0.016 04 (Ezenwa et al. 2018). The trend analysis of the temperature from 1985 to 2015 showed fluctuations with increased temperature (Fig. 3).

1.5.2 Rainfall Trends and Projections

Baringo County experiences a bimodal rainfall pattern with the long rains season occurring in March to May and short rains season from October to December. The County receives an average annual rainfall ranging from 500 mm in the lowlands and up to 1,500 mm in the highlands around Kabartonjo, Kabarnet, Sacho and Barwessa divisions. The county is long rains dependent for crop production across all the livelihood zones. In 2018, the onset of long rains was early in the first part of March compared to the normal onset in the second part of March.

The cumulative amount of rains received during the season amounted to 931 mm, which was over 350 percent of normal long rains as shown in figure 4.

However, there have been constant fluctuations in the volume of rainfall in the area since 2000. Changes in time explained a 6.31% variation in volume of rainfall in the area (Ezenwa et al. 2018). This increase in rainfall has resulted to increased extreme whether events, to include drought, number of heat stress days and floods particularly in the first rainfall season.

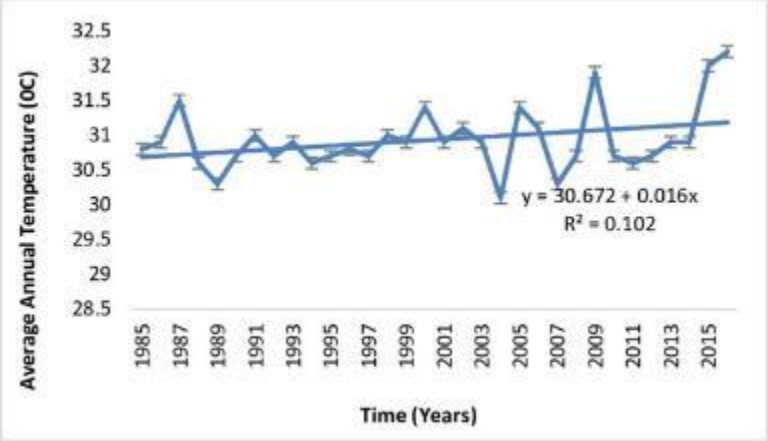

Figure 3: *Mean Variations in the annual temperature in Baringo County, Kenya Temperature Trend:*

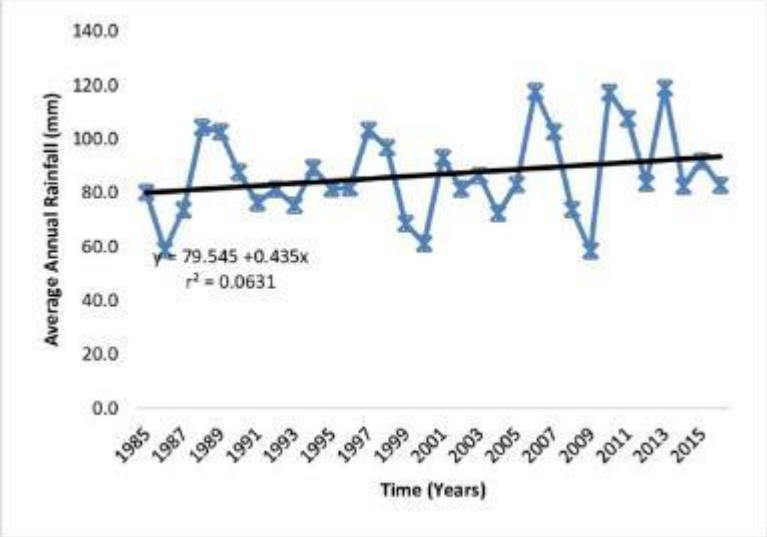

Figure 4: *Rainfall Trends in Baringo county (1985 – 2015)* Source (*Ezenwa et al. 2018)*)

1.6 Impacts of Climate Change in Baringo County

The county is vulnerable to various climate related hazards including drought, floods, forest fires and landslides, which all pose a risk to agricultural production in the county. Water shortages for domestic and agricultural use, including for livestock, are common in some of the drier parts of the county such as the Lake Baringo-Bogoria basin, parts of Kerio Valley, Mogotio, the western slopes of Ng'elecha (Mochongoi) and the entire area of East Pokot (Kollowa to Tangulbei) (WFP, 2016). Projections for the period 2021-2065 indicate the likelihood of increased heat stress, prolonged moisture stress and increasingly variable rainfall. The population in the Lowlands are more vulnerable to floods, drought, and high temperatures. The socio-economic factors that exacerbate vulnerability to climate hazards include; high poverty and illiteracy levels, communal land tenure system, poor infrastructure, insecurity, low technology adoption, high input prices, and undeveloped markets.

Women, Pro-poor and children are most vulnerable to climate hazards despite the women providing the highest family labour for livestock production and crop production to some extent. The impacts from such hazards include; increased household burden for women, food and nutritional insecurity for children and lack of alternative sources of income and productive assets for use in income generating activities for the youth.

Baringo county residents observe that there has been climate change manifested through decreased rainfall amounts, erratic and unreliable rains, increasing temperature, and increased

frequency of droughts and floods over time. The causes of this climate change are associated with human activities such as deforestation, charcoal burning, overstocking, inadequate conservation of soil and water, and massive deforestation in the county as well as other counties that serve as catchment areas for the region. These activities have resulted to the; drying up of water resources, frequent droughts and floods, erratic and unreliable rains, soil degradation, emergence of invasive species such as, water hyacinth, *Prosopis juliflora,* Dodonea *aquitifolia*, loss of biodiversity, resource conflict, human wildlife conflict and emergence of new diseases and pests. Examples of pests are desert locusts, tsetse flies and Tuta absoluta that affected Perkerra Irrigation Scheme in Marigat in 2014 (KNA, 2014).

The consequences of climate change affect the livelihoods of the people of Baringo in various ways. Heavy rainfall and flooding cause damage to crops and hamper income-generating activities such as renting farm equipment, resulting in a general decline in income. Food security is hard to achieve due to poor harvests and reduction in food availability. High temperatures affect dairy production as they lead to poor body condition and even death of animals hence loss of income. Baringo County faces several risks that are associated with climate variability and change.

1.7 Contribution to Climate Change by the County

Kenya has little historical or current responsibility for global climate change; the country's GHG emissions represent less than 1 per cent of the total global emissions. Nonetheless, the amount of greenhouse gases (GHGs) that humans release into the atmosphere has increased every year since the Industrial Revolution, and is now at disturbing levels. As carbon dioxide and other GHGs build up in the atmosphere, they trap heat, which causes climate change. While adaptation is the priority for Kenya, action to reduce GHG emissions projected to increase due to population and economic growth is needed. Kenya's mitigation or low-carbon actions seek to help to keep GHG emissions.

Actions in the six mitigation sectors set out in the UNFCCC; agriculture, energy, forestry, industry, transport, and waste, lead to lower emissions than in the projected baseline, and could help meet Kenya's mitigation Nationally Determined Contribution (NDC). The forestry sector

has large potential to reduce GHG emissions in Kenya, because forests act as “sinks” through carbon sequestration.

Implementation of climate change actions in the county

The Baringo County Government has made substantial progress in implementing actions related to climate change adaptation and mitigation in partnership with the national government and development partners to reduce climate change-related vulnerabilities, and build adaptive capacity of the communities, Emphasis being on preparedness and response actions. On legal formalities, the county has formulated and approved the Baringo County Climate Change policy and its subsequent regulation. In addition a Baringo County climate Change act, 2022, has been passed into law through a Gazette supplement No 3

Other related policies, Bills and Plans Include;

- Baringo County sustainable charcoal production bill, 2014
- Baringo County Polythene materials control and management Bill, 2014.
- Baringo County Conservancies Fund Management Bill, 2021 (Draft)
- Lake Bogoria Ecosystem management plan 2022-2027
- Baringo county Conservancies climate Change adaptation and mitigation strategy, 2022-2027
- Baringo County Climate Change Action plan 2023-2027.

Climate Change Directorate has been established which provides for the regulatory and institutional framework for enhanced response to climate change. It also provides for the mainstreaming of approaches for low carbon climate resilient development as well as establishment of the County climate change institutional structures.

1.7.1 Progress on adaptation

Adaptation actions include; irrigation projects, enhanced access to climate information services, providing grants for smallholder farmers to invest in resources that increase their climate

resilience through climate smart agriculture Programme (KSCAP), capacity building of government officers and the communities, water management, environmental management, mainstreaming of climate change in plans and programmes,

1.7.2 Progress on mitigation

While reducing GHG emissions is critical, the county prioritized mitigation actions that target both short and long-term impact. An example is in the forestry sector, Kenya Forestry Service (KFS) worked with the County Government and private landholders to plant trees, and developed actions on the Reduction of Emissions from Deforestation and forest Degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (REDD+)

Electricity generation from geothermal energy sources in Paka, Silale and Korossi in Tiaty Sub County has reduced GHG emissions, and lessened the vulnerability of the energy sector to climate change. Other energy projects include; mini-grids, biogas, biomass and solar photovoltaic systems for off-grid utility.

Reporting on climate actions needs to account for devolution and the role of state departments and Counties, as set out in the National *Climate Change Act,2016.* This will enhance successful delivery of NCCAPs.

There is also a requirement of robust monitoring, reporting and verification (MRV) systems and submission by all countries. All countries are to prepare National Adaptation Plans (NAPs).

Monitoring the strategy implementation will involve the following;

- Analysis / Reporting: Information and data obtained on progress of implementation will be obtained from the various sector's reports, analyzed and documented on a quarterly and annual basis.
- Generate of periodic summaries for reporting as well as for assessing the rate of indicator achievement, based on milestones and measurable outputs.
- Identify low carbon development strategies and coordinate related measurement, reporting and verification; develop and coordinate strategies for building resilience;

- Formulate and implement a county monitoring, evaluation and reporting framework for climate change response;

1.8 The Political, Economic, Social, Technological, Environmental, and Legal Situation

Effective delivery of *BCCCAP 2023-2027* requires a supportive political, economic, social, technological, environmental, and legal environment. All these are all currently favorable, at all levels of the county government leadership in a bid towards supporting implementation of climate change actions.

CHAPTER 2

2.0 LEGISLATIVE, INSTITUTIONAL AND POLICY FRAMEWORK

2.1 Introduction

In recognition of the challenges posed by climate change, Kenya has enacted various policies, legislation, and strategies to address them and meet international obligations. Thus, there is need for the county to expedite formulation of comprehensive climate change policy and legislative framework that creates, or sets out the mandate of a leading institution that will spearhead the county's efforts in climate change adaptation and mitigation. This will make it possible to mainstream climate change into all sectors of the Baringo economy, as reflected in the National Climate Change Response Strategy and the Vision 2030.

2.2 International Policy Framework

2.2.1 United Nations Framework Convention on Climate Change (UNFCCC)

The UNFCCC recognizes the importance of involving local communities in the fight against climate change. Locally led climate action is about empowering communities to assess climate risks and identify socially inclusive solutions that are tailored to local needs and priorities. This approach strengthens systems and capacities for locally driven climate action and supports partnerships between governments, communities, and civil society. The UNFCCC supports this by providing a platform for dialogue and collaboration. For example, the UNFCCC has been involved in initiatives that respond to climate change at the local level, integrating climate change adaptation into local governments' planning and budgeting systems in a participatory and gender-sensitive manner, and increasing the amount of finance available to local governments for climate change adaptation. Kenya is a signatory to the UNFCCC and as set out in Article 2(6) of the Constitution of Kenya (2010), now forms part of the law of Kenya.

2.2.2 UN 2030 global agenda on Sustainable Development Goals (SDG)

This SDG 13 on climate action recognizes the increasing frequency and intensity of extreme weather events such as heat waves, droughts, floods, aggravating water management problems, reducing agricultural production and food security, increasing health risks, damaging critical infrastructure and interrupting the provision of basic services such water and sanitation, education, energy and transport as a result of climate change. The SDG gives a number of targets that relate to this PCRA in addressing the effects of climate change. These targets include: target 13.1: strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries; target 13.2: integrate climate change measures into national policies, strategies and planning; and target 13.3: improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

2.3 Regional Policy Frameworks

2.3.1. African Union's Agenda 2063

The is a strategic framework for transforming Africa into a global powerhouse of the future. It aims to deliver on Africa's goal for inclusive and sustainable development. Climate change action is an integral part of this agenda. The African Union recognizes that climate-resilient communities and economies are essential to achieving the continental vision for an integrated, prosperous, and peaceful Africa. To support this vision, the African Union has developed the Climate Change and Resilient Development Strategy and Action Plan (2022-2032).

2.3.2. African Union Climate Change and Resilient Development Strategy and Action Plan (2022-2032)

This strategy outlines principles, priorities, and action areas for enhanced climate cooperation and long-term, climate-resilient development. It provides a framework for harmonized and coordinated actions to respond to the impacts of climate change, supporting planning for the continent's low-emission future. The strategy emphasizes the importance of supporting the most vulnerable communities and groups, recognizing that women and youth face challenges in responding to climate impacts but also play a critical role as change agents driving climate responses at local, national, sub-regional, and continental levels.

2.3.3. East African Community (EAC) Climate Change Master Plan (2011 - 2031)

The Climate Change Master Plan provides a long-term vision and a basis for Partner States to operationalize a comprehensive framework for adapting to and mitigating climate change in line with the EAC Protocol on Environment and Natural Resources Management and with international climate change agreements. The main regional issues which have been identified and prioritized by the EAC Partner States, as being vulnerable to climate change are:

Agriculture (crops, livestock, and fisheries) and Food Security

2.3.4. EAC Climate Finance Access and Mobilization Strategy

The Climate Finance Access and Mobilization Strategy sets out a strategic framework and key actions for addressing common barriers and solutions to enable the upscaling of climate finance collaboratively for and across all Partner States. The strategy includes four strategic areas: Strengthening capacity-building to enhance national and regional climate finance skills; Enhancing capacity and mechanisms at national and regional level for the coordination, development, and implementation of mitigation and adaptation projects or development projects with climate change co-benefits.

2.4. National and County Policy and Legislative Framework

Kenya has integrated climate considerations into Legal and Governance instruments for some time. There have been notably, progress made in planning and implementing policies, projects and programs in key economic sectors to align Kenya with the international community's approach to reducing greenhouse gas emissions and promote climate resilience.

2.4.1. Kenya Constitution 2010

Article 42 of the Kenya Constitution 2010, which deals with issues related to the environment, and advocates for the right to a clean and healthy environment for all citizens, this includes the right to have an environment protected for the benefit of the present and future generations.

2.4.2. Kenya Kwanza Government manifesto

The report is grounded on the commitment to Kenya's development aspirations, supporting the delivery of the "Kenya Kwanza" Government Manifesto, Key issues. Climate commitment to reduce emissions by 32 percent relative to "business as usual" by 2030 through Climate change impact mitigation, adaptation and resilience enhancement. The Kenya Kwanza Government will carry out the Constitutional mandate to ensure at least 10 percent land area forest cover. The Government is committed to mainstreaming ecological sustainable development to address climate change impacts. The Kenya Kwanza approach to climate action comprises Bottom up 3P (people, planet profit) solutions. Priority value chains under the 3P includes; biomass energy (woodfuel), agroforestry, solid waste management.

2.4.3. National climate change action plan (NCCAP)

This National Climate Change Action Plan (NCCAP) 2018-2022 is a five-year plan to steer Kenya's climate change action. The Plan derives from the Climate Change Act (Number 11 of 2016), which requires the Government of Kenya (GoK) to develop Action Plans to guide the mainstreaming of climate change into sector functions. NCCAP 2018-2022 furthers the achievement of Kenya's development goals by providing mechanisms to realize low carbon climate resilient development. It emphasizes sustainability, while prioritizing adaptation and enhanced climate resilience for vulnerable groups, including women, youth, persons with disabilities, and marginalized and minority communities. Seven priority areas underpin NCCAP 2018- 2022; Disaster Risk Management; Food and Nutrition Security; Water and the Blue Economy; Forestry; Wildlife, and Tourism; Health, Sanitation, and Human Settlements; Manufacturing; and Energy and Transport. Through these priority areas, climate change action is aligned to the Government's Sustainable Development Goals.

2.4.4. National Rangelands management policy

The main objective of this policy is to provide a coherent and practical framework for the implementation and realization of a new vision for ASAL development in Kenya.

2.4.5. Energy policy, 2019

The main objective of this policy is to enhance climate change mitigation by encouraging the use of energy efficient equipment and renewable energy sources.

2.4.6. Baringo County Integrated Development Plan 2022-2027

The 3rd Generation CIDP is the county master plan for development and has mainstreamed climate change in the following key areas. The plan takes cognizance of the drivers of climate change in the county and its impacts on the developmental aspirations as set out in the CIDP. The CIDP provides deliberate measures geared towards climate change adaptation and mitigation strategies, including environmental conservation education and awareness programmes; sensitization and enforcement of environmental law; harmonization of environmental conservation laws; and promotion of renewable energy and energy saving devices, resilience building mechanisms including a proactive approach to Disaster Risk Reduction.

2.4.7. The Baringo County Climate Change Adaptation and Mitigation Plan 2018-2022

Baringo County Disaster Risk Management Policy, 2019

The Policy gives responsibilities to County departments to mainstream DRM and integrate Climate Change Mitigation and adaptation, and provides a policy and institutional framework to promote linkages between disaster risk management and sustainable development for reduction of vulnerability to hazards and disasters. It ensures proactive management of conflict resolution and peace-building efforts in the county and makes available sensitization, awareness creation and functional literacy to the public for disaster management mainstream DRM in policy, plans, programmes and budgets in all levels and sectors.

2.4.8. Draft Baringo County Agriculture Policy, 2017

The policy acknowledges the climate sensitive nature of agricultural systems in the county, due to its extensive reliance on natural systems such as rain fed crops and pasture. The policy provides for strategies on adaptation to climate change including; mechanisms for investing in irrigation and irrigation infrastructure such as, water harvesting and conservation. It cascades and prioritizes implementation of the national climate change action plan, promotes adoption of climate change research findings relevant to crops, livestock, fisheries and early warning, response and preparedness. It promotes adoption of climate-smart agricultural approaches and promotion of climate financing and broadens mechanisms to attract investments in climate-smart agricultural practices along the commodity product value-chains.

2.4.9. Social protection and Gender policy for Baringo

This policy provides a framework for the government to address the current gender inequalities in many spheres of national and County development in regard to climate issues, given the vital role that women play in natural resource use and management.

2.5. Climate Change Legislations at the County level

The county has established policies, legislation and institutions that provide a framework for climate change related governance. A county executive committee member and chief officer run the department of environment, natural resources, tourism and wildlife. The department also has a climate change unit with a director. Climate Change mainstreaming brings on board institutions, and Departments that play a greater role in Climate Change Mitigation including the Department of Water and Irrigation, Department of Agriculture, livestock and Fisheries, Directorate of Disaster Risk Management among others. The climate change action at the county is provided under the following frameworks;

2.5.1. Lake Bogoria National Reserve Management Plan (2019-2029)

This is a ten year period for Lake Bogoria National Reserve developed in accordance with Section 44 of the Fifth Schedule of the Wildlife Conservation and Management Act 2013.

2.5.2. Climate Change Act 2016

The implementation of the Climate Change Act commenced in May 2016. The Act aims to strengthen climate change governance coordination structures. It outlines key climate change duties of public and private sector entities, and recognizes the complementary roles of national and county governments towards addressing climate change. The Act also establishes a high-level National Climate Change Council chaired by the President; a Climate Change Directorate as the lead technical agency on climate change affairs; climate change units in all Ministries, Counties, Departments and Agencies (MCDAs) and a Climate Change Fund as a financing mechanism for priority climate change actions/interventions. Further, the Act establishes a scheme for the recognition and incentivisation of private entities' efforts towards addressing climate change.

The Act obligates national and county governments to mainstream climate change across all sectors of the economy. In this regard, the PCRA process provides means for the mainstreaming climate change concerns across all sectors through participatory approaches.

2.5.3. The Baringo County Climate Change Act, 2022

Undergoing the Legislative process to, among others, facilitate community initiated Climate Change Adaptation and Mitigation activities; planning for Climate Change Adaptation and Mitigation in the County planning and budgetary framework for resource mobilization from national and international entities, the National Government, the County Government and other relevant organizations.

2.5.4. Baringo County Climate Change Fund Regulations, 2023

Pursuant to the Public Finance Management, Act 2012 for initiating and coordinating financing of Climate Change Adaptation and Mitigation activities at the community level;

CHAPTER 3

PRIORITY CLIMATE CHANGE ACTIONS FOR 2022-2027

3.1 Identification of Priority Climate Change Actions

BCCCAP 2022-2027 takes cognizance of the impacts of climate change on the County's socio-economic sectors. It identifies strategic areas where climate change action are linked to over the next five years in the county and national development Agenda recognizing that climate change could limit the achievement of the Agenda in the County. The climate-related risks affecting the various sectors in Baringo include; drought, floods, high temperatures, erratic rainfall and uncertainty in the rainfall season onset and duration. Projections for the period 2021- 2065 indicate the likelihood of increased heat stress, prolonged moisture stress and increasingly variable rainfall. The population in the Lowlands are more vulnerable to floods, drought, and high temperatures. Examples of negative impacts of climate change are the destruction of tens of thousands of hectares of crops, submerging of institutional and individual infrastructures, displacement of people and loss of livestock in the floods of May 2019 – June 2020 along the Lakes Baringo, 94 and Bogoria. There was an increase from 143.6 km^2 in January 2010 to a high of 219.8 km^2 in December 2014, in the areas around Lake Baringo. There have been cycles where droughts interposed with floods in, for example, 2018, 2019 and 2020. The socio-economic factors that exacerbate vulnerability to climate hazards include; high poverty and illiteracy levels, communal land tenure system, poor infrastructure, insecurity, low technology adoption, high dependence on nature based enterprises that is livestock keeping and rain fed crop farming, tourism among others.

Adaptation actions prioritized in BCCCAP 2022-2027 address the negative effects of climate change on vulnerable groups, including children, women, older members of society, pastoralists, persons with disabilities, the youth, and members of minority and marginalized communities. The actions will be undertaken, to limit GHG emissions, to ensure that the County contributes to enable the country achieve its National Designated Contribution (NDC) under the *Paris Agreement* of reducing GHG emissions by 35% by 2030. The mainstreaming of climate change actions in Third Medium Term Plan (MTP3) and in the 2nd and 3rd generation CIDPs is to ensure consideration in the county and all relevant sectors.

3.2 Priority Climate Change Actions

This section outlines the priority climate change actions envisaged in BCCCAP 2022-2027 for implementation in Baringo. The climate change actions directed towards specific functions in line with the devolved service areas are as highlighted below.

- Disaster Risk Management - Response measures to address drought, floods, and other climate-driven disasters;(reduced incidences of climate related water borne diseases)
- Food and Nutrition Security – ensure availability, accessibility and affordability of safe and health food amidst climate change effects (agriculture, including crop and animal husbandry; plant and animal disease control; and fisheries;
- Water Sufficiency and accessibility– comprehensive review and subsequent formulation and implementation of policy and regulatory frameworks, assess the resilience of major water resources and infrastructures, manage supply and demand, manage water quality and promote conservation.
- Environment and ecosystem stability, – ensure ecosystem resilience and environmental stability through protection and rehabilitation of critical ecosystems and restoration of ecological services. *(wildlife, tourism, forestry, soil)(priority to be given to the management of the proliferation of invasive species in the county).-(develop strategies to enhance the counties capacity to engage in carbon market activities, strengthen the viability of domestic carbon asset production & increase access to international carbon credit markets)*
- Solid waste management related adaptation– waste management practices contribute to Green House Gases (GHGs) both directly and indirectly. Solid waste management practices would be incorporate climate change related priorities.
- Green and Renewable Energy – create opportunities for investment and development in green and renewable energy sources; promote the use of energy efficient techniques to reduce household and institutional demand on biomass energy and consequent reduction in GHG emissions.

3.3 Climate Change Priority 1: Disaster (Drought) Risk Management)

3.4 Climate Change Priority 1: Disaster (Drought) Risk Management

Climate-related Hazards, such as drought impacts negatively on the society and economy of Baringo County. Impacts of climate-related disasters in Baringo at the household levels are food insecurity, human insecurity such as cattle rustling and resource based conflicts, increased food and fuel prices.

At both the national and county government level, scarce government resources are re-allocated to address the impacts of drought, at the expense of social programmes, such as health and education.

The cyclical nature of drought disasters, and the incomplete recovery from them, means that some households have become increasingly vulnerable as they lose their ability to spring back. Prolonged droughts lead to crop failure, shrinking of productive crop areas, and loss of livestock, which results to reduced food security and malnutrition. The most affected are pregnant women, lactating mothers, children, People with Disability (PWDs) and the elderly. Droughts also increase water scarcity, with negative impacts for communities, especially for women and girls who have to travel long distances in search of water and have less water for their hygiene. Droughts also mean that women have to work harder to feed and take care of their families and, take up roles that used to be the preserve of men, who often migrate to take up paid work in urban areas. The climate change actions prioritized under BCCCAP 2022-2027 seek to manage climate-related disasters to result in:

Adaptation - Improved ability of the county, vulnerable, marginalized and minority groups; to cope with effects of climate disasters and shocks like droughts and floods through strengthening.

In order to reduce risks that result from climate-related disasters, such as droughts and floods, to communities and infrastructure, BCCCAP 2022 -2027 intends to promote the following;

- Preparedness and Early Warning Programmes through EWS gathering, analysis and dissemination and community sensitization on EWS
- Mitigation and prevention programmes training, vulnerability analysis, building codes, zoning and land use management, preventive health care and exposures.

- Response and emergency initiatives: Relief food and NFIs assistance, disaster assessments, EMS, shelter materials, search and rescue
- Recovery and rehabilitation by supporting rehabilitation and reconstruction of livelihoods, infrastructure etc,
- DRM Sector plans, policies and legislations by developing critical policy documents and legislations to guide effective DRM programming
- Review of contingency plan (drought and flood).

Sustainable Development – BCCCAP 2022 -2027 promotes environmental protection, conservation of natural resources, social protection and equality through public participation so as to enhance community ownership of intended interventions.

To track progress of interventions, the Act shall outline the Monitoring and evaluation Approaches for the DRM.

3.5 Climate Change Priority 2: Food and Nutrition Security

Agriculture is the mainstay and primary source of livelihoods in Baringo County, with livestock and crop farming being the major economic activities and providing income and employment for 80% of the population. Mixed farming and pastoralism dominate the highlands and lowlands respectively, while other activities include beekeeping, aquaculture and fishing from Lake Baringo.

The contributions of youth-, male-, and female-headed households in crop activities are 53, 23, and 20% respectively while those in livestock activities are 27, 51 and 19% respectively. Fishing activities are mostly in male-headed households and contribute 20% of household incomes. The agriculture sector contributed 58% of the County GDP in 2017. The sector provides about 80% of total employment in Baringo, and supports over 90% of the rural vulnerable population.

The sector is highly susceptible to climate vagaries, including temperature rise, changes in precipitations, and extreme climate events. Climate change has the potential to prevent achievement on County food and nutrition security. Dry weather conditions in 2017, 2020 and 2021 for examples; have led to declines in the production of most agricultural commodities in Baringo County.

Climate change has affected pastoralists by reducing pasture and availability of forage, emergence of invasive species,, degradation of the environment, and increased poverty. Recurring droughts have forced an estimated 50% of livestock owners out of pastoralism in the past 20 years in the County, especially along the lowlands. Fishing communities report that increasing temperatures due to climate change impact fish breeding and fish distribution especially in Lake Baringo.

Most climate change-response actions aimed at increasing food security take place in the agriculture sector, including action relating to crops, livestock and fisheries.

Given its reliance on weather, the already limited agriculture production will endure the most of climate variability and change. Interventions in the sector to achieve improved food security and strengthening communities' livelihoods include:

3.4.1 Agriculture

- Strengthen the capacity of smallholder farmers to undertake commercialized agriculture in the county.
- Promotion of agricultural extension, research and development to improve farmer's knowledge on crop production
- Farm input subsidy and support to improve farmers' resource capacity for improved crop production
- Enhance crop diversification and farmers resilience through promotion of fruit trees and vegetables
- Pest control and management to reduced pre-harvest loss through integrated pest management practices.
- Post-harvest management

3.4.2 Irrigation and Land reclamation

Irrigation development, operation and maintenance through;

- enhanced water use efficiency, increased crop productivity through development of new irrigation schemes, repair and use of appropriate irrigation technologies (dam liners, water pumps, pumps, drip lines);

- protection of irrigation structures through construction of flood control structures to protect irrigation infrastructures;
- utilization of ground and surface water for increased crop production through irrigation
- Increase of land for crop and pasture production through mapping of potential areas, survey and design and construction of spate irrigation schemes
- Reclamation of degraded lands and putting it in to sustainable use through crop and pasture production
- Increased crop production through soil and water conservation

3.4.3 Policies and legislation

- Create necessary legal, institutional and regulatory framework for agriculture through development of agriculture policy,
- Establishment of county water harvesting and storage policy and accompanying sustainable water use strategies and legislation
- Promote joint planning, coordination, implementation and administration of county land reclamation, irrigation and agricultural activities synergy in land rehabilitation and reclamation efforts
- Asset creation through soil and water conservation, rainwater harvesting and management.
- Increased land for agricultural production, improved diversification of food and income sources for communities and households.
- Create climate-resilient asset and knowledge and skills transfer to promote resilience to shocks and improve nutrition
- Community members use and maintain climate smart assets in order to enhance their resilience to shocks
- Enhance fish farming by enacting fisheries policies and regulation

3.4.4 Fisheries programs

Impact of climate change will reduce fish production; fish catch and threaten the livelihoods of the fisher-folk who entirely depend on fish. The intervention includes:

- Development of fisheries value chain, market access and linkages for increased food, incomes and skill development
- Fisheries information, extension services, training facilities and skill development
- Development of fish infrastructure: Improve fish quality, hygiene and safety, establish cold storage facility to reduce post-harvest losses
- Fisheries resources management/ monitoring control and surveillance to enhance sustainable exploitation of fish resources
- Exploit economic activities on blue economy such as fish cage farming, Traditional fishing, and Eco tourism.

3.4.5 Livestock production services

Development and improvement of livestock productivity through:

- Pasture reseeding- on farms
- Strategic livestock feed stores
- Livestock diversification and breed improvement through establishment of breed improvement station.
- Livestock risk management (re-stocking, off-take, response, water trucking, livestock insurance)
- Rangeland management and Restoration, pasture reseeding, seed bulking, hay production, resource conservation and mapping of wet and dry zones and migratory routes.
- Development of livestock value chain, market access, linkages and bench marking/exposure for increased food, income and skills development
- Livestock production extension services through sharing of technical information between professionals and end users
- Establishment of Feed lot systems,

3.4.6 Safeguard human and veterinary health

- Livestock health management through:
- Effective disease and vector control (vaccination and treatment and response to disease emergencies)
- Establishment of livestock disease control center.
- Enhance the capacity of the livestock facilities management committee.
- Livestock disease control and monitoring through establishment of surveillance system along with community disease reporting.
- Veterinary public health services through improved control of zoonotic diseases and proper waste disposal/incinerators.

3.5 Climate Change Priority 3: Water Sufficiency and accessibility

Baringo is a water scarce county. BCCCAP 2022-2027 addresses one of County's major challenges, which is water scarcity. Climate change effects on precipitation and infiltration has exacerbated decline in access to quality water in the county. With immense potential to undermine achievement of sustainable development and vision 2030. The sustainable resource use and economic development of the blue economy (aquatic, lakes, rivers and underground water) has links to water sufficiency and accessibility.

3.5.1 Water supply and storage

- Design and establishment of new water supply, rehabilitation, expansion, and maintenance of existing rural, municipality and urban water supply systems
- Hydrological surveys, Drilling and equipping of boreholes
- Operationalization and maintenance of community water points
- Design, construction, and maintenance of surface water harvesting infrastructure, storage and underground water recharge including shallow wells, sub-surface dams and mega water pans for rural households and livestock.
- Design, development, maintenance and protection of natural spring infrastructure
- Upgrading of high yielding boreholes to solar or wind power or hybrid
- Construction and Rehabilitation of existing livestock water points
- Enhance water supply infrastructure/facilities for water trucking in times of drought.

- Establishment of water storage facilities within strategic livestock grazing zone and stock routes for pastoralists

3.5.2 Water Resources Management

- Setting up Community structures on water resource management
- Promotion of best practices in water resource management to ensure the supply of quality water
- Demarcation, protection, and rehabilitation of riparian and degraded catchment areas
- Enhancing Community participation in management of water resources though community sensitization on knowledge and Management of water resources and catchments
- Empowerment of women and youth to participate in water resource management
- Training of Water Resource Users Associations on management, conservation, and protection
- Establishment of mechanisms that promote peaceful co-existence among communities in water resource management

3.5.3 Water governance, planning and coordination

- Finalize, and disseminate water policy, bill and strategic plans
- Operationalize county legislations. (Water policy, bills and plans)
- Develop guidelines for rainwater harvesting and storm management conveyance system, sewerage system and treatment plants in built-up areas
- Develop water resource master plan
- Strengthen capacity on water programming, innovative technologies and operation and maintenance

3.6 Climate Change Priority 4: Environment and ecosystem stability

Ecosystems are fast changing in response to climate change and other global change drivers. Climate change threats and challenges to ecosystems include temperature changes; changes in precipitation; carbon dioxide concentration; water balance and frequency and magnitude of extreme events. Climate change also interacts with other pressures on ecosystems, including

degradation, deforestation and land fragmentation. There is a need to understand the ecological dynamics of these climate impacts, to identify hotspots of vulnerability and resilience and to identify management interventions that may assist biosphere resilience to climate change. Through ecosystem management and careful evidence-based restoration and stewardship, ecosystems can also assist in the mitigation of, and adaptation to, climate change. Local actions to protect or restore ecosystem complexity and structure can increase resilience to extreme events.

The county has several fragile ecosystems that include farmlands (degradation involves vegetation decline, soil salinization and loss of soil carbon), freshwater (wetlands, rivers, lakes and other inland waters), ASAL/rangelands/Conservancies (grasslands, woodlands, savannahs, shrub lands), hilltops, forest and urban (towns, habitats in green spaces) ecosystems, which provide multiple benefits. These ecosystems vary in their sensitivity and response to climate change because of complex interactions among organisms, disturbance and other stressors. Changes in natural ecosystems threaten biodiversity, and have implications for food production.

There exists opportunities to assist and manage ecosystems in order to enhance ecological and/or societal resilience to climate change including appropriate conservation and restoration approaches. BCCCAP 2022-2027 will contribute to the restoration, preservation, and sustainable management of the environment and valuable but fragile ecosystems that play an essential role in county's economy. Proposed priority actions for ecosystem restoration and management will include:

- Restoration/rehabilitation of degraded lands, forests, riparian areas, wetlands, rangelands/conservancies.
- Management of the proliferation of invasive species particularly prosopis juliflora and other identified invasive species in the county,
- Promotion of farmer managed natural regeneration (FMNR) and agroforestry by small holder farmers
- Establishment and sustainable management of community and county forests
- Promotion of integrated water resource management systems.
- Promotion of Livelihood diversification

3.7 Climate Change Priority 5: Solid waste management related adaptation

Rapid population growth and urbanization results in an increase in the solid waste generated. With the planned industrial development in the country, Kenya Vision 2030 recognizes the need for efficient and sustainable waste management systems. In recognition of this, the Baringo County identifies solid waste management as a major component for implementation in the CIDP. Baringo County faces unsustainable management of waste. Waste is disposed in unregulated dumps or openly burned in the county. Beside this creating serious health, safety and environmental effects it contributes to climate change through methane generation. The causes of unsustainable solid waste management in the county are slow adoption of modern technology options, inadequate technical competency in SWM, low funding, inadequate awareness and knowledge, increased waste generation, poor state of access roads, poor waste disposal methods and inadequate solid waste management policy and legal framework.

Priority areas to address waste management will focus on actions that address these challenges and that address the entire lifecycle of waste—from generation to collection and transportation, and finally treatment and disposal. Based on best practices for achieving sustainable SWM the following objectives will guide the priority actions.

- **Infrastructure:** The County will provide capital investments to build or upgrade waste sorting and treatment facilities, close dumps, construct or refurbish solid waste handling facilities, and provide bins, dumpsters, trucks and transfer stations.
- **Legal structures and institutions**: develop sound policy and regulatory measures and enhance coordination in the solid waste management sector.
- **Financial sustainability**: design of taxes and fee structures, and long-term planning, and projects that improve waste cost containment and recovery.
- **Citizen engagement**: support designing incentives and awareness systems to motivate waste reduction, source-separation and reuse.
- **Climate change and the environment:** promote environmentally sound waste disposal. Support greenhouse gas mitigation through food loss and waste reduction, organic waste diversion, and the adoption of treatment and disposal technologies that capture biogas and landfill gas. Support resilience by reducing waste disposal in waterways, addressing debris management, and safeguarding infrastructure against flooding.

- **Health and safety**: Improve public health and livelihoods by reducing open burning, mitigating pest and disease vector spreading.

3.8 Climate Change Priority 6: Green and Renewable Energy

About 95% of Baringo citizens rely on biomass (fuel wood and charcoal) energy for cooking, which is a significant driver of deforestation and forest degradation, magnifying the effects of climate change in the County. The use of raw biomass fuels for cooking is a pressing health, social, and environmental problem. The priority actions in this sector will focus on.

- Creating an enabling environment for investment in green and renewable energy.
- Promote the use of energy efficient techniques for households and institutions.
- Promote innovations and technology development investment in clean cooking energy.

3.9 Climate Change Priority 7: Sensitive Health Risks

Climate change is already impacting health in a myriad ways including leading to deaths and illness from increasingly frequent extreme weather events such: Heat waves; storms; floods; disruption of food systems; increase in zoonotic and food borne diseases; and water , sanitation and vector borne diseases and mental health issues.

Climate change is undermining social determinants of good health such as livelihoods, quality and access to quality health care, and also social support structures. This climate change sensitive health risks proportionately affects mostly vulnerable and disadvantaged which include women, children, ethnic minorities, poor communities' displaced persons, older population and those with underlying health conditions. However climate change impacts both directly and indirectly and is strongly mediated by environmental social and public health determinants.

Priority areas intervention:

- Establish Early warning systems and medical emergency response and preparedness
- sensitizing public health on vector control and prevention strategies
- Establish knowledge management HUB ob Real time data management
- Strengthen community disease surveillance teams
- Capacity building of environmental health officers and environment work force.
- Develop Flood plan management and recovery measures
- Stockpiling emergency drugs and other public health commodities.

- Develop Preparedness and evacuation plan.
- Mainstreaming and inclusivity of people living disability , children ,women and older people
- budgetary allocation for climate change mitigation
- Deploying technology and innovations on renewable energy and use of biogases, solar energy, and cycling of solid waste .through restore, recycle, and reuse of wastes.
- Develop policy, planning, designing and building standard codes.
- Improve water quality through water sampling.
- Improve public health and livelihoods by reducing open burning, mitigating pest and vectors which transmit diseases.

3.10 BARINGO COUNTY CLIMATE CHANGE ACTION PLAN

Table 1: Baringo County Climate Change Action Plan

Goals	Strategy	Activities	Target		Time frame	Estimated budget (Millions)	Sources of funds	responsibility
			location	Population				
DROUGHT RISK MANAGEMENT								
Enhanced resilience of the communities and their adaptive capacity to drough	Enhance the early warning systems on drought	Increase dissemination of EWS products coverage by 25%	Countywide	200,000	5 years	25	FLOCCA NDMA	CCU NDMA
		Participatory scenario and response planning (PSP) – Establish operational framework,	Countywide	200,000	5 year	45	FLOCCA County Government	CCU NDMA
		Enhance green and smart technologies in developing and dissemination of	Countywide	200,000	5 year	30	FLOCCA NDMA	CCU NDMA

t risks by 2033		EWS products						
		Establish two additional sentinel sites for drought Monitoring in Marginal mixed and Mixed farming livelihood zones.	Countywide	200,000	5 Year	15	FLOCCA NDMA	CCU NDMA
		Documentation and dissemination of ITK products	Countywide	200,000	5 year	15	FLOCCA NDMA	CCU NDMA
		Capacity building of EWS officers on use of emerging technologies for developing and disseminating EWS products	Countywide	20 officers	5 year	30	FLOCCA NDMA	CCU NDMA
	Enhance	Supporting county	Countywide	200,000	5 year	35	FLOCCA	CCU

	emergency and preparedness drought response capabilities by DRM Actors	emergency and preparedness operation centers					County government	County govt
		Review and update County and ward drought contingency plans	Countywide	200,000	5 year	30	FLOCCA County government	CCU NDMA
		Establish operational frameworks and undertake peer to peer review for climate change and disaster ward level committees	Countywide			15	FLOCCA County government	CCU DRM
		Undertake emergency drills and simulations	Countywide	250	5 year	30	FLOCCA County government	CCU County government

	SUB-TOTAL BUDGET					**270**		
Goal	**Strategies**	**Activities**	**Target**		**Time frame**	**Resource require (Millions)**	**Sources of funds**	**responsibility**
LIVESTOCK SECTOR			Location	Population				
Increased livestock productivity for sustainable food security and	Improvement of livestock nutrition	Procurement of pasture seeds	All wards	300,000	5 years	100	FLOCCA County government WFP KELCOP ELRP	Community WCCC CCU BCG Livestock dept
		Construction of hay sheds	1 per ward	300,000	5 years	100		Community WCCC CCU BCG Livestock dept

economic empowerment in Baringo by 2032		Capacity building on pasture management	all wards	100,000	5 Years	25	WFP KELCOP ELRP KCSAPASDS PBCG Community NG	Community WCCC CCU BCG Livestock dept
		Pasture harvesting and bailing equipment	one per sub county	50,000	5 years	35	WFP KELCOP, ELRP KCSAPASDS PBCG Community, NG	Community WCCC CCU BCG Livestock dept
		Formulate and adoption of grazing management plans	Emining, lower Kisanana, Mogotio, Upper kisanana, Saimo-soi, Saimo	60,000	5 years	10	WFP KELCOP, ELRP, KCSAP ASDSP BCG	Community, WCCC, CCU, BCG, Livestock Department

			Kipsaraman, Ribkwo, Tirioko, Mukutani, Tangulbei, Ilchamus, Koloa, Loyamorok, Silale				Community, NG	
		Livestock feed supplementation (Subsidies,	all wards	80, 000	5years	30	WFP, KELCOP, ELRP, KCSAP, ASDSP, BCG, Community	Community, WCCC, CCU, BCG, Livestock dept
	Enhance livestock emergency response programs	Enhance livestock off take programs	Baringo south (Lower Mochongoi, Ilchamus, Mukutani, Marigat)	120,832	5 years	50	WFP, KELCOP, ELRP, KCSAP, ASDSP, BCG,	Community, WCCC, CCU, BCG, Livestock Department

			Mogotio Sub County (Kisanana, Emining and Lower Mogotio) Tiaty Sub County, Baringo North (Bartabwa and Barwesa)				Community, NG	
		Undertake livestock restocking during drought recovery phase	Baringo South (Lower Mochongoi, Ilchamus, Mukutani, Marigat) Mogotio Sub County (Kisanana, Emining and lower Mogotio)	100,000	5 years	20	WFP, KELCOP, ELRP, KCSAP, ASDSP, BCG, Community, NG, Red cross, NDMA	Community, WCCC, CCU, BCG, Livestock Department

			Tiaty Sub County, Baringo North (Bartabwa and Barwesa)					
	Livestock breed improvement	AI services	Eldama Ravine Sub County, upper Mogotio, Kabartonjo, Kapropita Kabarnet, Emining, Upper Mochongoi, Ewalel Chapchap	6000	5 years	30	WFP, KELCOP, ELRP, KCSAP, ASDSP, BCG, Community, NG, Red cross, NDMA	Community, WCCC, CCU, BCG, Livestock Department
		Bull schemes (Sahiwal bulls)	Baringo south (Lower Mochongoi, Ilchamus, Mukutani, Marigat) Mogotio Sub	11,000	5 years	5	WFP, KELCOP, ELRP, KCSAP, ASDSP, BCG, Community	Community, WCCC, CCU, BCG, Livestock Department

			County (Kisanana, Emining and Lower Mogotio) Tiaty Sub County Baringo North (Bartabwa and Barwesa)				NG	
		Procurement of quality bucks and rams	Tiaty Sub County, Baringo South, Bartabwa, Barwesa, Mogotio, Kisanana, Koibatek, Lembus Parkerra	120,000	5 years	20	WFP, KELCOP, ELRP, KCSAP, ASDSP, BCG, Community, NG	Community, WCCC, CCU, BCG, Livestock dept
	Improve marketing infrastruct	Strengthening producer organizations	18 Farmer Cooperative Societies	270,000	5 years	10	WFP, KELCOP, ELRP,	Community, WCCC, CCU, BCG,

	ure and linkages						KCSAP, ASDSP, BCG, Community, NG	Livestock dept
		Rehabilitation of existing market infrastructure	Kisanana Nginyang	25,000	5 years	30	WFP, KELCOP, ELRP, KCSAP, ASDSP, BCG, Community, NG	Community, WCCC, CCU, BCG, Livestock dept
		Strengthen market information platforms	All wards	160,000	5 years	10	WFP, KELCOP, ELRP, KCSAP, ASDSP, BCG, Community, NG	Community, WCCC, CCU, BCG, Livestock dept
		Promote value	20 farmer	200,000	5 years	30	WFP,	Communit

		addition to livestock products	cooperative societies				KELCOP, ELRP, KCSAP, ASDSP, BCG, Community, NG	y, WCCC, CCU, BCG, Livestock dept
	Livestock disease control	Enhance livestock diseases surveillance	All wards	60,000	5 years	15	WFP, KELCOP, ELRP, KCSAP, ASDSP, BCG, Community, NG	Communit y, WCCC, CCU, BCG, Livestock department
		Routine vaccination programs	All wards	60,000		50	WFP, KELCOP, ELRP, KCSAP, ASDSP, BCG, Community,	Communit y, WCCC, CCU, BCG, Livestock department

							NG	
		Rehabilitation of nonfunctional dips	Mugurin, Chepyuan, Kip kitur, Chebarer, Tarabunyan, Maguyuni) RibKwo (Chepanda, Chemsic, Kositei, Kotorom,	60,000	By 2027	20	WFP, KELCOP, ELRP, KCSAP, ASDSP, BCG, Community, NG	Community, WCCC, CCU, BCG, Livestock dept
		Strengthening of dip committees	All wards	200,000	5 years	5	WFP, KELCOP, ELRP, KCSAP, ASDSP, BCG, Community, NG	Community, WCCC, CCU, BCG, Livestock dept
		Research on emerging livestock diseases (Marigat	Marigat	160,000	5 years	10	WFP, KELCOP, ELRP,	Community, WCCC, CCU, BCG,

		lab center)					KCSAP, ASDSP, BCG, Community, NG	Livestock department
	SUB-TOTAL BUDGET					**605**		
	WATER							
Goal	**Strategies**	**Activities**	**Target**		**Time frame**	**Resource require**	**Sources of funds**	**responsibility**
			Location	**Population**				
To have communities that are resilient to climate hazards by provision of	Establishment, rehabilitation and expansion of water facilities	Establishment of strategic watering points for livestock	Kolowa Silale Tirioko Churo Emining Tangulbei Ribko, Mukutani, Kisanana and Saimo Kipsarman	30,000 Livestock	5yr	30	WRA WRUA WV SHA WSP RVWB BCG	WRUA Department of Water WRA WCCPC
		Desilting of water pans	Ilchamus, Sacho, Kolowa, Bartabwa,	5000	5yrs	28	BCG WRA WRUA	WRUA Department

safe, clean and portable water for human, livestock and crop production across all livelihoods			Barwesa, Emining, Mogotio, Kisanana, Koibatek, Lembus Perkerra, Loyamork, Mukutani, Tirioko, Ribko and Silale wards				WV SHA WSP RVWB	of Water WRA WCCPC
		Repair and upgrading of strategic community	Sacho, Kolowa, Mumberes, Maji Mazuri, Barwesa, Marigat, Mogotio, Lemus Kwen, Ravine, Loyamork, Mukutani, Tirioko, Ribko	4000	5yrs	33	WRA WRUA BCG WV SHA WSP RVWB	WRUA Department of Water WRA WCCPC

			and Saimo Kipsaramani					
		Drilling and equipping of boreholes	Ilchamus, Sacho, Kolowa, Bartabwa Mumberes, Maji Mazuri, Churo, Mochongoi, Marigat, Barwesa, Emining Mogotio, Kisanana, Koibatek Lembus Perkerra Loyamork, Mukutani Tirioko, Ribko Silale, Tenges, Lembus Kwen,	6000	5ys	100	WRA WRUA GoK BCG WV SHA	WRUA Department of Water WRA WCCPC

			Tangulbei					
		Construction of water pans	Mogotio, Kolowa,Mochongoi and Sacho wards	25000		100	WRA WRUA WV SHA WSP BCG RVWB Water Towers	WRUA Department of Water WRA WCCPC
		Construction of water pans	Mumberes, Maji Mazuri, Mochongoi, Marigat,	1000	5yr	12	WRA WRUA WV SHA	WRUA Department of Water

			Kabarnet and Emining wards.				WSP RVWB	WRA WCCPC
		Spring protection and development	Mogotio, Kapropita, Lembus Kwen, Lembus Perkerra, Tangulbei, Mugutani and Kolowa wards	25 Primary Schools	5yrs	20	WRA WRUA WV SHA WSP RVWB	WRUA Department of Water WRA WCCPC
		Procurement and installation of roof water	Mogotio, Mumberes Maji Mazuri, Churo, Mochongoi, Emining, Kisanana, Tenges, Kabarnet, Kapropita, Lembus Kwen, Lembus	13,000	5ys	30	WRA WRUA WV SHA WSP RVWB	WRUA Department of Water WRA WCCPC

			Perkerra and Ravine wards					
		Pipeline extension to end users	County Wide			150	WRA WRUA WV SHA WSP RVWB	WRUA Department of Water WRA WCCPC
		Establish Emergency Water Supply Stations	30PMCs	150	5yrs	6	WRA WRUA WV SHA WSP RVWB FLLOCA	WRUA Department of Water WRA WCCPC
	Enhance water governance and management	Enact and review relevant policies, laws and regulations addressing water issues				5	WRA WRF WV SHA WSP RVWB	WRUA Department of Water WRA WCCPC

							BCG GoK	
		Strengthening of water management committees	30 Boreholes	6000	5yrs	15	WRA WRUA WV SHA WSP RVWB	WRUA Department of Water WRA WCCPC
		Solarization of water pumping systems	15 Boreholes	3000	5yrs	15	WRA WRUA WV SHA WSP RVWB	WRUA Department of Water WRA WCCPC
	Adopting use of modern technologies in designs, water	Installation of water pre-paid meters	15 Boreholes	3000	5yrs	45	WRA WRUA WV SHA WSP RVWB	WRUA Department of Water WRA WCCPC

	supply systems and water use management	Climate proofing of water infrastructures	Targeted Surface water resources	3000	5yrs	6	WRA WRUA WV SHA WSP RVWB	WRUA Department of Water WRA WCCPC
		Training of staff on emerging water structures design technologies	All Wards	30,000	5yrs	2	WRA WRUA WV SHA WSP RVWB	WRUA Department of Water WRA WCCPC
		Desalination of saline waters using appropriate technologies (Reverse osmosis)	Targeted Boreholes per Ward	600	5ys	10	WRA WRUA WV SHA WSP RVWB	WRUA Department of Water WRA WCCPC
	Enhance water treatment	Promote simple water treatment technologies at	Kolowa, Silale, Tirioko, Churo, Emining,	30,000 Livestock	5yr	20	WRA WRUA WV	WRUA Department

	at water facilities and household level	both the source and household level	Tangulbei Ribko, Mukutani, Kisanana Saimo and Kipsarman				SHA WSP RVWB	of Water WRA WCCPC
		Establishment of a surveillance system on water quality and usage	Ilchamus, Sacho, Kolowa , Bartabwa, Barwesa, Emining, Mogotio, Kisanana, Koibatek, Lembus, Perkerra, Loyamork, Mukutani, Tirioko, Ribko and Silale	5000	5yrs	10	WRA WRUA WV SHA WSP RVWB	WRUA Department of Water WRA WCCPC
		SUB-TOTAL BUDGET				**637**		

		AGRICULTURE SECTOR					Activities	
Goal	**Strategies**	**Activities**	**Target**		**Time frame**	**Estimated budget (millions)**	**Sources of funds**	**responsibility**
			Location	**Population**				
Increase food and nutrition security by 2032	Promote planting of drought tolerant crops	Procurement of planting materials and other inputs from accredited suppliers	Marigat, Ravine, Tenges, Ewalel Chapchap and Kapropita wards	18000	5years	16	Community, BCG, FLOCCA	Community, BCG, CCU
		Establishment of bulking centers for clean planting materials Value addition	Lembus Perkerra (ATC), Margat		5years	12	FFLOCCA, BCG, WFP, SHA	Community, BCG, CCU
		Promote use of certified seeds Promote utilization of	Ravine, Kapropita, Tenges, Barwessa	6000	5years	18	FFLOCCA, BCG, WFP, SHA	Community, BCG, CCU

		drought tolerant crops						
		Promote establishment of drought tolerant crop varieties	Countywide	90000	5years	36	FFLOCCA, BCG, WFP, SHA	Community, BCG, CCU
		Crop pest and disease surveillance and reporting systems	countywide	90000	5years	50	FFLOCCA, BCG, WFP, SHA,	Community, BCG, CCU
	Enhance crop pest and disease control	Capacity building of farmers on crop pest and disease management	County wide	90000	4 years	5		
		Establish plant doctor clinics	countywide	90000	5years	18	FFLOCCA, BCG, WFP, SHA	Community, BCG, CCU
		Procurement of hematic bags	countywide	90000	5years	60	FFLOCCA, BCG, WFP, SHA	Community, BCG, CCU

		Establishment of a modern strategic cereal store	Mochongoi,		3yrs	50	FFLOCCA, BCG, WFP, SHA	Community, BCG, CCU
		Formation and strengthening of farmers cooperatives	County wide	1500 members	5yrs	5	FFLOCCA, BCG, WFP, SHA	Community, BCG, CCU
		Capacity building of farmers on post-harvest management.	Mochongoi, Eldama ravine	45,000	5yrs	5	FFLOCCA, BCG, WFP, SHA	Community, BCG, CCU
	Reduce post harvesting losses	Capacity building of farmers on climate smart agricultural technologies	Margat, Ravine, Tenges, Ewalel Chapchap	12000	5yrs	12	FFLOCCA, BCG, WFP, SHA	Community, BCG, CCU

		Establishment of efficient irrigation technologies.	Mochongoi Ward	6000	5yrs	20	FLOCCA, BCG	Community, BCG, CCU
	Adoption of smart and green farming technologies	Establishment of efficient irrigation technologies.	Mochongoi Ward	6000	5yrs	20	FLOCCA, BCG	Community, BCG, CCU
SUB –TOTAL BUDGET						**327**		
HEALTH SECTOR								
Goal	**Strategies**	**Activities**	**TARGET**			**ESTIMATED budget** (Millions)	**Sources of funds**	**responsibility**
			Location	**Population**	Time frame			
	Enhance outreach programs on management of	Increase coverage of Agri nutrition programs	County wide	300,000	5 years	10	W.H.O, BCG,WFP	CCU, WCCPC, community

	malnutrition							
	Enhance disease surveillance and reporting in the county	Mapping of the disease prone localities in the county.	county wide	300,000	5 yeras	5	W.H.O, BCG,WFP	CCU, WCCPC, community
SUB –TOTAL BUDGET						**15**		
FLOODS								
Goal	**Strategies**	**Activities**	**TARGET**		**Time frame**	**Estimate costs(million)**	**Sources of funds**	**responsibility**
			Location	**Population**				

Create a flood resilient community by 2030	Application of timely early warning system on floods	Review of flood hazard maps						
		Establish a flood monitoring system	Countywide	100,000	5 years	25	FLOCCA	CCU CSG
		Establish an effective communication and dissemination on channels on flood risks	Countywide	300,000	5 years	10	FLOCCA	CCU CSG

	Restoration of flooded land	Countywide (Flood prone wards- Marigat, Ilchamus, Tangulbei, Mogotio)	300,000	5 years	30	FLOCCA	CCU CSG
Establish environmentally friendly innovations that will accelerate	Review of County flood contingency plan	Countywide	300,000	5 years	5	BCG NDMA WFP Red Cross	DRM
land use for production purposes	Reclaim lands prone to floods , Survey of lands prone to floods	Ilchamus ,Lower Mochongoi, Emining,Mogotio,Kisanana Marigat	50,000	5 years	20	WRA, FLLoCA, NDMA, Red cross	DRM, RED cross

	SUB –TOTAL BUDGET	**90**		

Environmental Degradation								
Goal(S)	**Strategy**	**Activities**	**Target**		**Time Frame**	**Budget (Ksh) (Million)**	**Sources Of Funds**	**Responsibility**
			Location	**Population**				
Reduced Flooded lands through proper environmental conservation measures to enhance sustainable livelihoods for food security in Baringo County by	Use ecosystem-based adaptation	Support establishment of community Tree Nurseries	Bartabwa Mogotio (Sirwa) Ewalel Chapchap,Kisanana, Sacho,tenges,barwesa,mochongoi	6,000	5years	10	BCG,FLLoCA, GDC, ICRAF,Local financial instituutions, KFS, KEFRI,SHA, WRI,	Community, WCCC, CCU, BCG, Livestok dept
		Promotion of Agro forestry initiatives. (Hedge row planting)	Bartabwa Mogotio (Sirwa) Ewalel Chapchap,Kisanana, Sacho,tenges,barwesa,mochongoi	50,000	5Years	30	FLLoCA BCG, GDC, ICRAF,Local financial instituutions, KFS, KEFRI,SH	Community, WCCC, CCU, BCG, Livestok dept

2050							A, WRI,	
		Planting of indigenous and exotic tree species in foresting sites (1 million tree seedlings per year)	Bartabwa Mogotio (Sirwa) Ewalel Chap chap,Kisanana, Sacho,tenges,barwesa,mochongoi	4,640 Ha	5Years	50	BCG,FLLoCA, GDC, ICRAF,Local financial instituutions, KFS, KEFRI,SHA, WRI,	Community, WCCC, CCU, BCG, Livestok dept
		Establishment and Management of conservancies sites/Ecotourism	Bartabwa Mogotio (Sirwa) Ewalel Chap chap,Kisanana, Sacho,tenges,barwesa,mochongoi	6,000	5Years	10	FLLoCA BCG,FLLoCA, GDC, ICRAF,Local financial instituutions, KFS, KEFRI,SHA, WRI,	Community, WCCC, CCU, BCG, Livestok dept
	Improving disaster risk reduction and	Support to GIS lab to create a real time data	County wide	300,000	5Year	15	FLLoCA BCG BCG,FLLo	Community, WCCC, CCU,

	management	base on climate and Non climate Hazards.					CA, GDC, ICRAF,Local financial instituutions, KFS, KEFRI,SHA, WRI,	BCG, Livestok dept
	Capacity building on ecological conservation	School and community Environmental awareness. Production of learning teaching Aids.	County wide	246,000	5 Years	5	FLLoCA BCG	Community, WCCC, CCU, BCG,
	Promote reclamation, rehabilitation & restoration of degraded areas.	Conservation of hilltops and steep slopes.	Tugen hills and ol arabel escarpment	150,000	4 years	5	FLLoCA, GDC, ICRAF,Local financial instituutions, KFS, KEFRI,SHA, WRI,	Community, WCCC, CCU, BCG,

		Mass Tree planting in degraded areas (Degraded Forests and soils, Riparian and fragile ecosystems and Catchment areas)	County wide	300	4 years	70	FLLoCA BCG, FLLoCA, GDC, ICRAF,Local financial instituutions, KFS, KEFRI,SHA, WRI,	Community, WCCC, CCU, BCG,
	Enhance sustainable management of invasive species	Implementation of invasive species management strategies (Plans) (Awareness, Uprooting, Pasture establishment, tree planting)	Marigat, Ilchamus, Mukutani Mochongoi (Lower)	15,000	4 years	5	BCG, FLLoCA, GDC, ICRAF, Local financial institutions, KFS, KEFRI,SHA, WRI	Community, WCCC, CCU, BCG,
		Development of a policy on	Marigat, Ilchamus,	15,000	5 years	3	FLLoCA BCG,	

		Sustainable management of invasive species.	Mukutani Mochongoi (Lower)				FLLoCA, GDC, ICRAF, Local financial institutions, KFS, KEFRI,SHA, WRI	
	Establish & support community conservancies	Establishment and strengthening of the community conservancies	Saimo Kipsaram, Mochongoi, Mukutani, Ilchamus,		5 years	2	FLLoCA	Community, WCCC, CCU, BCG,
	Develop and promote alternative livelihoods	-Promotion of livelihood diversification schemes/Enterprises e.g Nature based value chains,	County wide	300,000	5years	4	FLLoCA BCG, FLLoCA, GDC, ICRAF, Local financial	Community, WCCC, CCU, BCG,

							institutions, KFS, KEFRI,SHA, WRI	
	Establish & enhance opportunities for community access & investment in green businesses including carbon market	Promote the production and propagation of genetic resources for investment ventures.(Aloe, Opuntia, Sandal wood.	County wide	300,000	5 years	6	FLLoCA BCG, , GDC, ICRAF, Local financial institutions, KFS, KEFRI,SHA, WRI	Community, WCCC, CCU, BCG,
		Strengthening access and benefit sharing (ABS) scheme over genetic Resources.	County wide	300,000	5 years	1	FLLoCA , GIZ, BCG, ,Local financial institutions, KFS,KWS, KEFRI,S, WRI	Community , WCCC, CCU, BCG,

		Formulation of the legal frameworks (Policies, MATs and PICs)	County wide	300,000	5 years	3	FLLoCA BCG, , ICRAF, Local financial institutions, KFS, KEFRI,SHA, WRI	Community, WCCC, CCU, BCG,
	Promote biodiversity stability	Development of site management plans	Protected areas	30,000	5 years	1.5	FLLoCA BCG, , ICRAF, Local financial institutions, KFS, KEFRI,SHA, WRI	Community, WCCC, CCU, BCG,
		Specific Niche management	Protected areas	20,000	5 years	1	FLLoCA BCG, GDC, ICRAF, Local	Community, WCCC, CCU, BCG,

							financial instituutions, KFS, KEFRI,SHA, WRI	
		Carrying out Ecosystem species monitoring (Census and inventory Conduct research on ecosystem carrying capacity)	Protected areas	20,000	5 years	2.5	FLLoCA BCG, , GDC, ICRAF,Local financial instituutions, KFS, KEFRI,SHA, WRI	Community, WCCC, CCU, BCG,
					5 years	6	FLLoCA BCG, , GDC, ICRAF, Local financial institutions,	Community, WCCC, CCU, BCG,

							KFS, KEFRI,SHA, WRI	
		Establishment of wildlife data base (Flora and Fauna)			5 years	1.5	FLLoCA BCG, GDC, ICRAF, Local financial institutions, KFS, KEFRI,SHA, WRI	Community WCCC, CCU, BCG,
SUB –TOTAL BUDGET						**231.5**		
Grand total budget						**2,175.5**		