NAKURU COUNTY

COUNTY OF UNLIMITED OPPORTUNITIES

REPUBLIC OF KENYA

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Financing Locally-Led Climate Action (FLLoCA) Program

FEBRUARY, 2023

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NAKURU COUNTY CLIMATE CHANGE ACTION PLAN

2023-2027

Published by
Nakuru County Government (June 2023).

Reference Name
Nakuru County Climate Change Action Plan (2023-2027).

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The Chief Officer Directorate of Environment, Energy Climate Change, and Natural resources
Website: **www.http://nakuru.go.ke/departments/water/**

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Table of Contents

List of Figures

List of Tables

Foreword from the Governor Nakuru County

It is my pleasure to sign off Nakuru County's Climate Action Plan (NCCAP) that is going to strengthen the county's policy and planning framework in mitigating impacts of climate change. Through the development of the Participatory Ward Climate Actions Plans (PWCAP) and the review of the Nakuru County Climate Action Plan 2018-2022, Nakuru has once more shown its position as a leading County in Kenya in addressing the impacts of climate change.

In recent times, several sectors in Nakuru County economy including water, agriculture, livestock production, fisheries, tourism, transport, manufacturing, and energy have been affected by various negative impacts of climate change. Some of the examples include the Solai Dam tragedy in which many lives were lost in addition to the loss and destruction of property and livelihoods. We have also witnessed extensive destruction of infrastructure including roads, water reservoirs and buildings due to floods in various parts of the county.

Droughts and famine affecting communities particularly in the county's semi-arid areas have become more frequent, coupled with unpredictable rainfall patterns. This has affected agricultural and livestock production negatively thus affecting the livelihoods of many people. Climate change has also led to reduced water availability and productivity resulting in displacement of communities and widespread suffering by the population. Associated effects emanating from some to the effects such as increased health issues associated with poor sanitation due to limited water availability, reduced land productivity leading to famine in several areas.

Without commitment and voluntary action by the affected groups, climate change will derail the development agenda of Nakuru County and hamper its contribution to the National Government's BETA Agenda, the Governor' manifesto and the realization of the country's Vision 2030. Many of the negative impacts of climate change can be addressed by actions either targeting to help our people and the economy adapt to climate change impacts or through long-term strategies to mitigate climate change impacts. On the other hand, climate change offers many opportunities particularly for development agencies and the private sector. Such opportunities include the development and adoption of clean energy, research on and production of appropriate crop varieties, insurance against climate change impacts among others. This action plan will go a long way in helping the county government address the impacts climate change for the benefit of our people.

It is important to note that climate change does not respect county or even country boundaries. In this respect, my government will work closely with the national government and the neighbouring counties as we implement this plan. I wish to reiterate that Nakuru County Government is committed to ensuring that this action plan is implemented. Towards this end, the County has integrated the climate change adaptation and mitigation activities into the County Integrated Development Plan (CIDP), county budgeting and other planning processes. We shall also continue to invest without reservation in the implementation of outlined actions and establishment of the governance structures recommended by the plan. My office will work closely with the County Assembly to develop appropriate legislative instruments to operationalize the plan implementation.

The Nakuru County NCCAP will strengthen the existing; plans, policies and strategy framework both at national and sub national levels. Some of these documents at the County level include the Nakuru County Climate Change Act, 2021; the Nakuru Climate Change Fund Regulations; Nakuru Climate Change Action Plan, 2018-2022; Nakuru County Climate Change Policy; Nakuru County Water and Sanitation Act, 2021; Nakuru County Waste Management Act, 2021; Nakuru County waste management policy etc.

The climate crisis demands a unified approach from National government, County government, development partners and private sector actors. The processes must be inclusive and participatory to ensure all voices are heard, especially those of the vulnerable groups in our communities. The development of NCCAP has been a great achievement, thanks to a collaborative effort from all our stakeholders, who worked together to set very ambitious, yet practical, targets and actions to mitigate and adapt to the impacts of climate change while improving access to energy. Nakuru is indeed a county of unlimited opportunities, and we can only realise these targets if we continue working together.

I acknowledge the support from the World Bank through Financing Locally Led Climate Action (FLLoCA) project, National government, especially from the Climate Change Directorate; the Ministry of Energy; Ministry of Environment and Forestry, Ministry of National Treasury and Economic planning; the Council of Governors; Kenya National Bureau of Statistics; Kenya Power and Lighting Company; Slum Dwellers International (SDI), Arid lands Information Networks (ALIN), World Wildlife Fund (WWF), Deutsche Gesellschaft für Internationale Zusammenarbeit(GIZ)'s Covenant of Mayors Sub Saharan Africa (CoM SSA) and Nationally Determined Contribution (NDC) projects, Stockholm Environment Institute (SEI), Muungano Wa Wanavijiji, Sustainable Energy Access Forum Kenya (SEAF-K), amongst other development partners.

My profound appreciation also goes to all departments and stakeholders who have participated in one way or the other in the countywide PCRA process and preparation on NCCAP. Finally, I highly appreciate the Nakuru County department of Water, Environment, Energy, Climate Change and Natural Resources, who has shown so much dedication and has played a lead role in this process.

H. E. Susan Kihika

Governor, Nakuru County

Foreword from the CECM – Water, Environment, Energy, Climate Change and Natural Resources

The realization of the development of the Nakuru County Participatory Climate Risk and Vulnerability Assessment (PCRA) has made it possible for the development of the Nakuru County Climate Change Action Plan 2023 (NCCAP). This is a joint effort from the County Government of Nakuru, representatives from the national and sub national government with other non-government actors. I wish to extend my appreciation to some of the key stakeholders who primarily contributed to the realization of the plans. These include Ministry of Environment and Forestry, Ministry of Treasury and Economic planning; the Council of Governors; Slum Dwellers International (SDI), Arid lands Information Networks (ALIN), World Wildlife Fund (WWF), Deutsche Gesellschaft für Internationale Zusammenarbeit(GIZ)'s Covenant of Mayors Sub Saharan Africa (CoM SSA) and Nationally Determined Contribution (NDC) projects, Stockholm Environment Institute (SEI), Muungano Wa Wanavijiji, Sustainable Energy Access Forum Kenya (SEAF-K), amongst others.

In addition to the Nakuru County PCRA and the NCCAP being data driven processes and evidence based, this plan is a culmination of a highly participatory processes, involving enhanced buy-in, ownership and technical capacity. All the County Executive Committee members, chief officers, directors, and the climate change champions drawn from all departments, as well as technical staff within the county played a very critical role in shaping this plan. The main departments involved were the Department of Water, Environment, Energy, Climate Change and Natural Resources; Agriculture, Livestock and Fisheries, Health Service, Finance and Economic Planning; Public Service and administration, Gender, Infrastructure, Lands, Housing and Physical Planning and urban development, public service training and devolution Kenya Meteorological Department. The involvement of all the respective departments, not only increased the buy-in and potential for implementation by different stakeholder groups, but also increased knowledge and awareness on climate change and the importance of climate planning within the county.

With the capacity gained through the FLLoCA's PCRA and NCCAP processes, the county will be able to monitor and report on the progress of implementation of the climate plan, using both national and international level reporting platforms such as the JRC (Joint Research Centre) reporting platform taking advantage of the county being a member of the CoM SSA Network. Now that the NCCAP has been developed, the best way to measure success is to implement the actions identified to meet respective sectoral targets that were set by the county to mitigate and adapt to the impacts of climate change. This, again, will require all county departments to work together by assigning budget line items to successfully implement the actions relevant to their sectors. The county, however, cannot implement all these actions on its own, and calls for technical and financial support from national and international organisations to enhance and fast-track implementation. Implementation of this plan will be enhanced by the Nakuru County

Integrated Development Plan (CIDP), 2023–2027, since it integrated the CAP and NCCAP actions into the document. Implementation of the NCCAP will also be enhanced by the existence of the Nakuru County Climate Change Fund regulations, which was created in 2022. With the NCCAP in place, and with the current commitments and dedication of the County Government of Nakuru and its citizens, its partners and benefactors, we can build a climate resilient Nakuru for all.

Dr. Nelson Maara

Nakuru County Executive Committee Member

Water, Environment, Energy, climate change and Natural Resources

Foreword from the CO – Environment, Energy, Climate Change and Natural Resources

I take this opportunity with great pleasure to be part of the team that has developed this NCCAP 2023-2027. This plan aims at mainstreaming climate actions geared towards reducing effects and impacts of climate change, by focusing more on mitigation measures, enhancing adaptive capacity and building resilience for her Nakuru County Citizens. The plan was strengthened by the previous rigorous, PCRA exercise and is anchored in relevant international, national and County policy and legal frameworks.

Prominent hazards affecting the County include floods, droughts, rainstorms, and water-borne diseases. These current and future hazards affect all citizens and all sectors (especially agriculture, livestock and fisheries, water, forestry, and tourism sectors) in the County. The most vulnerable members of Nakuru County, women, girls, children, the elderly, and people with disabilities, are disproportionately affected by these hazards. We as the people of Nakuru County need to come together towards a climate neutral future for our beloved County and implement these climate actions so that the NCCAP. Pivotal in investment decision making. The plan needs integration into the sectoral and county's integrated planning framework; only then can we ensure that our NCCAP becomes a living guide for all of us.

My profound appreciation goes to Slum Dwellers International (SDI), Arid lands Information Networks (ALIN), World Wildlife Fund (WWF), Deutsche Gesellschaft für Internationale Zusammenarbeit(GIZ)'s Covenant of Mayors Sub Saharan Africa (CoM SSA) project, Stockholm Environment Institute (SEI), Muungano Wa Wanavijiji, Sustainable Energy Access Forum Kenya (SEAF-K), the Governor's office Nakuru county, all the Directorates in Nakuru county and the FLLoCA team that supported the PCRA process and reporting both in material and kind in form of expertise in working with the County to develop their NCCAP.

I am proud that Nakuru County has joined the forerunners among cities and governments committed to taking climate action, in Kenya and in Sub-Saharan Africa through putting in place the necessary planning framework and institutional arrangements. I encourage all residents of Nakuru County to be climate change ambassadors in their homes and different walks of life, as we can only overcome change crisis through joined efforts; no action is too small or too big.

Kennedy Mungai

Chief Officer,

Environment, Energy, Climate Change and Natural Resources

Acknowledgement

This Plan was developed by stakeholders on Climate change in Nakuru County Led by Nakuru County Government. The stakeholders included National government, especially from the Climate Change Directorate; the Ministry of Energy; Ministry of Environment and Forestry, Ministry of Treasury and Economic planning; Ministry of Treasury and Economic planning the Council of Governors; Kenya National Bureau of Statistics; Kenya Power and Lighting Company; Slum Dwellers International (SDI), Arid lands Information Networks (ALIN), World Wildlife Fund (WWF), Deutsche Gesellschaft für Internationale Zusammenarbeit(GIZ)'s Covenant of Mayors Sub Saharan Africa (CoM SSA) and Nationally Determined Contribution (NDC) projects, Stockholm Environment Institute (SEI), Muungano Wa Wanavijiji, Sustainable Energy Access Forum Kenya (SEAF-K), amongst others. Many other individuals either participated in the process by providing information, reviewing various versions of this document or by providing logistical support in the process.

The document was compiled by a technical team of consultants including Dr. Nelson Maara (County *Executive Committee Member Water, Environment, Energy, Climate Change and Natural Resources)*; Kennedy Mungai *(Chief Officer Environment, Energy, Climate Change and Natural Resources*); Grace Karanja (County *Director Environment, Energy, Climate Change and Natural Resources)*; Margaret Mwangi (*Economist/Statistician Water, Environment, Energy, Climate Change and Natural Resources*); Environment and Climate Change Officers, Kilion Nyambuga, (*Slum Dwellers International);* Bod Aston, *(ALIN);* Abel Omanga, *(CoM SSA).*

Financial support for this process was provided by the World Bank through Financing Locally Led Climate Action (FLLoCA) project. We are very grateful for this support.

List of Abbreviations

CBO	Community Based Organization
CDM	Clean Development Mechanism
CECM	County Executive Committee Member
CO	Chief Officer
CFA	Community Forest Association
CIDP	County Integrated Development Plan
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
DVS	District Veterinary Services
EAC	East African Community
EIA	Environmental Impact Assessment
EMCA	Environment Management and Coordination Act
GBM	Green Belt Movement
GDP	Gross Domestic Product
GHG	Green House Gas
Gok	Government of Kenya
INDC	Intended Nationally Determined Contribution
ICT	Information and Communication Technology
KALRO	Kenya Agricultural and Livestock Research organization
KEFRI	Kenya Forestry Research Institute
KENGEN	Kenya Electricity Generating Company
KEPSA	Kenya Private Sector Alliance
KFS	Kenya Forest Service
KWS	Kenya Wildlife Service
MENR	Ministry of Environment and natural Resources
MET	Meteorological
MoALF	Ministry of Agriculture, livestock, and Fisheries
NACOFA	National Alliance of Community Forest Associations
NAP	National Adaptation Plan
NCCAP	National Climate Change Action Plan
NCCRS	National Climate Change Response Strategy
NEMA	National Environment Management Authority
NMK	National Museums of Kenya
NGO	Non-Governmental Organization
OPM	Office of the Prime Minister
PES	Payment for Ecosystem Services
PFM	Public Finance Management
REDD	Reducing Emissions from Deforestation and Forest Degradation
SDG	Sustainable Development Goal
SEA	Strategic Environmental Assessment
SMS	Short Message Service
SGR	Standard Gauge Railway
UNFCC	United Nations Framework Convention on Climate Change
US	United States
WHO	World Health Organization
WRA	Water Resources Authority
WRUA	Water Resource Users Association
WWF	World Wide Fund for Nature

Operationalization of terms

Adaptation: refers to, adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

Mitigation: will be used to refer to, interventions to reduce anthropogenic contribution to the climate change problem. It includes strategies and measures to reduce greenhouse gas emissions and/or to enhance greenhouse gas sinks. Examples of mitigation measures are, renewable energy technologies, waste minimization processes and mass transport of people and goods among others.

Hazard: refers to "a dangerous phenomenon, substance, human activity, or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Impacts: will refer to the effects on natural and human systems of extreme weather and climate events and of climate change. Impacts generally refer to effects on lives, livelihoods, health status, ecosystems, economic, social, and cultural assets, services (including environmental), and infrastructure due to the interaction of climate changes or hazardous climate events occurring within a specific time and the vulnerability of an exposed society or system. Impacts are also referred to as, consequences and outcomes of climate change or hazards related to climate change.

Vulnerability: is the degree to which a system is susceptible to, and 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 change and variation to which a system is exposed, its sensitivity, and its adaptive capacity.

Resilience: is the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change.

Executive Summary

The Nakuru County Climate Action Plan (NCCAP) is the key document that defines strategies, plans, and actions for sustainable development aimed at enhancing climate change resilience at the community level. It includes measure to address climate change adaptations, mitigation action in response to current and future impacts related to climate change in the region. The foundation of the plan focuses on the Participatory County Climate Change Risk and Vulnerability Assessment (PCCCRVA) process, which identified risks and hazard associated with them. The ward level report also assesses the various levels of vulnerability among community groups.

There is irrefutable evidence that climate change has negative impacts on nearly all sectors of Nakuru County socio-economic and environmental sectors. However, the negative impacts of climate change are most visible in the agricultural and livestock production, water, environment, infrastructure and transport sectors. There are also some opportunities provided by climate change particularly in the energy, conservation, and infrastructure sectors.

To enable its implementation, there was consideration of various policies, laws and regulations both County and National Level. That is not limited to allocation of funds in the county budget and mainstreaming climate change actions in CIDP, Annual Work Plans and Annual Development Plans.

The plan is established upon existing relevant international, national, and county level legal and policy instruments including the national government's Big Four Agenda, Sustainable Development Goals (SDGs), Vision 2030, constitution, National Climate change Response Strategy 2010, Climate change Action Plan 2013-2017, Climate Change Action Plan 2018 - 2022, the Climate Change Act 2016 and Climate Adaptation Plan 2017. The action plan will inform other county planning processes including the County Integrated Development plans, County spatial plan, and the county budgetary process.

Introduction

Nakuru County Climate Action Plan is as result of a thorough process Participatory Climate Risk Assessment, an exercise that involved engagement of the community members at the lowest administrative unit (the ward). A Technical committee, which comprises of county directors from most affected sectors was constituted and trained on their expectations. National Government entities such as Kenya Meteorological Department and Social Development were also involved since MET contained County Information Climate Information while SD has primary data on various social groups.

All stakeholders who are directly and indirectly impacted by climate change were mapped and invited at the ward level to collect and analyse their inputs for inclusion in the action plan. Upon collection of all the necessary information during PCRA, analysis was done transform the data into information that later constituted an action plan.

The technical committee ensured that all vulnerable groups; women, elderly, persons with disabilities, youth, chronically ill person and indigenous communities were involved in the process through local administration (chiefs and wards administrators). To ensure active and significant participation, there was a preliminary session of building their capacity of comprehending what it entails in the climate change space.

The purpose of this action plan is enumerating county strategic actions towards building the adaptive capacity and resilience of the community to withstand impacts of climate change. The plan also provides a framework upon which climate change actions are mainstreamed into county plans like CIPD, AWP, ADP and the budget. It is also important to note the crucial role provided for in the plan to ensure gradual mitigation of future triggers to climate change. Opportunities to reticulate clean, adequate water for drinking and agriculture have been emphasized in the resilience lens while adoption of clean, renewable sources of energy as well as restoration of lost biodiversity has been sufficiently anchored to observe mitigation.

Chapter one: Highlights the background information, causes and evidence of climate change in the County. It encapsulates the process and various reasons for the development of the action plan. It also highlights the impacts of climate change, vulnerable groups affected, hazards and their distribution as well as climate change actions.

Chapter two: Outlines relevant national and County policies and regulatory frameworks on climate change.

Chapter three: Details priority climate change actions in key sectors.

Chapter four: Outlines the delivery mechanisms, the various enablers and implementation process of CCAP. It also identifies projects, their budgetary requirements and time frame of implementation.

Chapter five: Outlines the monitoring, evaluation and reporting framework of the plan.

CHAPTER ONE: BACKGROUND AND CONTEXT

1.0 Background and Context

Climate change adaptation is the process of adjusting to actual or expected climate change and its effects. Adaptation actions are undertaken in anticipation of the adverse effects of climate change and aim to prevent or minimize the damage the impacts of climate change can cause and/or take advantage of opportunities that may arise. The development of the adaptation plan includes four steps: i) undertaking a Participatory Climate Risk and Vulnerability Assessment (PCRA); ii) Setting an overarching adaptation vision; iii) setting adaptation targets for key sectors for adaptation; and iv) developing adaptation actions that contribute to achieving the sector targets.

Figure 1: Four Stages for the adaptation pillar within the Nakuru County CAP

i. The Nakuru County Participatory Climate Risk and Vulnerability Assessment

The objective of Nakuru County's PCRA was to identify the most significant climate hazards currently affecting the County and to understand which key sectors and population groups in the County are most affected by these hazards. The PCRA also aimed to assess how these hazards are likely to change in intensity, frequency, and time scale in the future because of climate change. Data informing the development of the PCRA were gathered through three separate methodologies, namely: i) primary data collection through community focus discussions; ii) secondary data collection; and iii) stakeholder consultations and participatory, multi-stakeholder workshops.

The PCRA revealed that Nakuru County faces several climate hazards, particularly: drought, rainstorms, flash/surface floods, river floods, and waterborne diseases. These hazards are likely to intensify with climate change as temperatures are projected to rise in the County and rainfall is likely to become more erratic.

The PCRA identified the sectors most affected by current and future climate hazards as: i) Environment, biodiversity, and forestry; ii) Water supply and sanitation; iii) Land use planning; and iv) Food and agriculture. It was also found that the most vulnerable groups to climate hazards in Nakuru County are women and girls, and low-income households.

ii. **Nakuru County climate change adaptation Validation**

Following the completion and validation of the Nakuru County PCRA, consultations were held with stakeholders from various departments and stakeholders to prioritise sectors for adaptation, set an overarching adaptation vision and sector-specific targets for the key sectors and subsequently identify and prioritise actions that will enable the County to achieve its climate adaptation vision. This process took the form of a participatory workshops with representatives from several County departments, including Agriculture, livestock and fisheries, Environment, Health, Resource Mobilisation, Water and Sanitation, Tourism, Roads, Transport and Public Works, private and other non-governmental stakeholders among others. During the workshop, the following overarching adaptation vision for Nakuru County (base year 2021) was adopted: A climate resilient County with sustainable ecosystems and livelihoods by the year 2030.

Table 1: Four Nakuru County Climate Change adaptation targets and priority actions identified by stakeholders during participatory workshops

Sector	Target	Priority action identified by stakeholders
Agriculture, livestock and fisheries	By 2030, ensure that at least 70% of crop, livestock and fishery farmers and other stakeholders are using climate-resilient practices including water harvesting techniques and nature-based enterprises (e.g., Agroforestry).	Desilt 60 water pans and construct 25 new water pans in Naivasha and Rongai sub-Counties by 2030 to promote water harvesting, conservation and utilisation for domestic and agricultural use in Nakuru County.
Water	By 2030, increase access to clean water to 80% of the population.	Map all community water sources in Nakuru County by 2030, including springs, boreholes, pans, dams and shallow wells.
	By 2030, increase access to sanitation to 100% of the population.	Support all rural villages in Nakuru County with achieving "Open Defecation Free (ODF)" status by 2030, including follow-ups, claims, verification, certification, and celebration of ODF villages.
Forestry	By 2030, increase tree cover in Nakuru County to 75,000 ha.	Rehabilitate open public green spaces in Nyayo Garden, Lion Garden, Naivasha People's Park and others, and reforest areas in gazetted forests with a focus on indigenous trees and the restoration of indigenous ecosystems.
Tourism	By 2030, ensure that the Nakuru County tourism sector promotes	Conduct sensitization and capacity-building on sustainable tourism activities with vulnerable groups (including youth,

Sector	Target	Priority action identified by stakeholders
	ecotourism and sustainability in 80% of its tourism destinations.	women and indigenous communities) across Nakuru County's 55 wards by 2030.

1.1 Introduction & Background

Climate change refers to the long term (typically decades or longer) shift in global temperature, precipitation, wind patterns and other measures of climate that can be verified statistically. Climate change may be due to natural processes or the persistent anthropogenic changes in the composition of the atmosphere or land use. Natural processes that contribute to climate change include variations in solar radiation, earth's orbit, continental tectonic movements, the reflectivity of the earth's surface, and natural release of greenhouse gases. Man's contribution to climate change is mainly through the increased release of greenhouse gases, deforestation, soil degradation, livestock and agricultural practices among others.

Climate change has had many negative impacts on all spheres of human socio, environmental, political and economic development. For example, climate change has led to many incidences of severe weather events leading to injuries and fatalities to man, loss of property and damage to essential infrastructures. Environmental degradation linked to climate change has also led to displacement and forced migrations in many areas in Kenya. There are many instances where climate change has resulted in the escalation of intercommunity conflicts as different communities compete for decreasing water and pasture resources for their livestock. Climate change has impacted negatively on food and water supply leading to malnutrition and other health complications. Climate change has led to changes in disease vector ecology leading to increased incidences of diseases in man, livestock, crops and wildlife, resulting in increased strains in human medicine, livestock, crop production and wildlife conservation.

1.2 Evidence of Climate Change: A global Outlook

The Earth's climate has changed over time, a phenomenon attributable primarily to anthropogenic causes. Globally, there is numerous evidence denoting the changes in climate, and a majority of these are associated with global warming (US Global Change Research Program, 2009). Amongst the evidence of global climate change, the increase in global temperatures has been experienced for quite a long period. It is estimated that the average temperature of the planet Earth has risen with approximately 1.1^0C since the late 19^{th} century. This change is mainly attributed to the emissions of greenhouse gases in the atmosphere, including carbon dioxide, nitrous oxide, and methane, which blanket the ozone layer.

The globe has also seen the emergence, resurgence, and redistribution of infectious diseases due to the increasing temperatures. Also, climate change has occasioned extended growing seasons, altered flowering phenology, breeding and migration of birds. Biological invasions have also been on the increase due to global climate change.

Climate change has increased ocean and sea temperatures. The increased global warming has led the oceans to absorb as much heat from the surface to 700-meter depths, with about 2300 feet of oceans being increasingly warmer by 0.302^0F since the year. Akin to oceanic warming is the sea level rise orchestrated by global warming.

(a) Flooding *(b) livestock deaths due to drought*

Figure 2: Contrasting impacts of climate change

Evidence of Climate Change in Kenya

In Kenya, studies have shown that climate change has been manifested in several ways, both direct and indirect. One of the most striking current pieces of evidence of climate change is the unpredictability and irregularity of rains. This has not only hampered the agricultural sector but has also affected the hydroelectric power generation. Due to the low rainfall amounts received in Kenya, several reservoirs with capacities to drive hydroelectric power have been negatively affected. There have been remarkable drops in volumes of such reservoirs and dams, thus raising the costs of per unit production of electricity, with the ultimate increases in prices heaped on the Kenyan consumers. At the moment, the costs of electricity are very high, a factor directly attributable to the adverse effects of climate change on rainfall regimes.

Besides the challenges in hydroelectric power generation in Kenya, the irregularity and unpredictability of rains, the downpours are sometimes very intense causing extensive flooding, damage to infrastructures, loss of lives and properties. These, alongside posing major health and safety risks, also work in synergy to devastatingly derail the Kenyan economy. In the recent past, the Kenyan economy as reflected by gross domestic product (GDP) has variably fluctuated, with significantly higher proportions of the causes being partially or directly attributed to the effects of climate change.

Apart from irregular rainfall patterns, extreme weather conditions in Kenya are also attributable to the changes in climate. Historic weather records claim that since the year 1960 (Figure 6) to date, there has been slow but consistent increases in both minimum and maximum temperatures, at night and daytime respectively.

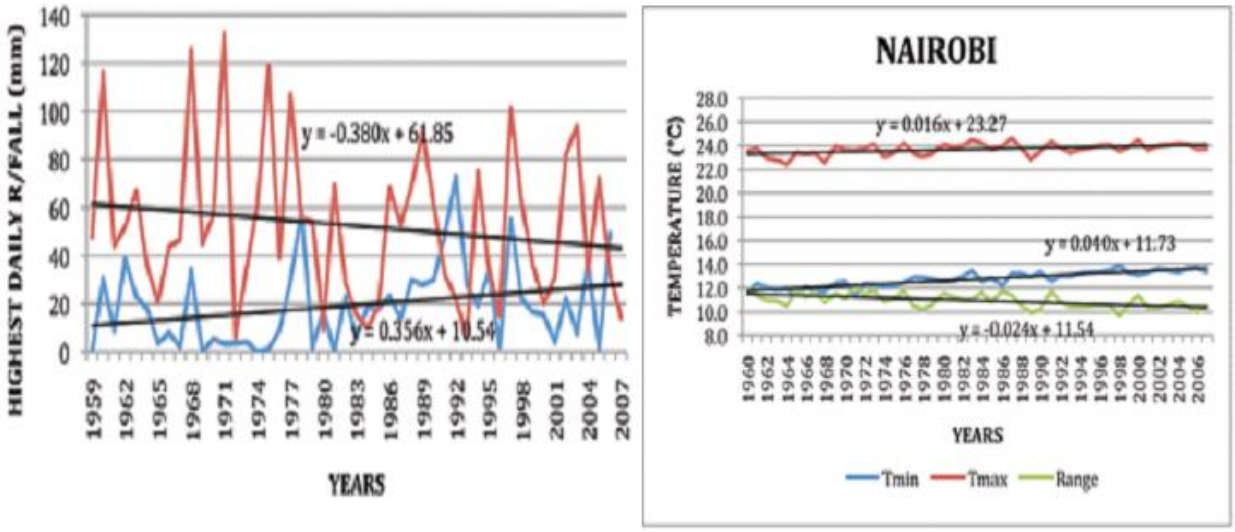


Figure 3: Trends in Kenya's weather patterns from 1960. Source: GoK (2010)

In Kenya, it is projected that the minimum temperatures have increased by 0.7-2^{0}C since early 1960's, signifying 65% increase (GoK, 2010). Similarly, maximum (daytime) temperatures have been projected to have risen by 0.2-1.3^{0}C, demonstrating 85% increase. These fluctuations in temperatures have contributed to the drops in sea levels, lakes, dams, streams, rivers among other water bodies due to their direct impacts in enhancing surface moisture evaporation. Climate change also affects the environmental conditions, with associated incidents that deter tourism activities, involving infectious diseases, wildfires, increased wildlife mortality, as well as water-borne diseases.

The extremes of weather conditions have also led to pronounced aridity and desertification in several parts of Kenya, with constricted forage availability, water scarcity among other shared natural resources. This has seen escalated losses amongst the Kenyan pastoralists, with far-reaching effects and conflicts evidenced amongst the shared resources with the wildlife.

1.3 Evidence of Climate Change in Nakuru County

In Lake Nakuru, the number of flamingos has been fluctuating due to changes in water levels, a phenomenon directly and strongly attributable to effects climate change manifest through global warming. The continued migration of flamingos from Lake Nakuru has derailed tourism and eco-tourism activities in this pristine Ramsar Site threatening the local livelihoods, and eroding the County's and the country's economic well-being.

The dwindling and unpredictable rainfall in Nakuru County, as occasioned by climate change, has also seen major challenges in agricultural productivity in the region. Agricultural yields have consistently dropped due to, among others, high production costs as a result of unpredictable rainfall, extreme weather conditions, and the associated alien crop pests and diseases.

Climate change has occasioned the spread of new pests and diseases in several parts of Kenya, and specifically, in Nakuru, the emergence of agricultural pests and pathogens like armyworms and *Tuta absoluta* has escalated economic costs of their management. The increased prevalence of such pests as armyworms has posed major threats to both vegetable and cereal productions

in the region, raising the costs of agricultural production in the region, with more adverse effects being heaped on the County's economy. In 2016, the county lost approximately 30% of crops to pest invasions. It is estimated that in 2017 maize production in 70,000 acres was curtailed by armyworm invasion (Damary, 2018).

Nakuru County has hosted many people who have been displaced by the extremes of weather. This has led to increased population pressure in the county, with increased land degradation, deforestation, as well as the escalated abstraction of water upstream. These have compounding effects in derailing the county's economic potential.

Climate change has been associated with increased unpredictability and irregularity of rainfall, some very torrential. The increase in heavy rains and flooding can exceed the carrying capacity of stormwater drainage and sewerage systems in the region resulting in their collapse; storm overflows as well as seepage from such facilities into the water bodies. This, besides the high potentials in occasioning eutrophication, also results to dirty and unsafe water for human consumption following the possibility of introducing pathogens that can potentially cause disease outbreaks. Extreme rainfall received during certain periods has led to damage of major infrastructure facilities involving roads, dams, bridges, and culverts, thereby perplexing transport and local trading activities. This hinders economic growth. The livestock sector is occasionally impacted negatively by irregular and unpredictable rainfall in the region arising from climate change. Shorter lengths of rainy seasons, as well as increasing frequencies of droughts, have seen adverse negative impacts on the crop and dairy productivity. A socio-economic survey on the severity of climate change on livestock production pointed to an estimated 78.3% interviewees being severely affected, with approximately 73.6% of the respondents highlighting adverse and significant drops in sheep productivity due to climate change. Although poultry farming was perceived a temporary strategy to effectively cope with climate change in the region, this can also be hampered by the increased incidences of disease outbreaks, and high operational costs for medication and maintenance, as occasioned by other synergistic but climate-related factors in the region.

A recent climate change vulnerability assessment of Naivasha basin showed that there has been an increase in the temperatures from 1960 to 2010. However, this increase has not been uniform. For example, the minimum daily temperature increased by 3.5 C while the maximum temperature increase was only 0.6 C during the same period. Climate change has led to continued increases in the average number of dry days in the region from 25 to 80 days in a period between the years 1970 to the years of 1990's. In the region, climate change has also led to 14-15 days increase in the number of dry days during the March-May log rains period. There is an increased number of cloudless nights (dry days) during the periods of low temperatures. This suggests an increase in risks of heavy frosts in the upper catchment areas in the region. Also, the increasing frequency of warm nights in the region suggests a significant decrease in the risks of frost in the region's lower catchments.

Figure 4: Impacts of fluctuating lake water levels on infrastructure at Lake Nakuru National Park

Source : http://kecobat.blogspot.co.ke/2014/11/

1.5 Purpose and process of the CCCAP

Climate change poses significant challenges to various aspects of the environment, society, and the economy in Nakuru County. CCCAP is crucial to address these challenges effectively. The plan:

- Provides a roadmap for implementation of climate change actions within the County.
- Provides a framework for mainstreaming climate change into sector functions.
- Aligns County development plans with those of national Government
- Encourages participation and inclusivity of vulnerable groups within the County; elderly, youth, women, children, persons living with disability, marginalized and resource poor households.

1.6 Formulation Process

This action plan was formulated in a highly participatory and consultative process which drew upon views and perspectives of as many stakeholders as possible. The purpose of participatory approach was to have a meaningful involvement of all the stakeholders impacted by the implementation of the action plan recommendations. The process followed is summarized in Figure 2.2-1.

1.6.1 Desktop Studies

This included the review of existing international, national and county level legal and policy instruments in relation to the development of county-level climate change Action plan. The documents reviewed included relevant International and regional climate change policy frameworks, national policy documents (Vision 2030, The Constitution, National climate change Response Strategy, National Climate Change Action Plan 2013-2017, National Climate change Action Plan (2018-2022), Nakuru County Climate change Act 2021, Climate adaptation Plan 2017), Nakuru County Integrated Development Plan (CIDP) 2013-2017, Nakuru Integrated Development Plan (CIDP) 2018-2022, Nakuru Integrated Development Plan (CIDP) 2023-2027, SEACAP 2022-2027, CEP 2022-2027, Climate Vulnerability and Ecosystem Assessment for Nakuru County, Naivasha Sub-County Climate Change Vulnerability Report 2022, and Nakuru County annual development Plans and budgetary process among others.

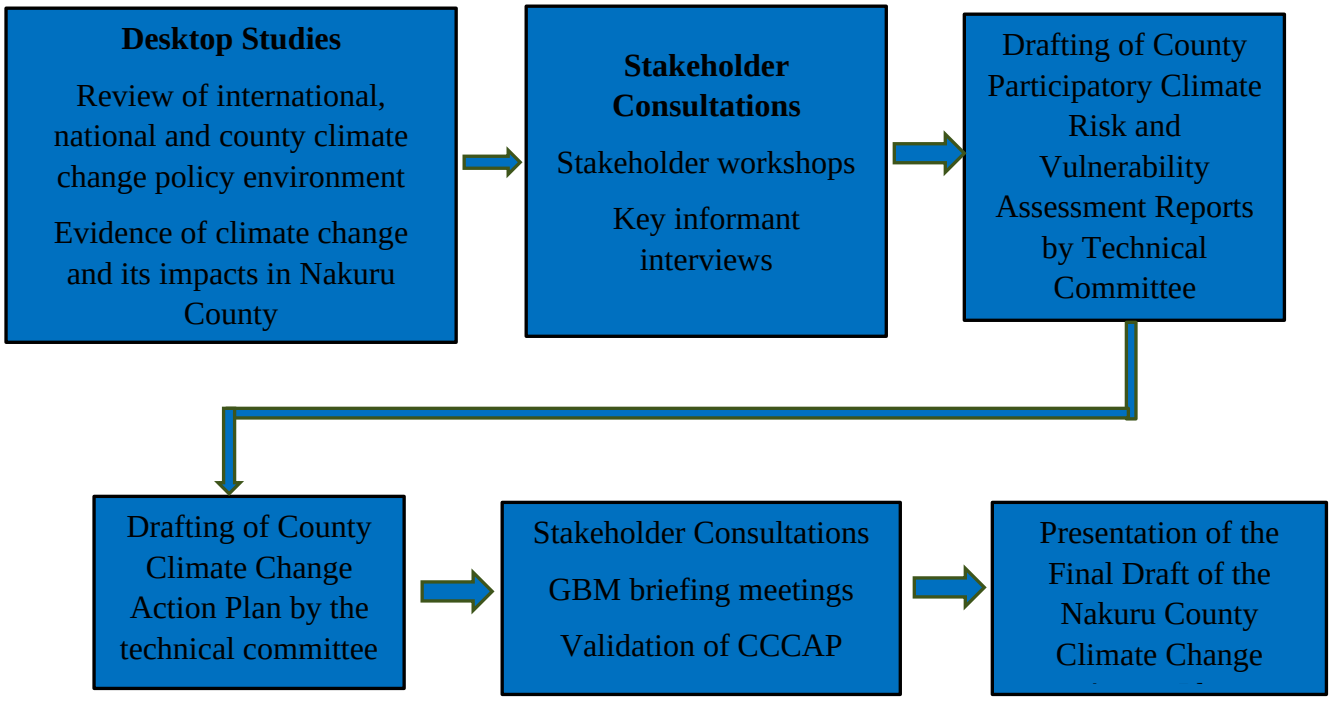


Figure 5: Schematic diagram summarizing Nakuru County Climate Adaptation Plan formulation process

1.6.2 Multi-Stakeholder Consultations

On 24th and 25th May 2023, multi-stakeholder workshops were conducted at the ward level in Nakuru County involving diverse stakeholders (Appendix 1). The workshops aimed at building the capacity of the participants on climate change matters with a focus on the

- The definition of climate change and the context within which it is discussed.
- Evidence of and impacts of climate change in Nakuru County
- The need for adaptation and mitigation against climate change

The workshops also aimed at obtaining sector-based information from the stakeholders on

- Evidence of climate change in Nakuru County
- Climate risks and vulnerabilities in Nakuru County
- Local Impacts and climate change in different sectors of Nakuru County Economy
- Climate change actions (both adaptation and mitigation) being carried out in Nakuru County and the stakeholders involved.
- The stakeholders working on climate change adaptation and mitigations actions.

- Other potential climate adaptation and mitigation actions and other stakeholders with the potential to engage.

Stakeholders extensively deliberated on the information obtained per sector and agreed on the actions that can be implemented to combat the problem of climate change in Nakuru County. They also prioritized the actions based their perception of the severity of the climate change impact on the sector. This information helped the formulation of a vision, mission, and strategic objectives for Nakuru County Climate Change Adaptation Plan.

In addition to these ward engagements, a multi-stakeholder's workshop was held on 26th-27th May involving key Government Agencies, County Government officers, private sector players with responsibilities in sectors that are vulnerable to climate change. The draft plan was then subjected to validation by stakeholders. This was then tabled at the County Executive Committee for approval. The plan was further submitted to the County Assembly for review and adoption.

1.6.3 Underlying Climate Resilience Context

1.6.4 Impacts of Climate Hazards in the County

Climate change has posed various risks which have adverse effects on various sectors; socio-economic, agricultural, health and environment influencing livelihoods of the people and development.

1.6.5 Agriculture, livestock, and Fisheries sector

1.6.5.1 Crop production sub-sector

Climatic related hazards relevant to crop production in the county include prolonged dry spells, frost, intense precipitation, flooding, and heat stress.

According to participants in the stakeholder consultation, there is sufficient evidence that climate change is having negative impacts on crop production in Nakuru County. The evidence includes:

1) Unpredictable rainfall patterns/seasons.
2) Prolonged dry spells leading to loss of crops.
3) During the years 2009, 2014, 2017 there were increased incidences of frost that destroyed crops leading to and reduced agricultural productivity.
4) In 2017, there was unusually high rainfall from July to November, which led to rotting of crops and increased incidences of pest infestation. Excessive rainfall, when made worse by poor farming methods leads to excessive soil erosion.
5) The food shortage, nutrition deficiencies and malnutrition among the residents due to depressed agricultural production has resulted in.

1.6.5.2 Livestock production subsector

Livestock production is an important economic and socio activity in Nakuru County. The main livestock kept include cattle, poultry, sheep, and goats. During the stakeholder's consultations, it was clear that climate change has impacted negatively on livestock production. The key climate change hazards that impact on dairy cattle production are floods, prolonged droughts, and high temperatures.

In dairy farming, flooding encourages disease and pest outbreaks, parasitic infections, poor pasture germination, damages to storage facilities, difficulties in linking with markets, high production costs, and low market activities. During drought periods, the main impacts revolve around breeding challenges, increased disease and pest prevalence, food scarcity, increased labour costs, increased costs of milk storage due to the perishability of mild in hot weather. Overall, drought leads to increased production costs, high prices of dairy products and reduced market activities.

1.6.5.3 Fisheries production subsector

Fisheries production is practiced at Lake Naivasha, private and community-owned water reservoirs and fish ponds (MoAFL, 2016). According to Nakuru CIDP of 2013-2017 (County Government of Nakuru, 2014), there were at least 50 fishing boats on Lake Naivasha by 2013 and at least 1500 operational fish ponds by 2013. The main challenges in fisheries production include the destruction of fish habitats especially through pollution, overharvesting of fish, extinction of some fish species, and the introduction of exotic fish species. The main climatic hazards that affect fisheries production in the county revolve around environmental degradation at the catchment level resulting from loss of vegetation cover. This leads to soil erosion and consequent siltation of water reservoirs. Prolonged droughts and increased temperatures lead to excessive evaporation thus interfering with fish habitat and fish production. Climate change, therefore, leads to depressed fisheries production thus interfering with diets of affected families and depressed incomes for fishers' families.

Figure 6: Fishermen at Karagita landing beach, Lake Naivasha

Source: https://www.the-star.co.ke, September 19, 2016

1.6.6 Water Sector

Nakuru County is endowed with natural water resources including four major lakes (Nakuru, Naivasha, Solai, and Elementaita), shallow wells, springs, dams, pans, and boreholes. Much of theses water, particularly, from the lakes, is not available for domestic, industrial or irrigation

purposes. Boreholes have been sunk to boost water supply but the county is still water deficient, and climate change is making the situation worse. According to the participants during the consultative workshop, some of the climate-related evidence/impacts in the county include:

1. **Over-abstraction of water:** Climatic hazards including frequent prolonged droughts, coupled with increased demand for water in other sectors and an increasing human population have led to water demand in the county outstripping supply.
2. **Depletion of aquifers:** This might be explained by the declining rainfall, reduced forest cover and over abstraction. This has very negative impacts on communities including drying of boreholes and natural springs. For example, the drying up of bores at Egerton University in 2010 was blamed on climate change.
3. **Fluctuating water levels in the lakes:** The levels of water at lakes Naivasha, Nakuru, and Elementaita and other rift valley lakes have been fluctuating a lot. This is probably due to **r**educed forest cover, reduced rainfall, over-abstraction, and siltation.
4. **Soil erosion:** Due to poor farming methods, land tenure, overgrazing, and deforestation.
5. **Flooding and storm water:** Flash floods due to excessive rainfall, deforestation, and poor drainage systems.
6. Many rivers/streams and wetlands also have either dried up, or water levels have decreased. For example, River Dundori and Olbanita Swamp. Besides, River Nderit, which was draining into Lake Nakuru dried up between 2014-2017.
7. Siltation in the lower Engashura Bahati Sub-county during the 2012-2017 period due to deforestation in the water catchment area.
8. **The El-Niño in 2015** in which above normal rainfall in October 2015 to Feb 2016 led to substantial losses in agricultural production.
9. **Illegal water abstraction** by hotels/flower farms to meet the rising demands.
10. **Air pollution:** The issue of air pollution was cited as a serious problem in Nakuru Town area. It was noted that pollution has made harvesting of rainwater, an ideal climate change adaptation challenge for local the community, . In fact, it was further noted that there was an incident where harvested rainwater was black.

1.6.7 Wildlife and tourism sectors

Nakuru County has a rich wildlife heritage. It has three national parks including Lake Nakuru, Hells Gate, and Longonot. The county also has a number of private wildlife conservancies, which include Marura, Oserian, and Kedong in Naivasha Sub-County and Kigio and Soysambu in Gilgil Sub-County. Its lakes, particularly Lake Nakuru, but, also the others, are known for their large flocks of birds, notably the flamingos. Lake Nakuru National Park is also known as a home of the endangered Rhino, and Rotchilds Giraffe among other wild mammalian species. Lake Naivasha is also known for large herds of Hippopotamus. The forests that dot the county are also rich in wildlife. Some of the climatic change related wildlife issues noted in Nakuru County include:

- **Fluctuating lake levels** in Lakes Nakuru, Naivasha, and Elementaita. This has made the flamingos, especially in Lake Nakuru to migrate to other water bodies, denying the county revenue from tourism.
- **Increased wildlife-human conflict.** Due to drought and resultant water scarcity, wild animals wander into human habitation and farmlands in search of food and water.

- **Drying of rivers** feeding Lake Nakuru including Rivers Njoro, Makalia, Larmudiac, and Enderit.
- Increased incidences of wildlife diseases, e.g. anthrax.
- The Spread of invasive species.
- Increasing poaching levels probably due to the need for supplementary protein from bushmeat particularly zebras, gazelles and buffaloes (Mwangi & Wambui, 2017).
- **Water scarcity** due to frequent droughts leading to drying of water sources.
- **I**ncreased conflicts between herders and farmers.

1.6.8 Forestry sector impacts

According to the stakeholders who participated in consultations, some of the impacts of climate change of the forest sector in Nakuru County:

- **Increased forest encroachment.** This is evident from the increase in illegal structures in forests, increased cases of illegal logging due to limited livelihood options as a result of climate change, firewood collection, charcoal burning, and cultivation. To address this, it is important to devise strategies to reduce poverty, increase forest patrols, encourage agroforestry to reduce pressure on forest products, and fencing of forest reserves to control entry.
- **Overgrazing:** Climate change leads to livestock feed scarcity. This leads to local communities relying on forests for pasture which leads to unregulated livestock grazing, and subsequently soil erosion resulting in gullies. It is important to design grazing zones to minimize this impact.
- **Habitat loss** due to increased logging and forest encroachment for agricultural purposes.
- **Loss of biodiversity** in forests. To understand the extent of this problem, stakeholders have been investing in biodiversity monitoring and ecosystem restoration. There is the need for enhanced collaboration and information sharing among the stakeholders to reduce duplication of efforts.
- **Forest fires.** During prolonged drought periods, there are increased incidences of forest fires leading to habitat loss, vegetation destruction, and loss of biodiversity. To contain them, Kenya Wildlife Service and CFAs have been maintaining fire breaks. Going forward, it is important to create awareness among the local community and engage them in the prevention and control of forest fires. Besides, there is the need to invest in fire preparedness.
- Increased incidences of diseases and pests infestations in forests Flooding in lowlands due to forest destruction.
- Change in micro-climatic conditions.
- Declining forest cover.
- Degradation of cultural sites in forests.
- Invasive species.

1.6.9 Transport and infrastructure

Transport infrastructure is prone to impacts of climate change including the destruction of infrastructure like roads and bridges during extreme weather events. This can have dire consequences for a county and even the national economy. For example, is estimated that the 1997-98 El Niño floods damaged transport infrastructure costing at least Ksh 62 billion (GoK, 2010). Higher temperatures can also cause pavements to soften and expand, creating rutting and potholes, as well as warping of rail tracks, requiring track repairs or speed restrictions to

avoid derailments. Some of the evidence/impacts of climate change in Nakuru County that stakeholders in Nakuru pointed out during the consultations included:

- **Fog and mist** that hamper visibility on the Naivasha Kinungi road leading to accidents.
- **Flash floods:** This has negatively affected Nakuru and Naivasha towns. This is made worse by unsustainable solid waste management that leads to blockage of drainage systems. To solve the problem, there is the need to clear drainage and dispose of solid waste properly according to EMCA regulations. Flash floods also lead to the destruction of transport and other infrastructure.
- Heavy traffic of the Nairobi – Eldoret Highway during heavy downpour and floods
- Impacts of climate change are made worse by **habitat destruction**, in particular, the destruction of vegetation and the consequent habitat loss. This translates into Loss of carbon sinks, making the county less resilient to climate change impacts. The habitat also becomes prone to soil erosion.
- **Unsustainable infrastructure development** practices leading to soil erosion and poor water percolation.
- The Improved transport system, coupled with the increasing vehicle population that had led to **increased emissions of greenhouse gases**.
- Increased building construction costs due to the need for air conditioners and need to climate- proof buildings. Use of air conditioners increases energy use and therefore increase carbon emissions.

One of the most tragic climate related impacts witnessed in Nakuru County is the Solai Dam Tragedy. This man-made dam within the vast Patel Coffee Estates located in Solai, Nakuru County broke its banks on 9th May 2018 as a result of unprecedented heavy rainfall. At least 47 people died while others were injured. The incident occasioned massive destruction of property and unprecedented displacement of people. Climate proofing of such infrastructure is necessary.

Figure 7: Floods wash away part of Maai Mahiu Road, motorists stranded

Source: Daily Nation, WEDNESDAY MARCH 14 2018. HTTPS://WWW.NATION.CO.KE/NEWS/MOTORISTS-FLOODS-WASH-AWAY-MAAI-MAHIU-ROAD/1056-4340808-B0CLM/INDEX.HTML

Figure 8: Dam burst due to poor planning and land degradation

Source: Kipsang Joseph, Standard Newspaper 11 May 2018

Impacts of unusually heavy rainfall on Solai Dam, Nakuru County

1.6.10 Health sector

Some of the health-related climate change impacts that have been noted by stakeholders in Nakuru County include:

- **Floods**: People are swept away and infections like cholera breakout. For example, contamination of water sources in areas due to open defecation and also due to overflowing of sewage into open water led to a cholera outbreak in Kapchawea area in 2017.
- Food scarcity leads to increased incidences of **Malnutrition,** a health hazard.
- Climate change impacts result in high morbidity and mortality due to disease outbreaks, food scarcity, and breakdown of infrastructure including houses.
- Inaccessibility of health services due to the damage of transport infrastructure and health facilities makes the health situation worse.
- **Increased generation of geothermal electricity** as a strategy to produce "green energy." This is a national government initiative implemented through the state-owned power generation agency, Kenya Electricity Generating Company (KENGEN). Although this initiative is commendable, it has had undesirable impacts including increased noise and respiratory diseases from geothermal activities.

1.6.11 Energy Sector

Most of the Nakuru County residents, especially those in rural areas and informal settlements of the rapidly expanding urban centres rely mainly on biomass energy (firewood and charcoal). This is due to poverty and the high cost of electricity that is blamed on unreliable rain, a climatic hazard. This results in increased carbon footprint and respiratory complications. To solve this problem, the national government has increased the generation of geothermal electricity as a strategy to produce "green energy," and it now contributes 30% of Kenyan electricity needs. According to the draft National Climate Change Action Plan 2018 – 2022, the government intends to increase geothermal power production in order to reduce dependence on fossil fuels and biomass energy, that contributes to increased greenhouse gas emissions. In addition, increased geothermal power production will lead to increased green energy production – a strategy that the government intends to employ to reduce electricity cost for manufacturers leading to enhanced capacity to manufacture more goods, and create more employment opportunities. Increased green energy production will contribute to three of the Big Four Agenda – health, manufacturing and employment creation. Most of the power is generated at Hells Gate National Park- a site with important biodiversity conservation that needs to be conserved. This has had some negative implications on biodiversity conservation particularly when Environmental safeguards recommended in the Environmental Management Plans of Project Environmental Impact Assessments are not adequately adhered to.

Solid waste management and sewage treatment plants generate GHG emissions through the production of methane. However, use of landfills for solid waste management would enable gas methane capture for electricity generation a low carbon development opportunity.

Figure 9: Olkaria IV Geothermal Power Plant in Naivasha

Source: https://www.voanews.com/a/kenya-kengen-electric-power/4262323.html

Figure 10: A trader transporting charcoal from the Mau complex at Mathangauta in Njoro, Nakuru County

Source: Daily nation, December 19 2013

HTTPS://WWW.NATION.CO.KE/COUNTIES/NYERI/DEFORESTATION-CAUSING-FLOODING/1954190-2118364-S3DMITZ/INDEX.HTML

1.6.12 Mining sector

According to the Nakuru County CIDP for the period 2013-2017, the major on-going mining activities in Nakuru County is that of Diatomite at Kariandusi near Lake Elementaita, harvesting of sand for construction, quarrying, and the harnessing of underground hot water for geothermal power generation. Some of the environmental hazards associated with these activities include unsustainable harvesting of sand and stones causing injuries, death, and sinking of houses. Sand mining and quarrying can be impacted negatively by climate change linked hazards including flooding leading to increased mining costs and increased risk to workers. Mining also leads to habitat destruction, which reduces the adaptive capacities of local communities. As pointed out earlier, geothermal power production has its own environmental changes.

1.6.13 Manufacturing and Trade Sector

Many of the industries found in Nakuru County are agro-based. As such, any climatic hazard that affects crop and animal production will affect the manufacturing sector. There are also many county residents who are dependent on wholesale and retail trade, hotels and restaurants, and the informal sector like the Juakali sector for their livelihoods mainly in Nakuru town and other urban centres. Climate change can also interfere with the availability of raw materials at the sources and through disruption of raw materials to processing plants. Extreme weather-related events impact negatively on the reliability of water and power supply and damage to road infrastructure through droughts rains, and ensuing floods (KEPSA, 2014). Climate change

can also impact on the distribution of finished products to markets thus reducing sales. During the stakeholder meeting, it was pointed out that manufacturing results in air, water, and soil pollution. This is associated with health hazards like increased incidences of respiratory diseases. In addition, buildings and other infrastructure are corroded by acid rain, and the ecosystem becomes contaminated. Pollutions can also interfere with livestock and crop production. To minimize these impacts, manufacturing sector players are engaged in tree (indigenous) planting through their CSR initiatives and also improving their water management processes.

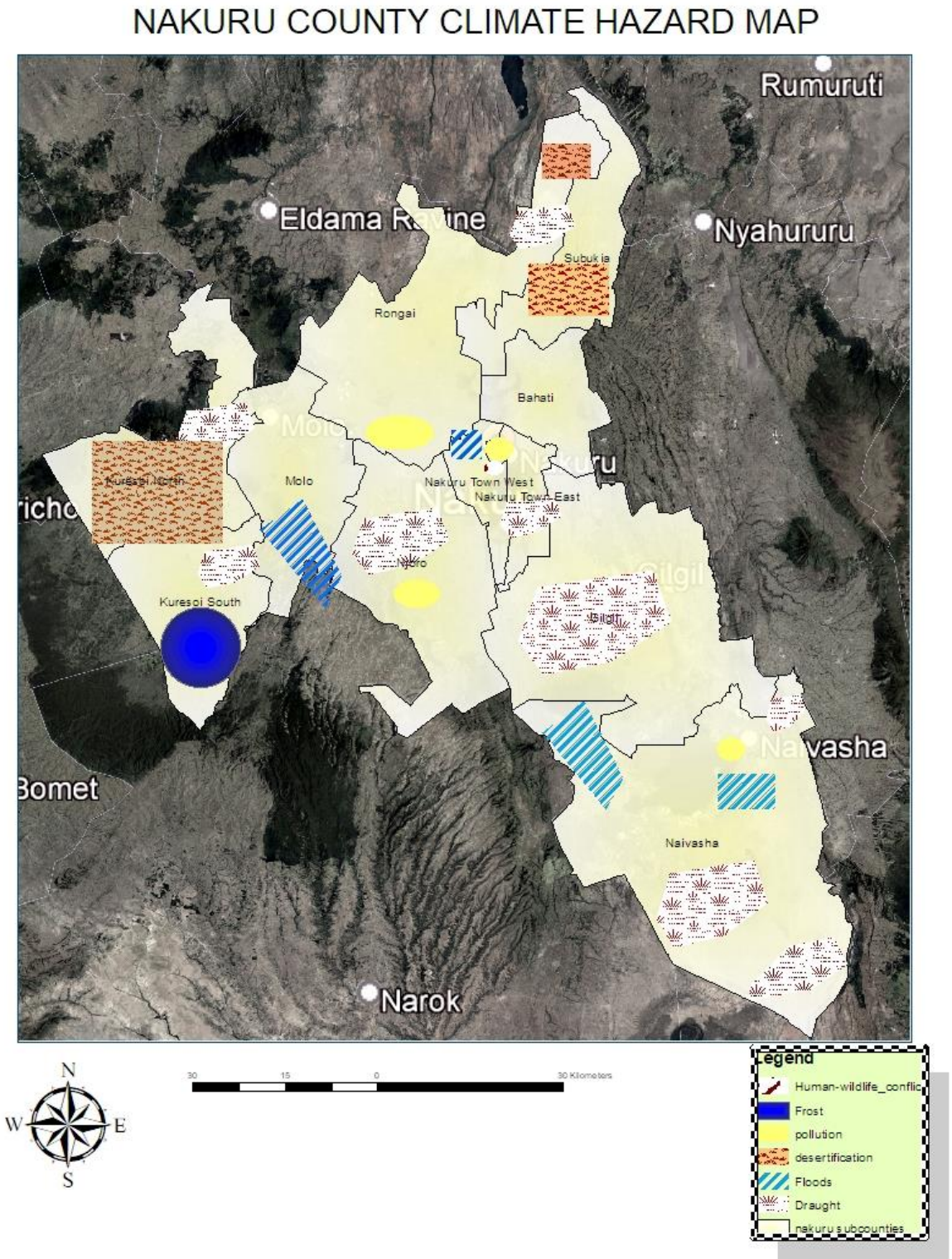
Table 2: Summary of Climate Change impacts by sector in Nakuru County

Sector	Likely Impacts of Climate Change
Crop Farming	• Increased food insecurity • Decline in overall crop yields due to insufficient availability of water, excessive moisture conditions, more pests, diseases and weeds • Lower production due to temperature increases and lower precipitation leading to reduced soil moisture • Uncertainty regarding the impact of production of specific crops, but likely reduction on yields of maize, potatoes and beans, and potential reductions of export cash crops mainly the horticulture • Higher temperatures may have a positive impact on agricultural production as the County lies on a highland area by increasing the plant growth rate and lowering maturity period • Greater reliance on irrigation due to reduced precipitation
Livestock	• Livestock deaths caused by drought • Decline in production due to lack of pasture, reduced access to water, and heat stress • Expected changes in disease patterns, and potential for re-emergence of Tsetse, East coast Fever and African Trypanosomiasis in the highlands of the County
Environment and Forestry	• Increases in invasive species, new pests, and diseases destroying the ecosystem • Increase in stagnant air days leading to worse air pollution

	• Increased likelihood of contestation and conflict over diminishing natural resources • Reduced provision of environmental resources and economic activity • Increased exposure to wild fires, pathogens and invasive species
Water	• Reduced availability of water for domestic and industrial use • Depletion of groundwater aquifers • Increased water loss from reservoirs (wetlands and rivers and water pans) dues to evaporation
Health	• Increase in the incidence of Malaria, Rift Valley fever, malnutrition among other diseases • Increase in water-borne diseases such as typhoid and cholera due to flooding
Tourism and Wildlife	• Adverse impacts on ecologically sensitive tourist destinations • Increased instances of human-wildlife conflict especially for hippos around Lake Naivasha, and Menengai Forest after wild fires • Potential for species extinction among them many species of birds like flamingo deaths and migration form Lake Nakuru
Transport	• Destruction of infrastructure including roads and bridges during storms • Interruption of road transport from flooding and heavy rainfall events • Softened and expanded pavement creating rutting and potholes • Disruption of access to work, markets, education and healthcare facilities, due to damaged infrastructure and transport services
Sustainable Manufacturing and cottage industries	• Greater resource scarcity (such as water and raw materials) for inputs to manufacturing processes • Greater risk of plant, product and infrastructure damage and supply chain disruptions from extreme weather events

	• Higher costs to companies, including for insurance
Drought and Flood Management	• Destruction of property and displacements • Increased number of people without access to water • Increased frequency and intensity of droughts, decreased ability to cope • Increased frequency and intensity of flooding decrease adaptive capacity • Increased number of food insecure and malnourished people • Declines in school attendance and rising dropout rates

1.7 County Climate Hazard Map



1.8 Summary of Differentiated Climate exposure and Vulnerability of key groups and livelihoods in the County

Based on data from the PCRA climate hazards currently affecting Nakuru County: erratic rains, frost, fog, hail, extreme temperatures, severe wind, lightning/thunderstorms, extreme cold days, heat waves, extreme hot days, droughts, forest fires, land fires, flash/surface floods, river floods, groundwater floods, landslides, waterborne diseases and vector-borne diseases. These hazards are likely to intensify with climate change as temperatures are projected to rise in the County and rainfall is likely to become more erratic. Current and future impacts of these hazards on the population of Nakuru County include increase in crop failure, malnutrition, fluctuation in the water levels of rivers and lakes, depletion of aquifers, soil erosion and degradation, water pollution, loss of biodiversity, and destruction of infrastructure such as roads.

The most vulnerable groups include: Women/ girls, elderly, less educated, persons with chronic diseases, abject poor households, persons living in sub-standard housing, youths, indigenous populations, people with disabilities, minority and marginalized groups

Table 3: Summary of the Vulnerable groups, hazard, and effects of exposure and vulnerability

Vulnerable Groups	Hazard	Livelihoods/ Resources	Effects of Exposure and vulnerability
Women/ girls, elderly, less educated, abject poor households, youths, indigenous populations, PWDs, minority and marginalized groups	**Drought**	Farming areas	Reduced or crop failure; reduced availability of food; crop diseases and pests; reduced incomes; malnutrition; time wastage in accessing resources; malnutrition and hunger, increased poverty levels
		Domestic water,	Famine due to prolonged drought; time wastage in accessing resources, Reduced water supply; reduced water quality; increased incidences water borne diseases
		Grazing areas	Declining grazing areas, conflicts over resource use, human-wildlife conflicts, declining livestock production, spend more time to cover long distances to resource
		Trade/Market	Low supply of needed commodities, high market prices, loss of income, conflict over limited commodities,
		Seasonal and daily calendar	interruption of social interactions, interrupted daily and seasonal activities,
		Livelihoods	Scarce casual jobs, conflicts over limited work opportunities, reduced incomes, Loss of livelihoods
Women/ girls, elderly, less educated, persons with	**Erratic rains,**	Farming areas	Post-harvest losses, water logging, crop, Crop loss, land degradation,

Vulnerable Groups	Hazard	Livelihoods/ Resources	Effects of Exposure and vulnerability
chronic diseases, abject poor households, persons living in sub-standard housing, youths, indigenous populations, people with disabilities, minority and marginalized groups	**Frost, fog, hail and extreme temperatures**	Trade/Market	Disrupted market access and activities, loss of marketable stock, loss of market time
		Infrastructure	Disrupted mobility due to destroyed transport infrastructure
		Health	Increased instances of respiratory diseases
		Seasonal and daily calendar	Interruption of social interactions, interrupted daily and seasonal activities,
Women/ girls, elderly, less educated, persons with chronic diseases, abject poor households, persons living in sub-standard housing, youths, indigenous populations, people with disabilities, minority and marginalized groups	**Flash flood**	Farming areas	Loss of crop, land degradation
		Habitats	Displacement of people and animals
		Domestic water,	Contamination of water, water borne diseases
		Grazing areas	Loss of pasture, reduced access to resources
		Trade/Market	reduced access to market and disruption of market activities
		Infrastructure	Reduced mobility due to impassable roads
		Seasonal and daily calendar	Disruption of scheduled activities
		Livelihoods	Reduced man hours, reduced work opportunities
Women/ girls, elderly, less educated, abject poor households, youths, indigenous populations, people with disabilities, minority and marginalized groups	**Emerging livestock crop pest and diseases**	Crops	Increased cost of crop production, low crop yields, reduced income
		Livestock	Increased cost of livestock production, low production, reduced income, loss of livestock, transmission of zoonotic diseases
Women/ girls, elderly, persons with chronic diseases, abject poor households, persons living in sub-standard housing, youths, indigenous populations, people with disabilities, minority and marginalized groups	**Strong Winds**	Farming areas	Felling of crop stalks, loss of vegetation
		Properties	Destruction of property, loss of livelihoods
Populations living near forests	**Forest fires**	Forests	Loss of biodiversity, loss of carbon sinks
		Wildlife	Human wildlife conflict

1.9 Brief Overview of Climate Change Actions in the County

1.9.1 Mainstreaming of NCCAP in County Actions

The County has enacted the Nakuru County Climate Change Act, 2021 setting the foundation for adaptation and resilience. Implementation of Nakuru County Sustainable Energy and Climate Action Plan (SEACAP) is underway. Implementation of this plan ensures all County Departments mainstream issues to do with clean energy solutions and climate actions. The CECM coordinates climate change affairs and reports annually on climate interventions.

1.9.2 Climate Change in CIDP

The Nakuru County third CIDP 2023/28 has been developed with the recognition of the effects of climate change within the County. The priority programmes and projects identified by County Departments address the effects of climate change as well as their mitigation strategies. The CIDP III priorities have been linked with the National priorities as captured in the MTP IV, Kenya's Vision 2030, among other plans. CIDP III has taken bold steps to mainstream climate change in the County's development agenda. It recognizes that climate change is a key driver of environmental degradation. The CIDP lays emphasis on building resilience, enhancing adaptive capacity to climate change impacts, promotion of research in climate change and mainstreaming climate change in all sectors of the County Government.

1.9.3 Other key climate actions/strategies in the County

The County Government of Nakuru has mainstreamed climate actions/ strategies to all county departments through the Annual Development Plans (ADP) 2023/24. The following are key areas being mainstreamed by the various departments:

Environmental protection

- Conventionally recognized disposal practices of e-waste and other forms of waste, reusing and recycling in the respective section
- Establish measures to mitigate against water, air, noise and other forms of pollution in social hall, stadia and youth resource centres
- Adopt digital practices that will reduce usage of paperwork in offices and operations

Energy Solutions

- Develop and implement strategies to ensure use of green, clean and sustainable energy solutions in lighting, cooling, heating, cooking and running of machines/equipment in offices, Stadia, Youth Resource Centres and production hubs
- Acquisition and installation of energy efficient appliances in all facilities
- Put in measures allowing adequate natural air circulation and lighting to reduce dependency on metered power supply

Climate Change resilience, adaptation and mitigation

- Ensure at least 10% tree cover in all facilities
- Sink solar powered boreholes in huge facilities to improve ability to cope with hydrological drought related to climate change and ensure adequate supply of water within the facility e.g. Afraha Stadium
- Regular check on the department vehicles to ensure emissions to the environment is reduced by at least 80%

2. POLICY ENVIRONMENT

2.1 The National Perspective

Kenya has put in motion efforts to ensure that there are mechanisms to mainstream climate change in the development agenda. The Country has made massive strides towards developing relevant policies and plans to regulate the climate change space in Kenya.

The Kenyan Constitution

Although the Kenyan constitution does not specifically deal with climate change, it does so indirectly by Articles 42 and 70. Under article 42, the constitution gives every person the right to "a clean and healthy environment" while Article 70 empowers any person whose right to a right to a clean and healthy environment is violated to seek legal redress. As such any person who contributes to making the environment unhealthy can be sued for it. Article 360 (1b) of the Kenyan constitution requires that the state should work towards a 10% forest cover. County governments can use these constitutional provisions in the formulation of county-specific policies and strategies.

Vision 2030

Vision 2030 – the long-term development blueprint for the country – aims to transform Kenya into "a newly industrializing, middle-income country, providing a high quality of life to all its citizens in a clean and secure environment." Emphasis was placed on infrastructure; Science, Technology, and Innovation; Public Sector Reforms; Tourism; Agriculture; Trade; Manufacturing; ICT (Information Communication & Technology) without the recognizing that climate change can derail the realization of the goals. Achievement of Kenya Vision 2030 is tracked by Sustainable Development Goals. SDG 13 on climate action states that climate change is increasing the frequency and intensity of extreme weather events such as droughts, floods, aggravating water management problems, reducing agricultural production and food security, damaging critical infrastructure etc. It is therefore timely relevant to plan for climate actions on resilience, mitigation and adaptation.

Bottom-Up Economic Transformation Agenda (BETA)

The Kenyan Bottom-Up Economic Transformation Agenda establishes Kenya Government's priorities areas for the period 2022 to 2027. The priorities include **Agricultural Transformation and inclusive growth; Micro, Small and Medium Enterprise (MSME); Housing and Settlement; Affordable Healthcare; and Digital Superhighway and Creative Industry**. Priority plans and budgets expected to be aligned to Environmental Protection, Water and Natural Resources will focus on Expanding Access to Clean and Adequate Water for Domestic and Agricultural Use; Forests and Water Towers Conservation; Wildlife Security, Conservation, and Management; Kenya Financing Locally Led Climate Action Project; Environment Management and Protection; Meteorological Service; and Human Wildlife Conflict Compensation and Wildlife Insurance.

However, most of Kenya's (and Nakuru County in particular) productive sectors are vulnerable to the impacts of climate change implying that the realization of the planned activities in each

of these priority areas will depend how well climate change impacts are addressed. This action plan focuses on addressing climate change impacts in Nakuru County.

At the national level, the key institution for climate change mitigation and adaptation planning and implementation is the National Climate Change Secretariat (NCCS), which coordinates with the National Climate Change Action Plan Task Force and other national stakeholders as detailed Table 2.1.1-1.

Table 4: National Level Stakeholders

Institution	Role
Ministry of Environment and Natural Resources	National Focal Point for the UNFCCC
Ministry of Devolution and Planning	Ensure the integration of climate change in the MTPs
National Environmental Management Authority (NEMA)	National Implementing Entity (NIE) for the Adaptation Fund and the GCF
National Treasury	National Designated Authority for the GCF
Ministry of Transport, Infrastructure, Housing and Urban Development	Member of the National Climate Change Action Plan Task Force
Ministry of Agriculture and Irrigation	Member of the National Climate Change Action Plan Task Force
Ministry of Water and Sanitation	Member of the National Climate Change Action Plan Task Force
Ministry of Energy	Member of the National Climate Change Action Plan Task Force
National Drought Management Authority (NDMA)	• Exercise overall coordination over all matters relating to drought management in Kenya; • Oversees adaptation and resilience-building in the arid and semi-arid lands (ASALs); • The secretariat of the Common Programme Framework in Ending Drought Emergencies in Kenya.

2.2 National Legal and Policy Framework

The following are the provisions of the national level policy framework and how they set a basis for the County Climate Change Action Plan 2023-2028.

Table 5: National Level policy and regulatory framework

Policy documents	Climate change Mitigation and Adaptation provisions
Nationally Determined Contribution (NDC), 2020	The updated NDC sets out an ambitious contribution for Kenya to climate change mitigation. In this document, Kenya commits to abate GHG emissions by 32% by 2030 relative to the BAU scenario of 143 $MtCO_2e$. The updated NDC also sets out contributions of mainstreaming climate change mitigation and adaptation into Medium Term Plans and implementing mitigation and adaptation actions. In the NDC, Kenya commits to: • Increase renewables in the electricity generation mix of the national grid; • Enhance energy and resource efficiency across the different sectors; • Make progress towards achieving tree cover of at least 10% of the land area of Kenya; • Make efforts towards achieving land degradation neutrality; • Scale up Nature Based Solutions (NBS) for mitigation; • Enhance REDD+ activities; • Implement clean, efficient and sustainable energy technologies to reduce over-reliance on fossil and non-sustainable biomass fuels; • Implement low-carbon and efficient transportation systems; • Promote climate smart agriculture (CSA), in line with the Kenya CSA Strategy with an emphasis on efficient livestock management systems; • Implement sustainable waste management systems; and • Harness the mitigation benefits of the sustainable blue economy, including coastal carbon Payment for Ecosystem Services. The commitments related to climate change adaptation include: • Enhancing the adaptive capacity and climate resilience across all the sectors of the economy and the two levels of government – national and county governments; • Exploring innovative livelihood strategies for enhancing climate resilience of local communities through financing of locally led climate change actions; • Enhancing the risk-based approach to climate change adaptation through the development and application of comprehensive climate risk management tools that would help in addressing and adaptively managing climate risks;

Policy documents	Climate change Mitigation and Adaptation provisions
	• Addressing residual climate change impacts, loss and damage especially in the productive sectors of the economy; • Enhancing generation, packaging and widespread uptake and use of climate information on decision-making and planning across sectors and counties with robust early warning systems (EWS); • Enhancing the uptake of adaptation technology especially by women, youth and other vulnerable groups, incorporating scientific and indigenous knowledge; • Enabling institutional strengthening of the community-driven development (CDD), the Climate Change Units and related institutions across sectors and counties as well as non-state actor institutions; and • Strengthening tools for adaptation monitoring, evaluation, and learning (MEL) at the national and county levels, including non-state actors
National Adaptation Plan 2015–2030	• The 2016 NAP is designed to operationalise the NCCAP 2013–2017 and support adaptation strategies in the country. The NAP is the basis for the adaptation component of Kenya's first NDC.
Second National Climate Change Action Plan (NCCAP) 2018-2022	• The plan guides Kenya on the priority climate change adaptation and mitigation actions that help define Kenya's low-carbon, climate-resilient development pathway and lead to the achievement of Kenya's NDC targets. • Nakuru County has aligned her Annual Development Plans and County Integrated Development Plans (CIDPs) to the Vision 2030 national development blueprint, the MTP IV, and the NCCAP 2018-2022 through a consultative process.
Constitution of Kenya, 2010	• Kenya's Constitution provides the basis for action on climate change by guaranteeing citizens a clean and healthy environment, which is a fundamental right under the Bill of Rights. • Provides for the devolved system of governance (counties) which ensures participation of communities and equitable national resource distribution to address socio-economic disparities.
Vision 2030, 2008	• Under the social strategy, Kenya aims to be a nation that has a clean, secure, and sustainable environment by 2030 by harmonising environment-related laws for better environmental planning and governance. • Kenya will also enhance disaster preparedness in all disaster-prone areas and improve the capacity for adaptation to climate change.

Policy documents	Climate change Mitigation and Adaptation provisions
Vision 2030 Third Medium Term Plan (MTP III) 2018-2022	Thematic area: Climate Change and Disaster Risk Management (DRM). • To mitigate drought, the government will strengthen the Integrated Early Warning Systems and National Drought Emergency Fund. • The government will promote a low-carbon, climate-resilient and green growth development. • This will be achieved through strengthening climate change governance and coordination, climate change monitoring, reporting and verification, capacity building and public awareness, and formulation and implementation of the Green Economy Strategy and the National Climate Change Action Plan.
Climate Change Act, 2016	• The Act provides a framework for mainstreaming climate change across sectors. • It facilitates the formulation of a five-year National Climate Change Action Plan (NCCAP) that addresses all sectors of the economy and provides mechanisms for mainstreaming climate change into all sectors and the County Integrated Development Plans (CIDPs).
Environmental Management and Co-ordination (Amendment), 2015	• Article 56 A on guidelines on climate change: The Cabinet Secretary shall, in consultation with relevant lead agencies, issue guidelines and prescribe measures on climate change.
National Climate Change Response Strategy, 2010	• The mission is to strengthen and focus nationwide actions towards climate change adaptation and GHG emission mitigation.
Kenya Climate-Smart Agriculture Strategy (CSA) 2017 – 2026	• The strategy is to adapt to climate change, and build resilience of agricultural systems while minimising emissions for enhanced food and nutritional security and improved livelihoods. • The strategy was subjected to wider stakeholder consultations that brought together all the 47 counties. • Nakuru County does not have a county CSA strategy. However, the CSA strategy has provision for the county agriculture sector Ministries, Departments, and Agencies (MDAs) to spearhead the implementation of the identified strategies in the counties.
Draft Climate Change Policy, 2018	• This policy was developed to facilitate a coordinated, coherent, and effective response to the local, national and global challenges and opportunities that climate change presents.
Sector Plan for Drought Risk Management and	• The plan sets 2030 drought risk mitigation targets defined in Kenya's NDC.

Policy documents	Climate change Mitigation and Adaptation provisions
Ending Drought Emergencies 2013-2017	
National Disaster Risk Management Policy, 2018	• The policy lays down strategies for ensuring that the government commits itself to the enhancement of research in disasters and the formulation of risk reduction strategies.

Green Economy Strategy and Implementation Plan (GESIP), 2016-2030	• This strategy is expected to strengthen the resilience of economic, social, and environmental systems to the adverse effects of external shock.
	• GESIP is linked with the NCCAP 2013-2017, and the National Climate Change Act 2016.
	• Strategies under the thematic area on sustainable infrastructure are to:
	  ○ Enhance sustainable mobility;
	  ○ Increase the share of renewable energy in the energy mix; and
	  ○ Enhance disaster risk reduction measures.
	• Other relevant thematic areas include sustainable natural resource management and promoting resource efficiency

National Spatial Plan 2015-2045	• The National Spatial Plan supports the mainstreaming of climate change into the national and county planning processes.
The Value Added Tax (Amendment) Act, 2014	• The Act offers an exemption from value-added tax (VAT) and import duties for supplies imported or bought for the construction of a power-generating plant or for geothermal exploration. Kenya is expanding geothermal projects to generate clean energy and cut GHG emissions.
Public Finance Management (Climate Change Fund) Regulations, 2018	• The regulations provide financing mechanisms to priority climate change actions and interventions, and empowers counties to develop climate finance policy frameworks.
The Public Finance Management (National Drought Emergency Fund) Regulations, 2018	• The regulations are meant to guide the operations of the National Drought Emergency Fund which is to be established to improve the effectiveness and efficiency of drought risk management systems in the country as well as to provide a common basket of emergency funds for drought risk management.
National Policy on Climate Finance (draft), 2016	• The policy recognises that climate finance is an important enabling aspect of efforts to address climate change. It prepares the country to tap into external and internal climate finances to support mitigation and adaptation activities. It highlights that significant financial resources from the public and private sectors are expected to be channelled towards climate activities.

Policy documents	Climate change Mitigation and Adaptation provisions
The Kenya National Green Climate Fund (GCF) Strategy, 2017	• The strategy strengthens national capacity to effectively and efficiently plan for, access, manage, deploy and monitor climate financing, through the GCF. • It recognises that the country must boost the mobilisation of adequate and predictable financial resources from domestic and international sources. Notably, county governments are critical co-financiers and can take the role of executing entities and/or implementing entities of low-carbon and climate-resilient initiatives (The National Treasury, 2017).
Climate Change Indicator Development Guidebook, 2018	The guidebook identifies climate change indicators at national and county level.
National Food and Nutrition Security Policy (FNSP), 2011	• The policy acknowledges that the current food crisis is fueled by new driving forces such as climate change; and adaptation interventions that enhance farming communities' resilience to climate change induced effects are critical for the realization of the principal objectives of FNSP. • It promotes the integration of climate change adaptation in development programmes and policies. • It improves forecasting of climate change and supports communities to respond to new opportunities and challenges. • However, it doesn't detail how to engage the counties to realize the FNSP.
Kenya Youth Agribusiness Strategy 2017–2021	• The strategy positions youth at the forefront of agricultural growth and transformation. • It has identified strategic issues which include Strategic Issue 10: Negative impacts of climate change and weak environmental governance (Ministry of Agriculture Livestock & Fisheries and the Council of Governors, 2017). • The MoEF in consultation with the county governments and development partners have developed the strategy with a view to increasing meaning and sustainable youth participation in the agricultural sector.
National Urban Development Policy	The policy seeks to create a framework for sustainable urban development in the country and addresses environment and climate change and other themes relevant to urban development. It recommends the following actions to address climate change: • Promote better quality housing that is adaptive to climate change;

Policy documents	Climate change Mitigation and Adaptation provisions
	• Institutionalise the development of green urban landscapes with networks of open spaces and parks; • Enhance climate change resilience through infrastructure design and flood protection; • Promote technological innovation for climate change adaptation and mitigation; and • Expand access to information about climate change through research, education, periodic vulnerability assessments, and impact monitoring at national, county and urban levels.
Integrated National Transport Policy, 2010	• This policy provides for transport solutions relevant to climate change mitigation.
National Sustainable Waste Management Policy, 2020	• The policy sets out the goal *"to protect public health and the environment, as well as drive job and wealth creation, by creating an enabling environment for sustainable, integrated waste management and the minimisation of waste generation, to contribute to a circular economy."* In addition to this goal, the policy contains objectives, principles and priorities for minimizing waste and supporting the circular economy in Kenya.

Other Relevant National Policy and Legal Instruments

a) **Environmental Management and Coordination Act** (No. 8 of 1999 and Amendment 2015). The Act is the Principle instrument of Government for the management of the environment. It provides for the relevant institutional framework for the coordination of environment management including the establishment of the National Environment Management Authority (NEMA), which is the Designated National Authority (DNA) for Clean Development Mechanism (CDM) and the National Implementing Entity (NIE) for the Adaptation Fund

b) **Water Act (No. 43 of 2016)** – establishes National Water Harvesting and Storage Authority. Part V of the Act establishes a Water Sector Trust Fund and empowers it to work with relevant institutions develop incentive programmes for water resources management including disaster management, climate change adaptation and mitigation.

c) **Forest Act 2016** gives effect to Article 69 of the Constitution with regard to forest resources; to provide for the development and sustainable management, including conservation and rational utilization of all forest resources for the socio-economic development of the country and for connected purposes.

d) **Urban Areas and Cities Act 2016** provides for the, classification, governance and management of urban areas and cities; for the criteria of establishing urban areas, also provides for the principle of governance and participation of residents and for connected purposes.

e) **Health Act (No. 21 of 2017**) – This act contains a section on environmental health and climate change (Part VII, sections 68 and 69) that is relevant to climate change.

f) **Energy Bill (2017)** – Part 3, section 43; Part 4, section 74 (i), and Part 9 address climate change-related issues

g) **National Urban Development Policy (NUDP)** seeks to create a framework for sustainable urban development in the country and addresses environment and climate change and other themes relevant to urban development. The policy proposes that county headquarters and other deserving urban centers within counties be upgraded to municipal status. It is important that such developments be informed by a well thought out plan to deal with climate change impacts. To achieve this, the policy recommends that the National and County governments, and urban

- Promote better quality housing that is adaptive to climate change; ·
- Institutionalize the development of green urban landscapes with networks of open spaces and parks; ·
- Enhance climate change resilience through infrastructure design and flood protection;
- Promote technological innovation for climate change adaptation and mitigation; and,
- Expand access to information about climate change through research, education, periodic vulnerability assessments, and impact monitoring at national, county and urban levels.
- **The Integrated National Transport Policy (2010)** policy provides for transport solutions that have relevant to climate change mitigation.
- **The National Disaster Management Policy, 2012** institutionalizes disaster management and mainstreams disaster risk reduction in the country's development initiatives. The policy aims to increase and sustain resilience of vulnerable communities to hazards. **A Draft Kenya's Disaster Risk Financing Strategy (2018-2022)** has also been developed.
- **Green Economy Strategy and Implementation Plan (GESIP) 2016 – 2030.:** The Green Economy Strategy and Implementation Plan (GESIP) 2016-2030 provides the overall policy framework to facilitate a transition to a green economy and outlines the need to mainstream and align green economy initiatives across the economic, social and environmental spheres. It aims to enhance low-carbon, resource efficient, equitable and inclusive socio-economic transformation. Its five thematic areas include promoting sustainable infrastructure; building resilience; sustainable natural resource management; promoting resource efficiency and social inclusion and sustainable livelihoods.
- **The Agriculture Sector Development Strategy 2010-2020** is the overall national policy document for the agricultural sector. The strategy promotes sustainable food

production and agroforestry. There are also broad implications for the forestry sector, which the strategy elaborates.

Table 6: Summary of the Stakeholders and their respective roles

STAKEHOLDER	ROLE OF STAKEHOLDERS
Local Community	▪ Embrace ownership for sustainability of projects ▪ Participation in all project cycles ▪ Contribution in unskilled labor ▪ Community participation and engagements in quality service delivery ▪ Provide feedback on service delivered
Self-help Group, CBOs, FBOs,	▪ Offer partnership in advocacy ▪ Offer quality services on delegated projects ▪ Information dissemination, disclosure and accountability
Donor Community and Partners NGOs e.g. Amiran Kenya, WVK, Rotary Club, NASWAMA, NCTNA, LIFE WATER, WSUP, Catholic Diocese of Nakuru, SANA, KEWASNET, Umande Trust, Practical Action, Kenya Red Cross, UNICEF Child Care, Within Foundation IEWM, GBM, KAM, Afya Uzazi-USAID, Stockholm Environment institute, COMSSA, GIZ, ICLEI, GBM, SDI, VCA, WWF, UNEP, KARA, WASPA, WIN, CESSPAD, WaterWorX,ALIN	▪ Funding support on projects and programmes ▪ Offer partnership in policy formulation, capacity development and awareness creation ▪ Enhance benchmarking, networking, collaborations and engagements ▪ Technology transfer, enhanced innovation, research and development ▪ Information dissemination, disclosure and accountability
NARUWASSCO, NAIVAWASS, NAWASSCO	▪ Partnership in provision of water and sanitation services ▪ Provision of quality services on delegated projects/programmes ▪ Information dissemination, disclosure and accountability

National Government and Line ministries: ➢ **Ministry of Environment and Forestry** ➢ **Ministry of Water, Sanitation and Irrigation**	▪ Offer guidance and support on policy formulation and institutional strengthening ▪ Funding support on projects and programmes ▪ Offer technical advice on matters Sector mandate ▪ Training, capacity development and capacity development ▪ Monitoring and Evaluation ▪ Enhance cooperation, networking, collaboration and building synergies ▪ Resource mobilization
Parastatals – NEMA, WASREB, KWS, WRA, KFS, KENGEN or CRWWDA.	• Coordination and regulation on policies and legal frameworks • Data and Information Dissemination • Approval and issuance of permits • Enhance enforcement and compliance • Implementation of flagship projects • Monitoring, evaluation and reporting
County Assembly	▪ Offer oversight ▪ Legislation ▪ Representation

- **The National Forest Programme (2016–2030)** is the first cross-sectoral and multi-stakeholder national framework for developing and coordinating forest development aimed at meeting the needs of Kenyans from 2016 to 2030. The framework aims at sustainable forest management and has the overall goal: "To develop and sustainably manage, conserve, restore and utilise forests and allied resources for socio-economic growth and climate resilience."
- **Climate Risk Management Framework (2017**). The framework was developed in a participatory manner with technical experts and stakeholders working on disaster risk reduction and climate change adaptation. It recognizes that Kenya faces various forms of disasters, but focuses on hydro meteorological disasters given their magnitude, socio-economic and environmental impact, and frequency of occurrence.

2.2 County Enabling Legal & Policy Framework

The following table depicts climate change resilience, mitigation and adaptation shareholders working with the County Government of Nakuru.

Table 2.2.1: County-level stakeholders

The table below provides relevant County-level policy and regulatory framework.

Table 7: County Level policy and regulatory framework

Policy documents	Mitigation and adaptation provisions

Nakuru County Climate Change Action Plan 2018-2022	Provides the following vision: *Nakuru County has a low-carbon, climate-resilient economy that sustains the livelihoods of its citizens while contributing to the national development agenda*
	• Anticipated to be achieved through eight strategic objectives, namely:
	  ○ Food security;
	  ○ Water security;
	  ○ Ecosystem conservation for sustainable economic development.
	  ○ Green energy production and use;
	  ○ Climate change resilient infrastructure.
	  ○ Knowledge management and capacity building of community, stakeholders, and county officials;
	  ○ Sustainable financing for climate change action; and
	  ○ Governance and coordination of climate change adaptation and mitigation.

Third County Integrated Development Plan (CIDP) 2023-2028	• Provides a strategic focus and programme implementation frameworks and support to tackle climate change, provide policy advice and tools.
Nakuru County Climate Change Fund Regulation	• The regulation provides for mobilisation of local climate finance and leveraging of international climate finance for county-led climate actions.
Nakuru County Climate Change Act, 2021	• The Nakuru Climate Change Act is aimed at putting in place a framework and mechanisms for mobilisation and facilitation of county government, communities and stakeholders to respond effectively to climate change. The response mechanisms will be through appropriate adaptation and mitigation measures and action.
Nakuru County Waste Management Act, 2021	• Mitigation: To facilitate appropriate waste management and utilisation to generate clean energy
The Nakuru County Agricultural Training and Mechanization Service Bill, 2019	• Establishment of the Agricultural Development Fund • Mitigation: Aim to reduce inappropriate land preparation technologies like burning.

Policy documents	Mitigation and adaptation provisions
The Nakuru County Urban Agriculture Promotion and Regulation Bill, 2015	• Mitigation: To include urban agriculture in the county as a way of maximising space, introducing green spaces, and using organic waste.
Nakuru County Clean Energy Policy	• The policy provides an overarching framework for the county's plans, programmes and initiatives relating to sustainable clean energy supply and use by 2022. The overall objective of the policy is to ensure an affordable, competitive, sustainable and reliable supply of energy to meet county development needs at least cost, while protecting and conserving the environment. The policy seeks to enhance access to electricity for households and small businesses and access to clean cooking solutions for households and institutions.
Nakuru Public Health and Sanitation Act, 2017	• This Act is the legal framework relating to health matters in Nakuru County, including dealing with infectious diseases, housing and sanitation, and the management of solid and liquid wastes. It is important in the management of climate change challenges due to the link between emerging diseases and climate change.
Nakuru County Water and Sanitation Act 2021	• This act provides a legal framework relating to potable water and sanitation services. It is important to ensure access to potable water and affordable sanitation services for all.

2.2.1 Nakuru County Integrated Development Plan (2018-2022)

Nakuru County Integrated Development Plan (2018-2022) was being developed during this plan formulation period. The draft 2018-2022 CIDP takes the lessons from the 2013-2017. It is premised on the priorities of MTP III 2018-2022 of Kenya's Vision 2030 that, among other areas, has a focus on mainstreaming climate change adaptation and mitigation. Just like its predecessor, this draft was developed in a participatory manner. In relation to climate change action plan, this draft has taken bold steps to mainstream climate change in the county's development agenda. First, it recognizes that climate change is a key driver of environmental degradation. It negatively affects many sectors in Nakuru County including agriculture, livestock, forestry and water. The plan recognizes climate change mitigation and adaptation activities that were underway by 2018. The draft CIDP lays a lot of emphasis on building resilience and enhancing adaptive capacity to climate change impacts, mainstreaming climate change at all sectors of the county government and promotion of research in climate change. Unlike the 2013-2017 CIDP, this second CIDP has allocated specific budgetary allocation for climate change actions. For example, the budget for climate change mitigation and adaptation including tree planting is 0.1 billion Kenya Shillings per year. In addition, the CIDP allocates a budget of Ksh 70 million for developing and implementing this action plan.

2.2.2 Nakuru County Spatial Development Plan (2015-2025)

This plan identifies programs and projects on land use and development in the county for the period 2015-2025. It designates urban areas, delineates sensitive areas that require conservation, and at the same time integrates those sectors that have special natural resource and environmental characteristics. It stipulates the direction for the county economy, agriculture, human settlements, transport and infrastructure. The spatial plan was formulated based on challenges and opportunities that face the County. Key problems identified includes; deforestation; soil degradation; flooding and landslides; population pressure; decreasing land productivity; lack of value addition on agricultural products; inadequate marketing facilities; land fragmentation into uneconomical units; unplanned urban areas; urban sprawl into agricultural productive areas; informal settlements; and inadequate infrastructural facilities. Most of these challenges are also relevant in planning for climate change challenges. Opportunities are presented through the county's strategic location and the major international transit road corridor, its rich in cultural heritage, abundance of human resources, arable agricultural land, and its great potential for green energy production.

2.2.3 Nakuru County Annual Development Plans and Budgetary Process

Each County is required by the constitution, Article 220 (2), to prepare annual development plans to guide development in the county. This constitutional requirement is actualized by the 2012 Public Finance Management Act (PFM) 2012) 126. The 2015/2016 annual plan was Nakuru's first, and it focused on the following Strategic Objectives:

i. Infrastructure development (Roads, Electricity, ICT and Telecommunications, Sewerage Systems, Water Supply, etc.).

ii. Investing in agricultural transformation and food security.

iii. Investing in quality, affordable and accessible (i.e., preventative, curative and rehabilitation health care services).

iv. Promote trade and industrial development including the revival of the collapsed industries.

v. Investing in Education, focusing on the rehabilitation and equipping of youth polytechnics, technical institutions, as well as middle-level colleges and social development of the communities through social programs.

vi. Enhancing governance, transparency, and accountability in the delivery of public service.

Review of the 2015/2016 plan (County Government of Nakuru, 2015) reveals that there was no mention of climate change in the plan. The strategic objectives for the 2016/2017 (County Government of Nakuru, 2016) remained similar to those of 2015/2016. However, there was a remote reference to climate change through the mention of activities to promote crop varieties adaptable to new climate conditions. The county development priorities seem to have changed slightly in the 2017/2018 (County Government of Nakuru, 2017) period with the following focus.

i. Creating an enabling environment for business and private sector participation in county development.

ii. Development of County Physical and Social Infrastructure facilities including feeder roads, water, ICT, to stimulate growth.

iii. Provision of health services through investing in quality and affordable health services.

iv. Promotion of value addition for agricultural produce, food security, and environmental conservation.

v. Promotion of equitable socio-economic development for county stability.

vi. Enhancing governance, transparency, and accountability in the delivery of public goods and services by promoting citizen participation in governance.

The fourth area of focus gives an opportunity to mainstream climate change. Unlike the two previous annual plans, plan mentioned "**climate change"** three times. The plan also summarised activities of previous annual development plans with a bearing on climate

change actions. It is, therefore, clear that the level of climate change awareness in the county has been growing gradually. As outlined in Chapter 1, there is strong evidence that climate change is impacting the socio-economic development of the county. It is, therefore, necessary to ensure that the county budgetary process mainstreams climate change actions. This can only be achieved through awareness creation and capacity building on matters of climate change among county planners and other stakeholders.

2.2.4 Nakuru County Clean Energy Plan

Nakuru County Clean Energy Plan provides an overarching framework for the County's plans, programmes and initiatives relating to sustainable clean energy supply and use by 2022. The overall objective of the plan is to ensure affordable, competitive, sustainable and reliable supply of energy to meet county development needs at least cost, while protecting and conserving the environment. The plan has identified improved access to energy as a key element in meeting its goals under this policy. The plan seeks to enhance access to electricity for households and small businesses and access to clean cooking solutions for households and institutions. These issues will be addressed by the activities proposed in this action plan.

2.2.5 The Nakuru County Fire and Rescue Services Act, 2016

This Act of the County Assembly of Nakuru makes provision for fire and rescue services and provided for the legal mechanisms to establish a Fire and Rescue Services Authority. Once operational, this authority will be key in dealing with some of the disasters that are associated with climate change including fires, flooding and collapse of infrastructure.

2.2.6 Nakuru Public Health and Sanitation Act 2017

This act the legal framework relating to health matters in Nakuru County including dealing with infectious diseases housing and sanitation and management of solid and liquid wastes. This act is important in the management of climate change challenges due to the link of emerging diseases and climate change.

2.2.7 Nakuru County Water and Sanitation Act 2021

CHAPTER 3: PRIORITY CLIMATE CHANGE ACTIONS

3.1 Identification of strategic climate action priorities in the PCRA

The hazards identified across Nakuru County include landslides, drought/dry spells, excess rainfall, changing rainfall patterns, increasing temperature, floods, hailstones, frost/extreme cold, and strong winds. Increasing temperature is a major concern in Gilgil, Naivasha, and Njoro sub-counties. Common across the board was changing rainfall patterns, while drought/ dry spell is mainly experienced in Molo, Naivasha, Nakuru Town, and Njoro. Excess rainfall was a major problem in Nakuru Town, Njoro, and Subukia, while the strong wind was identified as a problem in Njoro, Nakuru Town, Gilgil, Naivasha, and Rongai, respectively. In addition, farmers in the Njoro sub-county experience most of the identified climate change-related hazards

Participant engagements led to the proposal of priority adaptation strategies aimed at addressing the primary climate change hazards, with the goal of enhancing community resilience. These priority initiatives align with the needs of communities and focus on ecosystem conservation, as well as thematic areas such as food and nutrition, and soil and water conservation.

Residents emphasized the significance of soil and water conservation projects, attributing this preference to the identification of droughts and floods as major climatic risks across most wards in Nakuru County. The plan acknowledges the impact of climate change on socio-economic sectors and identifies specific areas where climate action in the next five years aligns with Kenya's Vision 2030 and the Sustainable Development Goals (SDGs). Recognizing the potential limitations imposed by climate change, the plan prioritizes adaptation actions, particularly in response to the adverse effects of droughts and floods on vulnerable societal groups, notably affecting the agriculture sector and food security.

The adaptation actions outlined in the plan are designed to mitigate greenhouse gas (GHG) emissions where feasible, aiming to fulfill the County's mitigation objectives. Simultaneously, the plan endeavors to help Kenya achieve its Nationally Determined Contributions (NDCs) under the Paris Agreement, which targets a 32% reduction in GHG emissions by 2030 relative to the business-as-usual scenario of 143 MtCO2e.

Grounded in the SDGs, the Nakuru County Climate Action Plan for 2023–2028 is poised to contribute to sustainable development, enhance agricultural productivity, and improve water accessibility. The plan anticipates positive outcomes for the most vulnerable including women/girls, elderly, PWDs, minority and marginalized groups through initiatives like access to clean cooking, forest restoration, and agroforestry actions that provide energy and water sources.

There is a harmonious alignment between the impacts of climate change mitigation and adaptation actions with the SDGs, Vision 2030 and Nakuru County 3rd CIDP 2023/28. Special emphasis is given to the inclusive objective of Vision 2030, focusing on prioritizing the poorest and most vulnerable to achieve sustainable development goals by ending extreme poverty and

curbing inequalities by 2030. In essence, the adaptation and mitigation actions outlined in this plan directly address or are likely to provide benefits for all the SDGs.

The greatest potential benefits are related to:

- Knowledge Management and Capacity Building of Community, Stakeholders, Climate Change Committees and County officials (SDG 13).
- Sustainable agriculture and food security (SDG 2 and Economic & Macro pillar of the vision 2030).
- Sustainable and renewable energy (SDG 7 and Economic and Macro & Social pillars of the vision 2030).
- Ecosystem restoration and preservation (SDG 15 and social pillar - Environment, Water and Sanitation of the Vision 2030).
- Water availability (SDG 6 and Environment, Water and Sanitation -Social pillar of the Vision 2030).
- Sustainable growth and industry (SDG 8 and Economic and Macro pillar – infrastructure and Manufacturing).
- Sustainable transport (SDG 9 and Economic and macro & social pillars of the vision 2030).
- Sustainable waste management (SDG 11 and Social (Environment water and sanitation) pillar of the Vision 2030).
- Human health (SDG 3 and Social-health Pillar of the vision 2030). Low-carbon energy sources; ecosystem-based solutions such as climate smart agriculture, rangeland restoration and agroforestry; and the development of sustainable public transport systems have sizeable win-win benefits for boosting employment and manufacturing capacity, protecting the environment, and narrowing inequalities (Government of Kenya, 2018).

3.2 Priority County Climate Change Actions

Nakuru County CCAP 2023/28 outlines the programmes and strategies for resilience, adaptation and mitigation. It is a comprehensive plan that:

- Enables all sectors within the County to act to achieve climate change adaptation and mitigation objectives.
- Supports achievement of the Vision 2030 agenda and the SDGs.
- Enhances the adaptive capacity and resilience of communities, with an emphasis on the marginalised and vulnerable groups within society.
- Undertakes actions that limit GHGs emissions, where possible, to help Kenya achieve the mitigation NDC under the Paris Agreement; and
- Enables actions to be undertaken in an integrated manner that address several priorities. E.g., actions to plant trees also contribute to disaster risk management, water and food security objectives

3.3 AGRICULTURE, LIVESTOCK AND FISHERIES

Priority actions in this sector includes:

- Desilt existing water pans
- Construct new water pans in Naivasha and Rongai sub counties to promote water harvesting, conservation and utilisation for domestic and agricultural use in Nakuru County
- Capacity build farmers/ pastoralists
- Adoption of climate resistant foods/crops/fodder

Many farms in Nakuru County are impacted negatively by flooding due to heavy rains during the rainy season, as well as water shortages during the dry season. Water pans are an intervention that addresses both of these climate hazards, as they reduce flooding locally by collecting runoff water, while also extending water availability through the dry season. In addition, it is an action that has already been undertaken in some areas in the county, and thus is definitely feasible. This action will directly mitigate against drought and river flooding, and will have high impact on increasing the resilience of the agriculture sector to the impacts of climate change.

3.4 WATER: ACCESS TO CLEAN WATER

Priority actions as identified in PCRA includes:

- Drilling of boreholes
- Protection of water catchments
- Construction of water infrastructure
- Reduce non-revenue water
- Map all community water sources in Nakuru County by 2030, including springs, boreholes, pans, dams and shallow wells

Around 32% of the population is estimated to get their water from springs, wells or boreholes, some of which are unprotected and are categorised as unimproved drinking water sources, resulting in the spread of waterborne diseases that are exacerbated by flooding caused by climate change. These water sources have not all been mapped, meaning it is difficult for the county to protect them, as well as ensuring that the population has access to clean water and ensuring the health of vulnerable groups in more rural areas. This action is a priority as it will ensure the protection of community water sources, contributing to the target of access to clean water for 80% of the population (a human right), while preventing the spread of waterborne diseases.

3.5 FORESTRY

- Grow 1,050,000 trees per year
- Rehabilitate degraded areas

- Establish tree nurseries
- Rehabilitate open public green spaces in Nyayo Garden, Lion Garden, Naivasha People's Park and others, and reforest areas in gazetted forests with a focus on indigenous trees and the restoration of indigenous ecosystems

As part of the resolutions and commitments within Kenya's NDC, the National Forest Programme, as well as county-determined contributions, this action will ensure that Nakuru County meets the target of 10% tree cover by 2030, thereby reducing negative impacts of climate change such as flooding, erosion, and extreme heat while also increasing the county's carbon sinks. In addition, this action will contribute to the social value of Nakuru County's open public green spaces by rehabilitating them, resulting in aesthetically pleasing areas that can be used for recreation and community-upliftment purposes. This action will also focus on the reforestation of gazetted forests with indigenous vegetation, contributing to the overall functioning of these ecosystems. These additional benefits contribute to this action being considered a priority by the county.

3.6 TOURISM

- Conduct sensitisation and capacity-building on sustainable tourism activities with vulnerable groups (including youth, women and Indigenous communities) across Nakuru County's 55 wards by 2030

Ecotourism contributes to the conservation and preservation of natural and cultural resources, increasing their resilience to climate change impacts such as flooding and droughts. It is also a well-established way of uplifting local communities and generating livelihoods, while increasing economic activity in the county in general. Thus, this action will build resilience to climate change through increased means by which to respond to climate hazards. Local residents, especially vulnerable groups such as the youth, women and Indigenous groups, will enjoy economic and social benefits through this action. Examples of this are already seen in Lake Naivasha, Lake Solai, Hells Gate National Park and Lake Elementaita. This action will result in community empowerment through ecotourism, as well as improved conservation and increased climate resilience. It is thus considered a priority for the county.

Table 8: Analysis of priority sectors from the technical workshop

Priority sector for adaptation actions	Sector description	Impact of climate hazards on the sector	Projected impact of climate hazards under BAU scenario
Food and agriculture	• The food and agriculture sector include agriculture, livestock, and fisheries in the context of Nakuru County. • The agricultural sector is the backbone of the	• The effects of climate change in Nakuru County have led to increasing forest fires, decreasing agricultural productivity, increasing urban sprawl, surging of lakes, and increasing migration and conflict as a result of porous borders and the fight for resources.	• Increasing vector-borne, waterborne, and airborne diseases will affect farming in the future. It is anticipated that it will be difficult to continue with farming practices due to various diseases. • Increasing extreme precipitation is likely to

Priority sector for adaptation actions	Sector description	Impact of climate hazards on the sector	Projected impact of climate hazards under BAU scenario
	county's economy and is important to address food security. • Most of the land in the county is agricultural.	• The temperature increase has been a key cause of the decreased productivity of most agricultural products. Some crops such as wheat have been negatively affected due to meteorological droughts and the associated increase in crop pathogens. • In addition to droughts, flooding also leads to loss of crops and livestock as well as incidence of pests and diseases, locusts, fall armyworm, livestock diseases and East Coast fever.	cause soil saturation and affect crop productivity generally. • Increasing frequency of drought is likely to lower wheat production and other key crops in the country.
Water supply and sanitation	• Water for agriculture and food production contributes substantially to the county's economy and is highly vulnerable to climate change impacts. Water contributes to producing food, employment (directly and indirectly), foreign exchange (revenue), and provides raw materials for industries.	• Changing rainfall patterns impacts water supplies negatively due to erratic and unpredictable patterns. This leads to post-harvest losses and affects the cropping calendar -the majority of crops are rain fed.	• If unchecked, the sector could be adversely affected, leading to conflict, rural-urban migration, and crop-livestock farmer conflicts in the search for pasture.
Environment, biodiversity and forestry	• The environment, biodiversity and forestry sector include both the forestry, wildlife and	• Changing rainfall patterns negatively impacts water levels in the lakes and rivers. This affects the biodiversity of the county relying on these water sources, and therefore the tourism sector.	• It is expected that rainfall will become more erratic and temperature will rise under a BAU scenario, leading to increased negative impacts on forest,

Priority sector for adaptation actions	Sector description	Impact of climate hazards on the sector	Projected impact of climate hazards under BAU scenario
	tourism sectors in the context of Nakuru County.	• Droughts, water scarcity and heat waves increase the prevalence of disease and wildlife deaths. • Forest fires lead to loss of biodiversity and habitats.	river and lake health, and biodiversity levels. • Losses in biodiversity could negatively impact tourism.
Land use planning	• The land sector guides resource use and management in the entire county. Properly planned and integrated land-use plans are very key to community adaptive capacity. This might entail the development of spatial plans to guide resource utilisation and management. In this case, the county and its citizens need to be proactive in planning rather than reactive.	• The effects of climate change in Nakuru County include an increase in forest fires, flooding areas, decreased soil productivity, urban sprawl, surging of lakes, increased migration and conflict as a result of porous borders and fights over resources. Consequently, the sector has increasingly lost its value and resulted in community incapacitation to adapt to the impacts of climate change.	• If no action is taken, increasing challenges such as sinking grounds and even the loss of lives could be seen shortly in Nakuru County.

Table 9: Summary of priority actions

STRATEGIC CLIMATE ACTION PRIORITIES IN THE PCRA		
HAZARD	**PRIORITY ACTION**	**TARGETED GROUPS**
Drought	Re-afforestation and Afforestation programs with 61 tree nurseries, planting 260,000 tree seedlings that will benefit 90,200 households in the entire county	Marginalized groups and Vulnerable communities
	Awareness creation of Water Harvesting Techniques and best practices targeting 16,000 households in the entire county	Women; marginalized groups, vulnerable communities
	Drilling and equipping 17 Boreholes targeting 100,000 households in the entire county	Women; marginalized groups, vulnerable communities, Youth
	Rain water harvesting and provision of water tanks targeting 19,700 households in the entire county	Women; marginalized groups; vulnerable communities
	Establishing of 18 water pans in the entire county	Women; youth; vulnerable communities
	Desilting and Maintaining 50 water pans	Women; youth; vulnerable communities
	Drought Resistant Crops (Sweet Potatoes, Katumani Maize) targeting 15,000 farmers in the entire county	Women; marginalized groups, vulnerable communities, Youth
	Promotion of various irrigation methods 25,000 farmers in the entire county	Women; vulnerable groups; marginalized communities
	Promotion of Agroforestry including drought resistant fodder trees 100,000 drought resistant fodder trees	Women; marginalized groups, vulnerable communities, Youth
	Training farmers on alternative agricultural practices targeting 100,000 farmers	Women, Youth, Marginalized groups, vulnerable communities
	Protection and Conservation of Mau Water Catchment areas	Women, Youth Marginalized groups, vulnerable communities
	Enforcement of Forest Protection Laws	Marginalized groups, vulnerable communities
	Pipe and supply water close to 32 livestock watering points and distribution centres	Women, Youth, Marginalized groups, vulnerable communities
Land Degradation	Planting Fruit tree seedlings such as guavas, loquats, and banana plantations along the buffer zones 2,200,000 seedlings to benefit 10,000 households	Women, Youth, Marginalized groups, vulnerable communities
	Establish 59 Tree nurseries to raise 837,000 seedlings	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Installation of gabions in 655 areas in the entire county	Women, Youth, Marginalized groups, vulnerable communities
	Agricultural extension services	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities

	Tree planting and conservation initiatives	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Conservation of forest habitats	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Public education and mass awareness creation on wildlife conservation and protection of water points	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Provision of water points for the wild animals targeting 2500 households in the entire county	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Smart agricultural practices such as paddocking, planting grass targeting 53,500 households in the entire Nakuru county	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Intercropping and crop rotation especially with leguminous crops targeting 7,500 farmers	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Capacity building 7,200 farmers on climate-smart agriculture	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Enhancing enforcement and patrols to protect the vulnerable areas	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Create awareness among the community on best solid waste management practices	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Provide more waste skips in the market areas	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Create awareness and sensitization of the community on effects of land degradation	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Promote use of organic manure to improve soil texture and characterization targeting 5,500 households	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Improve storm water drainage	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Beaconing of protected wildlife habitats	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Rehabilitate and restoration of degraded land/quarries 8	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
	Fencing Kiptunga Forest	Women, Youth, Marginalized groups, vulnerable communities, people with disabilities
Flood	Re-afforestation and afforestation programs especially along riparian and wetland areas to	Women and children who are more vulnerable

	protect over 23,000 No. of households living along rivers and lower lying areas.	
	Construction of 18 No. water pans to benefit about 5800 households.	Women, elderly, children and youths
	Construction of gabions	Youths and women
	Capacity building on integrated solid waste management to about 33,200 households.	Women, People living with disability and marginalized groups.
	Creation of awareness and training on water harvesting techniques and creation of spongy natural grounds for enhanced water percolation to 15,700 No. of households.	Women, marginalized groups, People living with disability and youths.
Pollution	Capacity building on integrated solid waste management techniques to about 28,000 households.	Youths, women and marginalized groups.
	Training of over 20,000 households on Waste recovery and onsite waste management and sanitation.	Youth and women
	Capacity building on smart agriculture and integrated pest management to 24,500 households especially in farming.	Women, marginalized groups, people living with disability and youth.
	Installation of air quality monitoring sensors	Women, marginalized groups, people living with disability and youth.
	Tree growing to sequester carbon emission and purify air through establishment of 20 No. of tree nurseries	Women, marginalized groups, people living with disability and youth.
	Public education on green energy options in cooking and transportation that is, promoting electric and solarized vehicles/ motorbikes and biogas and briquettes in cooking.	Women, marginalized groups, children and people living with disability.
Deforestation	Reforestation and reafforestation programs; through establishment of 100 No. of tree nurseries to benefit 44,500 households.	Youths, Women, marginalized groups, children and people living with disability.
	Promotion of green energy options through public education on biogas, solar energy, briquettes from waste materials and saving jikos to 9000 No. of households.	Youths, Women, marginalized groups, children and people living with disability.
Frost	Adoption of frost adaptable crops including traditional varieties of irish potatoes, beans and vegetables.	Women, children, marginalized groups, people living with disability and youth.

CHAPTER FOUR: DELIVERY MECHANISMS FOR CCAP

4.1 Enabling Factors

4.1.1 Enabling policy and Regulation

The County has put in place relevant policy and regulatory frameworks towards actualization of this plan. Among these frameworks includes: Third County Integrated Development Plan (CIDP) 2023-2028, Nakuru County Climate Change Act, 2021, Nakuru County Climate Change Fund Regulation, Nakuru County Waste Management Act, 2021, Nakuru County Clean Energy Plan 2022-2027, Nakuru County Water and Sanitation Act, 2021, SEACAP etc.

4.1.2 Mainstreaming in the CIDP

The Nakuru County third CIDP 2023/28 has been developed with the recognition of the effects of climate change within the County. The priority programmes and projects identified by County Departments address the effects of climate change as well as their mitigation strategies. The CIDP III priorities have been linked with the National priorities as captured in the MTP IV, Kenya's Vision 2030, among other plans. CIDP III has taken bold steps to mainstream climate change in the County's development agenda. It recognizes that climate change is a key driver of environmental degradation. The CIDP lays emphasis on building resilience, enhancing adaptive capacity to climate change impacts, promotion of research in climate change and mainstreaming climate change in all sectors of the County Government. Monitoring for implementation of these priorities will continue to enhance effective achievement of the objectives.

4.1.3 Multi-Stakeholders' Participation Processes

As per the Nakuru Climate Change Act 2021:

(1) The Steering Committee shall ensure that the Planning Committee and Ward Planning Committees implement comprehensive programmes of capacity building to equip individual citizens and communities in the county for effective participation in climate change governance and response.

(2) The Planning Committee and Ward Planning Committees shall support and facilitate communities to establish Community-Based Organizations and other frameworks for mobilization and engagement with climate governance and response issues in the county.

4.1.4 Finance- County Climate Change Fund

As per the Nakuru Climate Change Act 2021:

Establishment of County Climate Change Fund

(1) There is hereby established the County Climate Change Fund to provide funding for priority climate change actions and interventions identified by communities and other stakeholders and approved by the Steering Committee.

(2) The Fund shall be vested in the County Treasury, administered by the Steering Committee and managed by the Fund Administrator appointed by the Executive Committee Member for the time being in charge of the Treasury in consultation with the Executive Committee Member.

Sources of the Fund

The Fund shall be financed through—

(a) initial capital appropriated by the County Assembly, being not less than one percent of the county development budget;
(b) money appropriate annually by the County Assembly, which shall be not less than one percent of the annual development budget of the county;
(c) money received from the National Climate Change Fund;
(d) international Climate Finance received by the county directly or through the National Designated Authority, National Implementing Entity or other agency;
(e) donations, endowments, bequests, grants and gifts from individuals, public and private entities local or foreign;
(f) charges, fees, levies or fines received by the county government in connection with activities that adversely impact on climate in the county; and
(g) interest and any other money that may lawfully accrue to the Fund in any form.

4.1.5 Governance- County Government Structures

Synergy between the County Executive and Nakuru County Assembly has proved critical in delivery of services and positive development impacts. The two arms are working and will continue to work in synergy to actualise the CCAP and to ensure allocation and approval of adequate funding for the actions in this plan is paramount.

4.1.6 Governance- Climate Change Planning Committees

As per the Nakuru Climate Change Act 2021:

Composition of Planning Committee

Members of the Planning Committee shall be—
(a) Chief Officer in charge environment, climate change matters who shall be the chairperson;
(b) Director in charge of the climate change unit, who shall be the Secretary;
(c) County Director in charge of finance and planning;
(d) County Director in charge of agriculture, livestock and fisheries;
(e) County Director in charge of health;
(f) County Director in charge of water and irrigation;
(g) County representative of the National Environment Management Authority or a designated representative;
(h) County Drought Coordinator or a designated representative;
(i) County Director of Meteorology;
(j) one representative of duly registered public benefit organizations working in the county nominated by the umbrella organization representing the largest number of public benefit organizations;
(k) one representative of the private sector in the county nominated by the umbrella organization representing the largest number of private sector organizations in the county;
(l) one representative of women in the county nominated by the umbrella organization representing the largest number of women's organizations in the county;
(m) one representative of youth in the county nominated by the umbrella organization representing the largest number of youth organizations in the county; and
(n) the Administrator of the Fund, who shall be an *ex-officio* member with no voting rights.

4.1.7 Climate Information Services and Climate Data Access

The Steering Committee, the Planning Committee, the Ward Planning Committee shall publish, publicize and ensure access to all important climate change information in their possession

4.1.8 Resilience Planning Tools

A number of planning tools exist at various levels. The planning tools formed the basis for development of the CCAP and will guide in its implementation. These tools include among others, the, NCCAP 2018-2022, the National Climate Change Response Strategy 2010, the National Adaptation Plan (NAP), the National Determined Contributions (NDCs), Measurement, reporting and verification framework, the 3rd CIDP 2023/28 and NCCCA, 2021. Relevant provisions in these tools have been contextualized in the County through development of the County PCRA and will be critical in implementation of this CCAP.

4.1.9 Measurement, Reporting and Verification

Nakuru County will use the existing national measurement, reporting and verification framework and contextualise it to actions in this Plan. The plan stipulates indicators of progress in adaptation and resilience building in the County. The County is developing a context specific system to compile, analyse and report on progress and challenges and share with stakeholders and lead agencies. Progress will be reported annually by the CCU and the CECM in charge of climate affairs.

Table 10: Institutional roles and responsibilities

STAKEHOLDER	ROLE OF STAKEHOLDERS
Local Community	▪ Embrace ownership for sustainability of projects ▪ Participation in all project cycles ▪ Contribution in unskilled labor ▪ Community participation and engagements in quality service delivery ▪ Provide feedback on service delivered
Self-help Group, CBOs, FBOs,	▪ Offer partnership in advocacy ▪ Offer quality services on delegated projects ▪ Information dissemination, disclosure and accountability
Donor Community and Partners NGOs e.g. Amiran Kenya, WVK, Rotary Club, NASWAMA, NCTNA, LIFE WATER, WSUP, Catholic Diocese of Nakuru, SANA, KEWASNET, Umande Trust, Practical Action, Kenya Red Cross, UNICEF Child Care, Within Foundation IEWM, GBM, KAM, Afya Uzazi-USAID, Stockholm	▪ Funding support on projects and programmes ▪ Offer partnership in policy formulation, capacity development and awareness creation ▪ Enhance benchmarking, networking, collaborations and engagements ▪ Technology transfer, enhanced innovation, research and development

Environment institute, COMSSA, GIZ, ICLEI, GBM, SDI, VCA, WWF, UNEP, KARA, WASPA, WIN, CESSPAD, WaterWorX,ALIN	▪ Information dissemination, disclosure and accountability
NARUWASSCO, NAIVAWASS, NAWASSCO	▪ Partnership in provision of water and sanitation services ▪ Provision of quality services on delegated projects/programmes ▪ Information dissemination, disclosure and accountability
National Government and Line ministries: ➢ **Ministry of Environment and Forestry** ➢ **Ministry of Water, Sanitation and Irrigation**	▪ Offer guidance and support on policy formulation and institutional strengthening ▪ Funding support on projects and programmes ▪ Offer technical advice on matters Sector mandate ▪ Training, capacity development and capacity development ▪ Monitoring and Evaluation ▪ Enhance cooperation, networking, collaboration and building synergies ▪ Resource mobilization
Parastatals – NEMA, WASREB, KWS, WRA, KFS, KENGEN or CRWWDA.	• Coordination and regulation on policies and legal frameworks • Data and Information Dissemination • Approval and issuance of permits • Enhance enforcement and compliance • Implementation of flagship projects • Monitoring, evaluation and reporting
County Assembly	▪ Offer oversight ▪ Legislation ▪ Representation

4.2 Implementation and Coordination Mechanisms

4.2.1 Directorate of Climate Change

As per the Nakuru County Climate Change Act 2021, the Directorate of Climate Change shall:

- Advise the Executive Committee Member in charge of Climate Change on policy, strategic planning and all matters related to Climate Change in the County.
- Provide secretariat services to steering and planning committees.

- Coordinate, mainstream and integrate climate change programs into sectoral strategic plans to ensure synergy among other key sectors.
- Establish and maintaining relationships with the counties with shared natural resources, regional and international organisations, institutions and agencies with interest on the said ecosystems and natural resources as may be appropriate for the implementation of the climate change policy and recommendations.

4.2.2 County Climate Change Steering Committee

The Steering Committee shall coordinate and oversee climate change response in the County, and in this connection shall—

- Ensure mainstreaming of climate change into county planning and development processes;
- Coordinate formulation and monitor implementation of the County Climate Change Action Plan, County Climate Finance Framework and any other county climate change policies, plans and strategies;
- Mobilize funds into and administer the County Climate Change Fund established under this Act;
- Review, approve and monitor implementation of Regulations for administration and management of the Fund;
- Review and make recommendations on the biennial report on implementation of the County Climate Change Action Plan and any other reports on climate change response interventions in the county;
- Advise the county Government on legislative, policy and other measures necessary for climate change response and attainment of low carbon climate resilient development;
- Approve and oversee the implementation in the county of a comprehensive programme of climate change education, awareness creation and capacity building;
- Provide policy direction on research, training and dissemination of information relating to climate change to the public and other stakeholders the county;
- Ensure positive linkages, interactions and synergy between the county, neighbouring counties and the national government in climate change response programming and action;
- Ensure a coordinated approach to climate change response programming and action within the county government, between the county government and national government, and among the different stakeholders in the County;
- Coordinate the formulation of a climate change reporting framework, and the preparation and dissemination of an annual report on climate change response activities in the County; and
- Perform any other functions that may further the foregoing objectives and/or may be assigned by the Governor.

4.2.3 County Climate Change Planning Committee

There is established County Climate Change Planning Committee, which comprise of 14 members appointed to the Committee by the Executive Committee Member for the time being in charge of climate change matters in consultation with the Executive Committee Member for the time being in charge of the County Treasury.

4.2.4 Climate Change Unit (CCU)

There shall be established a County Climate Change Unit which shall serve as the secretariat of the Climate Change Steering Committee. The Unit shall be headed by the Director responsible for the Climate Change matters in the County.

The functions of the Secretariat shall be—

- The day-to-day administration of the affairs of the Steering Committee
- The co-ordination of the Committee's studies, research and evaluation
- The co-ordination of the functionality of the County Planning Committee and Ward Planning Committee
- To receive comprehensive programmes and ideas from the County Planning Committee and Ward Planning Committee
- To forward comprehensive reports and programmes from the County Planning Committee and Ward Planning Committee to the Steering Committee
- The custody of all records and documents of the Committee
- Collection and verification of data on proposed climate mitigation measures
- Documentation of comprehensive programmes on climate change
- Fund-raising and management of the funds and resources
- Management of information

4.2.5 Ward Climate Change Committee (WCCC)

There shall be established a Ward Climate Change Planning Committee in each ward. The functions of the Ward Planning Committee shall be—

- To coordinate and mobilize communities and other stakeholders in the ward to design and implement climate change response activities
- To facilitate research and knowledge management at the ward level on climate change, its impacts and strategies for responding thereto
- To facilitate public education, awareness creation, and capacity building at the ward level on climate change, its impacts and strategies for responding thereto
- To coordinate, facilitate and manage community consultations on priority climate change response activities
- To participate in county planning and budgeting processes with a view to ensuring the mainstreaming of climate change and prioritization of climate change response in county development plans
- To facilitate public participation in climate change governance, implementation of agreed climate change response activities, and monitoring of those activities
- To coordinate and facilitate provision of technical support to communities in the ward in developing proposals on climate change response projects for funding by the County Climate Change Fund
- To oversee implementation of climate change response projects funded by the County Climate Change Fund and report thereon to the Planning Committee
- To perform any other functions that may be assigned to it by the Planning Committee.

4.3 Implementation Matrix

Table 11: Summary of the actions to be implemented per sector

Sector	Issue/ Problems	Strategic Objective	Actions	Expected Output	Key Performance Indicators	Responsible Agency	Year 1	Year 2	Year 3	Year 4	Year 5	Estimated Budget (Ksh.)
SUPPORT, PLANNING AND ADMINISTRATION	Inadequate public awareness on climate change affairs	Create public awareness on climate change affairs	Develop and implement a robust public awareness programme on climate change	Improved public awareness on climate change affairs	No of Create public awareness on climate change workshops held	WEENR and partners	11	11	11	11	11	30,000,000
	Inadequate capacity of County climate change committees	Develop capacity of County climate change committees	Build the capacity of the County climate change committees: Steering Committee, Planning Committee, County Assembly, Ward Climate Change Committees, County Environment Committee	Improved capacity of the County climate change committees: Steering Committee, Planning Committee, County Assembly, Ward Climate Change Committees, County Environment Committee	No of committees trained	WEENR and partners	59	59	59	59	59	20,000,000
	Inadequate capacity support in the county departments	Develop capacity of county departments on climate change	Provide capacity support to address identified gaps in the County departments among other stakeholders: Climate Change Unit and County departments	Improved capacity of county departments on climate change issues	No of stakeholder's capacity built	WEENR and partners	30	40	40	30	20	15,000,000

Sector	Issue/ Problems	Strategic Objective	Actions	Expected Output	Key Performance Indicators	Responsible Agency	Year 1	Year 2	Year 3	Year 4	Year 5	Estimated Budget (Ksh.)
			(technical committee)									
RESEARCH AND KNOWLEDGE MANAGEMENT	Inadequate information management system	Develop a County Climate Change Information System	Develop an integrated County Climate Change Information Management System (CCCIMS)	County Climate Change Information System developed	County Climate Change Information System developed	WEENR and partners	0	1	0	0	0	5,000,000
			Develop and maintain an electronic and print climate change database to provide early warning information on climate change disasters	Electronic and print climate change database developed and maintained	Electronic and print climate change database developed and maintained	WEENR and partners	1	1	1	1	1	5,000,000
			Input and maintain Clim ate Information in the County GIS System	Climate Information input and maintained in the County GIS System	County GIS system updated	WEENR and partners	0	1	1	1	1	5,000,000
			Prepare Quarterly/Annual Reports on implementation/ M&E of actions and plans	Quarterly/Annual Reports on implementation of actions and plans prepared	No of reports prepared	WEENR	4	4	4	4	4	5,000,000
			Implement appropriate County Regulations for climate action	Appropriate County Regulations for climate action implemented	% Appropriate County Regulations for climate action implemented	WEENR	80	85	90	95	100	

Sector	Issue/ Problems	Strategic Objective	Actions	Expected Output	Key Performance Indicators	Responsible Agency	Year 1	Year 2	Year 3	Year 4	Year 5	Estimated Budget (Ksh.)
AGRICULTURE, LIVESTOCK, AND FISHERIES	Reduced food security due to effects of climate change such as increased frequency and intensity of droughts, erratic rains and frost	Introduction of climate smart agriculture within Nakuru County	Capacity build farmers on climate smart agricultural practices such as inter cropping, crop rotation, paddocking, planting grass, use of certified seeds, use of organic manure etc.	55,000 farmers capacity built on climate smart agricultural practices such as inter cropping, crop rotation, paddocking, planting grass, use of certified seeds, use of organic manure etc.	Number of farmers capacity built on climate smart agricultural practices such as inter cropping, crop rotation, paddocking, planting grass, use of certified seeds, use of organic manure etc.	Department of Agriculture, Livestock, and Fisheries in collaboration with Directorate of climate change and partners	11,000	11,000	11,000	11,000	11,000	55,000,000

Sector	Issue/ Problems	Strategic Objective	Actions	Expected Output	Key Performance Indicators	Responsible Agency	Year 1	Year 2	Year 3	Year 4	Year 5	Estimated Budget (Ksh.)
			Crop Diversification: Promote high yield crops, Promote Agroforestry through fruits trees; drought-resistant crops (Fodder, Sweet Potatoes, Katumani Maize) and frost tolerant crop varieties including traditional varieties of irish potatoes, beans and vegetables in kuresoi North and South	5,500 farmers to benefit from promotion of diversified crops	Number of farmers benefiting from promotion of diversified crops	Department of Agriculture, Livestock, and Fisheries (DOALF)in collaboration with Directorate of climate change and partners		1,100	1,100	1,100	1,100	15,000,000
			Promote small-scale irrigation by constructing 18 No. water pans and	18 No. water pans constructed and 50 No existing water pans desilted	18 No. water pans constructed	Department of Water, Environment, Energy, Climate Change and Natural Resources (WEENR & CC) in collaboration with DOALF	3	5	4	4	2	144,000,000

Sector	Issue/ Problems	Strategic Objective	Actions	Expected Output	Key Performance Indicators	Responsible Agency	Year 1	Year 2	Year 3	Year 4	Year 5	Estimated Budget (Ksh.)
					50 No existing water pans desilted	Department of WEENR & CC in collaboration with DOALF and partners	6	10	12	12	10	225,000,000
			Promote Value addition (harvested crops through cold storage, milk coolers, solar drying, processing etc. and Livestock and fisheries products)	3 climate smart value addition projects initiated benefiting at least 10,000 farmers	No of climate smart value addition projects initiated	Department of WEENR & CC in collaboration with DOALF and partners	0	1	1	1	0	15,000,000
			Establishment of climate smart agricultural center to ensure improved agricultural extension services and Research on crop varieties, Animal breeds, Aquaculture, disease and pests	Established climate smart agricultural center	Number of climate smart agricultural center Established	DOALF, WEENR and partners	1	0	0	0	0	20,000,000
			Train fish farmers in Nakuru County on how to adopt sustainable modern fish farming technologies	4,400 fish farmers in Nakuru County trained on how to adopt sustainable modern fish farming technologies	No. of fish farmers in Nakuru County trained on how to adopt sustainable modern fish farming technologies	DOALF, WEENR and partners	0	1,100	1,100	1,100	1,100	22,000,000

Sector	Issue/ Problems	Strategic Objective	Actions	Expected Output	Key Performance Indicators	Responsible Agency	Year 1	Year 2	Year 3	Year 4	Year 5	Estimated Budget (Ksh.)
			Enhance Naivasha fishery and nature-based enterprises	Enhanced Naivasha fishery and nature-based enterprises	Enhanced Naivasha fishery and nature-based enterprises	DOALF, WEENR and partners	0	0	1	0	0	5,000,000
WATER PROVISION	Scarcity of potable water	Increase access to potable water	Drilling and equipping Boreholes	Drilling and equipping 17 Boreholes targeting 100,000 households in the entire county	No of boreholes drilled and equipped	WEENR, NAWASCO, NARUWASCO, NAIVAWASCO and partners	0	9	5	3	0	136,000,000
			Solarisation of existing boreholes to increase pumping hours, enhance efficiency in management by reduction of bills and enhance use of green energy	Solarised 30 high yield boreholes	No of high yield boreholes solarised	WEENR, NAWASCO, NARUWASCO, NAIVAWASCO and partners	6	10	10	2	2	150,000,000
			Enhance rain water harvesting by creating awareness on Water Harvesting Techniques and best practices	Training on Water Harvesting Techniques and best practices and issues of 250 tanks to vulnerable groups done	No of households trained on Water Harvesting Techniques and best practices and 200 number of tanks issued to vulnerable groups	WEENR and partners	40	40	40	40	40	25,000,000

Sector	Issue/ Problems	Strategic Objective	Actions	Expected Output	Key Performance Indicators	Responsible Agency	Year 1	Year 2	Year 3	Year 4	Year 5	Estimated Budget (Ksh.)
			Rehabilitation and restoration of Wetland zones, mau catchment area, Riparian areas: Identification of sites Bamboo planting along the riparian Fencing of riparian areas. Indigenous tree planting	Wetland zones, mau catchment area, Riparian areas rehabilitated and restored	Number of Wetland zones, mau catchment area, Riparian areas rehabilitated and restored	WEENR and partners	5	10	10	10	5	50,000,000
			Reduction of non-revenue water	Non- revenue water Reduced	% Non-revenue water Reduced	WEENR, NAWASCO, NARUWASCO, NAIVAWASCO and partners	38	37	36	35	34	
			Increase annual per capita water availability through development of water infrastructure: drilling boreholes piping networks and storage Tanks	Developed water infrastructure	Number of water infrastructure developed	WEENR, NAWASCO, NARUWASCO, NAIVAWASCO and partners	100	100	100	100	100	700,000,000
ENVIRONMENTAL MANAGEMENT	Poor environmental practices	Enhance Solid Waste Management and pollution control	Establishment of a waste recovery center to encourage recycling, reuse	Developed waste recovery center	Phases of waste recovery center Developed	WEENR and partners	1	1	1	1	1	100,000,000

Sector	Issue/ Problems	Strategic Objective	Actions	Expected Output	Key Performance Indicators	Responsible Agency	Year 1	Year 2	Year 3	Year 4	Year 5	Estimated Budget (Ksh.)
			Purchase and supply of skip bins at strategic points within the county e.g., markets	22 No Skip bins supplied at strategic points within the county e.g., markets	No of skip bins purchased and supplied	WEENR and partners	0	8	8	3	3	10,000,000
			Surveillance, monitoring, evaluation and Awareness creation on integrated solid waste management techniques, land air, water and noise pollution	Reduced land air, water and noise pollution	No of awareness creation workshops held	WEENR and partners	11	11	11	11	11	20,000,000
			Installation of air quality monitoring sensors	Air quality monitoring sensors installed	No. of air quality monitoring sensors installed	WEENR and partners		3	3	3	3	10,000,000

Sector	Issue/ Problems	Strategic Objective	Actions	Expected Output	Key Performance Indicators	Responsible Agency	Year 1	Year 2	Year 3	Year 4	Year 5	Estimated Budget (Ksh.)
FORESTRY, WILDLIFE AND BIODIVERSITY CONSERVATION	Increasing GHG emissions, Deforestation, land degradation, landslides, human wildlife conflict	Conservation of forest habitats, Tree growing, afforestation, rehabilitation of Fragile Ecosystems and open green spaces to increase carbon sinks	Establishment of tree Nurseries	220 tree nurseries established	No. of tree nurseries established	WEENR and partners	44	44	44	44	44	22,000,000
			Planting Fruit tree seedlings such as guavas, loquats, and banana plantations along the buffer zones	2,200,000 Fruit tree seedlings such as guavas, loquats, and banana plantations along the buffer zones planted	No of fruit tree seedlings planted	WEENR and partners	440,000	440,000	440,000	440,000	440,000	176,000,000
			Grow 4375 ha of trees in degraded sites, forests, farms, public spaces and afforestation other green spaces	Grow 4375 ha of trees in degraded sites, forests, farms, public spaces and afforestation other green spaces	No of hectares restored with trees	WEENR and partners	875	875	875	875	875	84,000,000

Sector	Issue/ Problems	Strategic Objective	Actions	Expected Output	Key Performance Indicators	Responsible Agency	Year 1	Year 2	Year 3	Year 4	Year 5	Estimated Budget (Ksh.)
			Rehabilitation of County Green Spaces, parks and recreation sites	County Green Spaces, parks and recreation sites rehabilitated	No of County Green Spaces, parks and recreation sites rehabilitated	WEENR and partners	1	1	1	1	1	80,000,000
			Installation of gabions in severely degraded areas and rehabilitation	655 Severely degraded areas rehabilitated and gabions constructed	No of Severely degraded areas rehabilitated	WEENR, Department of Roads and public works and partners	0	163	170	170	152	100,000,000
ECO TOURISM AND WILDLIFE	Increased human wildlife conflicts, degradation of tourism sites	Conservation of ecotourism sites	Enforcement of forest laws, Monitor and control forest fires, including maintenance of fire breaks, and rehabilitation of degraded areas	Maintained wildlife habitats	No of maintained wildlife habitats	KFS, WEENR and partners	1	1	1	1	1	10,000,000
			Conduct sensitization and capacity-building on sustainable tourism and public education and mass awareness creation on wildlife conservation and protection of wildlife water points	Sensitization on sustainable tourism practices held	No of workshops held	WEENR, Department of Tourism and partners	0	2	2	2	0	10,000,000

Sector	Issue/ Problems	Strategic Objective	Actions	Expected Output	Key Performance Indicators	Responsible Agency	Year 1	Year 2	Year 3	Year 4	Year 5	Estimated Budget (Ksh.)
			Support biodiversity monitoring and mapping of natural resources	Mapping of natural resources done	Natural resources database developed	WEENR, Department of Tourism and partners	0	0	1	0	0	10,000,000
ENERGY	Need to increase renewable and affordable energy with low GHG emissions	Promote use of green and clean energy	Conduct an energy Audit in County Buildings and Promote solarisation of major county buildings including markets, hospitals, offices, etc.	Energy Audit in County Buildings conducted	No off. Energy Audit in County Buildings conducted	WEENR and partners	1	0	0	0	0	10,000,000
			Installation of Biogas Biodigesters and clean cooking appliances to reduce on deforestation as well as ensuring the reduction of GHGs	Biogas Biodigesters and clean cooking appliances installed	No of Biogas Biodigesters and clean cooking appliances installed	WEENR and partners	3	2	1	0	0	75,000,000
			Capacity building and awareness creation of county residents on clean cooking and clean lighting technologies	Capacity building and awareness creation of county residents on clean cooking and clean lighting technologies done	No of workshops held	WEENR and partners		11	11	11	11	15,000,000
			Promote increased production of non-forest biomass fuel briquettes at NAWASCOAL	Increased production of non-forest biomass fuel briquettes at NAWASCOAL	No of briquette production units supported	WEENR and partners			1			10,000,000

Sector	Issue/ Problems	Strategic Objective	Actions	Expected Output	Key Performance Indicators	Responsible Agency	Year 1	Year 2	Year 3	Year 4	Year 5	Estimated Budget (Ksh.)
			Establish a clean energy and climate change innovation hub	Clean energy and climate change innovation hub established	No of clean energy and climate change innovation hub established	WEENR and partners			1			25,000,000
TRANSPORT	Inadequate climate resilient infrastructure	Climate proof infrastructure	Conduct Strategic Environmental Assessments (SEA) for infrastructural programmes and EIAs Environmental audits for projects	SEA and EIAs conducted	No of SEA and EIAs reports	WEENR, Department of Roads and public works and partners	30	30	30	30	30	
			Installation and rehabilitation of solar street lights	Solar street lights installed and rehabilitated	No of solar street lights installed and rehabilitated	WEENR, Department of Roads and public works and partners		15	15	15	15	25,000,000
			Climate-proof infrastructure using ecosystem-based approaches (EbA) and construction of drainages to control flooding	Climate proofed infrastructure	% of climate proofed infrastructure	WEENR, Department of Roads and public works and partners	50	55	60	65	70	100,000,000

PLAN, REVIEW AND MONITORING

5.1 Introduction

The establishment of an intercommunal monitoring and evaluation system is essential to track the progress of the implementation of the Nakuru County Climate Change Action Plan (NCCAP) and to guide adjustments to the NCCAP when necessary. It should detail the accompanying measures and arrangements necessary to ensure the execution of the actions foreseen in the NCCAP and the continuous monitoring of its implementation. The indicators should incorporate several evaluation criteria such as: impact (the result obtained in relation to the objective set), perception (the reaction of the populations and the perceived value of the proposed action) and performance (quantitative evaluation of the state of implementation of the action).

Monitoring and Evaluation (M&E) of the planned activities will help the County Government and other stakeholders to know whether the desired outcomes have been achieved and if the issues identified at the planning stage are being addressed, have been resolved, or whether the situation is getting worse. Project monitoring will be an on-going process throughout the plan period and will be coordinated by the Department of Environment and Natural Resources. Other key stakeholders in the monitoring process will be the national government agencies with mandates in climate change and environmental conservation including NEMA, KWS, and KFS. Conservation NGOs operating in the area can also contribute significantly to this process.

The implementation of this action plan is linked with other plans and strategies, action plans, and other policies both at the county and national levels. These include the national planning process as captured by Vision 2030, County planning processes, and the national climate change policy processes among others.

5.2 Institutional and county arrangements for the implementation, monitoring and evaluation of the NCCAP

5.2.1 Steering Committee

To supervise the monitoring and evaluation of the implementation progress of the CAP, it is recommended that the county sets up a steering committee to coordinate the CAP implementation at the political level.

The steering committee should ideally meet at least once a year; its main role will be to:

- Represent the NCCAP implementation team at the level of the county integrated planning
- Monitor the progress of the implementation of the action plan and ensure the involvement of all the county's departments and services where applicable
- Validate any adjustments proposed by the implementing body;
- Submit the annual report on the state of implementation of the NCCAP to the County government, especially the department of economic planning and resource mobilization, during the budgetary orientation debates.

5.2.2 NCCAP Implementation, Monitoring, and Evaluation Team

The establishment of a team in charge of the implementation, monitoring, and evaluation of the NCCAP in Nakuru County is an essential first step. Its composition can be based on the team who was part of the development of the CAP with the CoM SSA focal points and those usually in charge of reporting to the CDPs and climate action as a core team, and include representatives of relevant County departments as well as other stakeholders (university, scientists, associations) as and when needed. This team could be subdivided into four sub-entities, depending on the needs of the city

5.3 Plan Review and monitoring

5.3.1 Monitoring Issues

This plan will need to be revised at five-year intervals in accordance with the climate change Act 2016. Key issues that will need to be monitored and evaluated to inform the review process include:

i. Ecosystem conservation including forest cover and habitat restoration.
ii. Level of adoption of green energy and energy efficiency.
iii. Carbon and other greenhouse gas emissions.
iv. Agricultural and industrial production.
v. Biodiversity status.
vi. Water quality in key water sources and lakes.
vii. Habitat condition.
viii. Poverty levels.
ix. Level of engagement of women, youth, and vulnerable groups in climate issues.

5.3.2 : Forms of Evaluation and Review

Two forms of evaluation will take place:

1. **Annual reviews** – An annual summary of progress made in implementing the activities as outlined in the activity plans.
2. **5-year evaluation and review:** At the end of 5 years year of implementation of this plan. This evaluation will inform the revision of activities and objectives for the following five -year implementation period. There will be a need to revise the plan every five years to ensure conformity with the county and national development priorities, and ensure relevance to the Integrated County Development Plans. In addition, the revision will provide an opportunity to capitalize on emerging opportunities.

ANNEX

COUNTY GOV...
DEPARTMENT OF WATER, ENVIRONMENT, ENERGY, CLIMATE ... NATURAL RESOURCES

COUNTY OF UNLIMITED OPPORTUNITIES

ATTENDANCE LIST FOR PARTICIPATORY CLIMATE RISK ASSESSMENT TRAINING WORKSHOP HELD AT MERICA HOTEL FROM 4th TO 5th MAY 2023 AT 9:00AM.

No.	Name	Organisation	Phone No.	Email Address	Gender M	Gender F	Age < 35	Age > 35	PWD Y	PWD N	Day 1 Sign	Day 2 Sign
1	PETER KIMANI NJAU	Buuri... WCCPC	0716 506 226	gwatter14@gmail.com	✓		✓			✓	[signature]	[signature]
2.	MARY W. KARANJA	EENR· NAKURU	0702571336	mkaranja957@gmail.com		✓	✓			✓	✓	[signature]
3	LUCY W. NGAHDU	ALIN	0759407212	Ingandu@alin.net		✓	✓				[signature]	[signature]
4	JAEL COLLEEN	ALIN	0723079611	Jonyango@alin.net		✓	✓		✓	✓	[signature]	[signature]
5.	ANNE W. MWANGI	SOCIAL SERVICES	0725 530515	wmwangi.a@gmail.com		✓		✓			[signature]	[signature]
6	Brian Omenji	SEAF-K	0101953683	omenjibrian@gmail.com	✓		✓				[signature]	[signature]
7.	SAMMY NGIGE	CGN	0712195920	Sammyngigekimani@gmail.com	✓			✓			[signature]	[signature]
8	Mumbi Kinyanjui	CGN	0705142446	gertrudekinyanjui44@gmail.com		✓	✓			✓	[signature]	[signature]
9.	Margaret Thiru	CGN	0769903761	margaretstanelly@gmail.com		✓	✓			✓	[signature]	[signature]
10	Imelda Simiyu	CGN	0717206695	imeldasimiyu@gmail.com		✓		✓			[signature]	[signature]
11	Jackline Chemutai	CGN	0721570808	lelachchemutai@gmail.com		✓	✓			✓	[signature]	[signature]
12	Githori Philomena	CGN	0742832500	Philodznyamby68@gmail.com		✓	✓				[signature]	[signature]
13	OLETAPI JAMLICK	CGN	0717318350	Oletapijamlick@gmail.com	✓					✓	[signature]	[signature]
14	Raphael Kimani	Meteorological	0721442056	mutuark@gmail.c	✓			✓		✓	[signature]	
15	FREDRICK O.O. AWINO	CGN-AGRIC	0710467777	cdanakura@gmail.com	✓	✓		✓			[signature]	[signature]
16.	BRANICE MUTHENI	CGN-Environment	0728470899	branosonnie@gmail.com		✓					[signature]	[signature]

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Figure 11: Attendance Sheet for the PCRA Training Workshop at Merica Hotel on 4th and 5th May 2023

ATTENDANCE LIST FOR PARTICIPATORY CLIMATE RISK ASSESSMENT TRAINING WORKSHOP HELD AT MERICA

No.	Name	Organisation	Phone No.	Email Address	Gender M	Gender F	Age < 35	Age > 35	PWD Y	PWD N	Day 1 Sign	Day 2 Sign	Day 2 Sign
50	KENNEDY MUNGAI	C.O.-EENRC	0720665096	ken@meikuni.go.ke									
51	DANCUN MACHARIA	CGN-ENVNT	0720539658	dancun@gmail.com	✓		✓			✓	[signature]	[signature]	[signature]
52	DANIEL KIPTOON	CGN-ENVT	0729303773	dkiptoo@gmail.com	✓			✓		✓	[signature]	[signature]	[signature]
53	Rafique Mohamed	Menengai Ward	0722886200	molia32@gmail.com	✓			✓		✓	[signature]		[signature]
54	Kipyator Dennis	CGN-Env	0717739000	kipyatordennis@gmail.com	✓			✓		✓	[signature]	[signature]	[signature]
55	Raymond Mwangata	CGN-Fisheries	0722902914	drinyau@gmail.com	✓		✓			✓	[signature]	[signature]	[signature]
56	Romanus Opiyo	SEI	0722718096	romanus.opiyo@sei.org	✓			✓			[signature]	[signature]	[signature]
57	Dorcas N. Mwangi	CGN-ECONOMIC PLANNING	0722134098	dorcasnduta@gmail.com	✓			✓			[signature]		
58	Emma Ndegwa	CGN Environment	0701939888	emmahwndegua@gmail.com		✓		✓			[signature]	[signature]	[signature]
59	Arthur Ngugi	CGN Environment	0718797736	arthurngugi49@gmail.com		✓	✓			✓	[signature]	[signature]	[signature]
60	Hannah Githinji	CGN Agriculture	0701045008	hannahgithini112@gmail.com	✓			✓		✓	[signature]	[signature]	[signature]
61	Ephraim Ngunyo	CGN ENVIRONMENT	0726-044-596	ngingofrein@gmail.com		✓	✓			✓	[signature]	[signature]	[signature]
62	Abel Omage	GIZ-C-MSSP	[illegible]	abel.omage@giz.de	✓			✓			[signature]	[signature]	[signature]
63	Stephen Kamau	CGN-Env.	072599372	stancomske@gmail.com	✓			✓			[signature]	[signature]	[signature]
64	Kimotho Munga	C.G.N-ENV	0720852136	kimothomunga@gmail.com	✓		✓				[signature]	[signature]	[signature]

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ENCES

ATTENDANCE LIST FOR PARTICIPATORY CLIMATE RISK ASSESSMENT TRAINING WORKSHOP HELD AT MERICA HOTEL FROM 4th TO 5th MAY 2023 AT 9:00AM.

No.	Name	Organisation	Phone No.	Email Address	Gender		Age		PWD		Day 1 Sign	Day 2 Sign
					M	F	< 35	> 35	Y	N		
	Bob Aston	ALIN	0725342537	baston@alin.net	V					V		
	George Maina	CGN-Environment	0725982367	georgemaina69@gmail.com	V							

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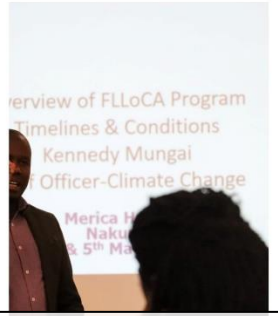

Members in attendance during the PCRA Training at Merica Hotel on 4th & 5th May, 2023



References

Nakuru County Climate Change Act 2021

Nakuru County Climate Change Fund Regulation

Nakuru County Water and Sanitation Act 2021

SEACAP

Nakuru County CIDP 2023/28

Nakuru County Departmental annual workplans