NAKURU COUNTY

COUNTY OF UNLIMITED OPPORTUNITIES

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Foreword from the Governor Nakuru County

It is my pleasure to sign off on 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. Prolonged droughts coupled with unpredictable rainfall patterns have 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. The situation is worsened by increasing environmental degradation due to deforestation, poor land use practices, increased demand for agricultural land, pollution and effects of climate change.

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 Four development agenda and the realization of the country's Vision 2030 and the governor' manifesto. 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 neighboring 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, we will integrate the climate change adaptation and mitigation activities proposed in the document into the County Integrated Development Plan (CIDP) and in the 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; and the Nakuru County waste management policy; as well as ongoing Climate actions such as the rehabilitation, greening and beautification of County recreational parks, solid waste disposal sites, tree growing programmes, establishment of new green parks and climate smart Agriculture among others within the County.

It is evident that climate action planning can only be effectively tackled through a bottom-up collaborative approach, and that the national government cannot do on its own. The climate crisis also 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 Nakuru County's SEACAP 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 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 others.

My profound appreciation also goes to all departments and stakeholders who have participated in one way or the other, especially the World Bank through Financing Locally Led Climate Action (FLLoCA) project who have funded and offered technical guidance on the countywide PCRA process. 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 low-level community led County Participatory Climate Action Plan (NCPCAP) and the Sustainable Energy Access and Climate Action Plan (SEACAP) 2022 has made it possible for the review of the county Climate Action Plan 2023-2027. 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 NCPCAP and the SEACAP 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 National social development 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 SEACAP 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

which is an arm of the Global Covenant of mayors' chapter CoM SSA which supports sub Saharan member countries in taking climate action.

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 t 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. This plan has also been developed at an opportune time when the Nakuru County Integrated Development Plan (CIDP), 2023–2027, is currently being updated.

This creates a unique opportunity to integrate the SEACAP and NCCAP actions into the CIDP. 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 Chief Officer – 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. The major contributing sectors to GHG emissions in the County. This aims at reducing carbon footprint, by focusing more on mitigation measures, enhancing adaptive capacity and building resilience for her citizenry. The process has strengthened the previous rigorous, participatory SEACAP that delved on major and critical sectors that highly contributes to GHGs emission. Total GHG emissions for Nakuru County in 2019 were estimated at 1 642 867 tCO2e. This estimate includes emissions from the stationary energy, transportation and waste sectors. This is equivalent to approximately 0.8 tCO2e per person. For comparison, national emissions for Kenya in 2010 were 17 000 000 tCO2e when considering only the stationary energy, transport, and waste sectors (Republic of Kenya, 2015). This is equivalent to approximately 0.4 tCO2e per person. However, emissions per person in Nakuru County in 2019 were only about one sixth of the global average (World Bank, 2022a). The total GHG emissions in Nakuru County for 2019 are equivalent to 37 000 cars travelling from Nakuru city centre to Nairobi city centre and back every day for a year

The largest contributing sector was stationary energy, contributing 43% of emissions, followed by transportation (33%) and waste (24%). In Nakuru County, the stationary energy sector accounted for 703 860 tCO2e (43% of total GHG emissions) in 2019. The largest proportion of emissions in the stationary energy sector come from energy use in residential buildings (37%). This is followed by energy use in manufacturing and construction (30%) and in energy industries or charcoal production (23%). The remaining emissions in the stationary energy sector come primarily from energy use in commercial and institutional buildings (8%), while less than 1% come from energy use in agriculture, forestry, and fishing activities

. Similarly, 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 urge all citizens of Nakuru to pay special attention to the locals at the grassroot level, by communicating in a language in which they can understand. I also encourage all residents of Nakuru County to be climate change ambassadors at 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.

The County Government of Nakuru is committed to mainstreaming climate action and building climate resilience for our people a thriving county. Going forward.

Kennedy Mungai

Nakuru County 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 Barasa (Chief Officer Water, Environment, Energy, Climate Change and Natural Resources); Grace Karanja (Director Environment, Energy, Climate Change and Natural Resources);
Kilion Nyambuga (Slum Dwellers International); Bob Aston - Alin, Abel Omanga COMssa

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.

Executive Summary

The Nakuru County Climate Action Plan (NCCAP) is the key document that defines strategies, plans, and actions for sustainable development and low greenhouse gas (GHG) emissions and taking adaptation action. It includes measure to address climate change adaptation and mitigation action in response to current and future climate change impacts in the region. The NCCAP is a strategic and operational plan used to identify the best areas of action and opportunities to achieve the local government's GHG emissions reduction targets and build climate resilience. It builds on the Participatory County Climate Change Risk and Vulnerability Assessment (PCCCRVA) process, which identified the most relevant climate hazards and their effects, vulnerabilities, and target actions of the county. It also includes PCRA county plan which aggregates all the ward Participatory Ward Climate Action plans (PWCAP). The NCCAP defines concrete measures for to translate the long-term strategy into action as the PCCAP details the specific actions at ward level.

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, and infrastructure and transport sectors. There are also some opportunities provided by climate change particularly in the energy, conservation, and infrastructure sectors. This action plan was formulated in a very participatory process by Nakuru County stakeholders to guide the actions necessary to address climate change impacts and take advantages of any emerging opportunities.

It is anchored in relevant international, national, and county policy and legal frameworks. Relevant climate change issues affecting each sector were identified by the stakeholders and actions either addressing the impacts or those that can mitigate the impacts were agreed upon during stakeholder fora. If implemented as intended, the result will be a county with **"a low carbon, climate resilient economy that sustains the livelihoods of its citizens while contributing to the national development agenda"** The action plan has eight objectives around Food Security, Water Security, Environmental Conservation, of Climate Change Adaptation and Mitigation Actions, Enhanced Food Security, Green Energy, Climate Change Resilient Infrastructure, Knowledge Management and Capacity Building, Sustainable Financing for Climate Change Actions and Governance and Coordination.

As required by the Climate Change Act 2016, implementation of the action plan will be led by the County Government supported by all relevant stakeholders. However, successful

implementation of the plan calls for increased financial commitments from the county governments, development partners and other stakeholders. To facilitate implementation, the plan links planned activities for each objective to appropriate stakeholders. This will promote mainstreaming of the plan activities into the county government and other stakeholders' relevant budgetary processes.

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.

This action plan is guided by the **vision "Nakuru County has a low carbon, climate resilient economy that sustains the livelihoods of its citizens while contributing to the national development agenda"** The **goal** of the plan is to **"Mainstream climate change adaptation and mitigation strategies in the economic production and development activities to improve the living standards of Nakuru County residents.**". This goal will be achieved through eight strategic objectives namely: The goal may need to be redone as what is stated is a strategic objective

1. Enhanced Food security.
2. Enhanced Water security.
3. Ecosystem conservation for sustainable economic development.
4. Green energy production and use.
5. Climate change resilient infrastructure.
6. Knowledge management and capacity building of community, stakeholders and county officials.
7. Sustainable financing for climate change action.
8. Governance and coordination of climate change adaptation and mitigation.

The activities necessary to achieve each of these objectives, the stakeholders and actors have been identified and monitoring indicators suggested. In addition, the activities have been prioritized. The plan includes a Monitoring and Evaluation (M&E) framework which will need to be revised at five-year intervals in accordance with the climate change Act 2016.

List of Abbreviations

CBO Community Based Organization
CDM Clean Development Mechanism
CECM County Executive Committee Member
CFA Community Forest Association
CIDP County Integrated Development Plan
CO Chief Officer
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
ILBM Integrated Lake Basin Management
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
LANAWRUA Lake Naivasha Waster Resource Users Association
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
PCRA Participatory Climate Risk Assessment
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
SEACAP Sustainable Energy Access and Climate Action Plan
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

Operationalisation 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.

1 Context of the Participatory Climate Risk Assessment (PCRA)

1.1 Background

1.1.1 County Context

Nakuru County is among the 47 counties of the Republic of Kenya that came into existence with the enactment of Kenyan Constitution in 2010. The county is cosmopolitan, comprising a populace of different ethnicities and nationalities (KNBS, 2019). The dominant communities include Kikuyu and Kalenjin. Other communities present in the county include Luo, Luhya, Maasai, Kamba, and Meru, among others (Nakuru County, 2018).

1.1.2 Demography

As per the 2019 National Population and Housing Census, the county's population was approximately 2.16 million in 2019, made up of 1,077 million males, 1,084 million females, and 95 intersexes. Approximately 33% of people in the county are aged 18-35, indicating a predominantly youthful population (KNBS, 2019). Furthermore, 54.2% live in rural areas, and 45.8% live in urban areas. The population growth rate is approximately 3% per year (Nakuru County, 2021).

The county is divided into eleven administrative sub-counties namely: Nakuru Town East, Nakuru Town West, Naivasha, Molo, Njoro, Kuresoi North, Kuresoi South, Rongai, Bahati, Subukia and Gilgil as shown in Figure 5. These 11 sub-counties are further divided into 31 Divisions, 121 Locations, and 265 sub-locations.

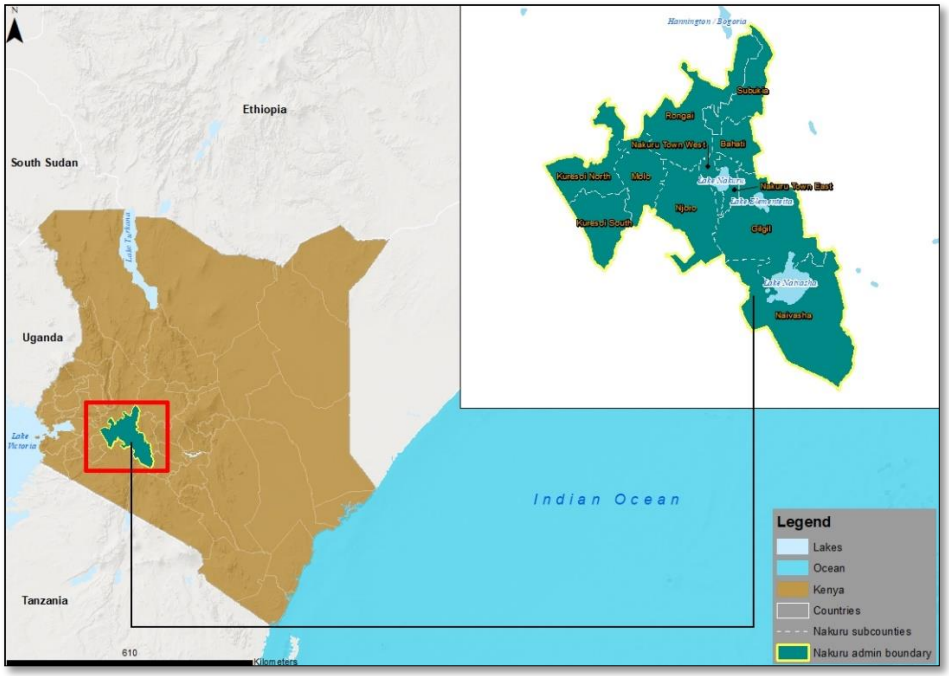

Figure 1 A map of Nakuru County and its sub counties (based on KNBS 2019 census data)

Table 1 depicts the population of the different sub counties, land surface area, population density and household size, in comparison to county and national level. This shows that the most populated subcounty is Naivasha, and the subcounty with the highest population density is Nakuru Town West with 2,764 persons per km^2.

Table 1 Summary of Nakuru County and subcounty demographics compared to Kenyan demographics

Sub-county	Total population	Male population	Female population	Total number of households	Number of Conventional households	Number of Group Quarters	Land area,Sq. Km	Density, Persons Per Sq. Km	Household size
KENYA	**47564296**	**23548056**	**24014716**	**12143913**	**12043016**	**100897**	**580895**	**82**	**3.9**
NAKURU	**2162202**	**1077272**	**1084835**	**616046**	**598237**	**17809**	**7505**	**288**	**3.5**
NAIVASHA	355383	179222	176132	117633	111493	6140	1958	181	3.0
NJORO	238773	118361	120408	61271	61156	115	699	341	3.9
NAKURU NORTH	218050	106155	111880	61728	61582	146	387	563	3.5
RONGAI	199906	99976	99922	52348	52248	100	988	202	3.8
NAKURU WEST	198661	101797	96854	64481	64429	52	72	2764	3.1
NAKURU EAST	193926	92956	100960	61398	60066	1332	231	840	3.2
GILGIL	185209	92955	92247	58920	49405	9515	1075	172	3.1
KURESOI NORTH	175074	87472	87599	40359	40168	191	618	283	4.3
MOLO	156732	78129	78598	41462	41439	23	483	324	3.8
KURESOI SOUTH	155324	78204	77117	34627	34543	84	591	263	4.5
SUBUKIA	85164	42045	43118	21819	21708	111	402	212	3.9

(Source: KNBS, 2019b)

1.1.3 Geography

The county covers an area of approximately 7,498.8 km² with its capital being Nakuru Town. The main topographical features in Nakuru County are the Mau Escarpment covering the western part of the county, the Rift Valley floor, Ol-Doinyo Eburru volcano complex, Akira Plains and Menengai Crater. The county has an elaborate drainage and relief system with various inland lakes on the floor of the Rift Valley where nearly all the permanent rivers and streams in the county drain into. These rivers include Njoro and Makalia which drain into Lake Nakuru, Malewa which drains into Lake Naivasha, and the Molo River which drains into Lake Baringo, among others. The topography in Naivasha and Gilgil sub-counties is characterized by mountain ranges and savannah vegetation that supports various species of wildlife.

The Mau Escarpment has an average altitude of 2,400 m above sea level and contains most of the county's forests. Nakuru County has about 680 km^2 of gazetted forests as well as three national parks: Lake Nakuru, Hell's Gate, and Longonot. The county also has a number of private wildlife conservancies with large flocks of birds (notably flamingos) endangered rhinos, Rothchild's giraffes and hippos among other wild mammalian species. Underground hot springs in Olkaria are an important source of geothermal power that serve not only the county but also provide power supply to the national grid. The county typically receives rainfall twice a year from March to May and from October to December with a distribution ranging from 550 to 1900 mm/year depending on altitude and location (Nakuru County, 2018).

Nakuru County has large natural water resources including four major lakes (Nakuru, Naivasha, Solai, and Elementaita), shallow wells, springs, dams, pans, and boreholes. However, most of these water resources, particularly the lakes, are not available for domestic, industrial or irrigation purposes. Boreholes have been sunk to boost water supply but the county is still water deficient. During the implementation of the first County Integrated Development Plan 2013–2017, water coverage within Nakuru increased from 58% to 63%. In terms of water quality, Nakuru County regularly experiences contamination of water sources due to open defecation and overflowing sewage into open water.

1.1.4 Economy

Nakuru County's Gross Domestic Product (GDP) for 2019 was estimated at 613 billion Kenyan shillings (KES) (approximately USD 5.7 billion), accounting for 6.9% of Kenya's GDP (KNBS, 2019, 2020c). About 29.1% of the population lives under the poverty line of USD 2 a day, which is slightly below the national poverty level of 36.1% (KIPPRA, 2019). Furthermore, informal settlements are increasing in the county due to rapid urbanisation and failure of the formal sector

to supply adequate houses especially for the low-income segment of society (KIHBS, 2016). An estimated 82.5% of households in Nakuru County own a mobile phone. Approximately 16% have access to the internet, 57% have access to television, and 91% have access to radio (KIHBS, 2016).

The main economic activities within Nakuru County are agribusiness, financial services, geothermal power generation and tourism (Nakuru County, 2018). The county's economy is mostly built around agriculture, which accounts for approximately 60% of total economic activity (Nakuru County, 2020). Both subsistence and large-scale commercial farming is practiced with flower farms as major employers in the county. The main food crops produced in the county include maize, Irish potato, wheat, and beans, and the main livestock types are dairy cattle, local poultry and wool sheep (Government of Kenya, 2016).

Nakuru County offers some of the most significant power generation capacity both in the country and in Africa, as it is home to one of the largest geothermal plants on the continent. According to the 2015–2016 Kenya Integrated Household Budget Survey (KIHBS), electricity is the main source of energy for lighting in the county at 55%. However, 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 for cooking (firewood and charcoal).

1.1.5 Infrastructure

The entire road network in Nakuru County is approximately 12,491 km, with paved roads accounting for 993.7 km, gravel roads accounting for 4,500 km, and earth roads accounting for 6,998 km. The road infrastructure can be described as 20% good, 35% fair and 45% poor (Nakuru County, 2018). Some roads, especially in agriculturally rich areas such as Kuresoi North and South, Molo, Njoro Subukia, Naivasha and Gilgil are in poor condition, leading to delays in the transport of agricultural produce to market, and causing losses for farmers for perishable goods. A railway line traverses through the county to Uganda and is used to transport cargo mainly from the port of Mombasa to the Malaba border. The proposed Standard Gauge Railway (SGR) will pass through Mai Mahiu (Naivasha) as it joins Narok County all the way to the Malaba border.

A snapshot of key demographic, economic and geographic indicators in Nakuru County have been outlined in Table 2.

Table 2 Nakuru County Overview

Sector	Description
1. Geography	
Location:	The county is located between longitudes 35.41 º East or 35 º 24' 36" East and 36.6 ºEast or 36 º36' 0" East and latitude 0.23 º North or 0 º13' 48" North and 1.16 º South or 1º 9`36" South. Nakuru is among the 14 counties within the Rift Valley region.
Environmental and climate change challenges	Environmental degradation in Nakuru County is mainly because of inappropriate farming methods, poor solid and liquid waste disposal, soil erosion, inadequate sanitary facilities, massive felling of trees for firewood, encroachment of forest reserves, timber and clearing land for agriculture.
Land area (2019)	Nakuru County covers a land area of 7,505 km^2, compared to a national land area of 580,895.4 km^2 (making up about 1.3% of total land area in Kenya).
2. Demography	
Population (2019)	2,162,202 people, with 49.8% (1,077 million) males, 50.2% (1,084 million) females, less than 0.1% (95) intersexes. The national population of Kenya is 47,564,296 (KNBS, 2020).
Household size (2019)	3.5 persons per household in Nakuru county, compared to a national average of 3.9 (KNBS, 2020) The most populated households are found in Kuresoi South, with an average household size of 4.5 persons.
Population density (2019)	288 persons/km^2 in Nakuru County, compared to 82 people/km^2 in Kenya. Nakuru Town West has a very high population density of 2,764 persons/km^2 due to its very small land area of 72 km^2.
Number of households (2019)	616,723 households in Nakuru County, with an average household size of 3.5 persons (KNBS, 2019a), compared to 12,143,913 households in Kenya, with an average household size of 3.9 persons. The subcounty with the highest number of households is Naivasha (117,633) and the lowest is Subukia (21,819).
3. Governance and leadership	
County capital:	The county's capital is Nakuru Town.
Number of subcounties and wards	There are 11 subcounties, 31 divisions, 121 locations, 265 sublocations. Subcounties include: Nakuru Town East, Nakuru Town West, Naivasha, Molo, Njoro, Kuresoi North, Kuresoi South, Rongai, Bahati, Subukia and Gilgil.

Sector	Description
Urban areas	There is an urban population of 1,047,080 (48.4% of county population) comprising of 49.4% males and 50.6% females. There are 339,787 households covering a total land surface area of 949 km^2 and a population density of 1,103 persons per km^2. The major urban centres are: Nakuru City, Naivasha Municipality, Mai Mahiu, Molo Municipality, Njoro, Gilgil Municipality, Subukia, Olenguruone, Bahati, Rongai, Salgaa, Dundori and Mau Narok (County Government of Nakuru, 2018).
Rural areas	The rural population of 1,115,122 people (51.6% of county population) comprises of 50.2% males and 49.8% females. There are 276,259 households (44.8% of households in the county) covering a total surface area of 6,556 km^2 (87.3% of total land area in county) and the population density is 170 persons per km^2.
Informal settlements	The major informal settlements are in Nakuru Town East (Bondeni, Manyani, and Lakeview), Nakuru Town West (Ronda, Kaptembwo, and Gituima), Gilgil (Kampi Somali, Maina, and Makaburi), Naivasha (Lakeview, Kihoto), Molo (Casino, Kasarani), and Njoro (Industrial area, Juakali, Jewathu, Bondeni).
4. Economy	
GDP	The county's Gross Domestic Product (GDP) for 2019 was estimated at KES 613 billion (at current prices), accounting for 6.9% of Kenya's GDP.
Unemployment levels	According to the Kenya Integrated Household Budget Survey (KIHBS) report 2015-16, approximately 22.9% of the labour force remains unemployed. Of these, 46% of the unemployed are female and 54% are male.
Main economic activities/industries:	The major economic activities within Nakuru County are: agribusiness, financial services, and tourism. Nakuru County's economy is built around agriculture, which accounts for approximately 60% of total economic activity (County Government of Nakuru, 2018).
Tourist attractions:	The National Parks are the major tourist attractions in the county. These are: Lake Nakuru National Park, Hells Gate National Park and Mt. Longonot National Park. Other tourist sites include: Menengai Crater, Subukia Shrine, Lord Egerton Castle, Lake Naivasha, Lake Elementaita, Hyrax Hill prehistoric site, Ol-doinyo Eburru volcano and Mau forest (County Government of Nakuru, 2018).

2 Policy Context

2.1 Introduction

Kenya has made massive strides towards developing relevant policies and plans to guide the country's fight against climate change, both at the national and the county level. Table 7 and Table 8 provide an overview of the climate change mitigation and adaptation policy and regulatory framework at the national and county level, respectively. The development of the NCCAP is anchored in Kenya and Nakuru County's existing climate action initiatives and ambitions. The findings contained in this PCRA builds on these policy documents, particularly on the 2020 updated Nationally Determined Contribution (NDC); the National Climate Change Action Plan, 2018-2022, the National Adaptation Plan, 2015 – 2030; the Nakuru Country Climate Change Action Plan, 2018-2022; and the Nakuru County Clean Energy Policy (2016) and Action Plan (2016).

The country has put in motion efforts to ensure that there are mechanisms to mainstream climate change in the development agenda. To achieve this Kenya has been working with the rest of the global community to address the impacts of climate change and to reduce Green House Gas (GHG) emissions that are to blame for much of the global warming problem. Within the country, the Kenyan government has been working with stakeholders to plan her response to dealing with climate change and has also been actively developing various national policies and strategies to combat it. However, following devolution as per the country's constitution, the lead player in some of the sectors impacted on by climate change is the county government. In this chapter, the relevant international, regional, national, county, and local level and climate change policy environment is examined with emphasis on mainstreaming of climate change at the county level.

2.2 Key players in the climate change sector of Kenya

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 3.

Table 3 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.

In Nakuru County, County-based mitigation and adaptation stakeholders are mainly departments within the Nakuru County Government in charge of County Integrated Development Plans (CIDPs), climate change, and the management of specific sectors. These include the Department of Water, Environment, Energy and Natural Resources; the Department of Agriculture, Livestock, and Fisheries; and the Department of Roads, Public Works and Transport. The County Executive Committee including Subcounty Administration and Chiefs, and County Assembly are also relevant to climate change action planning.

Community-based initiatives include several CBOs such as the Sustainable Community Development Services (SCODE) working with local communities (e.g. distribution of solar home systems and clean cooking equipment, access to water, forestry programmes, etc). Relevant associations for specific sectors include the Nakuru County Water Resource User Associations (WRUAs) and Community Forest Associations (CFAs) and several conservation organisations, including WWF, the Green Belt Movement, and Kenya Wildlife Services. There are also private sector players such as the M-KOPA and Water & Sanitation Services Co. Ltd. (NAWASCO) as well as the state-owned power generation agency, KenGen.

The following section outlines the Nakuru County climate change mitigation and adaptation targets developed through the SEACAP development process.

2.3 Relevant International and regional climate change policy frameworks

At the international Scene, Kenya demonstrated its commitment to tackling climate change by ratifying the United Nations Framework Convention on Climate Change (UNFCCC), the main international agreement on climate action, in 1994. Kenya ratified the Kyoto Protocol (http://unfccc.int/kyoto_protocol/items/6034.php) that compels countries to act on climate change in 2005. The convention recognized that there was a problem at a time when there was no scientific evidence for the problem (http://unfccc.int/essential_background/convention/items/6036.php). It also sets out to stabilize greenhouse gas concentrations "at a level that would prevent dangerous anthropogenic (human- induced) interference with the climate system." The convention requires developed countries to cut down their emissions and to support developing countries to tackle climate change challenges. In addition, the convention kicked off formal consideration of adaptation to climate change. Kenya annually participates in the Conference of the Parties to the UNFCCC and Conference of the Parties to the Kyoto Protocol, articulating the national interest and position during international negotiations. County governments work with the national government to explore ways of benefiting from the mechanisms of Kyoto Protocol (**http://unfccc.int/kyoto_protocol/mechanisms/joint_implementation/items/1674.php**) namely clean development mechanism to finance their climate response agenda**.** At the regional level, Kenya participated in the development of East African Community (EAC) Climate Change Policy, Master Plan, and Strategy. In 2015 all the 191 UN member states adopted and committed to deliver on 17 Sustainable Development Goals (SDGs goals with 169 targets by the year 2030. The Goals build on the successes of the Millennium Development Goals, while

including new areas such as climate change, economic inequality, innovation, sustainable consumption, peace and justice, among other priorities. Goal 13 focuses on taking "urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy". The realization of all the other goals will largely depend on effective tackling the impacts climate change. Kenya has also signed onto the Paris Agreement and through this has assumed specific responsibility to mitigate and adapt to climate change as its contribution to global climate change efforts.

2.4 National Climate Change Policy Environment

2.4.1 The Kenyan Constitution

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. Vision 2030 projects of interest in Nakuru County include SGR (with major investments particularly in Naivasha) and geothermal power production.

2.4.2 Vision 2030

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.

2.4.3 Big Four Agenda (2018)

The Kenyan Big 4 Agenda (2018) establishes Kenya Government's priorities areas for the period 2018 to 2022. These include ensuring **food security**, **affordable housing**, **increased manufacturing,** and **affordable healthcare**. Sector plans and budgets are expected to be aligned to help deliver on the for-priority areas. 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. The plan's implementation will provide a conducive environment for the county to realize the Big 4 Agenda in Nakuru County.

2.4.4 County Government Act, 2012

This Act of Parliament requires that counties produce a ten-year spatial plan to guide development. Some of the actions recommended in this plan can be implemented in the formulation of the Nakuru County Spatial plan. These activities include the mapping of wetlands and riparian habitat boundaries. Such actions will contribute to the county's climate change adaptation and mitigation strategies.

2.4.5 The national climate change planning journey

2.4.5.1 National Climate change Response Strategy 2010

The National Climate Change Response Strategy (NCCRS) 2010 was developed to help Kenya deal with the negative impacts of climate change and to maximize the positive impacts of climate change. The strategy was developed through a consultative process and its vision is a "prosperous, and climate resilient Kenya." Its mission is to strengthen nationwide focused actions towards adapting to and mitigating the changing climate. The strategy aimed to develop sectoral and cross-sectoral priorities for climate change adaption and mitigation in the terms of short, medium, and long-term actions.

The strategy recognized that agriculture, tourism, infrastructure, health, natural resources especially biodiversity are the sectors that are most vulnerable to climate change. However, for agriculture emphasis, particularly budgetary, is on irrigated agriculture, which can be mal adaptation especially when downstream communities and ecosystems are not factored into the overall project planning. This can lead to increased vulnerability to such downstream communities. The strategy failed to address the challenges faced by the livestock sector in a changing climate because of not being very explicit particularly in the action plan and the budgeting section. All large-scale irrigation projects are supposed to be subjected to detailed SEAs/EIAs so that environmental impacts are identified, and mitigation measures are put in place. Care should be taken that irrigation projects do not deny water to downstream human communities, biodiversity and indeed ecosystems. Ecosystem-based adaptation measures like Natural Resource Management planning particularly in pastoral communalities should have been encouraged to deal with issues of overgrazing and consequent habitat degradation as has been witnessed in many pastoral communities in the country. Forestry and wildlife sector seem

to be well taken care of. However, planning for tourism sector seems to lay a lot of emphasis on the infrastructure and fails to address biodiversity conservation.

Strategy recognized that the Kenyan environmental policies in place by 2010 had not mainstreamed climate change. It also took note of the prevailing international climate change policy instruments available by 2010 and Kenya's participation in the global climate change agenda. The strategy pointed out the international, national, and local mechanisms to finance recommended actions. However, much of the funds identified were not definite. The strategy was formulated in an inclusive and participatory process that mainstreamed gender and vulnerable groups and identified research needs and vulnerable sectors. However, the process took place before the current constitution was promulgated. That means that the elaborate institutional and governance structure recommended by the strategy may not be acceptable or applicable at the county level.

2.4.5.2 Climate change Action Plan 2013-2017

National Climate Change Action Plan was formulated in 2012 and launched in 2013, just before county governments became effective. The National Climate Change Action Plan (NCCAP) was the product of a participatory process involving the public sector, the private sector, academia and civil society, under the leadership of the Ministry of Environment and Mineral Resources during the year 2012. It sets a 'low carbon' climate resilient development pathway in order to steer the National Climate Change Response Strategy (GoK, 2010), and meet Kenya's international obligations. The action plan recognizes county governments and rightly identifies that climate change mandate is a mandate of both national and county governments and even allocates the county governments their respective responsibilities. Although the county government formation was a constitutional reality by 2012 when the action plan was formulated, it was not clear by then how these governments will turn out to be. They were also not party to the formulation process.

The action plan recommended the formulation of a national climate change policy and enactment of the necessary legal instruments to implement the provisions of the act. It was recommended that a national climate change council headed by the Office of The President be established. This served to highlight the importance of taking climate change matters seriously in Kenya to realize her development Agenda. Borrowing from this, implementing county climate change action plans need to be accorded the highest level of political goodwill.

2.4.5.3 The National Climate Change Framework Policy (2018)

The National Climate Change Framework Policy provides a clear and concise articulation of overall response priorities to climate variability and change. It focuses on the interlinkages between sustainable development and climate change. Its objectives revolve around enhancing adaptive capacity and resilience to climate change and promote low carbon development for the sustainable development of Kenya. The policy framework's guiding principles that are; to guide the implementation of this policy include common but differentiated responsibilities and respective capabilities, the right to a clean and healthy environment as enshrined in the Constitution, the right to sustainable development, partnership among stakeholders including women and youth, cooperation between the two levels of government, equity and social inclusion, prioritization of special needs groups, avoidance of maladaptation, integrity and transparency and cost-effectiveness in delivery .

The policy recognizes that the economy, being dependent on natural resource base, is vulnerable to climate change variability and change. Climate change is, therefore, a threat to the realization of Vision 2030. This recognition gives an opportunity to both the national government and county governments to ensure that while implementing the Vision 2030 agenda they are mainstreaming climate change adaptation and mitigation measures. Counties need to base their responses to climate change on their unique vulnerabilities and also take advantage of any unique opportunities that might arise from climate change.

As policy statements are not legally binding, it will be necessary for the national and county governments to enforce the policy provisions using Climate change Act 2016. It is also possible for county governments to domesticate the framework through the development of county climate change action plans that can be implemented through the county's legislative arm, developing the necessary legal frameworks.

The framework recognizes that devolution is central to inclusive governance and indeed mentions county or county governments forty times. The framework also highlights the need to mainstream climate change at both the national and county government.

2.4.5.4 Climate change Act 2016

The Climate Change Act 2016), provides the regulatory framework for enhanced response to climate change through mechanisms and measures to achieve low carbon climate resilient development. The Act acknowledges the interlinkages between sustainable development and climate change and is aligned with the constitution and Sustainable Development Goals.

Objects and purpose of the Act include enhancement of climate change resilience and low carbon development for the sustainable development of Kenya as the key focus.

The fact that the Act applies in all sectors of the economy and is to be applied by both national and county governments creates a good ground for integration of climate change actions into decision making, and implementation of functions by sector ministries, state corporations and county governments.

Specifically, the purpose of the Act is to:

a. Mainstream climate change responses into development planning, decision making and implementation
b. Build resilience and enhance adaptive capacity to the impacts of climate change;
c. Formulate programmes and plans to enhance the resilience and adaptive capacity of human and ecological systems to the impacts of climate change;
d. Mainstream and reinforce climate change disaster risk reduction in strategies and actions of public and private entities;
e. Mainstream intergenerational and gender equity in all aspects of climate change responses;
f. Provide incentives and obligations for private sector contributions to achieving low carbon climate resilient development;
g. Promote low carbon technologies to improve efficiency and reduce emissions intensity by facilitating approaches and uptake of technologies that support low carbon, and climate resilient development;
h. Facilitate capacity development for public participation in climate change responses through awareness creation, consultation, representation and access to information;
i. Mobilize and transparently manage public and other financial resources for climate change response;
j. Provide mechanisms for, and facilitate climate change research and development, training and capacity building;
k. Mainstream the principle of sustainable development into the planning for and decision making on climate change response; and
l. Integrate climate change into the exercise of power and functions of all levels of governance, and to enhance cooperative climate change governance between national government and county governments".

2.4.5.5 Climate Adaptation Plan 2017

The National Adaptation Plan (NAP 2015-2030) sets out Kenya's national circumstances, focusing on current and future climate trends, and describes the country's vulnerability to climate change. Priority actions are identified in 20 planning sectors for the short, medium and long term. This builds on the premise that all the country's socioeconomic sectors are vulnerable to climate change impacts, although the manifestation of these impacts may vary

from one sector to the other. NAP has mainstreamed devolution in the Adaptation plan, and identified relevant areas where of linkages with the counties and ministry of devolution in the national government. Further the NAP emphasizes that County Governments should integrate and mainstream climate change actions, interventions and duties into County Integrated Development Plans (CIDPs); and designate a County Executive Committee member to coordinate climate change affairs; submit a report on the implementation progress of climate change actions to the County Assembly for review and debate, with a copy to the Climate Change Directorate for information.

2.4.5.6 Nationally determined contribution

The NAP is the basis for the adaptation component of Kenya's Nationally Determined Contribution (NDC) that was submitted to the United Nations Framework Convention on Climate Change (UNFCCC).

2.4.5.7 National Climate Finance Policy (2018)

The *National Climate Finance Policy* (2018) establishes the legal, institutional and reporting frameworks to access and manage climate finance in Kenya. The goal of the policy is to further Kenya's national development goals through enhanced mobilisation of climate finance that contributes to low carbon climate resilient development goals.

2.4.5.8 National Climate Action plan 2018-2022

The second NCCAP (2018-2022) aims to further Kenya's development goals by providing mechanisms and measures to achieve low carbon climate resilient development in a manner that prioritises adaptation.

It seeks to:

- Align climate change actions with the Government's development agenda, including the Big Four;
- Provide a framework for mainstreaming climate change into sector functions at the national and county level;
- Encourage participation of private sector and non-state actors in climate change actions; and
- Serve as the implementation plan for Kenya's National Adaptation Plan 2015-2030 (NAP) and Nationally Determined Contribution (NDC) for the five-year period 2018-2022.

Consultations during the National Climate Change Action Plan 2018-2022 formulation process placed Nakuru in the Mount Kenya and Aberdares Counties Trade and Investment Block which includes Embu, Kiambu, Kirinyaga, Laikipia, Meru, Murang'a, Nakuru, Nyandarua, Nyeri, Tharaka-Nithi counties. According to consultations, counties in this block need to institute

climate change adaptation and mitigation actions to address various issues as listed in Table 4. These priority actions informed the formulation of the Nakuru climate Change Action Plan 2018-2022.

Table 4 Adaptation and mitigation strategies recommended for Mount Kenya and Aberdares Counties Trade and Investment Block.

Issue	Priority Actions
Industrialization	▪ Water recycling ▪ Subsidies for drip irrigation ▪ Zoning of industrial areas (undertaken by County Governments)
Infrastructure	▪ Green building technologies and regulations ▪ Climate proofing of infrastructure – such as concrete poles for powerlines ▪ Water harvesting / Capture of road run-off – e.g., Isiolo-Moyale road ▪ Regulations for water harvesting - roof tops ▪ Invest in riverbank conservation and on-farm soil and water conservation to prevent silt runoff from poor farming methods that impact effectiveness of dams ▪ Discourage open canals for irrigation ▪ Enforce existing regulations – such as Environmental Impact Assessment
Information and Communications Technology (ICT)	▪ Early warning systems, information centres for farmers, introduction of digital data programs, packaging of Climate Information Services (CIS) for farmers ▪ Explore tax and fiscal incentives for use ICT to reduce greenhouse gas (GHG) emissions ▪ Invest in electronic waste management through partnerships
Gender	▪ Promote gender-friendly water conservation measures ▪ Promote gender-friendly agroforestry – fruit and fodder trees ▪ Provide livelihood options/diversification for women and men, both on- and off-farm and options that extend across seasons ▪ Address land ownership issues ▪ Invest in high-value crops ▪ Consider how to involve both genders in climate change action ▪ Empower women through information; improve women's access to training; improve women's input to decision making ▪ Consider gender-based budgeting

Agribusiness	▪ Use of climate data and information from Kenya Meteorological Department (KMD) – increase coverage of meteorological stations and awareness creation/training ▪ Conservation of water catchment areas ▪ Technology innovations such as climate-smart agriculture, hydroponics, dairy goats, pest and disease resistant crops ▪ Promote urban agriculture
Tourism	▪ Promote REDD+ and purchase of credit credits ▪ Develop clear boundaries between human habitats and wildlife ▪ Broaden tour packages and products ▪ Promote ecotourism
Health	▪ Promote family planning methods ▪ Promote forestry and afforestation ▪ Disaster management and preparation ▪ Research the link between health and climate change
Forestry	▪ Counties have surpassed or working toward 10% tree cover ▪ Ensure trees are growing in secure places that can be protected/ enclosed to ensure accountability such as schools and public areas ▪ Tree planning – support for seedlings, consider partnerships, e.g., Finlays. ▪ School greening programmes; twin program officers with schools so that children work alongside environmental officers to plant trees, form environmental clubs in primary schools, provide County awards for best survival percentage of tree seedlings, provide water so that schools can maintain trees, hold an environment day. ▪ On-farm forestry by issuing farmers with seedlings; recruit farmers to plant trees, work with Association of Small-scale Farmers (¼ hectare); provide incentives to farmers for tree planting, monitor and track progress; work in partnerships, such as tea factories ▪ Provision of seedlings from Kenya Forest Service (KFS) and Kenya Forestry Research Institute (KEFRI) ▪ Promote youth-based planting of certified seedlings. ▪ Ensure contractors for tree planting maintain trees for at least 6 months and report on survival rate.

	▪ Provide water tanks. ▪ Partner with CBOs to promote tree planting. ▪ Rehabilitate rivers and conservation of riparian areas

Source: National Climate change Action Plan 2018-2022

2.5 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 Act (2019)** – 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.

- **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.

2.6 Recommendations to county governments

Based on the review of national climate change and related policies above, there is the need for Nakuru County Government, and indeed other county governments to prioritize climate change actions. This can be achieved if the county government:

1. Takes leadership on climate change matters in their respective counties.
2. demonstrates political goodwill by strategically positioning climate change agenda both in the county executive and legislative arms.
3. Uses the development of **county climate change action plans** to domesticate the national climate change policies, plans and strategies including the **Big 4 Agenda** to the respective counties.
4. Ensures that the process of development of county climate change action plans is as inclusive as possible.
5. Mainstream ecosystem conservation into the county policy and planning processes.
6. Mainstream climate change in all government departments, economic sectors, programmes and policies including County Integrated Development Plans (CIDPS).
7. Works with the national government, the private sector, and other relevant stakeholders to develop sustainable mechanisms to finance climate change adaptation and mitigation strategies.
8. Enacts enabling legal instruments to facilitate the implementation of national and county climate change policies and plans.
9. Invests in capacity building, innovation and, technology transfer, and networks with research institutions to ensure adequate local capacity on climate change matters.

10. Ensure the needs of the vulnerable groups including indigenous communities, women, children, the elderly, youth, the disabled among other are taken into account in the county climate change agenda.

2.7 The County Policy Environment

2.7.1 Nakuru County Integrated Development Plan (2013-2017)

Nakuru County Integrated Development Plan (2013-2017) was formulated in a Participatory Process that involved all sectors of both the national and county governments. - There was also local community consultation through sub-county consultation forums. The County Assembly also played a leading role through the County Assembly Committee on trade and planning. Adequate stakeholder consultation and participation provided an opportunity to articulate and mainstream some Climate Change elements in the CIDP. According to the document, it is evident that climate change in the county is a reality that manifests in a rise in average temperatures, shifts in rainfall pattern and subsequent long-term shift in the normal weather patterns. The document acknowledged the need for mainstreaming environment issues in development planning and identified the following measures/actions for realizing this that include the following:

- Ensuring Environmental Impact Assessment (EIA) requirement in the implementation of all projects and programmes that are likely to have effects on the environment, social settings and climate change as envisaged in EMCA ’99.
- Protection of wetland and forest reserves and ensuring community participation in the management of forest reserves and other ecologically sensitive areas is important.
- Tree planting.
- Enforcing both local environmental laws and adherence to internationally agreed regulations on environmental sustainability.

The major shortcoming of Nakuru CIDP for the period 2013 – 2017 is that climate change was not linked to sector issues including insufficient food production, poor and dilapidated physical infrastructure, environmental and forest degradation, and inadequate water per capita. Due to this, climate change adaptation and mitigation measures were not given prominence in the interventions. Failure to link the poor state of physical infrastructure such as roads to climate change explains why climate proofing of infrastructure as an adaptation measure is not provided for.

2.7.2 Draft 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.

2.7.3 Draft 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 of 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.

2.7.4 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.

2.7.5 Nakuru County Clean Energy Policy

Nakuru County Clean Energy 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 affordable, competitive, sustainable and reliable supply of energy to meet county development needs at least cost, while protecting and conserving the environment. The policy has identified improved access to energy as a key element in meeting its goals under this policy. The policy 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.

2.7.6 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.

2.7.7 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.

2.8 Purpose of the PCRA Report

The PCRA report is to detail the ward level Actions identified by the community. The actions will also inform the County Climate Action.

2.9 Key steps in the county's PCRA process

The PCRA process in Nakuru County was implemented using the eight key steps, as outlined in the PCRA guidelines. These includes the formation of the technical working group, training/capacity strengthening of the technical working group, stakeholder mapping, preparing for community engagements, conducting participatory risk assessment at the ward level, creating ward level risk assessment reports, analyzing data and preparing for the multi-stakeholder workshop at the county level, hosting the workshop on multi-stakeholder climate change risk assessment, and writing the final report are these.

8 Step Process	Brief Description
Step 1: Creation of the Technical Working Group	The technical working group in Nakuru County's PCRA process was formed by accommodating the environmental officers from the 11 sub-counties and representatives from key sector departments including: • Finance and Economic planning • Agriculture, Fisheries, and Livestock Production • Education • Health • Lands and Urban Development • Gender and inclusion • Social Development • Water and Sanitation • Public Service Training and Devolution • Kenya Meteorological Department The involvement of the above considered actors who fall within the following groups: • Are formally responsible for climate action and building resilience; • Are involved in climate action and responses to climate impacts; • Have knowledge and expertise relevant to climate action and building resilience, including knowledge on the climate system and climate risks; • Are impacted by climate change
Step 2: Training of the Technical Working Group	The Technical Working Group was trained for two days on the PCRA process on 4th and 5th May 2023. The training covered understanding the process, its relevance in the planning and implementation of development projects, and how to carry out each step of the PCRA process according to the guidelines provided in the PCRA guidance. During the two-day training period, the significance of the PCRA document was also highlighted. This training was coordinated by the County Climate Change Unit and supported by a range of stakeholders, including CSO's.

Step 3: Stakeholder Identification and Analysis	The main goal of this step was to identify all key stakeholders at the county, subcounty, and ward levels who can and should participate in the PCRA process, including representatives of groups and communities traditionally marginalized and vulnerable groups to the effects of climate change, and to develop a stakeholder engagement strategy/process for the key stakeholders. The initial process was carried out by the Technical Working Group, which met and identified, mapped, and analyzed all stakeholders affected by climate change, those responsible for climate change actions and responses to impacts, resilience strategies, and knowledge / expertise relevant to climate change matters, as well as those interested and their influence in climate change matters. During the mapping process, the Ward Climate Change Planning Committees (WCCPCs), Community Based Organizations (CBOs, Civil Society Organizations (CSOs), grass roots organizations, Faith Based Organizations (FBOs), Nongovernmental Organizations (NGOs), Academia and Research Organizations, business community, community leaders and representatives, youth groups, women groups, providers of scientific and statistical data, such as Kenya Meteorological Department, were considered crucial in the PCRA process. Gender inclusiveness was also considered with the Technical Working Group giving emphasis to the inclusion of women, youth, elderly, and People Living with Disabilities (PWDs).
Step 4: Preparation for ward level engagements	The Climate Change Unit and the technical working group sensitized the sub county technical teams and other stakeholders (CSO's) on participatory climate change risk assessment exercise to be conducted at the ward level. Stakeholders ward mapping was carried out to identify relevant community representatives. Participants mobilized from the wards included representatives of; WCCPC, PWD, CBO's and FBO's, CFA, women, youth and relevant sub county technical officers. Programs, maps, engagement tools and other materials relevant to the ward-level community engagements were prepared and distributed in advance. Some of these materials include: the program, community guiding questions and the note takers feedback forms.
Step 5: Engagement	On average, 25-30 community representatives participated at the ward level engagement forums. Community representatives were taken. Participants at

of Communities at Ward Level on PCRA	ward level were first taken through an introduction session covering the significance of the PCRA process, overview of climate change trends followed by explanation of the process and its application in the county planning and development cycle. Climate change risk assessment tools (including the Resource map; Historical profile; Seasonal calendar; Leaky bucket; Chapatti/Venn diagram; Wealth ranking; Daily gender calendar; and the Access and control tool) were administered to determine the main hazards, prioritize them, identify vulnerabilities, local response actions and propose adaptation strategies. The output of this process was that the community identified key climate change risks and hazards and priority response measures.
Step 6: Data Analysis	Once the information was collected at the ward level, it was analyzed by the technical working group and the sub-county technical team to identify common hazards, historical & current climate patterns, and key issues related to climate risks in each ward in Nakuru County. The data analysis phase involved synthesizing and interpreting the qualitative information obtained from the entire stakeholder engagement process at the ward, sub-county, and county levels. The analysis assisted in understanding the specific climate-related risks and vulnerabilities that exist in all the wards around the county. The process helped in identifying historical climate patterns, current climate patterns, key hazards and risks, and the potential impacts of these risks on different sectors such as agriculture, health, water resources, and livelihoods. Furthermore, this phase identified existing climate change adaptation measures and their effectiveness in curbing the climate change menace.
Step 7: Multi Stakeholder workshop	A multi stakeholder workshop was held at the county level on the 26th and 27th May 2023. The main goal of the workshop was to bring together representatives from different stakeholder groups, including government officials, community-based organizations (CBOs), community members, NGOs, faith-based organizations (FBOs), civil society organizations (CSOs), and business people. The workshop served as a platform for sharing the findings of the ward engagements and fostering dialogue among stakeholders. It allowed for the identification of key hazards and risks, potential adaptation

	measures, and the prioritization of adaptation options. Through focus group discussions, the workshop also helped in building consensus among stakeholders regarding the most appropriate and effective adaptation strategies in Nakuru County.
Step 8: Drafting of Participatory Climate Change Risk Assessment	The final step involved the drafting of this participatory climate risk assessment report. Based on all stakeholders' inputs and secondary data, a PCRA report was prepared. The report outlined the identified climate risks, their potential impacts, and recommended adaptation strategies as well as prioritized areas.

3 County Climate Hazard Profile

1.1 Current and Historical Climate Hazards and Trends

3.1 Historical and Projected Climate Trends and Hazards

3.1.1 Historical and Projected Climate Trends

Kenya's climate ranges from tropical (along the coast) to arid (in the mountain regions). The average temperature across the country is 24°C and the mean annual precipitation is 669 mm. The rainy season in Kenya usually begins in March and decreases in May to June. Since 1960, Kenya's mean annual temperature has increased by 1.0°C, at an average rate of 0.21°C per decade. The rate of increase has been most rapid in March to May (0.29°C per decade) and slowest in June to September (0.19°C per decade). Observations of rainfall over Kenya since 1960 do not show statistically significant trends, as trends in the extreme indices based on daily rainfall data are mixed (World Bank, 2021). According to the global climate model CMIP5 (RCP 8.5), mean annual temperature in Kenya is expected to increase by 1.0°–2.8°C by 2060 and annual rainfall is expected to increase between October and December as well as between March and May.

According to the Nakuru County Climate Risk Profile (2016), Nakuru experiences a bimodal rainfall pattern, receiving heavy rainfall from March to June and low rainfall from September to November. On average, dry spells are longer around the second wet season ranging from 35 to 80 days in any given year. Around the first wet season, the dry spell ranges between 25 to 60 consecutive days every year. Satellite data for rainfall (from Chirps) and temperature (from ERA-5) from the Nakuru Meteorological station analysed using the ORIGIN-Pro software also show that the climate is shifting at the county level. Since 1981, the county has experienced a moderate (1.0°C) increase in mean temperature accompanied by increased heat stress, especially in the first wet season, with an associated reduction in the crop cycle.

The Climate Systems Analysis Group (CSAG) from the University of Cape Town (UCT) has developed the Climate Information Platform (CIP) which provides climate-related information at downscaled levels. Utilising data collected from weather stations located in towns across the African continent (including the Nakuru weather station), the CIP runs a series of climate models which collectively provide a database of historical climate patterns as well as future projections for regions and districts throughout the world. With regards to temperature, these climate models all agree that warming within the Nakuru County will almost certainly occur

and that there will be an overall increase in average monthly temperatures by between 1.0°–2.5°C by 2060). The data also indicate that there will be an increase in heat wave duration, especially in January and February. This is calculated relative the historical period 1980-2000 under RCP 8.5.

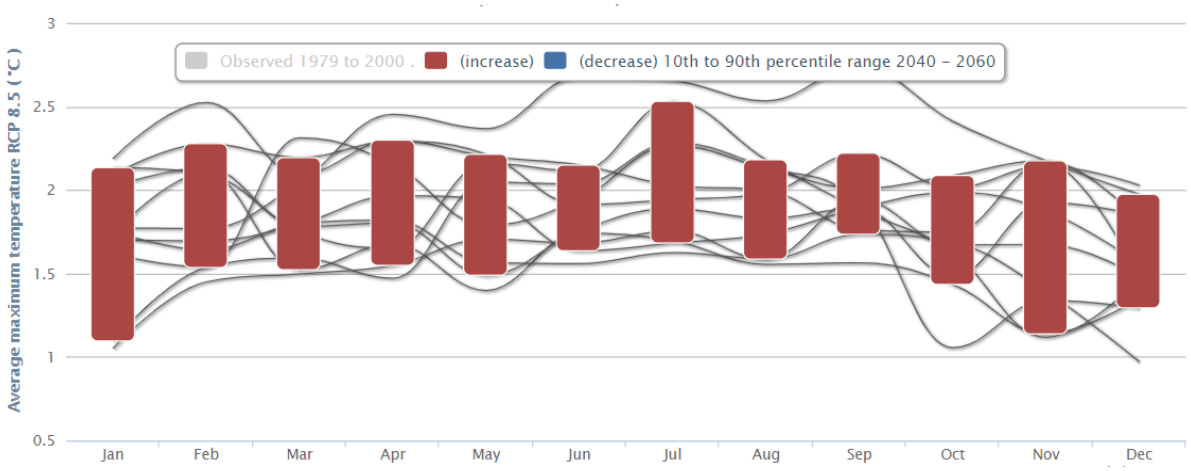

Figure 2 Average predicted maximum monthly temperature in Nakuru for the period 2040-2060

In terms of rainfall, the climate models all agree that shifts in the historical rainfall patterns will also almost certainly occur. However, the models do not agree on the direction of change and as such there is uncertainty as to whether there will be an overall increase or a decrease in annual rainfall in Nakuru County. This is calculated relative to the historical period 1980-2000 under RCP 8.5. The solid red bars indicate a range of potential decreases in rainfall for each month, whilst the solid blue bars indicate a range of potential increases in rainfall for each month. Where both blue and red bars are present for one month, it indicates there is uncertainty for that month and that the rainfall could either increase or decrease for that month.

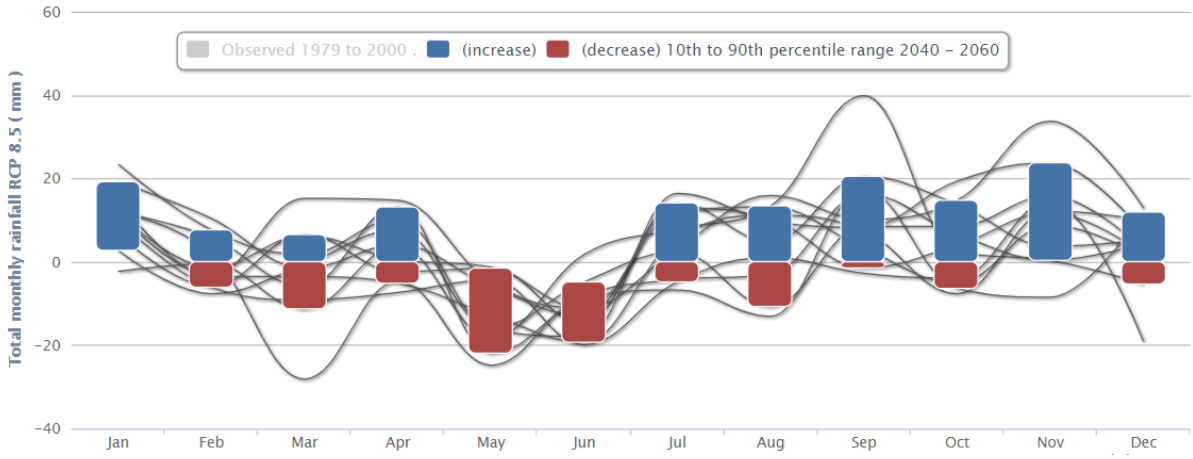

Figure 3 Total predicted monthly rainfall in Nakuru for the period 2040-2060

3.1.2 The Current and Future Hazards

The National Climate Change Action Plan (NCCAP) 2018–2022 indicates that rising temperatures, uncertain changes in rainfall patterns, stronger storm surges and greater risk of extreme weather events such as droughts, floods and landslides are all significant climate risks facing Kenya. Based on data from the participatory workshops, the household survey, interviews and results presented in the

Nakuru County Climate Change Action Plan (NCCCAP) 2018–2022, there are 21 climate hazards currently affecting Nakuru County: rainstorms, fog, hail, severe wind, lightning/thunderstorms, extreme winter conditions, cold waves, extreme cold days, heat waves, extreme hot days, droughts, forest fires, land fires, flash/surface floods, river floods, groundwater floods, permanent inundation, landslides, rock falls, subsistence, waterborne diseases and vector-borne diseases.

Further risk mapping indicated that the five hazards that have the most significant impact on Nakuru County are **droughts**, **rainstorms**, **flash/surface floods**, **river floods**, and **waterborne diseases**. According to the findings of the RVA, 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.

3.2 Exposure and vulnerability profiles of the county

The RVA found that factors that could support the adaptive capacity of Nakuru in the future include: agricultural and livestock insurance and safety net schemes; improved technology to handle post-harvest losses; mainstreaming and promotion of climate-smart agriculture and livestock development; improved communication systems related to climate-smart agriculture extension and agroecological issues; domestication of the National Water Master Plan to ensure dams, dykes, lakes, and rivers are protected; and improvement in public awareness of climate health risks.

Finally, the RVA found that factors that could challenge the adaptive capacity of Nakuru include: conflict over land-use policies in the agriculture-livestock sectors; increased demand for water in other sectors and an increasing human population; incoherent and insensitive policies to deal with the over-abstraction of water and other water management issues; limited data on the current and future water situation; overexploitation of wildlife habitats due to the

absence of laws to support wildlife benefits to the population; loss of indigenous forest knowledge and practices that protected

3.3 Differentiated impacts of climate trends and risks

The NCCAP 2018-2022 identified several key sectors as relevant for the Mount Kenya and Aberdares Counties Trade and Investment Block, of which Nakuru County is a part. These include industry, infrastructure, information, and communications technology (ICT), agribusiness, tourism, health, and forestry. The National Adaptation Plan (2015) lists agriculture, livestock, water, environment, infrastructure, sustainable livelihoods, energy and tourism as priority sectors. At the county level, the NCCCAP 2018–2022 identifies the sectors of agriculture, livestock and fisheries, water, wildlife and tourism, forestry, transport and infrastructure, health, energy, mining, manufacturing, and trade as being key to promoting a low-carbon and climate-resilient economy and livelihoods in Nakuru County.

The RVA found that the sectors most affected by current climate hazards are: **food and agriculture**; **water supply and sanitation**; **environment, biodiversity and forestry**; and **land use planning**. Stakeholders provided a rationale for the selection of these sectors by describing how climate hazards which already affect Nakuru County could further impact these sectors in the future if no action is taken.

Regarding vulnerable population groups, households, and communities in Nakuru are impacted differently by climate hazards depending on the magnitude of the climate hazard, and their adaptive capacity. The household survey conducted found that the following groups are vulnerable to climate hazards: women and girls; the less educated; indigenous populations; marginalised groups; persons with disabilities; persons with chronic diseases; low-income households; persons living in sub-standard housing; and unemployed persons. Of these groups, **women and girls**, and **low-income households** are the most vulnerable. Evidence shows that in most African settings such as Nakuru County, women spend long hours on farms, hence are most susceptible to heat stress. Similarly, as the primary caregivers, women are widely responsible for daily household livelihoods and spend more time at home with children thus are more exposed to risks such as floods and hunger. Low-income households are less endowed with assets that could build their long-term adaptive capacity and thus can only cope with daily (relatively moderate) climate risks and become highly vulnerable to severe events such as floods and landslides. Overall, the differentiated impacts could help in tailoring adaptation actions towards these vulnerable social groups.

3.4 Spatial Distribution of Risks

3.4.1 Future Climate Scenarios for the county

3.4.2 National and downscaled climate change projections

Kenya's climate ranges from tropical (along the coast) to arid (in the mountain regions). The average temperature across the country is 24°C and the mean annual precipitation is 669 mm. The rainy season in Kenya usually begins in March and decreases in May to June. Since 1960, Kenya's mean annual temperature has increased by 1.0°C, at an average rate of 0.21°C per decade. The rate of increase has been most rapid in March to May (0.29°C per decade) and slowest in June to September (0.19°C per decade). Observations of rainfall over Kenya since 1960 do not show statistically significant trends, as trends in the extreme indices based on daily rainfall data are mixed (World Bank, 2021). According to the global climate model CMIP5 (RCP 8.5), mean annual temperature in Kenya is expected to increase by 1.0°–2.8°C by 2060 and annual rainfall is expected to increase between October and December as well as between March and May.

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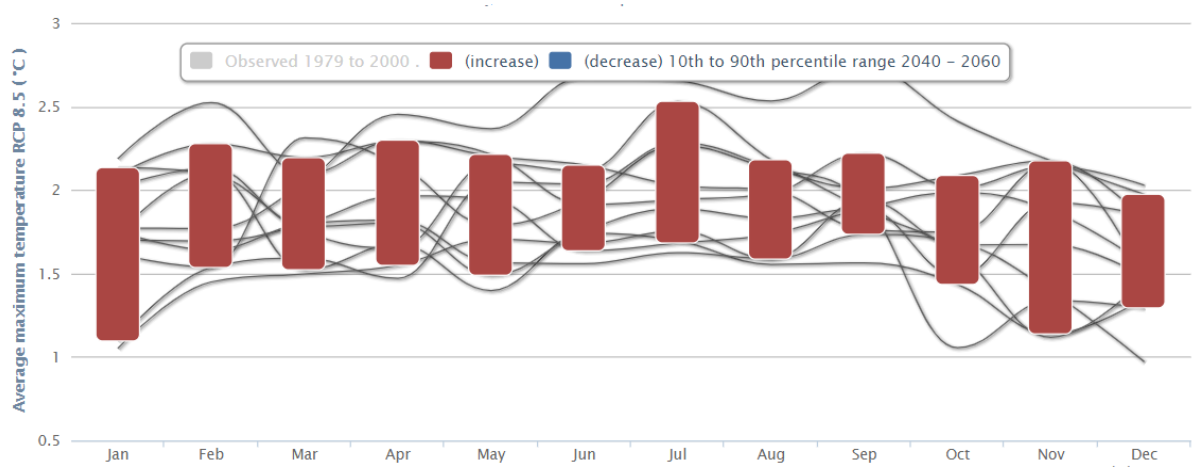

Figure 4 Average predicted maximum monthly temperature in Nakuru for the period 2040-2060

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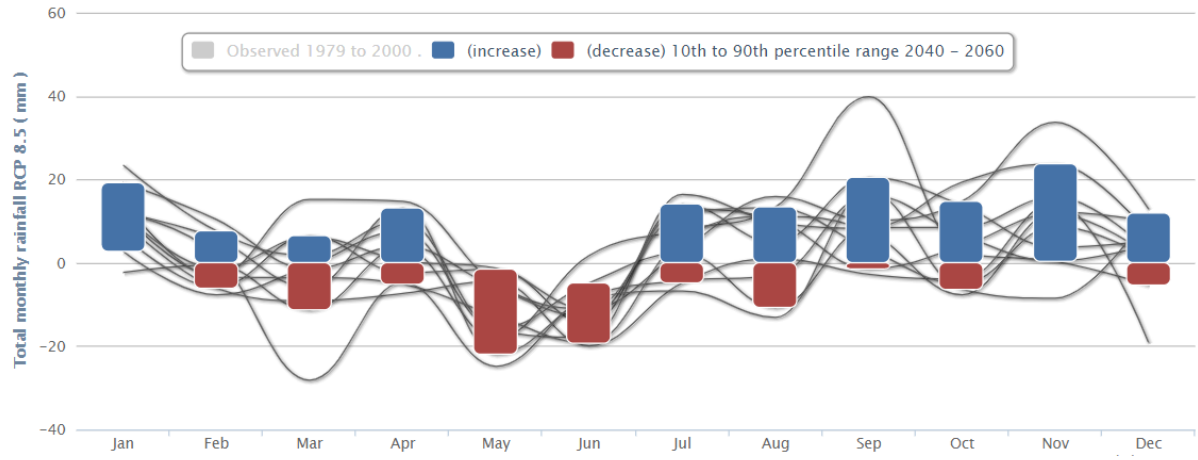


Figure 5 Total predicted monthly rainfall in Nakuru for the period 2040-2060

3.4.3 County future climate scenarios

The National Climate Change Action Plan (NCCAP) 2018–2022 indicates that rising temperatures, uncertain changes in rainfall patterns, stronger storm surges and greater risk of extreme weather events such as droughts, floods and landslides are all significant climate

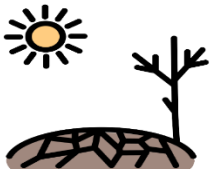
risks facing Kenya. Based on data from the participatory workshops, the household survey, interviews and results presented in the Nakuru County Climate Change Action Plan (NCCCAP) 2018–2022, there are 21 climate hazards currently affecting Nakuru County: rainstorms, fog, hail, severe wind, lightning/thunderstorms, extreme winter conditions, cold waves, extreme cold days, heat waves, extreme hot days, droughts, forest fires, land fires, flash/surface floods, river floods, groundwater floods, permanent inundation, landslides, rock falls, subsidence, waterborne diseases and vector-borne diseases.

Further risk mapping indicated that the five hazards that have the most significant impact on Nakuru County are **summarized below**. According to the findings of the RVA, 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 water levels of lakes, depletion of aquifers, soil erosion and degradation, water pollution, loss of biodiversity, and damage to infrastructure such as roads.

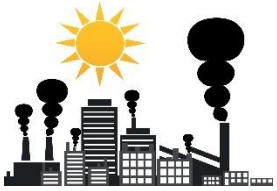
Main Hazards in Nakuru County

Strong winds have caused property destruction by carrying away roofing sheets from structures, making repairs costly. Wind damage has reduced working/business opportunities and incomes. Strong winds are also suspected of contributing to health issues by increasing exposure to dust particulate matter and air pollution

Floods have caused displacement, destruction of property, loss of jobs, and wildlife threats. Floods can kill, destroy infrastructure, contaminate water and flood. Floods have deadly impacts because many poor communities receive runoff from the top of plains. Floods also contribute to food insecurity as crops are destroyed, food prices increase, and the quantity of food decreases



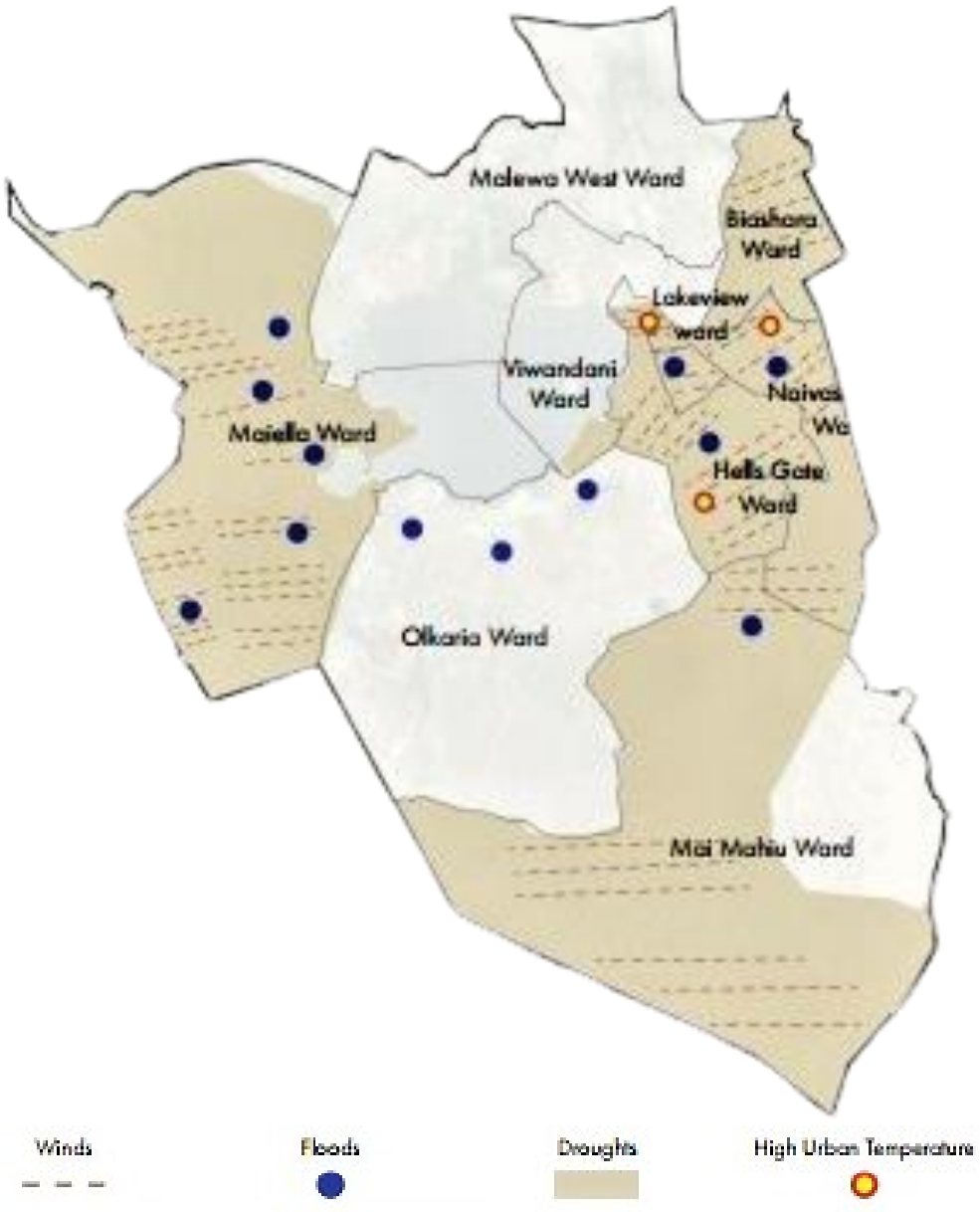
Droughts have led to water scarcity, livestock starvation, and reduced produce, all of which poverty due to the increases in the price of food and how drought can limit livelihoods and reduce income, such as street vendors.



Rising temperatures have caused lower crop yields and increased the presence of mosquito-vector-transmitted diseases such malaria and dengue fever. Heat related diseases include stroke, heart attacks & asthma, and is a leading cause of hospitalization. Excessive, prolonged heat can contribute to adverse outcomes at birth and stunt infant growth

Forest fires impact climate change through carbon emissions, feedback loops, loss of carbon sinks, altered ecosystems, and air quality. Forests act as carbon sinks, and their loss reduces CO2 absorption. Fires alter ecosystems and regional climate patterns. Smoke and pollutants from fires degrade air quality, affecting human and wildlife health. Addressing both fire management and climate change is crucial.

Climate change can affect frost events despite the overall warming trend. Shifting seasons, unstable weather patterns, changes in atmospheric moisture, and impacts on agriculture are factors that can contribute to the occurrence and severity of frost events, varying by regions in Nakuru County. These changes affect agriculture, farming, and lead to human health issues



4 Analysis of Existing Resilience/Adaptation Strategies to Current and Future Climate Risks

4.1 Overview of existing adaptation/resilience strategies and their effectiveness to current climate risks

4.2 Effectiveness of adaptation/resilience strategies to future climate risks

ACTION NUMBER	ACTION TITLE	RATIONAL FOR PRIORITISATION
PRIORITY MITIGATION ACTIONS		
PRIORITY ADAPTATION ACTIONS		
SECTOR:	AGRICULTURE, LIVESTOCK AND FISHERIES	
1	Desilt 60 water pans and construct 25 new water pans in Naivasha and Rongai subcounties by 2030 to promote water harvesting, conservation and utilisation for domestic and agricultural use in Nakuru County	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.

SECTOR:	WATER: ACCESS TO CLEAN WATER	
4	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.

SECTOR:	WATER: SANITATION	
8	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	Waterborne diseases are ranked among the top five diseases in Nakuru County and are exacerbated by climate change related flooding. They are also preventable with improved sanitation. One aspect of the vision in the Nakuru Countywide Strategic Sanitation Plan is for open defecation to be eliminated and for waterborne diseases to be minimised in Nakuru County by 2030. It is estimated (as of 2019) that Nakuru County loses about KES 978 million per year due to poor sanitation (Nakuru Countywide Strategic Sanitation Plan, 2019). This figure is likely to increase as climate change induced flooding events increase in intensity and frequency in the future. To address these problems, this action was considered a priority. In addition to improving hygiene standards, this action will enhance social dignity and reduce the economic burden in accessing healthcare by reducing the prevalence of waterborne diseases.

SECTOR:	FORESTRY	
12	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.

SECTOR:	TOURISM

14	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.

Ward Level Action Plan

Having learnt how to use the resilience tools, the participants used pile stock pairing method to rank the hazards that need intervention in order of priority.

Table 5 Summary of the Ward Action Plan

GILGIL SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Eburru Mbaruk	Drought	– Reforestation/ Afforestation programs, awareness creation and drilling of boreholes – Rainwater harvesting, Establishment of water pans	5000H/H	Mbaruk Oljorai Eburu	Community, KFS, WCCPC CGN
	Flood	– Re-afforestation construction of water pans other infrastructures such as drainage systems	3000H/H		Community County Govt, NGOs, National Govt
	Land degradation	– Planting of tree/fruits seedlings such as guavas, loquats, bananas along the buffer zones – Establish tree/fruits seedlings nurseries to raise 200,000 seedlings each	2no.		County Government, Community, KWS, KFS CFA, Rhino Ark, Conservancies owners
		– Installation of gabions Agricultural extension services – Tree planting and conservation initiatives	5000 H/H		MOALF, CGN, Community KFS
		– Re-afforestation and Afforestation – Training community on Proper land use Sustainable farming practices			Community, MOALF, KFS CGN
	Strong winds	– Initiate Tree planting initiatives – Generation of wind power			Community, KENGEN CGN
Elementaita	Drought	– Drought resistant crops e.g sweet potatoes, 'Katumani' maize	5000 HH	Miti Mingi Ndibai Kiambogo Kiptangwanyi	KALRO, CGN MOALF

GILGIL SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
		– Promotion of various irrigation methods	50 Acres		KALRO, CGN MOALF
		– Increase water access			KALRO, CGN MOALF
	Flood	– Afforestation and reforestation especially along riparian areas – Construction of gabions public education on importance of riparian areas	50km	Miti Mingi Kiambogo Kiptangwanyi	WRA, Nakuru County Government, Ministry of Environment and Forestry Community Based Associations
	Frost	– Adaptable crops - traditional irish potatoes and Katumani Maize, njahe, sweet potatoes	2000 farmers	Miti Mingi Kiambogo Kiptangwanyi	KALRO County Government of Nakuru
	Land degradation	– Planting of fruit trees in game reserve and Conservation of forest habitats especially for monkeys – Public education on wildlife conservation protection of water points and – provision of water points for the wild animals.	2500HH	Elementaita Miti Mingi Kiambogo Kiptangwanyi	KWS, Ministry of Tourism County Government of Nakuru
		– Smart agricultural practices such as paddocking, planting of grass e.g boma grass – Intercropping and crop rotation especially with leguminous crops – Training of farmers	5000HH	Thugunoi Kasambara Miti Mingi Kiambogo Kiptangwanyi	Nakuru County Government KALRO, MOALF
Gilgil	Drought	– Drought resistant crops e.g Cassava, green peas, Katumani maize, sweet potatoes – Agroforestry to include drought resistant fodder trees such as caliandra – Training on Water harvesting techniques such as pan liners, water tanks and smart agriculture e.g.kitchen gardening in every household	5000 H/H	Kariandusi Kikopey	Farmers Associations and cooperatives, MOALF CGN

GILGIL SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
		– Drilling of 2 No. of boreholes Establishment of irrigation schemes at Kikopey and Kariandusi.			
Gilgil	Flood	– Construction of 3 No of water pans in Kikopey and Ngomongo – Relocation from wetlands	3000 H/H	Kikopey Ngomomgo	CGN, Central Rift Water Works Agency, NEMA
	Land degradation	– Planting of fruit tree seedlings e.g. guavas and Loquat along the conservancy buffer zones – Enhancing patrols – Awareness creation on wild animal behavior	5000 H/H	Kikopey Kariandusi Ngomomgo	KWS, Community CGN
Malewa West	Land degradation	– Reafforestation – Establish tree nurseries in public schools to raise 200,000 assorted tree seedlings	200,000 assorted tree seedlings	Kirima Ngathengera NYS	Community, CFAs, County Government, KFS KEPHIS, NGOs
		– Planting of fruit tree seedlings such as guavas, loquats, along the Eburu forest buffer zone to deter monkey from human settlements – Establish tree nurseries in Public School to raise 200,000 assorted tree seedlings	200,000 assorted tree seedlings	Ngatamaiyu	CFA, KFS, KEFRI, County Government, KWS, NGOs
Murindat	Flood	– Construction and maintenance of drainage systems. – Construction of water pans.	4000 H/H	Langa langa Karunga	CGN, NGOs
	Pollution	– Creation of zones and engagement of private service providers – Regular clean-up exercises	8000 H/H	Mbegi Langlanga Karunga Gitare	Residents/Traders, CGN NEMA
	Strong winds	– Afforestation and reafforestation Creation of awareness on the need to plant trees within their homes to act as wind breakers	2000HH	Miti Mingi Kiambogo Kiptangwanyi	Department of Meteorology KFS, CGN

BAHATI SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Kiamaina	Drought	– Planting of Katumani variety to combat drought; – Construction of dams	200HH	Kagoto area and scode.	CFAs, CGN, CBO's, NGOAs,
Dundori	Drought	– Drought-resistant crops like katumani maize – construction of 2 dams – Construction of 4 water pans – Desilting of the existing dams, – Afforestation, Rainwater harvesting by schools and homeowners	Farmers in Ndunduri 5500 Households	Mwiteithia, Ndundori centre area	CFAs, CGN, CBO's, NGOAs, Community, Central rift valley water development agencies
	Flood	– Construction of gabions and terraces along the flood path Planting trees, Stormwater drainage construction, Establishment and equipping 15 tree nurseries	2000	Githioro	CGN,NGOs,NGAOs, WRUA's, CBO's, Community members
Bahati	Drought	– Purchase of certified 10,000 tree seedlings in the short term – Establishment and equipping of tree nurseries in schools and other enclosed community – Best landuse management Sensitization of community on – promotion of water harvesting and provision of water tanks where applicable	2,000	Bahati Ward (Karunga, Chania)	Farmers Government
	Flood	– Drought resistant crops – construction of 5 dams – Construction of 10 water pans – Construction of proper drainage channels – Desilting of the existing dam at Karunga – Integrated solid waste management	3000HHs	Bahati Ward (Bahati market, Munyaka estate, Mile Kumi area0	Government Farmers, CBOs

BAHATI SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
	Land degradation	– Creating awareness among the community on proper solid waste management i.e reuse, waste reduction, and recycling, Provision of more waste skips at the market areas, – Conducting clean-us with schools and community to create awareness and sensitization on waste disposal and management Use organic manure – Agroforestry ensure compliance in the extraction of natural resources such quarrying Crop rotation	3000	Bibilioni, Bahati centre, Karunga, Muringa, Maili kumi.	CGN, CBOS Government MCA
Kabatini	Flood	– Planning and construction of drainage infrastructure storm water drainage – Construction of water pans.	5,500 Famers in Kabatini	West acres area in Thayu area and Kiungeuini	C.G.N, NGAO's NGO's, CBO's Community
Lanet/Umoja	Flood	– Increase capacity of storm water drainage systems	5000	Ndege Ndimu Sublocation	NGO's NGAO'S C.G.N
		– Adopt integrated solid waste management	6000	Meroroni area	
	Land degradation	– Establish 1 tree seedlings of 50,000 seedlings in each of the 5 locations in Lanet/Umoja Ward	2000 HH	Ndegendimu	C.G.N, NGAO'S Community, NDMA KFS, KEFRI, NGAO'S Community
Kiamaina	Flood	– Construction of gabions, – Increase capacity of storm water drains, – relocation of people to a safer place, – construction of dikes, – excavation of trenches	2000	Kiamaina	CGN, NGOs, NGAOs
	Pollution	– Disease resistant livestock, Fast maturing livestock, vaccination	1500	Karunga	Community, Central rift valley water development agencies

BAHATI SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Kabatini	Land degradation	– land restoration crop rotation, diversification of crops – afforestation (on farm),	5,500 HHs	Kwa Amos	KFS, CFA, C.G.N NGAO's, NGO's CBO's, Community
Lanet/Umoja		–			
	Land degradation	– Sensitizing the community on effects of land degradation	2000 HH	Ndegendimu	C.G.N, NGAO'S Community, NDMA KFS, KEFRI, NGAO'S Community
	Land degradation	– Build capacity of 2,000 farmers on climate smart livestock farming	2000 HH	Ndegendimu	CGN, NGAO'S Community, NDMA KFS, KEFRI, NGAO'S Community

SUBUKIA SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Subukia	Drought	Increase in ground vegetation, Planting trees	Farmers in Subukia 5500	Tetu, Arash, Munanda, Kahiga, Kirengero, Kwa Mathenge	Farmers NGAO,CBOs, CGN
	Land degradation	Use organic manure Agroforestry	Farmers in Subukia 5500	Subukia centre, Tetu, Kahiga, Arash,	CGN CBOS

SUBUKIA SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
		Crop rotation, Construction of proper drainage channels		Kirengero and Munanda	Government MCA
Kabazi	Drought	Drilling boreholes Water pans Water harvesting Tree planting in water catchment Drought-resistant crops, protection of water sources and rehabilitation of water harvesting facilities.	1000 Households	Ndungiri, Solai Ol-Bonata, Gitura, Upper kabazi, Ndungiri, lower Solai	National government, CGN,NGOs, Research institutions
	Flood	Construction and rehabilitation of water harvesting facilities, improvement of drainage systems, creation of spongy natural ground, afforestation	1200 Households	Lower Kabazi	National government, CGN,NGOs, Research institutions
	Land degradation	Afforestation, Use of organic manure, Crop rotation Improve storm water drainage Water drainage Creating awareness	200	Upper Kabazi, Solai centre, Ndungiri, Olbanita	CGN CBOS Government MCA
Weseges	Land degradation	Improvement of drainage systems Building gabions, Increase in Vegetation Planting trees Claiming of grabbed resources Capacity building Siltation of dams	5000 Households	Kiboronjo	National government, CGN,NGOs, Research institution

NAIVASHA SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Biashara	Drought	- Establish 10 tree nurseries each covering 1/4 acre land in different locations	10	Biashara Ward	KFS, CGN, Community
	Flood	- Upgrade and increase drainage system - Build capacity and increase awareness on waste management from the source	20 km	Kinamba centre Gituamba	County Government, Well Wishers, Donors
	Land degradation	- Beckoning of protected Wildlife habitats	12km	NYS, Nyondia and Gituamba	KWS, Community, CG
	Pollution	- Build capacity of 10,000 households on integrated solid waste management	10,000	Biashara Ward	CGN, Community groups i.e. youth, women
Hells Gate	Drought	- Plant drought-adapted trees species (10,000 seedlings)	10,000	Karagita Beach Schools Public Lands	CGN, NG, NGOs
	Flood	- Desilting of drainages - Increase the volume of the stormwater drain systems	20 km	Karagita Karagita Mirera	CGN, NG, NGOs
	Land degradation	- Build capacity on proper solid integrated waste management	5,000 people	Karagita Mwicingiri Nyamathi Mirera Karai	CGN, GOK, NGOs, PWSPs

NAIVASHA SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
	Land degradation	- Beckoning of protected Wildlife habitats and riparian land - Build capacity on resolutions on HWC	5,000 people	Mwicingiri mirera Nyamathi Oasis & ASTU Camp area Karai Mirera Nyakio	KWS, GOK CGN, NGOs
Lake View	Drought	- Tree growing through adapting a tree method.	2300 HH	Kayole Kihoto	KFS, CGN, KEFRI
	Flood	- Construction, rehabilitation and maintenance of drainage	23,000 HH	Kihoto Unity Lakeview estate Manera	County government, GOs
	Pollution	- Proper Management of dumpsite and waste	100 HH	Kayole Unity Mountain View Estate	CGN, NGOs
Maiella	Drought	- Drilling, equipping and solarization of 3 boreholes - Construction of 3 water pans - Growing 60,000 indigenous trees per year using adopt a tree method	40,000 HH	Kipkonyo Ngondi Maiella Centre Ndabibi Moi Ndabi Kongoni Ngondi	NGOs, County Government, World Vision, CDF, Flower Farms, GOK, KFS

NAIVASHA SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
	Flood	- Construct gabions to regulate flows	20,000 HH	Kipkonyo Ngondi Maiella Centre Ndabibi Moi Ndabi Sero Kongoni	NGOs, County Government, World Vision CDF, Flower Farms
	Land degradation	- Beckoning of protected Wildlife habitats and riparian land - Build capacity on resolutions on HWC	10,000 HH	Kipkonyo Ngondi Maiella Centre Ndabibi Moi Ndabi Sero Kongoni	KWS, GOK, CGN, NGOs
	Pollution	- Sensitization and training on integrated waste management	5000 HH	Kipkonyo Ngondi Maiella Centre Ndabibi Moi Ndabi Sero Kongoni	NGOs, County Government, World Vision CDF, Flower Farms
Maimahiu	Deforestation	- Establishment of 4 tree nurseries in the Ward	10,000 HH	Old Kijabe Forest	NGOs, CGN, Community, CBOs

NAIVASHA SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
	Drought	- Provide 200 (5000 ltrs) water tanks to vulnerable communities	200 HH	Gichugu area	NGOs, CGN, Community, CBOs
	Forest Fire	- Training on forest fire fighting creating fire cut lines - Offer source of energy for cooking, enforcement	5000 HH	Old Kijabe Forest	NGOs, CGN, Community, CBOs
	Land degradation	- Conduct awareness on environmental pollution, prevention and control	10,000 HH	Maai Mahiu Town	NGOs, CGN Ministry of Education, CBOs
	Land degradation	- Sensitizing land owners and quarry owners on proper land use practices and engagements, enforcement and compliance	500HH	Gichugu Gathima Namcha	NGOs, CGN, NG Community, Civil Society
Naivasha East	Drought	- Training farmers on alternative agricultural practices that are more resilient	10,000 HH	Kinungi Ihindu Maraiguchu	C.G.N, Agricultural companies, Agro Vets
	Flood	- Installation of culverts and prioritize construction of drainage systems first before roads and Maintenance of drainages by the youth	200 Water puns	Kinungi Nyakairu Nyaingoya	C.G.N, NGO's, WRA, National government
	Land degradation	- Grow 1,000,000 fruit and indigenous seedlings	1,000 HH	Kinungi Nyakairu Nyaingoya	C.G.N, NGAO's NGO's, community, KFS

NAIVASHA SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Olkaria	Pollution	- Installation of quality sensors, - Sensitization of communities on air pollution	5,000 HH	Olkaria Chiefs Camps	CGN, NGOs, GoK, Development partners
	Deforestation	- reforestation	30,000 tree seedlings learning institutions and public land	Ol karia ward	CGN, NGOs KFS, GoK
	Drought	- Training of farmers on improved agricultural practices and water harvesting techniques	3000 HH	Narasha	CGN, GoK
	Flood	- Increase drainage system capacity	3,000 HH	Kwa Muhia Kamere	CGN, NGOs GoK, Development Partners
Viwandani	Flood	- Improve the volume of stormwater drainage system - Desilt the existing stormwater drainage systems	2,500 HH	Kabati Site and Service Naivasha CBD Industrial area Council Estate	CGN, NG, NGOs CSOs, CBOs, Waste Service Provider
	Land degradation	- Provide modern waste management equipment like skip and skip loaders - Training community members on integrated waste management practices	5,000 HH	Markets Naivasha CBD Kabati Site & Service	CGN, NG, NGOs

NAIVASHA SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
			5000 people	Council Estate Industrial Area Hope Well Naivasha CBD	
	Land degradation	- Increase forest cover by tree planting of 5,000 tree seedlings by adopt a tree method - Construction and installation of 15 gabions in Mukuru valley and Kabati	5,000 HH	kabati site & service Naivasha CBD and along the highway Council estate Mukuru valley	CGN, NG, NGOs
	Strong winds	- Growing wind breaking trees (5000)	500 HH	along the highway Naivasha CBD	CGN, NG, NGOs KENGEN

Nakuru Town West					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
London	Pollution	– Tree nurseries – Planting of trees – Waste recovery – Enforcement and compliance	10,000 assorted tree species	Schools and health facilities within the ward	Community, CBO's, NGO's, CGN, NGAO's
		– Enforcement and compliance on waste management	Manufacturing - industries	Industrial area, Community	CGN, NGAO's NEMA, Community
		– Promote waste Recovery at source	5 No. organised CBO's	mololine estate,Gioto dumpsite	CGN, CBO'S,community waste recyclers, NEMA
		– Enforcement and compliance against pollution of water bodies	1 No. Water body	London Ward	CGN, NGAO's, NAWASSCO, Community
	Drought	– Promote water harvesting technologies targeting roof and surface run-off harvesting	10,000 HHs	Entire Ward	Community, CBO's, NGO's, CGN, NGAO's
	Forest Fire	– Routine maintenance and installation of fire breaks with Mexican Green Ash species	Between forest sub-compartments (100 hectares)	Menengai Forest	KFS, CFA'S, CGN
		– Adoption of clean energy sources	10000HH's	London ward	Practical Action, CGN, Community

		– Promote sustainable forest management	100 Hectares	Menengai Forest	KFS, Menengai CFA'S, CGN
	Land degradation	– Promote climate smart Agriculture – Capacity development on smart agriculture	200 Farmers	Individual farmers; Institutions (Kenya Prisons)	CGN, KALRO
		– Rehabilitation and restoration of degraded lands	Nakuru -sigor road	Nakuru- sigor road	KFS, CFA'S, CGN
Kaptembwo	Flood	– Unclogging of drainages, – Maintenance and covering of drainage systems, – Promote Solid waste recovery at CBO level	Kaptembwo Ward	Muslim Primary to River Ndarugo Stretch	CGN, NGO's, Community, CBO's
Rhoda	Flood	– Construction and maintenance of storm water drainage	Main roads in Mbugua Village	Mbugua and Mbugua village	CGN, Development Partners, Community
		– Conservation and protection of an Encroached wetland in Mbugua and Mbugua Villlage	Encroached wetland in Mbugua and Mbugua Villlage	Mbugua and Mbugua village	CGN, WRUA's, WRA, KFS, Community
Shaabab	Flood	– Unclogging and maintenance of drainages, – Construction of gabions	2km stretch - Pivot Area and Weavers market	Pivot Area and Weavers Mkt	CGN, Community, CBO's, NGO's
Barut	Flood	– Installation of retainer nets – Construction of contour gabions	15km stretch	Along River Ndarugu	CGN, KURA, Community, CBO's, Rotaract
		– Rehabilitation and restoration of riparian land	15km stretch	Along R.Ndarugu	CGN, WRA, WRUA's, CBO's, Community

Barut	Land degradation	– Establish Tree nurseries – Grow indegenous tree species that provide food for wildlife	10,000 trees	Mwariki- B village, institutions	CGN, KWS, Schools, Land Commission, Community, CBO's
		– Rehabilitation and restoration of degraded land/quarries	4 No. Quarries sites	Kwa Ndingi ,Soimet quarries	CGN, Private owners of the quarries, Community members
Kaptembwo	Land degradation	– Rehabilitation and restoration of degraded land/quarries	1 No. Kasisi Quarry	Kipsigis,Tugen Farm	CGN, Private owners of the quarry, Community
Kapkures	Land degradation	– Rehabilitation and restoration of degraded land/quarries	3 No. Sand harvesting sites	Mogoon, Ingobor and Lalwet sand harvesting sites	CGN, Private owners of sites, Community
	Pollution	– Capacity development of communities on livestock management techniques – Increase access on AI	1,000 farmers	Kapkures and Lalwet villages	CGN, KALRO, Community
Shaabab	Pollution	– Regular inspection,enforcement and compliance of garages – Implement Development Control codes	5 No. Industries and 20 No. Garages	Bedi investment, Githima Tanners Industry, Spin Knit industry, Menengai Oil Refinery	CGN, NEMA, NGO'S, Business Owners
		– Establish Tree nurseries – Grow indegenous tree species that provide food for wildlife	10,000 Assorted Trees species	Jualako Round about, Eveready, Open spaces, Social hall l	CGN, KFS, City Board, WCCPCs, CBO's, Community

Rhoda	Pollution	– Promote waste recovery at source – Capacity development on waste management	2 No. waste service providers, CBO's	Gamu, kwanza and Pembe mbili Village	CGN, Waste service providers, Community, CBO's
Shaabab	Pollution	– Promote waste recovery at source – Capacity development on waste management	1 No Waste Compactor truck	Markets,	CGN, Waste Service Providers, Community, CBO's

Nakuru Town East					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Biashara	Pollution	– Tree nurseries – Growing of trees	1,000,000No. assorted tree species	Road medians, roundabouts, highways and open spaces, schools and institutions	CGN, NGO's, CBO's, NEMA, Community
		– Promotion of non motorized transport	5km	Mburu gishua road. Kenyatta lane.	CGN, NGO's, CBO's, NEMA, Community
		– Introduction of zero carbon city transportation	1 No. Electric bus	Mashambani stage	CGN, NGO's, CBO's, NEMA, Community
		– Introduce of car free day	thrice a week	Kenyatta Avenue	CGN, NGO's, CBO's, NEMA, Traders
		– Introduce designated parking areas	2 parking lots	mashambani fire depot	CGN, NGO's, CBO's, NEMA, Traders
		– Promote off site sanitation solutions	5 residential areas	Club Road Section 58	CGN, NGO's, CBO's, NEMA, Traders, Community

Nakuru Town East					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
	Flood	– Increase capacity, rehabilitation and maintenance of storm water drainage	10,000Km of storm water drains	Entire Biashara ward.	CGN, NGO's, CBO's, Community
		– Installation of retainer nets on drainages	700 culverts	entire biashara	CGN, NGO's, CBO's, Community
		– Adoption of sponge installation of porous walkways	2km of Non motorized transport	Mburu Gichua Road Government Road	CGN, NGO's, CBO's, Community
Flamingo	Flood	– Increase capacity of storm water drains and regular maintenance	200km of storm drains	Pangani Estate Racecourse flamingo	CGN, NGO's, CBO's, Community
		– Installation of retainer nets on drainages	50 culverts	Pangani Estate Racecourse flamingo	CGN, NGO's, CBO's, Community
		– Capacity building by creation of awareness/sensitization on water harvesting techniques to reduce water run off	500hh	Pangani Estate Racecourse flamingo	CGN, NGO's, CBO's, Community

Nakuru Town East					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
	Land degradation	– Containment of animals inside the park , – Creating alternative livelihoods for the people	Baboons	Kimathi ,pangani ,Racecourse	CGN, K.W.S
		– Tree planting /growing in degraded lands	growing of 1million no assorted tree species	entire ward	CGN, CBOs, NGOs, Community, KFS, KEFRI
	Pollution	– Clearing of bushes – storm water drains	all storm water drains and bushes in flamingo ward	entire ward	CGN, CBOs, NGOs, Community,
Kivumbini	Flood	– Planning, designing and construction of storm water drainages – Maintenance, and Rehabilitation of storm water drainages	5,000hh	Manyani Kivumbini 4 estate	CGN, NGO's, CBO's, Community
		– Introduce Water Harvesting techniques to attain potable water	3,000hh	Kivumbini 1-4	CGN, NGO's, CBO's, Community, National water harvesting authority, Community
		– Establish of 10 No. tree nurseries to help in establishing water breakers	10 learning institutions	Kivumbini secondary , Nakuru primary, st theresa primary	CGN, KFS, CBO's, NGO's, Community
		– Purchase and installation of 10 No water storage tanks (5000 litres)	10 learning institutions	Public schools in Kivumbini ward	CGN, National water harvesting authority, Community, NGO's, CBO's

Nakuru Town East					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
		– Purchase and distribution of 20,000 certified tree seeds	10 learning institutions	Public schools in kivumbini ward	CGN, KFS, CBO's, NGO's, Community, KEFRI
Kivumbini	Land degradation	– Building gabions to stablise the eroded areas ad trap silt	5 gabions	Manyani near south cemetery	CGN, Community, NGo's CBOs
	Pollution	– Installation of 1No. Solid waste waste recovery resource center	3,000hh	Makuti estate	CGN, NGO's, CBO's, Community
		– Capacity building -creation of education and awareness	3,000hh	residents of kivumbini ward	CGN, NGO's, CBO's, Community
Menengai East	Flood	develop water sinks eg wettlands and groundwater recharge areas	500km storm water drains	Lower teachers, Kiratina, Dafra, Kasa Media	County Government
		establishment 3No. of tree nurseries to establish water breakers on waterways	3No tree nurseries	Kirima Menengai Secondary School	County Government CBOs Development Patner
		Capacity Building by giving them education and creation of awareness	500hh	kirima teachers mawanga	County Governemnt CBOs Development Patner
Menengai East	Land degradation	– Building gabions to stablize gullies and trap silt	500 gabions	Teachers mawanga	CGN, CBOs, NGOs, Community, KFS, KEFRI, CFA
		– Tree nurseries – Tree planting /growing	growing of 1million no assorted tree species	Entire ward	CGN, CBOs, NGOs, Community, KFS, KEFRI, CFA

Nakuru Town East					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
		– Installation of 2 No. solid waste waste resource recovery centers	2 No Resource recovery Centres	Mawanga Kiratina	CGN, CBOs, NGOs, Community, KFS, KEFRI, CFA
Nakuru Town East	Drought	Afforestation	Schools. (500 schools) Faith based organizations (200)	Mwariki. Muguga. Mzee wa nyama.	CGN, CBOs, NGOs, Community, KFS, KEFRI, CFA
	Flood	– Increase capacity of storm water drains.	Entire ward.	Pipeline. Mzee wa nyama. Free area.	CGN, CBOs, NGOs, Community, KFS, KEFRI, CFA
		– Building Gabions.	10 No gabions	Imperial	CGN, CBOs, NGOs, Community, KFS, KEFRI, CFA
		– Capacity building by creation of awareness/sensitization on water harvesting techniques to reduce water runoff	3,000hh	mzee wa nyama mwariki JB	CGN, National water harvesting authority, Community, NGO's, CBO's

Nakuru Town East					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
	Land degradation	– Tree nurseries – Planting trees	Growing of 1million no assorted tree species	Mzee wa nyama JB .	CGN, CBOs, NGOs, Community, KFS, KEFRI
		– Introduce Water Harvesting techniques to attain potable water	3000hh	mzee wa nyama mwariki JB	CGN, National water harvesting authority, Community, NGO's, CBO's
Nakuru Town East	Strong winds	– Tree growing to act as wind breakers	Growing of 1million no assorted tree species	Mzee wanyama	CGN, CBOs, NGOs, Community, KFS, KEFRI

NJORO SUB-COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Kihingo	Drought	- Planting more trees, Construction of large water pans - Encouraging the community to harvest rainwater through the construction of water pans - Build capacity of farmers on cover crops and fodder grass	2,000 HH	Subuku, Kihingo and Stoombili	C.G.N, NGAO, NGO, CFAs and Community

NJORO SUB-COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
	Flood	- Planting more trees, Construction of large water pans - Encouraging the community to harvest rainwater	2,000 HH	Subuku, Kihingo and Stoombili	C.G.N, NGAO, NGO, CFAs and Community
	Frost	- Planting deciduous tree and vine varieties that bloom later in the spring. - Planting citrus trees on slopes facing away from the sun	1,500 HH	Kanyati, Bagaria and subuku areas	C.G.N, NGAO, NGO and Community
Lare	Drought	- Provision of drought resistant crops like maize, peas, beans and potatoes - Educate people on the importance of rainwater harvesting - Planting more trees and combating deforestation - Promoting drip irrigation	8,000 HH	Kilo, karagoe and St..Francis sub locations	C.G.N, NGAO, NGO and Community
	Land degradation	- Establish 2 tree nurseries - Create awareness of contour and strip farming	5,000 HH	Pwani and Muthiga sub locations	C.G.N, NGAO, NGO , KWS and Community
	Flood	- Create awareness of integrated solid waste management	8,000HH	Kampyament, milimani, Kianjoya and	C.G.N (water dept and agriculture dept), NGAO, NGO and Community

NJORO SUB-COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
		- Construction of accommodative drainages - Build capacity of communities on water harvesting technologies		mugumo villages	
Mau Narok	Drought	- Protection and conservation of mau water catchment - Urban areas introduction of cover crops and fodder grass - Enforcement of forest protection laws	Farmers in Mau Narok ward	Metta, mwisho wa lami , Mau town, Tipis, Mau Nark	C.G.N, NGAO, NGO and Community
	Flood	Create awareness of proper solid waste management practices in Urban areas	2000 HH	Metta, mwisho wa lami , Mau town	C.G.N, and KURA
Mauche	Pollution	- Rehabilitation of likia and siryat quarry - Education and awareness on waste management practices to avoid dumping waste into the rivers	2000 HH	Likia and Siryat locations Chemosit, Tachasis and Sururu villages	CGN, NGOs, World Bank
	Land degradation	- Establish 2 tree nurseries - Create awareness of contour and strip farming	5,000HH	Tebeswet, Kimugul, Taita and kaptich	CGN, NGOs, World Bank

NJORO SUB-COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
				locations Likia and Logoman Forests Siryat	
Mauche	Drought	- Build capacity of farmers on drip irrigation - Equip the existing boreholes (pumps, solarization and piping) - Provide drought resistant crops (maize, beans, potatoes and peas)	5,000HH	All households at Mauche ward	CGN, NGOs, World Bank
	Flood	- Create awareness of integrated solid waste management - Construction of accommodative drainages - Build capacity of communities on water harvesting technologies -	5,000 HH	Siryat, Ewaat and taita Kusumek, Teret and Kamasai locations Logoman forest	CGN, NGOs, World Bank

NJORO SUB-COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Nessuit	Drought	- Build capacity of farmers on drip irrigation - Equip the existing boreholes(pumps, solarization and piping) - Provide drought resistant crops(maize, beans, potatoes and peas)	2000HH	Nessuit	C.G.N, NGAO, NGO and Community
Nessuit	Flood	- Create awareness of integrated solid waste management - Construction of accommodative drainages	2600 HH	All the roads Nessuit ward, tree seedlings in every village	C.G.N, NGAO, NGO and Community
Njoro	Flood	- Create awareness of integrated solid waste management	2000 HH	All the roads Njoro	C.G.N, NGAO, NGO and Community
	Pollution	- Create awareness on safe disposal of waste - Build capacity of farmers on climate-smart agriculture	2000 HH	Njoro ward	C.G.N, NGO, Egerton University
	Drought	- Build capacity of farmers on drip irrigation - Increase urban and peri-urban tree cover	2000 HH	Njoro town, piave and pwani farmers beaston	C.G.N, KFS NGAO, NGO and Community

NJORO SUB-COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Nessuit	Strong winds	- Support communities to grow deciduous tree, vine varieties and citrus trees to act as windbreakers	2000 HH	Kanyati, Bagaria and subuku areas, Njoro town	C.G.N, NGAO, NGO and KFS, CFAs Community
	Flood	- Create awareness of proper solid waste management practices in Urban areas	2600HH	All the roads Nessuit ward, tree seedlings in every village Metta, mwisho wa lami , Mau	C.G.N, NGAO, NGO and Community, KURA
Nessuit	Forest Fire	- Provision of enough seedlings - Awareness creation on forest conservation	2,000 HH	Nessuit forest	C.G.N, NGAO, KFS, CFA NGO and Community
	Drought	- Equip the existing boreholes (pumps, solarization and piping) - Provide drought resistant crops (maize, beans, potatoes and peas)	2000HH	Nessuit	C.G.N, NGAO, NGO and Community

MOLO SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Elburgon	Drought	Tree planting	Establishment of 4 No.tree nurseries with a capacity to propagate 200,000 tree seedlings per year		
Elburgon	Drought	Drought resistant crop varieties	500 farmer households		KALRO CGN NGOs National Government
Elburgon	Drought	Training and capacity development on Water harvesting and conservation techniques	6000HH	Elburgon	WRA CGN NEMA NGOs

MOLO SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Elburgon	Flood	Cleaning of water bodies rivers, to allow free water flow	2 rivers and their tributaries	River Muro River Mau	Farmers Individuals Schools Institutions CBOs CFAs Tree Nursery associations KFS NEMA WRA NGAO CGN
	Forest Fire	Educate community on measures to reduce forest fires	2000 HH	Elburgon	KFS CGN NGOs
	Forest Fire	Establish alterntive livelihoods to prevent charcoal and forest product dependence	2000 HH	Elburgon town	Community CGN National Government Development partners

MOLO SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Elburgon	Land degradation	Gabions building on gullies	100NO eroded areas	along rivers Mau and Muro	Farmers WRA NEMA CGN Development partners
	Land degradation	Planting trees (bamboo species and indiginours vegetative cover along river banks)	40,000 seedlings	along rivers Mau and Muro	Farmers WRA NEMA CGN Development partners
	Land degradation	sustainable farming practices and riparian conservation	5000HH	along rivers Mau and Muro	Farmers WRA NEMA CGN Development partners KALRO INSTITUTIONS such as Egerton university
	Pollution	Capacity development on Waste recycling/recovery	5 No, organized CBOs	Mukinyai Ndimu Kapsita Baraka Salama	Community WRA NEMA CGN Development partners NGAO

MOLO SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Marioshoni	Flood		1000 farmer households in Marioshoni General community	Kichaki Lawina Omoptica Ndoswa Mawe mbili Kapsimendet Kapkein Chaimoto Kaprop	Farmers Government KALRO KFS
	Land degradation	Fencing of kiptunga forest zonation of forest land	Kiptunga forest	Kiptunga Cha Segut Daraja Kapkerang Burbux Molem Kapkein Kaptimom kapkein	farmers KFS KALRO CGN

MOLO SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Marioshoni	Land degradation	planting of 100000 Building gabions Making terraces sensitisation of 1000 households on Planting cover crops.	100000 tree seedlings PA	Lawina Kamonoswo Kapocholola Ndiswa Daraja Segut Molem Kapkein Taragonik kaptimom	farmers KFS KALRO NEMA CGN National government
	Pollution	Supply of certified seeds to 1000 households Knowledge on pest management for 15 most vulnerable villages.	Agricultural land in Mariashoni 1000 15 most affected villages	Kiptunga CheSegut Daraja Kapkerang Burbux Molem Kapkein Kaptimom kapkein	NATIONAL GOVERNMENT KALRO CGN NGOs
Molo	Deforestation	Reaforestation	1,000,000 tree seedlings at Molo Forest	Molo forest	County Government KFS community Molo CFA

MOLO SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Molo	Deforestation	promote intensive farming technics such zero grazing that are less land demanding, poultry farming,	1000 households	Molo forest Tayari springs	County Government KFS community Molo CFA WRA MOLO WRUA
	Land degradation	Involving KWS in wildlife control and training on information sharing and basic management of human wildlife conflict	100 HH living around Molo Forest	Molo Forest Milimani	KFS Government Community CFA NGOs
	Pollution	Promote sustainable landuse such as organic farming, enforcement and compliance	500 HH along riparian	Munju River Nguzu River Mto Polisi Tayari Springs	County Government KFS WRA NEMA MOLO WRUA Community
	Pollution	sensitization on best environmental practices			

MOLO SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Molo	Pollution	construction of gabions and trenches in slopy areas	100 eroded gullies	Munju River Nguzu River Mto Polisi Tayari Springs	County Government KFS WRA NEMA MOLO WRUA Community
	Pollution	set aside area for waste resource recovery	5 Acres	Molo Town	county government NEMA flower farms
	Pollution	Sensitization on sustainable waste water and solid waste management practices	2000HH	Michatha Michira Kenyatta Milimani Tayari Everbest Munju KCC	Industries community county government NEMA flower farms NGOs
	Pollution	Onsite sanitation solutions	500 households	Molo Town	NARUWASCO CRVWWDA CGN Development partners

MOLO SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
TURI	Flood	Implement the riparian rehabilitation to contain overflows	Farmers and residents in Turi	Kiambiriria location Turi location Chandera location	Residents Government NGOs CFAs KFS
	Land degradation	Restoration and rehabilitation of riparian areas. Establishment of 5No.tree nurseries Training on cover crop species Control soil erosion Control quarrying activities Proper waste disposal	Establishment of one tree nursery in each of the farms below. Kiambiriria farms Ngwatanero farms Muchorwe farms Minonga farms Turi farmers	Turi location Kiambiriria location Chandera location	KFS CFA NEMA CGN
	Pollution	Onsite sanitation solutions	NARUWASCO Central RIft Water Works Development Agengy	Kiambiriria location Turi location Chandera location	Government NARUWASCO

MOLO SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
TURI	Pollution	Training on sustainable agricultural practices	1000HH	Kiambiriria location Turi location Chandera location	County government National government NGOs

KURESOI NORTH					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Kamara	Air Pollution	Build capacity of 5000 farmers to adopt organic farming	5000 farmers	Ketigoi Muchorwe, Koige and Kamara areas	C.G.N NGAO'S NGO's FBO, WRUA CFA
	Deforestation	Capacity build and create Awareness on use of briquettes, biogas,energy saving jikos as an alternative source of cooking energy on alternative of fuel	1,500 HH	Haraka, Koige and Milimani areas	C.G.N NGAO'S NGO's FBO, WRUA CFA

Kamara	Deforestation	Reforestation	12,000 trees	Haraka, Koige and Milimani areas	C.G.N NGAO'S NGO's FBO, CFA
	Deforestation	Undertake green energy projects like use of briquettes, biogas,energy saving jikos as an alternative source of cooking energy	1,500 HH	Haraka, Koige and Milimani areas	C.G.N NGAO'S NGO's FBO, CFA
	Drought	Dril, equip and solarize 3 boreholes	3 boreholes	Ketigoi Muchorwe, Koige areas	C.G.N NGAO'S NGO's
	Drought	Rehabilitate 4 water pans	4 water pans	Ketigoi Muchorwe, Koige areas	C.G.N NGAO'S NGO's
	Forest Fire	Enforcement, monitoring and compliance	Forest neighborhoods	Haraka, Pele,Milimani, Kipsinendet areas	C.G.N Community, KFS KWS NEMA

Kamara	Forest Fire	Create awareness on modern honey harvesting method like use of personal protective equipment	2000 bee farmers	Haraka, Pele,Milimani, Kipsinendet areas	C.G.N NGAO'S NGO's CBO' S Community, KFS KWS
	Forest Fire	Build community based alternative livelihood to reduce charcoal burning	5 forest zones	Haraka, Pele,Milimani, Kipsinendet areas	C.G.N NGAO'S NGO's CBO' S Community, KFS KWS
	Land degradation	Create Awareness to stop encroachment of wildlife habitat	2000 HH	Haraka, Pele,Milimani, Kipsinendet areas	C.G.N NGAO'S NGO's CBO' S Community, KFS KWS
	Land degradation	Sensitise and promote the establishment of Forestry and wildlife community based scouts	5 forest zones	Haraka, Pele,Milimani, Kipsinendet areas	C.G.N

Kamara	Land degradation	Build gabions	4 areas	Jogoo, Koige and Ketigoi areas Around Baraka area	C.G.N NGAO'S NGO's CBO' S Community
	Land degradation	Create Awareness and sensitization on climate smart agriculture	2000 farmers	Jogoo, Koige and Ketigoi areas Around Baraka area	C.G.N NGAO'S NGO's CBO' S Community
	Land degradation	Afforestation in riparian areas and eroded areas	8,000 trees	Jogoo, Koige and Ketigoi areas Around Baraka area	C.G.N NGAO'S NGO's FBO, WRUA CFA
Kiptororo	Air Pollution	Build capacity of 4000 farmers to adopt organic farming	4000 farmers	Githima Sitoton and Bochege areas	C.G.N NGAO'S NGO's FBO, WRUA CFA
	Air Pollution	Build capacity of 4000 farmers on safety measures and preventive measures to the threats	4000 farmers	Githima Sitoton and Bochege areas	C.G.N NGAO'S NGO's NEMA KALR1

	Land degradation	Afforestation in riparian areas and eroded areas	10,000 trees	Chorwa, Githima, lemechonik, Tiloa, Ndoinet Kongoi, Roret and Mkulima	C.G.N NGAO'S NGO's FBO, WRUA CFA KFS
	Pollution	Capacity build on alternative water sources such as rain water harvesting to secure potable water	1500 HH	Githima Sitoton and Bochege areas	C.G.N NGAO'S NGO's WRUA
Kiptororo	Pollution	Build capacity of 4000 farmers to adopt organic farming	4000 farmers	Githima Sitoton and Bochege areas	C.G.N NGAO'S NGO's WRUA
Nyota	Air Pollution	Build capacity of 3500 farmers to adopt organic farming	3500 farmers	Langwenda, Seguton, Karirikania,Chesingele, Tulwet	C.G.N NGAO'S NGO's FBO, WRUA CFA
	Deforestation	Build capacity,undertake Awareness and sensitization of use of briquettes, biogas,energy saving jikos as an	2,500HH	Kiptulwo, Mwahe ,karirikania, Mawingu ,Murunduku	C.G.N NGAO'S NGO's FBO, WRUA CFA

		alternative source of cooking energy on alternative of fuel			
Nyota	Deforestation	Reafforestation	20,000 trees	Kiptulwo, Mwahe ,karirikania, Mawingu ,Murunduku	C.G.N NGAO'S NGO's FBO, CFA KFS
	Deforestation	Undertake green energy projects like use of briquettes, biogas,energy saving jikos as an alternative source of cooking energy	2,500HH	Kiptulwo, Mwahe ,karirikania, Mawingu ,Murunduku	C.G.N NGAO'S NGO's FBO, CFA KFS
	Drought	Drill, equip and solarize 5 boreholes	5 boreholes	Chesirikwa, Bondet, Githiriga,Matunda, Umoja	C.G.N NGAO'S NGO's W
	Drought	Rehabilitate 4 water pans	4 water pans	Chesirikwa, Bondet, Githiriga, Matunda,	C.G.N NGAO'S NGO's

Nyota	Land degradation	Building gabions	7 areas	Kiptulwo, Mwahe ,karirikania, Mawingu ,Murunduku, Bondet, Githiriga,	C.G.N NGAO'S NGO's CBO' S Community
	Land degradation	Build capacity of 3500 farmers on climate smart agriculture	3500 farmers	Kiptulwo, Mwahe ,karirikania, Mawingu ,Murunduku, Bondet, Githiriga,	C.G.N NGAO'S NGO's CBO' S Community
	Land degradation	Afforestation in riparian areas and eroded areas	12,000 trees	Kiptulwo, Mwahe ,karirikania, Mawingu ,Murunduku, Bondet, Githiriga,	C.G.N NGAO'S NGO's FBO, WRUA CFA
Sirikwa	Air Pollution	Build capacity of 7000 farmers to adopt organic farming	7000 farmers	Kiptenden,Kangawa , Kagonda	C.G.N NGAO'S NGO's Community
	Air Pollution	Enforcement and compliance	Flower farms in Kiptenden,Kangawa , Kagonda	Kiptenden,Kangawa , Kagonda	C.G.N NEMA

Sirikwa	Deforestation	Capacity building, Awareness and sensitization of use of briquettes, biogas,energy saving jikos as an alternative source of cooking energy on alternative of fuel	10,000 HH	Entire ward	C.G.N NGAO'S NGO's FBO, WRUA CFA
	Deforestation	Reforestation	15,000 trees	Muitiriria and Tombo areas	C.G.N NGAO'S NGO's FBO, CFA
	Deforestation	Undertake green energy projects like use of briquettes, biogas,energy saving jikos as an alternative source of cooking energy	1000 HH	Muitiriria and Tombo areas	C.G.N NGAO'S NGO's FBO, CFA
	Drought	Procure and install drip irrigation for 1500 vulnerable farmers, youth and women groups	1500 vulnerable families	Nyakinyua sub-location	C.G.N NGAO'S NGO's WRUA
Sirikwa	Drought	Pipe and supply water close to livestock watering points and distribution centres	8 watering points	Nyakinyua sub-location	C.G.N NGAO'S NGO's WRUA

	Drought	Dril, equip and solarize 3 boreholes	3 Boreholes	Set Kotes, Ngenia and Muthenji	C.G.N NGAO'S NGO's
	Drought	Create Awareness on alternative water sources like storage tanks and roof water harvesting	10,000 HH	Entire ward	C.G.N NGAO'S NGO's FBO, WRUA CFA National water harvesting authority
	Pollution	Capacity build on alternative water sources such as rain water harvesting to secure potable water	2000 HH	Nyakinyua sub-location	C.G.N NGAO'S NGO's WRUA
Sirikwa	Pollution	Capacity build on best use of herbicides and pestcides and organic farming	7000 farmers	Sirikwa ward	C.G.N NGAO'S NGO's FBO, WRUA CFA

RONGAI SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Menengai West	Air Pollution	-Enforcement and compliance of existing regulations and standards -Sensitization of the community on dangers of geothermal emissions -Increase tree cover by planting more trees around geothermal	200HH	Olrongai	Community NGOs NEMA County government CBOs GDC
	Flood	-Adequate gabions construction -Proper installation of drainage system -Effective enforcement on urban planning	300HH	Kiamunyi Olive inn	Community County government
Mosop	Drought	-Drought resistant crops(millet and sorghum) -Water harvesting storage -Establishment of tree nurseries	1500 HH	Sumeek Boror	Community WCCPC CGN KFS CBOs NGOs

RONGAI SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
	Flood	-Improvement of proper drainage system -Development of sewerage system -Regular maintenance of existing drainage system Introduce cover vegetation like nippier grass in the uplands -Construction of water pans installed with dam liners - Integrated solid waste management	3500HH	Boror Ngata	Community Government NGOs Community Government NGOs
	Pollution	-Compliance to the recommended standards and regulations of EMCA	3000HH	Boror Sumeek Ngata	Community NEMA County Government Flower farms Factories

RONGAI SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Soin	Drought	-Reducing deforestation by finding alternative sources of energy(solar, electricity, biogas) -Construction of water pans -Tree growing -Provision of water tanks for water harvesting to vulnerable households -Drilling of boreholes -Pans for water harvesting	500HH 1 water pan per location	Majani mingi Athinai Lomolo Makutano	Community NGOs County government WRUA CBOs
Visoi	Drought	Plating of trees	3000HH	Kware Muricho Along Molo River	Farmers County government WCCPC County government NGOs NEMA
	Flood	-Building of gabions -Conservation of riparian -Integrated solid waste management			
	Pollution	-Compliance to the set standards and regulations -Integrated solid waste management			
Solai	Deforestation	Establishment of tree nurseries Alternative sources of energy eg biogas,	50HH Settlement of Solai ward	Emarangishu, Nyamamithi, Kiriko	Community County government CBOs

RONGAI SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
		energy saving cooking stoves Provision of adequate funding for increasing tree cover			
	Land degradation	-Awareness creation on ways to prevent soil erosion -Afforestation in riparian areas and eroded areas		Maji tamu,Solai	Community, NGOs CBOs FBOs, CGN,
	Flood	-Construction of water pans -Gabions construction	4 per Location 1500HH	Arus,Sandai	
	Drought	-Reducing deforestation by finding alternative sources of energy (solar, electricity, biogas) -Alternative sources of livelihoods(poultry farming, rabbit rearing)	500HH	Ngetdaptich,Chemasis	Community Government KELCOP NGOs CBOs Ministry of agriculture

KURESOI SOUTH SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
Kiptagich	Pollution	-Capacity build EENR on enforcement on pollution measures	1 officer	Kiptagich	CGN, NGOs, NEMA
	Deforestation	-Grow 10000 indigenous trees.	10,000No. Trees	Emiitik forest	Farmers; CGN; KFS; NGOs; KEFRI; CFA
	Land degradation	Grow10,000 indigenous trees along Cheptuech river	10,000No. Trees	Cheptuech	Farmers; CGN; KFS; NGOs; KEFRI; CFA
	Land degradation	-Build capacity to farmers on agroforestry, and soil conservation	1000No. Farmers	Kiptagich	CGN, CBO, NGOs, KFS
	Land degradation	-Adopt natural regeneration model,Rehabilitate and restore degraded landscapes	Entire Ward	Kiptagich	CGN; National Government; MET, NGOs, Community
Amalo	Drought	-Drilling and equipping of. boreholes	3No	Saptet, Sigowet, Longet	CGN, NDMA WRA, WRUAs
	Drought	-Construct waterpoints and water troughs along River Amalo and Ambusket	2 water troughs and 2 water points	Kitoben and Motito areas	CGN, NGOs, CBO community, WRA, WRUAs
	Drought	-Rehabilitate River Amalo and Ambusket banks by growing 10,000 indigenous trees	10,000No trees	Keboet Village; Kaplamai	CBOs; FBOs; KFS; KEFRI; CGN; NGOs
	Frost	-Provide Frost resistant seedlings and Subsidize organic	1000 farmers	Kaplamai, Amalo, Saptet	Farmers; CGN, NGOs, CBO,

KURESOI SOUTH SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
		frost agricultural inputs to 1000 farmers			
Amalo	Frost	-Conduct a research on what can be done to help the communities cope	1 research	Kamplamboi, Kaplamai, Gorofa and Amalo	CGN; National Government; MET
	Drought	-Establishment of tree nurseries with 20,000 tree seedling capacity	2No. tree nurseries	Daraja Mbili; Saosa	CBOs; FBOs; KFS; CGN; NGOs, community
	Landslide	-Grow 10000 indegenous trees in landslide prone areas .	10,000 trees	Gorofa, Kaplamai	Farmers; CGN, community, NGOs, CBO, Institutions
	Landslide	-Construction of 20 gabions to rehabilitate hotspot gullies	20 gabions to rehabilitate hotspot gullies	Gorofa, Kaplamai	CGN, Farmers, community, NGOs, CBO, Institutions
	Pollution	-Sensitization on better solid waste management practices, /waste recovery at souce	5000 people	Amalo Olenguruone market and trading centre	CGN, CBOs, community.
Keringet	Drought	Drilling and equipping boreholes	3No.	Siwot, Kirandich and Ogiek- Sotiki	CGN, CBOs, NGOs
	Drought	-Construct waterpoints and water troughs along River Chepkulo and River Danger	20No water troughs and 2 water points	Danger area	CGN, NGOs, CBO, community, WRA WRUA
	Drought	Desilting of Maziwa and Kapkores dams	2No. dams	Maziwa and Kapkores	CGN. NGOs, Community, CBOs
	Drought	-_Rehabilitate River Chepkulo and River Danger banks by	10,000No. trees	Chebaraa, Kirandich	CBOs; FBOs; KFS; CGN; KEFRI; NGOs, WRUAs, WRA

KURESOI SOUTH SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
		growing 10,000 indigenous trees			
	Land degradation	-Grow 10000 indegenous trees in Bararget forest	10,000No. Trees	Bararget	CBOs; FBOs; KFS; CGN; KEFRI; NGOs; CFAs
	Land degradation	Build capacity to farmers on agroforestry	1000No. Farmers	Keringet	CGN
	Frost	-Provide Frost resistant seedlings and Subsidize organic frost agricultural inputs farmers	1000No. farmers	Tendulet; Siwot	Farmers; CGN, NGOs, CBos
Tinet	Drought	-Drilling and equipping of boreholes	3No.	Sotiki; Kapkembu; Tegat Negoi- Kapkeet	CGN,CBOs,NGO,NARUWASCO
	Drought	-Construct waterpoints and water troughs along River Kamwaura and River Cheram	20No. water troughs and 20 water points(springs)	Cheram, Kamwaura	CGN,NGOs,Community,NARUWASCO
	Drought	-Rehabilitate River Kamwaura and River Cheram banks by growing 10,000 indigenous trees	10,000No. trees	Cheram, Kamwaura	Farmers; CGN; KFS; NGOs; KEFRI; CFA
	Drought	Establishment of tree nurseries with 20,000 tree seedling capacity	20No. tree nurseries	Sotiki; Tegat Negoi- Kapkeet	Farmers; CGN; KFS; NGOs; KEFRI; CFAs
	Drought	-Rehabilitate River Kamwaura and River Cheram banks by	10,000 trees	Cheram, Kamwaura	Farmers; CGN; KFS; NGOs; KEFRI; CFA

KURESOI SOUTH SUB COUNTY					
WARD	**HAZARD**	**ACTION**	**TARGET**	**WHERE**	**WHO**
		growing 10,000 indigenous trees			
	Drought	-Establishment of tree nurseries with 20,000 tree seedling capacity	20No. tree nurseries	Sotiki; Tegat Negoi- Kapkeet	Farmers; CGN; KFS; NGOs; KEFRI; CFA
	Frost	-Provide Frost resistant seedlings and Subsidize organic frost agricultural inputs to 1000 farmers	1000 farmers	Kapkembu; Taita	Farmers; CGN

5 Conclusion

The first step in developing the adaptation pillar of the SEACAP was the development of the Risk and Vulnerability Assessment (RVA), which revealed that Nakuru County faces a number of 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 RVA also 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.

With this, the County set an overarching vision which captures the overall direction that the county wishes to go with regards to climate change adaptation: “A climate resilient county with sustainable ecosystems and livelihoods by the year 2030.” Sector targets were then set to translate the overarching adaptation vision into practical targets per sector. Sectors that have been prioritised to focus adaptation efforts on, and thus the sectors for which targets have been set are: agriculture, livestock and fisheries; water; forestry; and tourism.

ANNEX

A1: List of Workshops Participants

REPUBLIC OF KENYA
COUNTY GOVERNMENT OF NAKURU
DEPARTMENT OF WATER, ENVIRONMENT, ENERGY, CLIMATE CHANGE & NATURAL RESOURCES

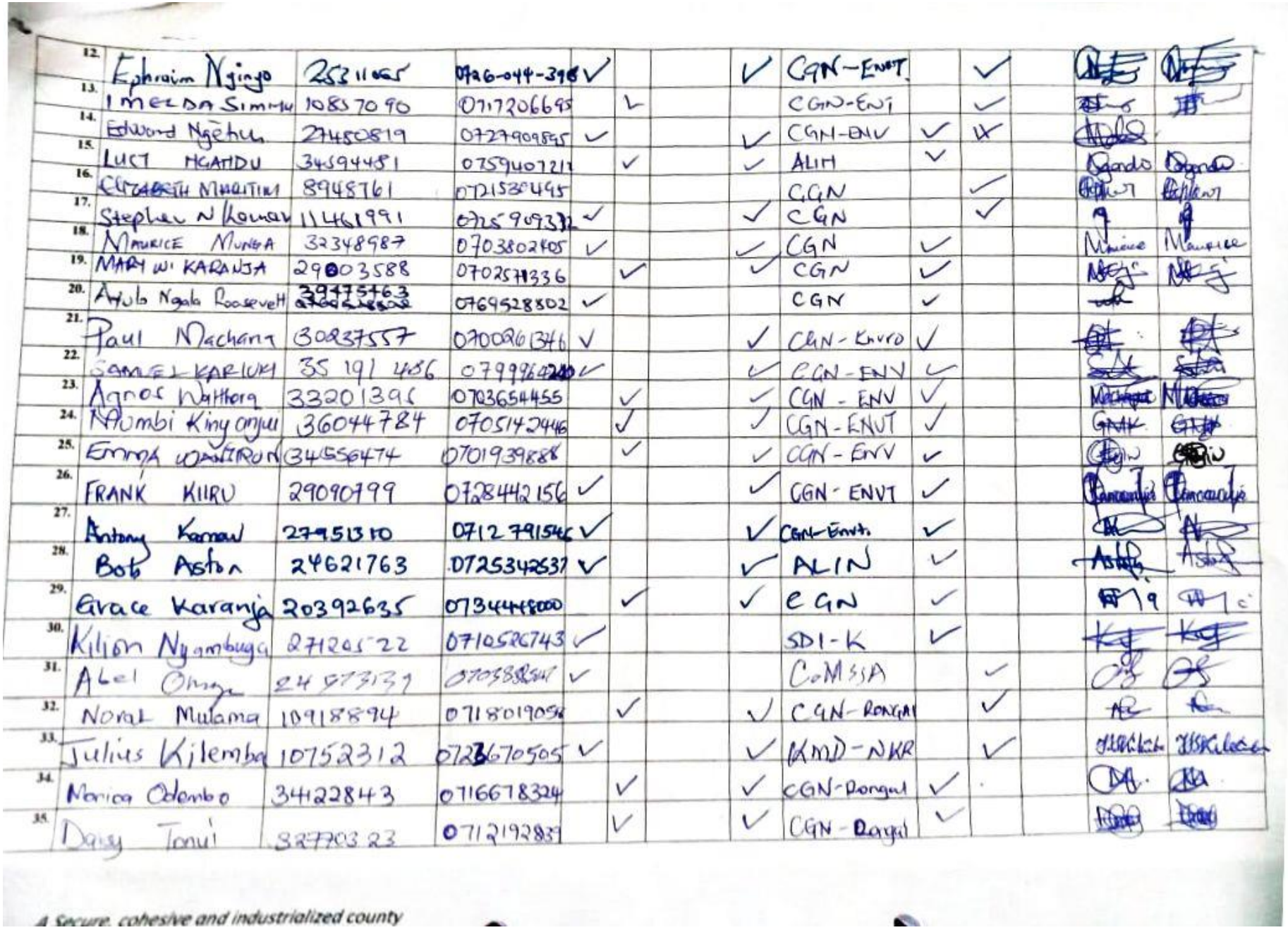
NAKURU COUNTY
COUNTY OF UNLIMITED OPPORTUNITIES

FINALIZATION OF PARTICIPATORY CLIMATE RISK ASSESSMENT

- County: Nakuru
- Sub County: Gilgil
- Venue: Buraha Zenoni
- Ward:
- Date: 26th-27th May 2023

S/No	Name	ID	Mobile number	Gender		PLWDs		Organization	Age			26th May 2023	27th May 2023
				M	F	Yes	No		18-35	36-59	Above 60		
1.	Maina Nelson	9884839	0722428583	✓			✓	CICM		✓		[illegible]	[illegible]
2.	Kenndy Mwangi	20725232	0720665056	✓			✓		✓			[illegible]	
3.	Margaret Mwangi	33815182	0707008160		✓		✓	CGN- Econ Planning	✓			[illegible]	[illegible]
4.	SAMMY NGIGE	20356018	0712195920	✓			✓	CGN NJORO		✓		[illegible]	[illegible]
5.	Dennis Kipyator	32610960	0717739000	✓			✓	CGN	✓			[illegible]	[illegible]
6.	Samuel Kimani	27809257	0705226281	✓			✓	CGN-ENVT.	✓			[illegible]	[illegible]
7.	Kennedy Kirwa	23422480	0726257330	✓			✓	CGN-ENV		✓		[illegible]	[illegible]
8.	Mary Njoki	27552318	0714895380		✓		✓	CGN- ENVT	✓			[illegible]	[illegible]
9.	Evans Chengot	29642289	0700759265	✓			✓	CGN ENVTI	✓			[illegible]	[illegible]
10.	Florence momanyi	31364928	0728016476		✓		✓	CGN ENVT	✓			[illegible]	[illegible]
11.	Jackline chemutai	3181507 4	0721570808		✓		✓	CGN- ENVT	✓			[illegible]	[illegible]

A Secure, cohesive and industrialized county



12.	Ephraim Ngingo	25311065	0726-044-398	✓			✓	CGN-ENVT		✓			
13.	IMELDA SIMIYU	10857090	0717206695		✓			CGN-ENV		✓			
14.	Edward Ngetich	21450819	0727909845	✓			✓	CGN-ENV	✓	✓			
15.	LUCY MGANDU	34594481	0759407217		✓		✓	ALIM	✓				
16.	ELIZABETH MWAITIKA	8948761	0721535495					CGN		✓			
17.	Stephen N Kamau	11461991	0725909332	✓			✓	CGN		✓			
18.	MAURICE MUNGA	32348987	0703802405	✓			✓	CGN	✓				
19.	MARY W. KARANJA	29003588	0702571336		✓		✓	CGN	✓				
20.	Ayub Ngala Roosevelt	39475763	0769528502	✓				CGN	✓				
21.	Paul Machana	30237557	0700961346	✓			✓	CGN-ENVRO	✓				
22.	SAMUEL KARIUKI	35 191 486	0799[illegible]	✓			✓	CGN-ENV	✓				
23.	Agnes Wathoya	33201396	0703654455		✓		✓	CGN - ENV	✓				
24.	Naumbi Kinyanjui	36044784	0705142446		✓		✓	CGN-ENVT	✓				
25.	Emma Wanjiru	34556474	0701939888		✓		✓	CGN - ENV	✓				
26.	FRANK KIIRU	29090799	0728442156	✓			✓	CGN - ENVT	✓				
27.	Antony Kamau	27951310	0712791546	✓			✓	CGN-Envt.	✓				
28.	Bob Aston	24621763	0725342637	✓			✓	ALIN	✓				
29.	Grace Karanja	20392635	0734448000		✓		✓	CGN	✓				
30.	Kilion Nyambuga	27120522	0710526743	✓				SDI-K	✓				
31.	Abel Omuga	24[illegible]	0705[illegible]	✓				CoMSA		✓			
32.	Noral Mulama	10918894	0718019056		✓		✓	CGN-RONGAI		✓			
33.	Julius Kilemba	10752312	0726670505	✓			✓	KMD-NKR		✓			
34.	Monica Odambo	34122843	0716678324		✓		✓	CGN-Rongai	✓				
35.	Daisy Tonui	32770323	0712192889		✓		✓	CGN-Rongai	✓				

36.	Komotta Mungai	9834993	0720852136	✓			✓	C.G.N - Balaki		✓					
37.	CYRUS KAHIGA	24576232.	0724621156	✓			✓	CGN-ECON PLANNING		✓					
38.	Margaret Thuita	31421021	0700544234		✓		✓	C.G.N - WATER Subukia	✓						
39.	Simon Muthami	28740753	0707379924	✓			✓	C.G.N - Subukia	✓						
40.															

COUNTY GOVERNMENT ...
DEPARTMENT OF WATER, ENVIRONMENT, ENERGY, CLIMATE CHANGE ...
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	Biashara WCCPC	0716 506 226	gnapeter14@gmail.com	✓		✓			✓	[signature]	[signature]
2.	MARY W. KARANJA	EENR. NAKURU	0702571336	mkaranja957@gmail.com		✓	✓			✓	✓	[signature]
3	LUCY W. NGANDU	ALIN	0759407212	lngandu@alin.net		✓	✓				[signature]	[signature]
4	JAEL COLLEEN	ALIN	0723049611	Jonyango@alin.net		✓	✓		✓	✓	[signature]	[signature]
5.	ANNE W. MWANGI	SOCIAL SERVICES	0725530515	wmwangi.a@gmail.com		✓		✓			[signature]	[signature]
6	Brian Omenyi	SEAT-IC	0701953683	omengibrian@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	margaretstanley@gmail.com		✓	✓			✓	[signature]	[signature]
10	Imelda Simiyu	CGN	0717206669	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	muturavk@gmail.c	✓			✓		✓	[signature]	
15	FREDRICK O.O. OWINO	CGN-AGRIC	0710407777	cdanakura@gmail.com	✓	✓		✓			[signature]	[signature]
16.	BRANICE MUTHENI	CGN-ENVironment	0728470899	branosonnie@gmail.com		✓					[signature]	[signature]

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
33	Grace Karanja	CGN- Environment	0734448000	jgrace karanja.@gmail.com		✓		✓		✓	[signature]	[signature]
34	Mama T. N	CECM	0722428653	cecppmama@yahoo	✓			✓		✓	[signature]	[signature]
35	Paul Macharia	CGN- Environment	0700261346	Paulkahara20@gmail.com	✓		✓			✓	[signature]	[signature]
36	CHRISTINE WAMBUI	VIJIJINI Muungano Wa Wanavijiji	0713597330	christine.wambui09@gmail		✓	✓			✓	[signature]	[signature]
37	Kilion Nyambuga	SDI-Kenya	0710526743	Knyambuga@gmail.com	✓		✓			✓	[signature]	[signature]
38.	Geogiaidis byron	SDI-KENYA/MUUNGANO	0728732805	geogiaidiskamau@gmail.com	✓		✓			✓	[signature]	[signature]
39	Elizabeth Mantau	CGN-Environment	0721530495	elizabethmantau2@gmail.com		✓		✓		✓	[signature]	[signature]
40	Mercy Mongo	Facilitator-Director	0722640284	Mongomercy@gmail.com	✓	✓		✓		✓	[signature]	
41	Wilfred Patrick Njaga	SCEO facilitator	0757699719	wilfredpmnjaga@gmail.com	✓			✓		✓	[signature]	[signature]
42	Selina NKatha	CG Nakuru Gender	0723303966	nkathaselin@gmail.com		✓		✓		✓	[signature]	[signature]
43	Florence Maranga	CGN - ENVIRONMENT	0728018476	marangaflorence@gmail		✓	✓			✓	[signature]	[signature]
44	Norah Mulama	CGN-ENVIRONMENT	0718019058	norahmulama71@gmail.com		✓				✓	[signature]	[signature]
45	Simon Mithami	CGN-Environment	0707379324	simon mithami@gmail.com	✓			✓		✓	[signature]	[signature]
47	GEORGE NYACHOMBA	CGN- HEALTH	0716870395	gnyachomba@yahoo.com	✓			✓		✓	[signature]	[signature]
48	Monica Odembo	CGN-WEENR	0716618324	monicahodembo@gmail.com		✓	✓			✓	[signature]	[signature]
49	Kimotho Mungai	CGN-ENVT	0720852136	kimothomungai@gmail	✓			✓		✓	[signature]	[signature]

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
50	KENNEDY MUNGAI	C.O.-EENRC	0720665096	ken@meikuru.go.ke	✓		✓			✓	[signature]	[signature]
51	DANCUN MACHARIA	CGN-ENVNT	0720539658	dancun@gmail.com	✓			✓		✓	[signature]	[signature]
52	DANIEL KIPTOON	CGN-ENVT	0729303773	dkiptoo@gmail.com	✓			✓		✓	[signature]	
53	Rafique Mohamed	Menengai Ward	0722886200	molue32@gmail.com	✓			✓		✓	[signature]	[signature]
54	Kipyator Dennis	CGN-Env	0717739000	kipyatordennis@gmail.com	✓		✓			✓	[signature]	[signature]
55	Raymond Mwangata	CGN-Fisheries	0722902914	dzinyau@gmail.com	✓			✓		✓	[signature]	[signature]
56	Romanus Opiyo	SEI	0722718096	romanus.opiyo@sei.org	✓			✓			[signature]	
57	Dorcas N. Mwangi	CGN-ECONOMIC PLANNING	0722134098	dorcasndutu@gmail.com		✓		✓			[signature]	[signature]
58	Emma Ndegwa	CGN Environment	0701939888	emmahwndegwa@gmail.com		✓	✓			✓	[signature]	[signature]
59	Arthur Ngugi	CGN Environment	0718797736	arthurngugi149@gmail.com	✓			✓		✓	[signature]	[signature]
60	Hannah Githoni	CGN Agriculture	0701045008	hannahgichini112@gmail.com		✓	✓			✓	[signature]	[signature]
61	Ephraim Nginyo	CGN Environment	0726-044-396	nginyofreim@gmail.com	✓			✓			[signature]	[signature]
62	Abel Omanga	GIZ-C-MSSP	0703188441	abel.omanga@giz.de				✓			[signature]	[signature]
63	Stephen Kamau	CGN-Env.	0725993772	stancamsk@gmail.com	✓			✓			[signature]	[signature]
64	Kimotho Mungai	C.G.N.-ENV	0720852136	kimothomungai@gmail.com	✓						[signature]	[signature]

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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.apt	✓					✓		
	George Maina	CGN-Environment	0725852367	gmaina69@gmail.com	✓							

Figure 6: Sampled images of various wards during the PCRA process