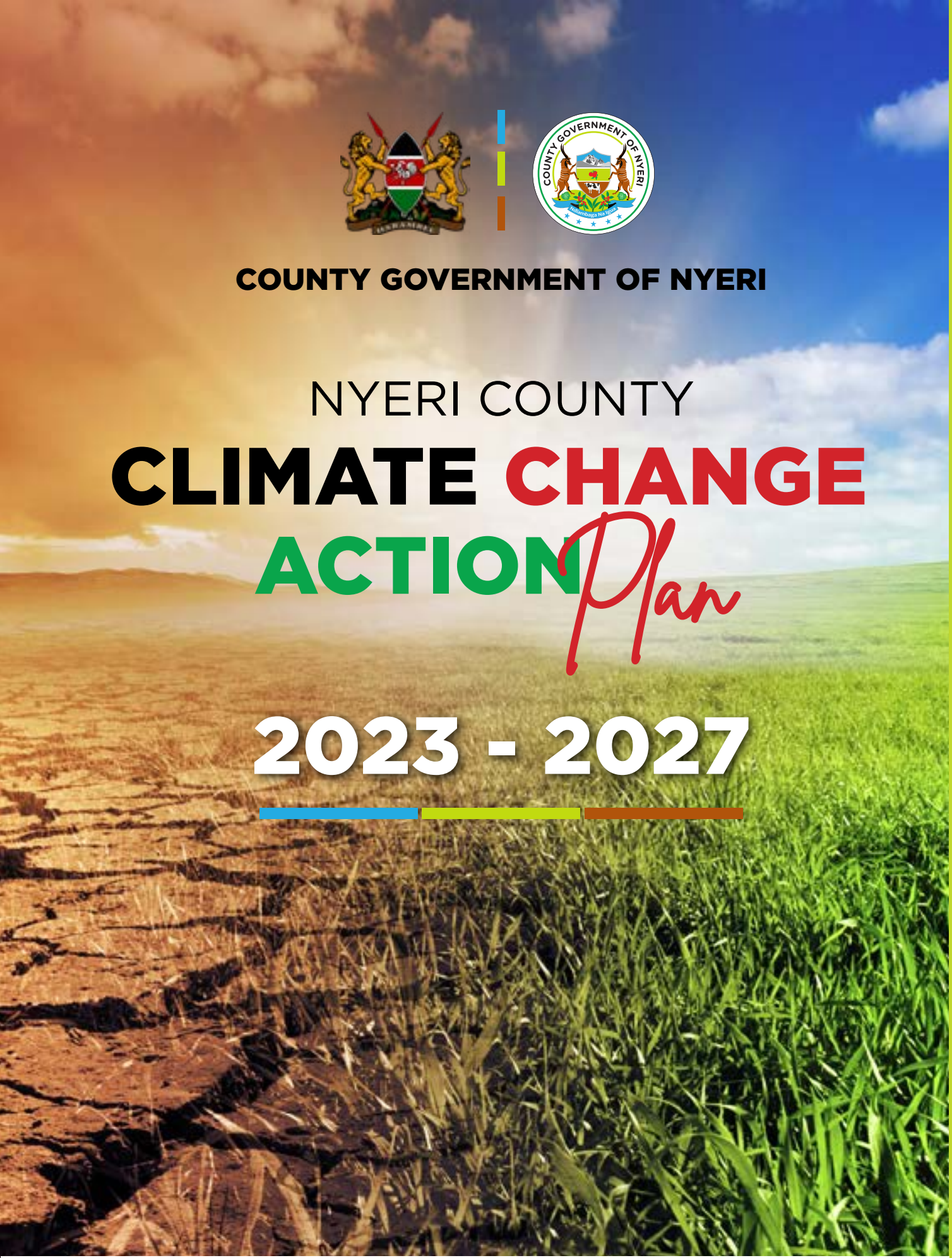
COUNTY GOVERNMENT OF NYERI

NYERI COUNTY CLIMATE CHANGE ACTION Plan

2023 - 2027



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FOREWORD

Climate change is a major threat to Nyeri County's socioeconomic well-being. Climate change, indeed, has the potential to roll back the development gains made over the years and threaten the attainment of our County Integrated Development Plan. In line with our responsibility to mitigate the effects of climate change, and in keeping up with the country's National Climate Change Action Plan and the Climate Change Act no. 9 of 2023. Nyeri County assented the County Climate Change Act 2021 which provides the legal framework for enhancedresponse to climate change. Consequently, climate change is now recognized as a cross-cutting thematic area in our planning process.

The Nyeri County Climate Change Action Plan (CCAP) 2023-2027 is a five-year iterative tool for the integration of low-carbon climate-resilient initiatives across our different socio-economic sectors including Disaster Risk Management, Food and Nutrition Security, Water, Natural Resources and Tourism, Health and Human Settlements, Manufacturing, Transport and Energy. Nyeri County Climate Change Action Plan (CCCAP) 2023-2027 builds on the strong foundation laid during the implementation of the National Climate Change Action Plan (NCCAP) 2019-2022, and the Climate Change Act. This Climate Action Plan set out bold measures to ensure that our development remains sustainable in the event of any adverse climate change impacts, including droughts, floods, and other extreme climate events that have in the recent past occasioned far-reaching negative implications on our economy.

A key action during the 2023-2027 medium-term planning period is increasing our cover to at least 42% and tree cover to 45% of our land area to support the National efforts of reaching the target forest cover of 30% by 2050. This action will contribute to the of our water towers and the management of flooding, which will translate to tangible benefits for our citizens across the different sectors. The collective contributions of the Nyeri County Government, the private sector, civil society, faith-based organizations, other non-state actors, and individual citizens to this Nyeri Climate Change Action Plan will help deliver the expected transformational outcomes.

The Plan will also require the support of our development partners and other well-wishers to ensure its effective implementation for the benefit of the present and future generations. I commit to be at the forefront of these efforts, so as to ensure that our aspiration of a low carbon climate resilient and prosperous Nyeri County is realized.

H.E. MWALIMU MUTAHI KAHIGA, EGH *GOVERNOR, NYERI COUNTY*

ACKNOWLEDGEMENT

The County Government of Nyeri through the Department of Water, Environment and Climate Change (WECC) expresses its gratitude to the World Bank and all other partners through the National Treasury under the Financing Locally Led Climate Action (FLLoCA) for financing the Nyeri County Climate Change Action Plan (NCCCAP) process. The success of the NCCCAP process has been enabled by the goodwill and guidance of the Governor, H.E Mutahi Kahiga, The County Assembly of Nyeri and the Executive Committee and the Chief Officer WECC Mr. Benard Kiama, among others. I highly appreciate the technical working group, which included representation from the County departments of Climate Change, Environment, Agriculture, Water, Trade, Public Health, Economic Planning, Lands, Geospatial Information systems, Finance and Procurement as well as various national MDAs such the Ministry of Environment, Ministry of Mining and Geology are all under the coordination of the Nyeri County Director Climate Change. I would also like to emphasize my gratitude to the Climate Change Unit (CCU) for the effective coordination of all activities pertaining to the formulation of this document. The success of this NCCCAP process was also enabled by the National Treasury's FLLoCA Program Implementation Unit (PIU) which provided technical and substantive inputs to the implementation of this process. Lastly, I acknowledge the contribution of all stake-holders who enriched this process with relevant data; Kenya National Bureau of Statistics, Red cross, National Council of People Living with Disabilities, National Population Council, Maendeleo ya Wanawake, youth groups, community-based organizations among others and the overall community of Nyeri for their active participation in the identification and prioritization of Climate Change issues in their wards which informed the preparation of this document.

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LIST OF ACRONYMS

AEZ	Agroecological Zone
ASAL	Arid and Semi-Arid Land
CCAP	County Climate Change Action Plan
CDLP	County Director of Livestock
CFA	Community Forestry Association
CGN	County Government of Nyeri
CIAT	International Center for Tropical Agriculture
CIDP	County Integrated Development Plan
CSA	Climate Smart Agriculture
EDE	Ending Drought Emergencies
FAO	Food Agriculture Organization
GDP	Gross Domestic Product
GHG	Greenhouse Gases
HFC	Hydrofluorocarbons
CSO	Civil Society Organizations
NGO	Non Governmental Organizations
MDA	Ministries, Departments and Gencies
CCU	Climate Change Unit

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KCSAP	Kenya Climate Smart Agriculture Programme
KCSAS	Kenya Climate Smart Agriculture Strategy
KeRRA	Kenya Rural Roads Authority
KFS	Kenya Forest Service
KMD	Kenya Meteorological Department
KNBS	Kenya National Bureau of Statistics
MTP	Medium Term Plan
NAP NCDs	National Adaptation Plan Noncommunicable Diseases
NCCAP	National Climate Change Action Plan
NCCRS	National Climate Change Response Strategy
NDC	Nationally Determined Contributions
NDMA	National Drought Management Authority
PCRA	Participatory Climate Risk Assessment
PIU	Program Implementation Unit
TWG	Technical Working Group
UNFCCC	United Nations Framework Convention on Climate Change
UTaNRMP	Upper Tana and Natural Resource Management Project

GLOSSARY

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

Adaptive Capacity: - The social and technical skills and strategies of and individual and group (communities) that can be directed towards responding to effects caused by climate change.

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

Climate: - Refers to the behaviour of weather parameters for a relatively long time, the classical period of 30 years and above, for a larger region

Climate change: refers to long-term shifts in temperatures and weather patterns that are caused by significant changes in the concentration of greenhouse gasses due to human activities, which is in addition to the natural climate change that has been observed for a considerable period.

Climate Variability: - Refers to fluctuations in the mean state and other characteristics of climate.

Greenhouse gases: (GHGs) are gases that absorb and emit radiant energy within the thermal infrared range. The main GHGs measured in a GHG inventory are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), Sulphur hexafluoride (SF6) and nitrogen trifluoride (NF3).

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

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

Weather: - Refers to the behaviour of the atmosphere on a day-to-day basis in a relatively small area

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

EXECUTIVE SUMMARY

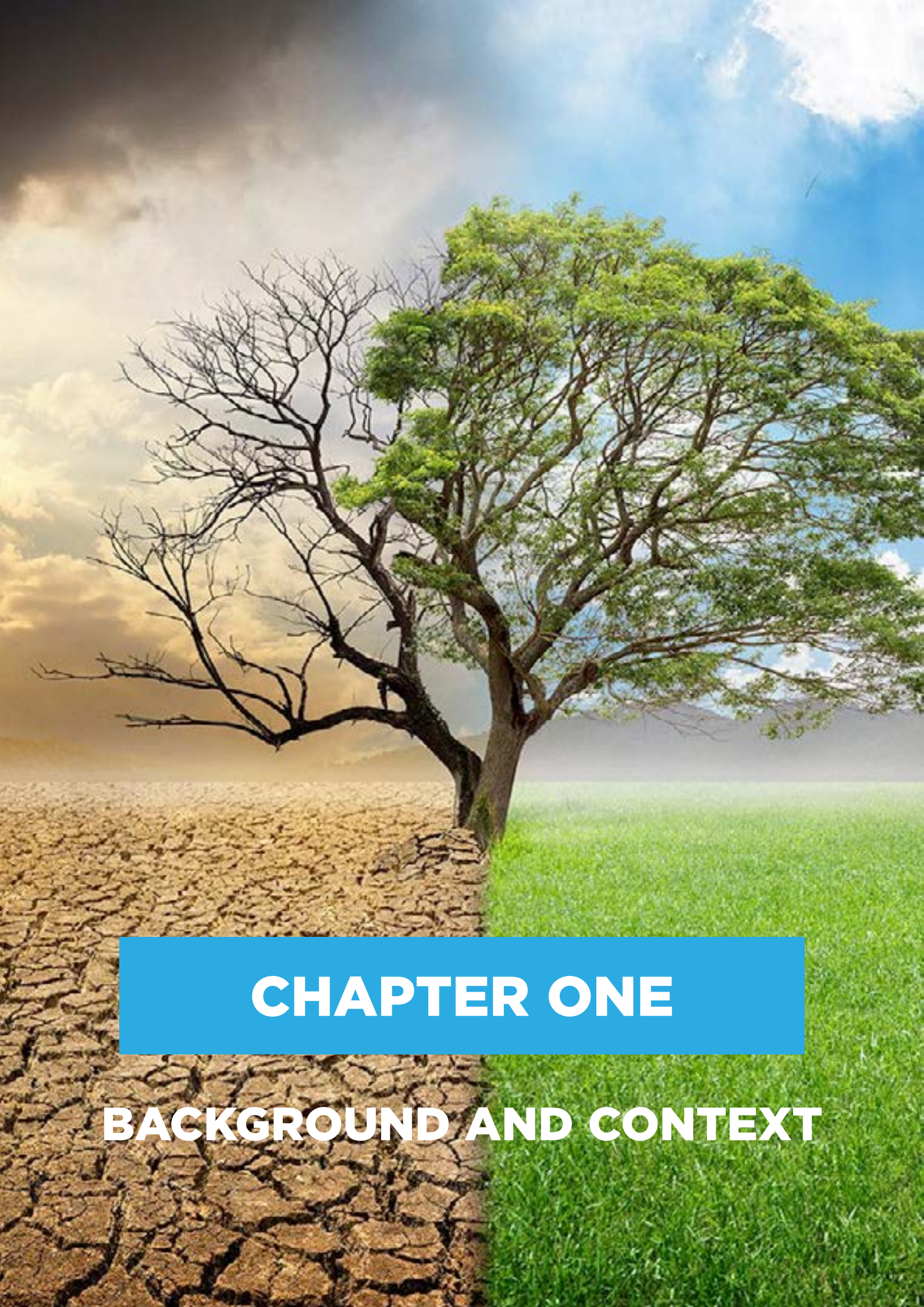
“The Nyeri CCAP 2023-2027 will ensure the achievement of Nyeri County development goals by providing mechanisms to realize low carbon climate and resilient development pathways.

The Nyeri County Climate Change Action Plan (CCAP) 2023-2027 is a five-year plan to steer climate change action in Nyeri County. The Plan derives from the Kenya Climate Change Act (No.11 of 2016) and the Climate change (amendment act) No. 9 of 2023, which requires county governments to develop Climate Action Plans to guide the mainstreaming of climate change into their functions and development. Further, the Nyeri County Climate Change Act 2021 (Sections 25 and 26) provides for participatory climate action Planning. The Nyeri CCAP 2023-2027 will ensure the achievement of Nyeri County development goals by providing mechanisms to realize low carbon climate and resilient development pathways. The plan emphasizes sustainability while prioritizing adaptation and enhanced climate resilience for vulnerable groups, including women, youth, persons with disabilities, and marginalized and minority communities. This plan has been developed at a time when significant changes in the local climate were evidenced and documented in the Nyeri County Participatory Climate Risk Assessment Report, 2023. Climate-related disasters, particularly landslides, droughts, frost, floods, pests and diseases, were frequent, and their impacts adversely affected the economy and livelihoods in the county with the frequency of cold days and nights, having increased temperature rise spanning across all seasons and rainfall patterns changing.

Nyeri county communities are dependent on climate-sensitive sectors, such as agriculture, water, energy, tourism, wildlife, and health with the changes in the county climate having been singled out as severe threats to their well-being. The Plan aims at providing a strategic framework for reducing greenhouse gas emissions, enhancing climate change resilience, and promoting sustainable development within the county. The plan seeks to integrate climate change considerations into policies, plans, and projects across various sectors, including disaster management, health, water, energy, transport, food security and nutrition. It also aims to foster collaboration among stakeholders, including government agencies, community organizations, academia, and civil society, to ensure coordinated efforts in tackling climate change. The plan has been developed by the Technical Working Group (TWG) coordinated by t the Climate Change Unit through a participatory process bringing all relevant key stakeholders on board, including communities at the ward level, local leaders, relevant Community groups, Civil Society Organizations (CSOs), NGOs, National and County government Ministries, Departments and Agencies (MDAs).

The priority action areas underpinning this plan include; Disaster Risk Management; Food and Nutrition Security; Water and the Blue Economy; Natural Resources (Forestry & wetlands) and Tourism; Health, Sanitation, and Human Settlements; Manufacturing; Energy and Transport. Through these priority areas, climate change action is aligned with the Government’s Transformation Agenda, Kenya Vision 2030 MTP III and the Sustainable Development Goals (SDGs). These actions are also mainstreamed in the proposed Nyeri County Integrated Development Plan (CIDP) 2023-2027, to ensure that they are mainstreamed in Nyeri county government developments.

This plan entails four chapters; Chapter one describes the background, purpose and process of the CCCAP, the County Climate Resilience context and the climate hazards as drawn from the Participatory Climate Risk Assessment (PCRA) 2023 Report. Chapter 2 reviews the relevant policy and legal frameworks as key enablers of the CCAP while chapter 3 details Climate Change Action as per sector in terms of the current adaptive /resilience strategies and the proposed strategic priority actions for the period 2023-2027. Lastly, Chapter 4 explicitly outlines the delivery mechanism for the CCCAP detailing key enablers in terms of institutional arrangement; Measurement, Reporting and Verification (MRV) and finally the Implementation Matrix which lists the proposed priority investment actions drawn from the Community and stakeholders engagement forums and aligned with the CIDP 2023- 2027.



CHAPTER ONE

BACKGROUND AND CONTEXT

1.1 Introduction

1.1.1: Background

Climate change is a global phenomenon with far-reaching implications for both human and natural systems. Its impacts are being felt across the globe, and local communities, including counties, are increasingly recognizing the need to address this pressing issue. Nyeri County, located in the central region of Kenya, is no exception. The county is highly dependent on agriculture, making it vulnerable to climate-related hazards.

Nyeri County is situated in the Central region of Kenya, covering an area of approximately 3,337 km2 (KNBS, 2019). The county's economy heavily relies on agriculture, which is susceptible to the impacts of climate change, including erratic rainfall patterns, prolonged droughts, increased pests and disease altering the growing seasons. Additionally, the county is home to important water catchment areas, such as the Mount Kenya and Aberdare ranges, which serve as sources of various rivers crucial for water supply, hydroelectric power generation, and supporting ecosystems.

Nyeri County has taken the initiative to develop a robust Climate Change Action Plan, as demonstrated through the county climate change Act, 2021. The framework provides a pathway towards creating climate resilience in the county. Section 25 (1) and (2) of the act provide for the development of the County Climate Change Action Plan to prescribe measures and mechanisms to mainstream adaptation and mitigation actions in the county.

The Nyeri County Climate Change Action Plan aims to provide a strategic framework for reducing greenhouse gas emissions, enhancing climate change resilience, and promoting sustainable development within the county. The plan seeks to integrate climate change considerations into policies, plans, and projects across various sectors, including disaster management, health, water, energy, transport, food security and nutrition. It also aims at fostering collaboration among stakeholders, including government agencies, community organizations, academia, and civil society, to ensure coordinated efforts in tackling climate change.

The plan has been developed after the development of the County Participatory Climate Risk Assessment (PCRA). Through the PCRA & Climate Change Action Plan, Nyeri County will identify climate change risks, vulnerabilities, and opportunities specific to the local conditions. It will prioritize adaptation and mitigation strategies, seeking innovative solutions to address climate-related challenges while promoting sustainable development. The plan also emphasizes capacity building, awareness-raising, and the engagement of local communities to ensure broad participation and ownership of climate change initiatives.

The development of the Nyeri County Climate Change Action Plan aligns with national and international commitments, including Kenya's Nationally Determined Contributions (NDCs) under the Paris Agreement, National Climate Change Action Plan, and National Climate Change Response Strategy. It reflects Nyeri County's commitment to achieving low-carbon, climate- resilient development, and its aspiration to become a model for climate action at the local level.

Through this Plan, Nyeri County seeks to safeguard its ecosystems, protect vulnerable communities, enhance economic opportunities, and build a sustainable future for its residents. The plan serves as a roadmap for effective climate change mitigation and adaptation strategies, ensuring a resilient and prosperous future for Nyeri County amidst the challenges posed by the changing climate.

1.1.2 Purpose and process of the Nyeri County Climate Change Action Plan

The Nyeri County Climate Change Action Plan 2023-2027 is a plan, which aims to assist residents in mitigating and adapting to the effects of climate change. It seeks to build climate resilience, through low-carbon development, mainstreaming of climate change into county actions and community engagement in climate action.

The Plan derives from the Kenya Climate Change Act (No.11 of 2016), which requires county governments to develop Climate Action Plans to guide the mainstreaming of climate change into their functions and development. Further, the Nyeri County Climate Change Act 2021 (Sections 25 and 26) which provides for participatory climate action Planning.

The process of formulating The Nyeri County Climate Change Action Plan involved;

i. Review of key documents: An extensive review of key documents was carried out by the TWG including the county Integrated Development plan, Participatory climate risk assessment report, National climate change action plan 2018-2022, Nyeri climate risk profile, County Climate change Act and, Nationally Determined Contribution (NDCs) among other national and county documents. The Participatory climate change risk report contained key climate hazards, mitigation and adaptation strategies and priorities, which were integrated into the plan.

ii. Collecting public input: Stakeholder engagements were held at the ward, sub-county and county levels led by the Technical Working Group (TWG) in collaboration with representatives from the relevant National and County Government and Ministries, Departments and Agencies (MDAs). The Nyeri Climate Change Action Plan recognizes the integration of the needs and priorities of key interest groups with particular focus on women youth, people living with disability and other vulnerable groups.

iii. Drafting the County Climate Change Action Plan: The TWG converged to analyze and compile the input collected from the various stakeholder engagements to a comprehensive first draft outlining the needs and priorities of key interest groups with a particular focus on women youth, people living with disability and other vulnerable groups.

iv. Other steps involved presentation to the public for feedback and validation, to the County executive committee for approval and to the county assembly for adoption.

1.1.3 Guiding Principles

The formulation and implementation of this plan is guided by the following principles:

Public Participation - In addressing the effects of climate change the principle of public participation will be key in all aspects of development.

Responsiveness - Responding to actual adaptation and mitigation needs in Kenya through taking measures that reduce the adverse effects of climate change, and preventing or minimizing the causes of climate change;

Fairness - ensuring that climate actions do not create a competitive disadvantage for the Nyeri private sector, relative to its trading partners.

Precautionary Principle - Threats of climate change damage to the environment, whether serious or irreversible, lack of full scientific certainty shall not be used as the reason for postponing the cost right to a clean and healthy environment - under the 2010 Constitution every person in Kenya has a right to a clean and healthy environment and a duty to safeguard and enhance the environment.
Right to sustainable development - the right to development will be respected taking into account economic, social and
environmental needs. Kenya seeks to achieve people-centred development that builds human capabilities, improves people's well-being and enhances quality of life.

Partnership - building partnerships, collaboration and synergies among various stakeholders from the public, government, non-governmental organizations, civil society and private sector, as well as vulnerable communities and populations including women and youth, will be prioritized to achieve effective implementation of this Policy.

Cooperative government - embracing a system of consultation, negotiation and consensus building in government administration between and within the national and county governments.

Equity and social inclusion - ensuring a fair and equitable allocation of effort and cost, as well as ploughing back of benefits in the context of the need to address disproportionate vulnerabilities, responsibilities, capabilities, disparities, and inter– and intra-generational equity.
Special needs and circumstances - the special needs and circumstances of people and geographic areas that are particularly vulnerable to the adverse effects of climate change will be prioritized. This includes, but is not limited to, vulnerable groups such as women, children, the elderly and persons with disability.

Avoiding maladaptation - the climate change response will be conducted in such a way as to avoid maladaptation, defined by the UNFCCC as any changes in natural or human systems that inadvertently increase vulnerability to climatic stimuli.

Integrity and transparency - the mobilization and utilization of financial resources shall be undertaken with integrity and transparency to eliminate corruption and achieve optimal results in climate change responses.

Cost-effectiveness - the selection of climate change interventions will take into account available alternatives to identify appropriate choices that provide the most benefit at the least cost.

1.2 Underlying Climate Resilience Context

1.2.1 Impacts of Climate Hazards on the County

Sector Impacts

(i) Crop Production

Climate hazards such as extreme temperatures, frost, landslide, drought, floods, pests and disease have decreased subsistence and cash crop production (PCRA, 2023), which remain a critical source of livelihoods and the main economic activity across the county. Small-scale farms account for up to 90 per cent of crop production across the county and are the main source of employment for the county especially rural residents, women and the elderly (MoALF, 2022). The most dominant crops include subsistence crops (Irish potatoes, onions, beans, carrots and cabbages) and cash crops (coffee and tea). Some of the underlying factors contributing to the vulnerability of crop production to the effects of climate change include; rain-fed production, low processing, storage, market inefficiency, limiting policies and inadequate infrastructure. Some of the identified impacts include; reduced water levels and water sources which facilitate irrigated agriculture, emerging pests and diseases, loss of soil moisture, stunting of crops, drying of crops, soil erosion, reduced crop acreage, reduced quality of crop produces, emergence of invasive species among others.

Table 1.1: Summary of Climate Impacts on Crop Production

Climate Stressors and Climate Risks Crop Production	
Stressors	Impacts/Risks
Rising Temperatures and Heat stress on crops	Crop failure/loss, reduced yields and quality
	Changes in crop suitability due to shifting temperatures in the agroecological zones (AEZ)
Shifting seasonalrainfall patterns	Increased incidence of pests and diseases (e.g., Fall armyworm, maizestalk borer, coffee berry borer)
Increased frequency and intensity of heavy rainfall	Soil degradation from heavy rainfall, flooding, and erosion

(ii) Livestock

Livestock production is an integral part of food production in Kenya, contributing to food and nutrition security, income and livelihoods among other socio-economic benefits in the county. Drought, pests and diseases, frost, erratic rainfall and extreme temperatures are the most significant stressors facing the county's livestock sub-sector. The most affected species are cattle, sheep, goats, poultry and fishery. Livestock are susceptible to heat stress that reduces/ increases feed intake, reproduction rates, production, longevity, morbidity and even death. Other impacts include increased susceptibility to diseases, incidences of pests and the emergence of invasive species which affects the availability of pasture in grazing areas (CDLP, 2022).

Additionally, increased seasonal and drought-related water stress, alongside warming trends, have already impacted pastures, reduced acreage on pasture and fodder crops, and water availability in some wards. Increased post-harvest losses have especially adversely affected dairy industries in the county. (KDB, 2022) Further, this has led to reduced income, export and revenue from the sub-sector. Wildlife and transboundary conflicts due to the movement of animals in search of pasture, water and grazing areas have been reported especially in Kieni sub-counties. (NDMA,2022).

Additionally, increased seasonal and drought-related water stress, alongside warming trends, have already impacted pastures, reduced acreage on pasture and fodder crops, and water availability in some wards.

Table 1.2: Climate stressors and Risks Livestock

Climate Stressors and Climate Risks	
Livestock	
Stressors	**Risks/Impact**
Extreme temperature	Reduced livestock reproduction, stunted growth rates, reduced milkproduction and increased milk spoilage.
Shifting seasonal patterns	Reduced feeding options due to rangeland degradation and diminishedfodder crops.
Unreliable rainfall intensityand frequency.	Early drying or loss of seasonal water sources, altered pastoral mobility, increased conflict over scarce resources, increased occurrence and outbreaksof some livestock diseases

(iii) Human Health

Climate change has wide-ranging impacts on various aspects of human health. The variability of climate change has increased both direct health risks such as undernutrition during drought, waterborne diseases during floods and a rise in incidences of infectious diseases such as respiratory infections among others. Most hazards will affect the elderly, children, pregnant women and those in warmer wards and informal settlements. The impacts of warming temperatures and shifting rainfall patterns on agriculture will heighten food insecurity and undernutrition. Water-washed diseases caused by scarcity of water will ultimately surge in the informal settlements where vulnerable groups such as children live.

Table 1.3:Climate stressors and Risks Human Health

Climate Stressors and Climate Risks *Human Health*	
Stressors	**Risks**
Increased temperature	Increased mortality and morbidity related to heat stress
Shifting seasonal rainfallpatterns	Increased drowning and displacement of people and flooding
Increased frequency and intensity of heavy rainfall	Increased poverty, food insecurity, and undernutrition caused by croploss/decreased yields, livestock loss, or rising food prices

(iv) Trade

The trade sector relies heavily on the products and services generated by other sectors within the economy. Consequently, any detrimental effects of climate change on these sectors will inevitably have an impact on trade. Notably, the agriculture and manufacturing sectors, which play crucial roles in both domestic and international trade, are particularly susceptible to climate variability and extreme weather conditions. To ensure a thriving trade sector, it becomes imperative to foster resilience throughout the entire economy of the county.

In Nyeri County, a significant number of traders primarily rely on agricultural products, which are being severely affected by various climate-related challenges. These include prolonged periods of drought resulting in water scarcity, the proliferation of pests and diseases, and even the occurrence of frost. Such adverse conditions have significantly hampered the productivity and reliability of agricultural outputs. Consequently, traders in the region have faced numerous challenges, including reduced availability and quality of agricultural goods for trade.

(v)Tourism

Tourism is also significantly impacted by climate change, which in turn affects biodiversity and wildlife. This is a matter of concern for Nyeri County's tourism industry as it is expected to result in the alteration of wildlife species' habitats in Aberdare and Mount Kenya ecosystems, the decline in population sizes of various species, and even the extinction of certain species.

(vi) Cooperatives

The cooperative sector, particularly in agriculture, has suffered negative consequences due to climate change. The frequency and intensity of droughts and floods have significantly reduced farm production especially in the dairy, coffee and tea industries, making it increasingly challenging for people to engage in farming activities. Consequently, this has hindered the growth and progress of cooperatives within the county. Furthermore, interventions aimed at value addition have also been affected by these circumstances.

(vii) Transport, Infrastructure and Energy

Infrastructure and energy systems are susceptible to the impacts of climate change, especially with more frequent and intense heavy rainfall events. These events can lead to floods and landslides, causing damage to infrastructure and disrupting essential services such as energy, water, and transportation. As a result, social amenities suffer, and the most vulnerable members of the community bear the brunt of these consequences. Additionally, the reliance on firewood, particularly among women who heavily depend on this resource, exacerbates the situation.

While increasing temperatures may reduce heating demands, they also heighten the overall demand for cooling. This increased demand, especially during peak periods, strains transmission and distribution systems.

While increasing temperatures may reduce heating demands, they also heighten the overall demand for cooling. This increased demand, especially during peak periods, strains transmission and distribution systems. Furthermore, small hydroelectric systems that support agricultural cooperatives and industries, such as tea production, are at risk due to river siltation caused by soil erosion and the heightened demand for water during drought periods. Lastly, flooding events can also inflict damage on the infrastructure of these systems.

Table 1.4:Climate stressors and Risks, Infrastructure and Energy

Stressors	**Risks**
Increased temperatureand heat	Buildings overheat and road surfaces are compromised by high temperatures.
Increased frequency and intensity of heavy rainfall	Reduced river flows hamper hydropower production.
	Increased flood and landslide damage to buildings, bridges, roads,
	Increased siltation of reservoirs and water pans

Table 1.5: Climate stressors and Risks, for Energy Sector

Hydro-meteorological and/or climate parameter	Select energy uses
Rainfall	Hydro-generation potential and efficiency, biomass production,demand, demand simulation/modelling
Wind speed and/or direction	Wind generation potential and efficiency, demand, demand,simulation/modelling
River flow	Hydro-generation and potential, hydro-generation modelling (including dam control), power station cooling water demands
Flood statistics	Raw material production and delivery, infrastructure protectionand design, cooling water demands
Drought statistics	Hydro-generation output, demand
Storm statistics (includes strong heavy rain	Infrastructure protection and design, demand surges

(viii) Ecosystems

The intricate interplay between various factors influencing ecosystem structure, composition, and function makes it challenging to predict the impacts of climate change. However, it is anticipated that rising temperatures and shifting rainfall patterns will exacerbate the strain on the rich biodiversity of Nyeri County, which is already under pressure from human activities such as deforestation, pollution, human-wildlife conflicts, expanding settlements, and conversion of agricultural land.

The county has already experienced a loss of biodiversity, primarily attributed to hazards like droughts and floods. The projected increase in heavy rainfall events and more intense droughts is expected to intensify land degradation and diminish vegetative cover in the county's diverse ecosystems. These ecosystems are essential for providing crucial products and ecosystem services, including forestry, fishery, pastoralism, and tourism-related livelihoods, as well as fuel and food supplies, and water regulation through filtration and groundwater recharge.

Additionally, rising temperatures, storms, and floods pose heightened threats to ecosystems through direct damage, altered distributions of native and invasive species (e.g., Tumutumu Forest), elevated physiological stress, and increased risk of wildfires. Forest fires have already impacted Nyeri County.

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(ix) Water

Over the past one to two decades, the water resources in Nyeri County have been facing continuous depletion due to the hazards associated with climate change. This depletion has resulted in water scarcity, particularly in sub-counties like Kieni East, Kieni West, and Mukurweini. Some notable changes in the water resources over this period include the depletion of water pans and springs due to encroachment by human activities such as crop and livestock farming. This encroachment has diminished the effectiveness of these water bodies as vital carbon sinks and important water sources.

The water table levels have significantly dropped due to high water demand, limited water recharge caused by excessive runoff resulting from inadequate water storage infrastructure, and the effects of deforestation. As a consequence, borehole drilling costs have risen due to deeper water table/aquifer levels below ground, and there is insufficient water available for domestic use and irrigation purposes. Unpredictable river flow levels have led to water usage restrictions and rationing for farmers engaged in irrigated agriculture. The rivers have become more seasonal and intermittent.

Moreover, there has been an increase in flash floods, particularly during the long rainy seasons, which have caused crop damage and destruction of animal pastures. Therefore, there is an urgent need for extensive extension services and training on modern methods of water conservation and harvesting, as well as infrastructural development to ensure sustainable water availability.

Table 1- 6:Climate stressors and Risks, Water Sector

Climate Stressors and Climate Risks Water Sector	
Stressors	**Risks**
Deforestation	Poor underground water recharge leads to lower water table levels. This has caused a rise in borehole drilling costs and depletion of shallow wells. Reduced spring water sources and dried wetlands
Unpredictable river flow levels	This has led to restricted/rationed water usage for farmers engaging in irrigated agriculture hence limiting crop production and pasture growth.
Increased flash flood occurrences	Increased siltation of dams and water pans hence reduced water availability and extinction/death of subaquatic life. Increased pollution of surface water sources. leading to the low quantity andquality of these sources available for use by the community.
Rising temperatures	High evaporation and wetlands encroachment rates lead to the depletion of open wetlands. This has also led to an increased water demand, and depletion of water pans and springs therefore causing a significant ineffectiveness ofthese water bodies as carbon sinks and as major sources of water.

(x) Social-economic impacts

i. Disintegration of families: Communities cited an increase in family breakage in the county as a result of many factors which are related to climate change hazards and risks, such as unemployment and migration in search of alternative livelihoods.

ii. Increased rural-urban migration: In many parts of the county, the majority of the youth who form the biggest proportion of the active workforce have migrated to the urban areas hence reducing the workforce in the rural areas.

iii. Lifestyle diseases: Nyeri County has been ranked 2nd leading in overweight and obesity in Kenya, one of the risk factors for Non communicable Diseases (NCDs). Child undernutrition is also still a major public health problem with stunting levels being at 15.1%, wasting at 2.4% and underweight at 2.1%. These unacceptable high levels of malnutrition, over-nutrition and micronutrient deficiency have remained a public health concern and a hindrance to achieving the county's developmental agenda.

iv. Mental health issues: The community highlighted mental health as a main social economic risk which partly can be attributed to the climate change risks and hazards.

v. Gender-Based Violence: as a result of imbalance in providing for the family: The community cited an increase in GBV as a

result of economic imbalances in the families. GBV is affecting both women and men in the county.

vi. Drug and substance abuse: There has been an increase in drug and substance abuse in the county, among the youth and older persons, with men being the most affected. This has led to family breakage, reduced workforce and increased insecurity.

vii. High cost of living: Increased inflation has led to a high cost of living which has also led to increased environmental degradation as people look for alternative sources of living to supplement their income such as charcoal burning.

viii. Increased conflicts: over natural resources: Increased drying up of rivers and other water sources due to drought has led to increased conflicts as communities scramble for the little water available.

1.2.2 County Climate Hazard Map

Nyeri county faces diverse hazards including drought, floods, landslides / mudslides and frost. These hazards were mapped to provide a concise overview of the main hazards faced and reported by a specific community during the participatory climate risk assessment (PCRA) process around the county. The map highlights the climate-related risks that were identified through a participatory approach against historical mean values of rainfall and precipitation.

The county faces multiple climatic challenges, including drought, extreme temperatures, frost, and floods, which have significant impacts on communities and agricultural production. Floods affect Kieni East and West, while drought primarily affects Kieni West, East Mukurweini, Mathira West, and Tetu Sub- County. The sub-counties of Mukurweini, Tetu, Nyeri South, Mathira East, and Mathira West are prone to landslides and soil erosion due to their hilly terrain. Drought incidences are expected to increase as per the projections while each of the other hazards poses unique challenges and potential negative impacts on the county's population, infrastructure, and ecosystems. The hazards are shown in the figure 1.1, 1.2 and 1.3 below:

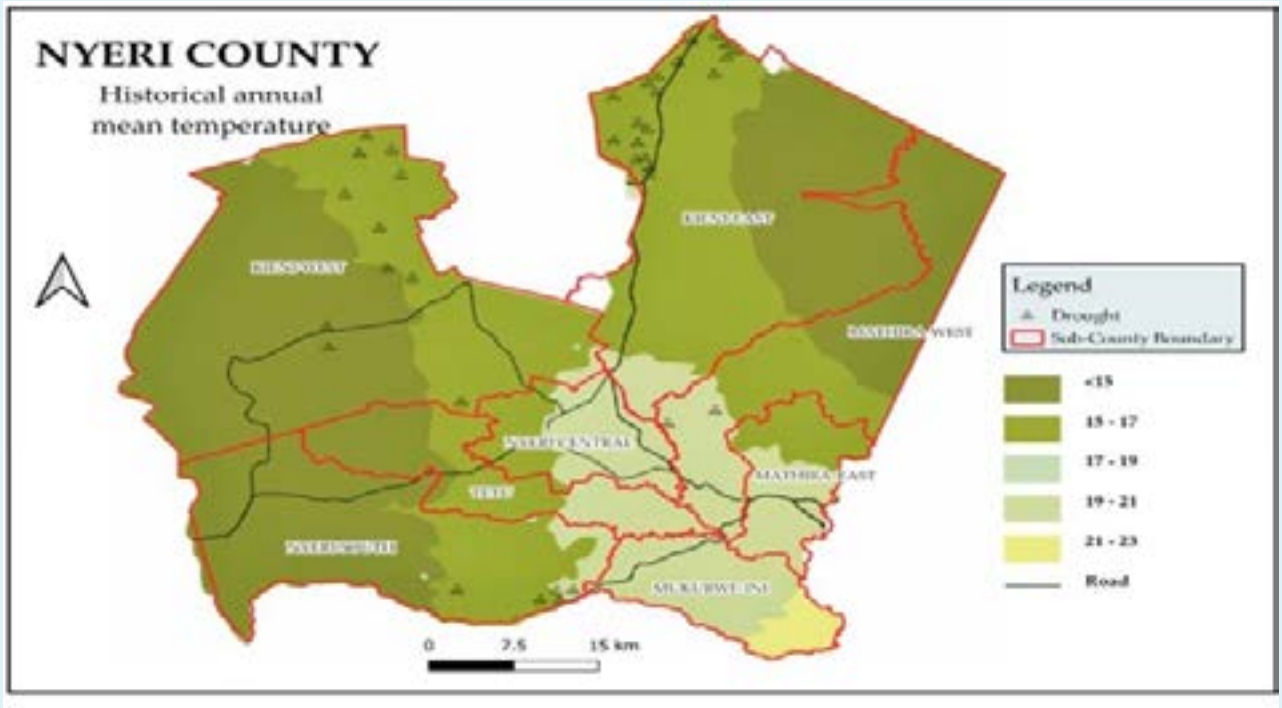


Figure 1.1: Nyeri County Climate Hazards profile (Source: Nyeri County PCRA 2023)

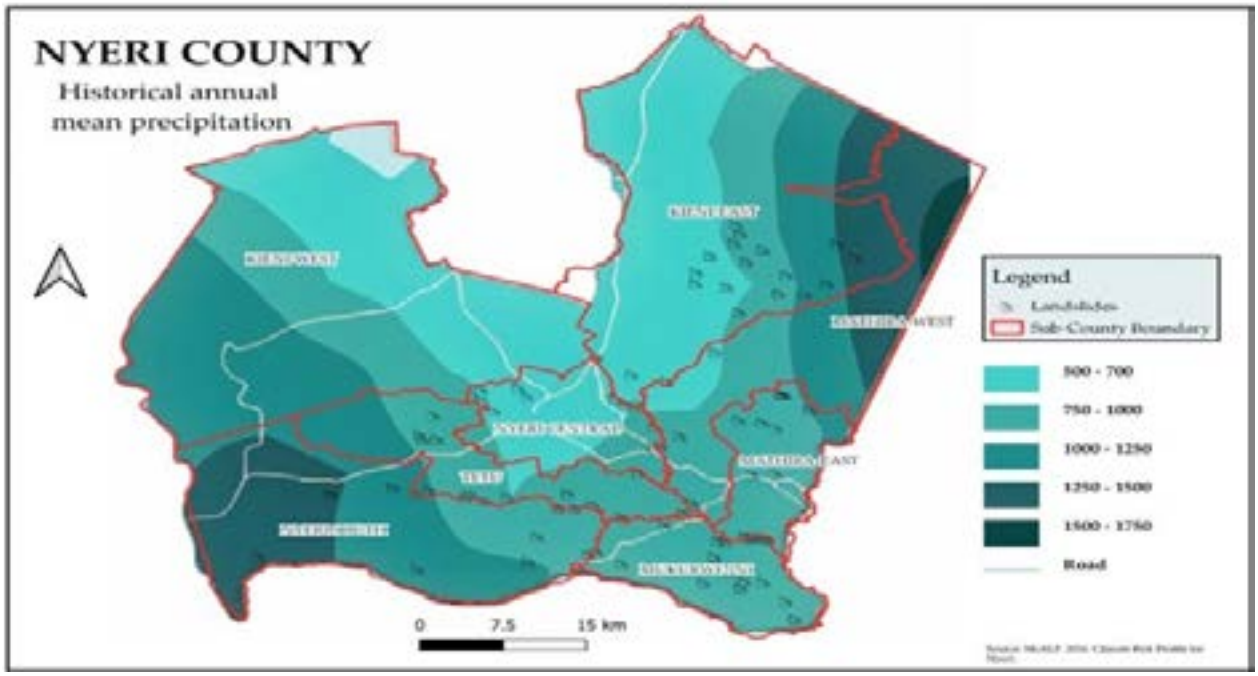


Figure 1.2: Nyeri County Climate Hazards profile (Source: Nyeri County PCRA 2023)

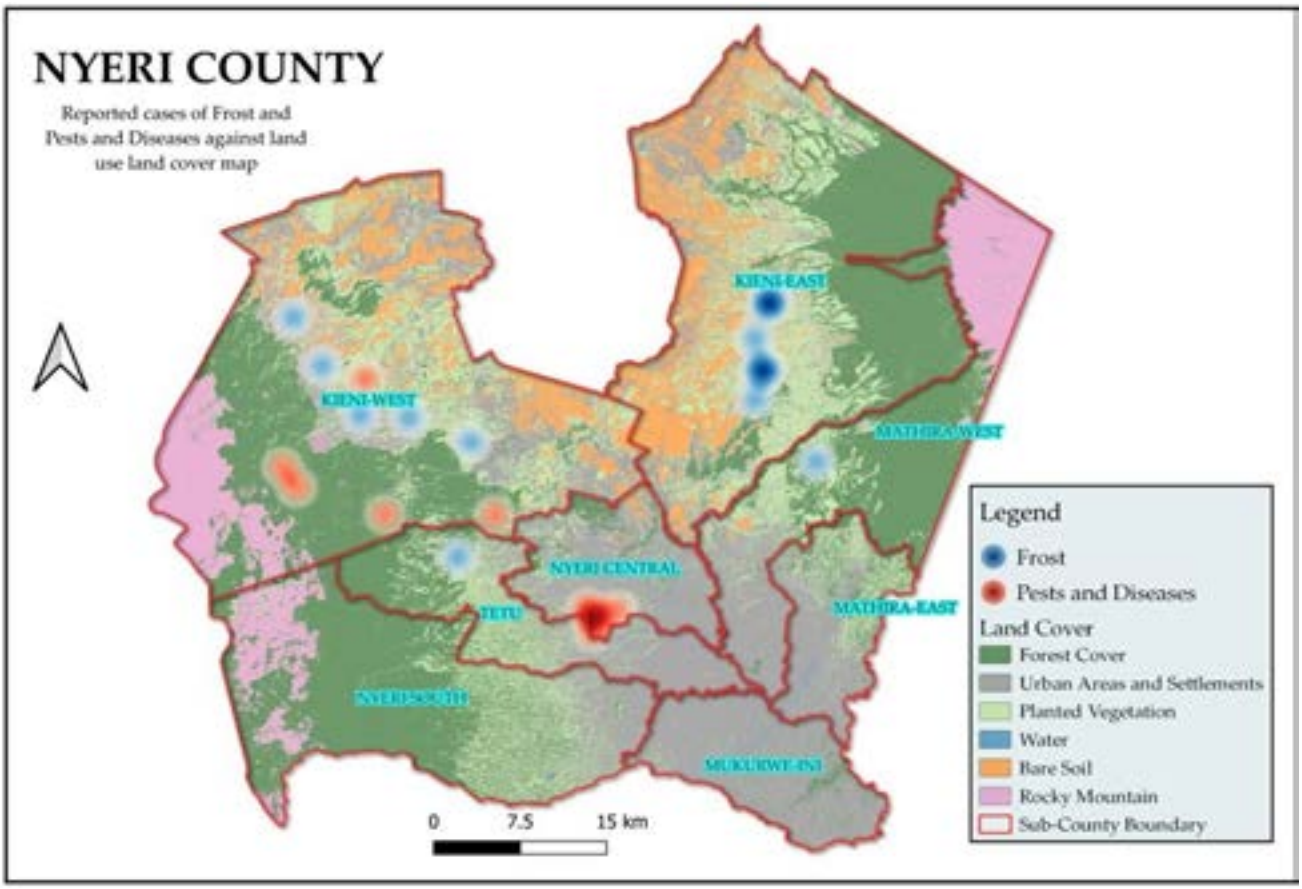


Figure 1.3: Map indicating areas affected by Frost, Pests and Diseases in the county.

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

1.2.3.1 Vulnerability Indicators

To facilitate effective planning and decision-making processes, the following vulnerability indicators serve as valuable tools for identifying the susceptibility of communities or individuals to the impacts of climate change:

a) Poverty statistics
b) Geographical location
c) Food security/nutrition

(a) Poverty statistics

The poverty rate in the county is 27.3% while absolute poverty is 19.3% (KIHBS 2015/2016). The higher the poverty index the higher the vulnerability of a community or a household. During the community engagement communities identified poor households as one of the vulnerable groups. Most of the poor households in Nyeri County are located in slums and colonial villages.

(b) Food security/ Recipients of food aid

One of the key vulnerable groups in Nyeri County is the agricultural community. Small-scale farmers heavily rely on rain-fed agriculture, making them highly susceptible to changing rainfall patterns. Increased occurrences of droughts and unpredictable rainfall disrupt planting and harvesting seasons, leading to reduced crop yields and food insecurity. Additionally, extreme weather events like floods damage crops and destroy agricultural infrastructure, further exacerbating the vulnerability of farmers.

Livestock farmers also face significant climate-related challenges. Changes in temperature and precipitation patterns affect grazing lands and water availability for their animals. Prolonged droughts force pastoralists to travel longer distances in search of water and pasture, resulting in livestock deaths, loss of livelihoods, and increased competition over limited resources.

According to a recent Kenya National Bureau of statistics, the food poverty index for Nyeri County stands at 15.5%. This figure indicates the percentage of the population facing food insecurity within the county. Unfortunately, in recent years, certain areas within the county have been severely affected by frequent droughts. In the 2021/2022 financial year, approximately 2760 individuals in Kieni East, Kieni West, Mathira West, Nyeri Central, and Tetu were in desperate need of food aid. These regions have been significantly impacted by the adverse effects of drought, resulting in a heightened demand for assistance to meet basic nutritional requirements.

Moreover, the prevalence of child undernutrition in the county is alarming, with stunting affecting 15.1% of children, muscle wasting impacting 2.4%, and underweight affecting 2.1 per cent of the children (KHIS, 2021/2022). These statistics reflect the sub-optimal growth of undernourished children in the area. Undernutrition not only has immediate consequences on children's health but also has long-term ramifications, negatively affecting their educational performance and cognitive abilities. Moreover, in adulthood, undernutrition can lead to reduced economic productivity (NCNAP - Nyeri County Nutrition Action Plan, 2020). The data from KHIS further reveals that 1617 children aged 0 to 5 years were severely underweight, 936 were severely stunted, and 968 experienced malnutrition. These trends are projected to worsen with the increased frequency, severity, and duration of extreme climatic events such as droughts.

(c) Geographical location

Nyeri County has different agro-ecological zones hence different climatic conditions. In recent years there has been a change in weather patterns hence change in climate hazards affecting the different agro-ecological zones. Some parts of Kieni and Mukurweini have been facing acute drought than other areas in the county. Additionally, communities living along steep areas in Tetu, Othaya, Nyeri Central & Mukurweini have been facing landslides in recent years. This is a clear indicator that communities are prone to different climate hazards depending on their geographical location.

(d) Non-Communicable Diseases

Nyeri is one of the high-burden counties for Non-Communicable Diseases (NCDs), with close to half of deaths in the county caused by NCDs, and about 700 new cancer cases annually (MoH, 2020). For the year 2021/2022, KHIS hypertension cases stood at 16466, while diabetes was 10477. Cardiac Related Complications were the second leading cause of mortality after pneumonia. Cancer came at position 4, as Diabetes

Mellitus and Hypertension occupied positions 8 and 9 respectively.

Climate-driven changes will upset agricultural systems and lead to diminished crop yields, reduced food availability, and altered nutritional content of food. These changes will contribute to malnutrition and diet-related NCDs such as obesity, diabetes, and cardiovascular diseases.

(e) Social vulnerability

Social Vulnerability pertains to the potential adverse consequences faced by communities due to external pressures on human well-being, including natural or human-induced disasters and disease outbreaks. By mitigating social vulnerability, it is possible to alleviate both human suffering and economic losses attributed to climate change. The primary focus of attention is on culturally disadvantaged groups within the population, with a specific emphasis on women, children, poor households, and Persons Living with Disabilities.

(i) Women

Women in Nyeri County are particularly susceptible to the hazards and risks associated with climate change due to their reliance on, yet limited access to, natural resources. Many women in the county have restricted rights to land ownership and control, thereby inhibiting their ability to utilize land or derive benefits from it. This lack of control makes it challenging for them to adopt strategies that would facilitate their adaptation to the impacts of climate change.

Agriculture serves as the primary employment sector for women in low- and lower-middle-income brackets within Nyeri County. A significant number of women are employed as casual labourers on farms, specifically in the coffee and tea sectors. During periods of drought and unpredictable rainfall, women, as agricultural workers, exert greater efforts to secure income and resources for their families.

In many parts of the county, women bear a disproportionate responsibility for ensuring access to food, water, livestock forage, and fuel. During drought periods, women endure significant hardships in their search for water, food, forage, and employment, particularly those engaged in farming.

(ii) Youth

According to Article 260 of Kenya's Constitution, youth are defined as individuals aged between eighteen (18) and thirty-four (34) years. In Nyeri County, youth constitute 31.16% of the total population based on the 2019 census. As the majority demographic group in the county, they are vulnerable to the impacts of climate change. The youth face significant challenges, with unemployment being a major concern, resulting in limited resources to adapt to climate change risks and hazards.

(iii) Children:

Children are particularly susceptible to climate change risks and hazards due to their higher food and water requirements relative to their body weight. They are less capable of surviving extreme weather events and are more vulnerable to temperature changes and diseases. During droughts, many children in the county experience malnutrition, child abuse, early pregnancies and marriages, and mental illnesses, among other consequences. Altered rainfall patterns and prolonged droughts resulting from climate change lead to water scarcity, posing challenges in accessing clean water.
These conditions increase the incidence of water-related diseases, such as skin and eye infections, and negatively impact their education. Flooding, inadequate waste management, and other climate-related effects contribute to the rise of vector-borne diseases such as malaria.

The table below presents statistics on underweight and stunting among children in Nyeri County.

Table 1.4:Annual data on nutrition status for children below 59 months. source: KHIS 2021/2022

Data name	Kieni East Sub County	Kieni West Sub County	Mathira East Sub County	Mathira West Sub County	MukurweiniSub County	Nyeri Central Sub County	Nyeri South Sub County	Tetu Sub County	Total
Severely underweight 0-<6 months	32	25	179	0	17	169	92	43	557
Severely underweight 24-59 months	4	2	49	2	6	31	13	8	115
Severely underweight 6-23 months	58	33	330	8	34	331	89	62	945
Underweight 0-<6 months	359	300	833	46	138	889	253	443	3261
Underweight 24-59 Months	139	44	124	10	23	139	42	103	624
Underweight 6-23 months	741	318	1516	71	258	1245	617	1044	5810
0-<6 months Stunted	248	127	97	36	61	896	257	346	2068
24-59 months Stunted	135	7	62	6	14	92	40	35	391
6-23 months Stunted	468	148	37	20	177	1148	453	715	3166
0-<6 months Severely Stunted	20	10	1	6	12	225	20	27	321
24-59 months Severely Stunted	29		8	3	16	12	31	3	102
6-23 months Severely Stunted	64	21		6	33	221	61	107	513
Malnutrition	17	13	142	31	7	723	31	4	968
Hypertension	982	3705	1854	328	231	8180	315	871	16466
Diabetes	585	1477	423	42	91	7526	194	139	10477

Source: KHIS

Table: Annual data on nutrition status for children below 59 months. source: KHIS 2021/2022

(iv) Elderly or Aged Individuals

As individuals enter old age, their bodies become less capable of effectively coping with the impacts of certain environmental hazards, such as extreme temperatures, whether excessively high or low. According to the 2019 census, individuals aged 60 years and above make up 10.8% of the total population in the county, with a projected increase to 11.9% by 2026 (2019 census). The elderly population in the county is particularly vulnerable to climate risks and hazards.

The elderly face a range of complex medical conditions that can affect their physical, sensory, and cognitive abilities, hindering their ability to care for themselves and respond to climate-related disasters. Unlike other segments of the population, they may struggle Moreover, the prevalence of child undernutrition in the county is alarming, with stunting affecting 15.1% of children, muscle wasting impacting 2.4%, and underweight affecting 2.1 per cent of the children (KHIS, 2021/2022). Most elderly individuals rely on caregivers and functioning healthcare systems, which can become overwhelmed and fragmented during climate disasters. Moreover, rural-urban migration has left many elderly individuals without support, exacerbating their vulnerability. Cognitive impairments, including mild to severe dementias, further hinder their ability to assess risks, plan responses, and engage in protective behaviours, making it challenging for them to adapt to the impacts of climate change.

(v) Poor Households

Many low-income earners in rural areas depend on natural resources such as forests, rivers, and land for their livelihoods. However, climate change significantly affects these resources, leading to overexploitation and depletion. In recent years, there has been a rise in deforestation in county forests and farmlands due to increased drought, forcing communities to seek alternative livelihood sources. Additionally, numerous poor households in the county rely on rivers for domestic water and subsistence irrigation farming. The drying up of these water sources greatly impacts their well-being. Given that agriculture is their primary source of income, it is difficult for them to adopt climate-smart agriculture technologies to build resilience. Consequently, when climate change impacts occur, poor households face challenges in adapting due to limited resources.

(vi) Persons Living with Disabilities

People with disabilities are more likely to face social and economic risk factors, including

poverty and unemployment, which make them more vulnerable to the impacts of climate change. During community engagements, many individuals with disabilities expressed feeling neglected by decision-makers in county programs and projects, indicating a lack of full consideration during planning. Limited access to donations, education, healthcare, social amenities, and natural resources further hampers their ability to adjust to climate change effects. They often face additional barriers that limit their ability to adapt and respond to climate change impacts.

1.3 Overview of Climate Change Action in Nyeri County

1.3.1 Mainstreaming of NCCAP in County Actions

The mainstreaming of the Kenya National Climate Change Action Plan (NCCAP) into county actions is an important step in addressing climate change at the local level. The NCCAP provides a comprehensive framework for climate change mitigation and adaptation strategies in Kenya, and the successful integration of this plan into county-level actions is crucial for effective implementation and achieving the desired outcomes. The mainstreaming process includes:
The mainstreaming of the Kenya National Climate Change Action Plan in Nyeri County actions involves integrating the objectives, strategies, and targets outlined in the national plan into the county's policies, programs, and projects. This ensures that climate change considerations are incorporated into local decision-making processes

and actions, leading to effective mitigation and adaptation measures at the county level.

i. Awareness and Capacity Building:
The county government has initiated awareness campaigns and capacity-building programs to educate county officials, stakeholders, and communities about various aspects of the Nyeri County climate change action plan. This helps in fostering understanding, ownership, and commitment to climate action within the county. This has been done through community sensitization programs, during the commemoration of international environmental days, social media campaigns as well as workshops.

II. Policy Alignment:
The county has aligned its existing policies, strategies, and plans with the national action plan which involves reviewing and revising relevant policies to ensure consistency and coherence with the national objectives and targets. For instance, climate change considerations were incorporated into the previous Nyeri County Integrated Development Plan, and have been integrated into the current CIDP (2023-2027) across all sectors, as well as in land-use planning, agriculture, water resource management, and disaster risk reduction policies.

III.Institutional Framework:
Nyeri County has established and strengthened the institutional framework for climate change governance. This includes designating a focal point or department responsible for coordinating climate change activities, which is the Directorate of Climate Change in the Department of Water, Irrigation, Environment and Climate Change, developing monitoring and evaluation systems, and ensuring adequate resources and capacity for implementation. A County Climate Change Fund has been established under the Nyeri County Climate Change Act, 2021 where at least 1% of the county budget should be allocated to the fund.

IV. Stakeholder Engagement:
The county engages with various stakeholders, including local communities, civil society organizations, private sector entities, and development partners, to foster collaboration and participation in climate change actions. These collaborations potentially lead to the formulation of joint projects, resource mobilization efforts, and knowledge sharing.

V. Climate Change Risk Assessments:
Nyeri County has conducted county-wide climate change vulnerability and risk assessments at the ward level to understand the specific climate risks and impacts it faces. Community engagements were held across the 30 wards to collect data on local climate hazards (past, and current) and their impacts on livelihoods and resources, traditional coping strategies and their effectiveness, government interventions as well as proposed strategies by the community and their priority options. This assessment helps in identifying priority areas for intervention and designing appropriate adaptation and resilience strategies at the local level. The findings have been documented in the Nyeri County Participatory Climate Risk Assessment (PCRA) Report 2023

VI. Project Development and Implementation:
Following the Participatory Climate Risk Assessment exercise, Nyeri County set out to develop projects and programs that align with the national plan's objectives. These projects include sustainable energy initiatives, climate-smart agriculture practices, afforestation programs, waste management projects, and climate-resilient infrastructure development, among others.

VII. Monitoring and Reporting:
Nyeri County has established mechanisms to monitor the implementation of climate change actions and regularly report on progress. This includes tracking key indicators, evaluating the effectiveness of interventions, and sharing information with the national government for overall progress assessment.
By effectively mainstreaming the Kenya National Climate Change Action Plan in Nyeri County's actions, the county will contribute to the national climate change agenda while addressing local climate challenges and promoting sustainable development.

1.3.2 Climate Change Mainstreaming

The Nyeri County Integrated Development Plan (CIDP 2023-2027) is a strategic document developed to guide the county's development agenda and priorities. Climate change is a critical consideration within this plan, as it poses significant challenges and impacts on various sectors within the county. Nyeri County CIDP has ensured the mainstreaming of climate actions across all county departments; each county department has set specific targets to ensure climate mitigation and adaptation are prioritized. To ensure that Climate Action targets all vulnerable groups in the County, deliberate stakeholder engagements during the CIDP (2023-2027) and PCRA (2023-2027) were conducted and representatives of PLWDs, Orphaned and Vulnerable Children (OVCs), Women, youth, poor households and the elderly consulted. Their cross-sectoral inputs were captured in the formulation of the implementation matrices in both documents.

Climate Change Adaptation:
The Nyeri County CIDP includes strategies and actions to enhance the resilience of communities, infrastructure, and ecosystems to the impacts of climate change. It involves measures such as improving water resource management, promoting drought-resistant agriculture, implementing early warning systems for disasters, and developing climate-smart infrastructure.

Natural Resource Management:
The Nyeri County CIDP emphasizes the sustainable management of natural resources, including land, water, forests, and biodiversity. This involves promoting sustainable land-use practices, reforestation, watershed management, and conservation of ecosystems to mitigate climate change and enhance ecosystem resilience.

Renewable Energy and Energy Efficiency:
The Nyeri County CIDP recognizes the importance of transitioning to renewable energy sources and improving energy efficiency to reduce greenhouse gas emissions. This includes promoting the use of solar, wind, and hydro-electric power, as well as energy-efficient technologies in buildings and industries.

Livelihood Diversification:
The Nyeri County CIDP has focused on supporting alternative livelihood options for communities vulnerable to climate change impacts. This involves promoting income-generating activities such as eco-tourism, sustainable agriculture practices, and supporting small-scale enterprises that are resilient to climate variability.

Capacity Building, Awareness Creation and Knowledge Transfer:
The Nyeri County CIDP includes provisions for capacity-building initiatives and awareness programs to empower communities, government officials, and stakeholders to understand and respond to climate change challenges. This involves training on climate change adaptation and mitigation strategies, promoting climate-smart practices, and raising awareness about the importance of climate action. Knowledge transfer through trade fairs show exhibitions and establishment of resource centres.

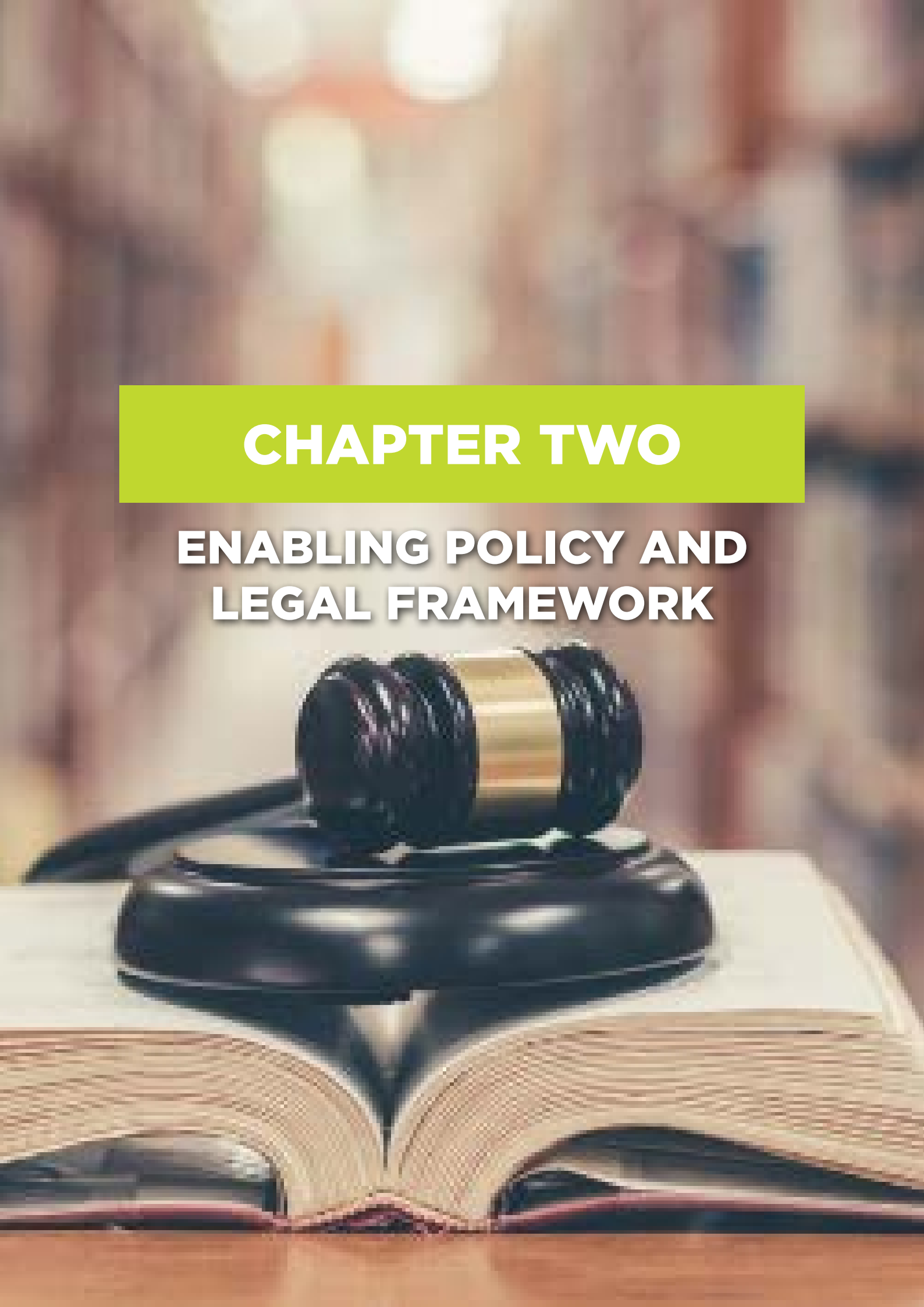
Collaboration and Partnerships:
The Nyeri County CIDP recognizes the need for collaboration between county governments, national institutions, non-governmental organizations, and other stakeholders to address climate change effectively. This includes leveraging resources, sharing knowledge and experiences, and coordinating efforts to implement climate change initiatives at the county level. Integrating climate change considerations into the CIDP helps ensure that county development plans align with national climate change policies and contribute to Kenya's overall efforts to address climate change and achieve sustainable development.

1.3.3 Other Key Climate actions/strategies in the county

i. Development of legal and legislative frameworks; The Nyeri County Climate Change Act 2020, Nyeri County Forest Conservation and Management Act, Nyeri County Climate Change Fund Regulation 2021, Nyeri County Environment Policy, Nyeri County Climate Change Policy, Nyeri County Climate Change Resource Mobilization Strategy 2021
ii. Provision of accurate, timely and reliable climate/weather information to inform decisions of actors on crops, livestock and fisheries value chains.
iii. Promotion of crop varieties, livestock and fish breeds and tree species that are adapted to varied weather conditions and tolerant to associated emerging pests and diseases
iv. Diversification of enterprises and alternative livelihoods
v. Establishment of baselines and undertake an inventory of the existing natural resources
vi. Strengthening of research, technology development and dissemination for sustainable natural resource management
vii. Development of Measurement, Reporting and Verification Systems
viii. Strengthening of collaboration between State Agencies on enforcing Climate-smart agriculture activities.
ix. Strengthening of institutions involved in Climate-smart agriculture.
x. Knowledge transfer through trade fairs show exhibitions and establishment of resource centres.

CHAPTER TWO

ENABLING POLICY AND LEGAL FRAMEWORK



2.1 Introduction

This chapter reviews relevant policy and legal frameworks related to climate action both at national and county levels.
Climate action calls for a multi-sectoral approach for it to be effective. Nyeri County is an active player in national climate change response efforts and has domesticated key national strategies to grassroots to suit the unique needs of the county as far as Climate Action is concerned. Nyeri County has already developed and adopted, among others, CIDP 2023-2027, County Climate Change Act 2021, County Climate Fund Regulations 2021, County Climate Change Policy and County Resource Mobilization Strategy. The adoption of these key documents provides an enabling environment for effective climate action at the county level.

2.2 County Enabling Legal & Policy Framework

2.2.1 Nyeri County Integrated Development Plan (2023 - 2027)

The County Government of Nyeri has mainstreamed climate change in its CIDP. It addresses the impacts of Climate change through their development activities. In the CIDP Nyeri County has prioritized building climate resilience of the citizenry through cross-sectoral strategies. The CIDP specifically prioritizes the reduction of climate change risks and impacts and identifies education, training and awareness creation as one of the strategies for combating the negative impacts of climate change. Thus, carrying out this climate change risk and vulnerability assessment will contribute to the realization of the CIDP's objectives of tackling climate change and will inform the mainstreaming of climate actions into the next CIDP (2023-2027).

2.2.2 Nyeri County Climate Change Policy, 2020

The Nyeri County Climate Change Policy aims to ensure the integration of climate change considerations into planning, budgeting, implementation, and decision-making by the Nyeri County government across all sectors.

2.2.3 Nyeri County Climate Change Act 2021

The Nyeri County Climate Change Act was enacted in May 2021. It puts in place the framework and mechanisms for the mobilization and facilitation of the county government, communities and other stakeholders to respond effectively to climate change through appropriate adaptation and mitigation measures and actions for connected purposes. Among the key frameworks established under the Act are the County Climate Change Action Plans, County Climate Change Fund and the Climate Change Fund Regulations.

2.2.4 Nyeri County Climate Fund Regulations, year 2021

These regulations are established under the Nyeri County Climate Change Act 2021 and provide for the establishment of the Nyeri County Climate Change fund. The fund is essential in implementing the priority climate actions identified in this CCCAP. The Regulations also identify the sources of funds to boost the implementation of the climate actions.

2.3. National Legal and Policy Framework

Kenya is an active player in international climate change response efforts and has signed and ratified several key global and regional agreements. (NCCAP 2018-2022).
Kenya has also formulated and adopted important policy and legal frameworks that are key enablers of climate action. The policy and legal frameworks at the national level assign responsibilities to various players/ actors including both public and private sectors some of the actors include:

i. National Climate Change Council (NCCC)- Oversees implementation of NCCAP and ensures mainstreaming of climate change into national and county governments.

ii. Climate Change Directorate (CCD) the Ministry of Environment, Climate Change and Forestry- it is the secretariat to the National Climate Change Council and the lead government agency on climate planning and action

iii. National Environment Management Authority (NEMA)- Responsible for monitoring and enforcement of compliance of public and private entities charged with climate duties and targets.

iv. Ministry of Energy- charged with the responsibility of mainstreaming climate change into renewable energy policies.

v. Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works- charged with the responsibility of mainstreaming climate change into the transport sector as well as profiling the sectors' Greenhouse Gas emissions.

2.3.1 Constitution of Kenya (2010)

A robust framework of policies, plans, and institutions has been progressively established at the National and County levels in Kenya over the past decade to address climate change. The foundation of the institutional and legal framework for climate change action is the Constitution of Kenya (2010). Article 10 sets out national values and principles of governance, such as sustainable development, devolution of government, and public participation, which are mandatory when making or implementing any law or public policy decisions, including those relating to climate change. Article 42 provides for the right to a clean and healthy environment for every Kenyan, which includes the right to have the environment protected for the benefit of present and future generations through legislative and other measures.

County Governments have a key delivery role in implementing the Climate Change Act, 2016, having jurisdiction, as set out in the Fourth Schedule (Part 2) of the Constitution, over sectors relevant to climate change action, such as agriculture, soil and water conservation, forestry, water and sanitation, tourism, and health.

2.3.2 Kenya Vision 2030 and its Medium-Term Plans

Kenya Vision 2030, the country's development blueprint, recognized climate change as a risk that could slow the country's development. Climate change actions were identified in the Second Medium Term Plan (MTP) (2013-2017). The Third Medium Term Plan (2018-2022) recognized climate change as a crosscutting thematic area, and mainstreamed climate change actions in sector plans.

2.3.3 National Climate Change Response Strategy (2010)

Kenya's National Climate Change Response Strategy was the first national policy document on climate change. It sought to advance the integration of climate change adaptation and mitigation into all government planning, budgeting, and development objectives.

2.3.4 National Climate Change Framework Policy 2016

This Policy was developed to facilitate a coordinated, coherent and effective response to the local, national and global challenges and opportunities presented by climate change. An overarching mainstreaming approach has been adopted to ensure the integration of climate change considerations into development planning, budgeting and implementation in all sectors and at all levels of government. This Policy therefore aims to enhance adaptive capacity and build resilience to climate variability and change, while promoting a low-carbon development pathway. As a policy statement on enhancing climate resilience and adaptive capacity, the Government commits to ensure the integration of climate change risk and vulnerability assessment in environmental impact assessments and strategic environmental assessments. The policy further compels the Government to promote public and stakeholder consultation and participation, including with vulnerable groups, to enhance adaptive capacity and climate resilience.

2.3.5 National Climate Change Act 2016 Rev 2023

The Climate Change Act came into force in 2016 and was revised in 2023. The main objective of the Act is to govern the development, management, implementation and regulation of mechanisms to enhance climate change resilience and low-carbon development for the sustainable development of Kenya. The Act is to be applied to all sectors of the economy by both the national and county governments. Specifically the Act is to be applied to ensure among other objectives: Mainstreaming of climate change responses into development planning, decision making and implementation; building resilience and enhancing adaptive capacity to the impacts of climate change; formulation of programmes and plans to enhance the resilience and adaptive capacity of human and ecological systems to the impacts of climate change; and, mainstreaming and reinforcing climate change disaster risk reduction into strategies and actions of public and private entities.

2.3.6 National Climate Change Action Plan (2018-2022)

Kenya's National Climate Change Action Plan, 2018-2022 is the second and current five-year plan that aims to further Kenya's development goals in a low carbon climate resilient manner. The plan set out adaptation, mitigation, and enabling actions. The process of developing NCCAP 2023-2027 is ongoing. County Climate Change Action Plans should be integrated into the NCCAP.

2.3.7 National Adaptation Plan (NAP) (2015-2030)

Kenya's National Adaptation Plan 2015-2030 (NAP) was submitted to the UNFCCC in 2017. The NAP provides a climate hazard and vulnerability assessment and sets out priority adaptation actions in the 21 planning sectors in MTP II.

2.3.8 Nationally Determined Contribution (NDC) (2016)

The Nationally Determined Contributions (NDCs) are commitments made by countries that are parties to the Paris Agreement to reduce national emissions and adapt to the impacts of climate change. The Paris Agreement requires each party to prepare, communicate and maintain successive NDCs that it intends to achieve. Kenya first submitted its NDC on 28th December 2016. In the first NDC, (Government of Kenya, 2020) Kenya committed to reduce its emissions by 30 per cent by the year 2030 given the Business as Usual (BAU) scenario of 143 MtCO2eq. On 24th December 2020, Kenya submitted its updated NDC with a commitment to reduce its national emissions by 32 per cent by the year 2030 relative to the BAU scenario of 143 MtCO2 eq. In the updated NDCs Kenya committed to meet 13 per cent (USD 8.06 Billion) of the total required costs (USD 62 Billion) of implementing the mitigation and adaptation actions. The updated NDCs contain Kenya's mitigation and adaptation goals.

Mitigation goal: BAU scenario of 143 MtCO2eq; and in line with her to) the promotion and implementation of the sustainable development agenda. Subject to low carbon, climate resilient development pathway. Kenya will implement and periodically update the national circumstances, Kenya intends to bear 21% of the mitigation cost from domestic sources, increasing renewables in the electricity] while 79% of this is subject to the international generation mix of the national grid. support in the form of finance, and technology. Enhancement of energy and resource development and transfer, and capacity building.

Adaptation goal: Adaptation Goal: Kenya aims to ensure a climate-resilient society. This is to be achieved through mainstreaming climate change adaptation into Medium-Term Plans (MTPs) and County Integrated Development Plans (CIDPs) and implementing adaptation actions. Subject to national circumstances, Kenya intends to mobilize domestic resources to cater for 10 per cent of the adaptation cost, while 90 per cent of the adaptation cost will require international support in the form of finance, technology development and transfer, and capacity building10. The implementation mechanism for the NDC in Kenya is the five-year National Climate Change Action Plan.

2.3.9 Kenya Climate Smart Agriculture Strategy (KCSAS) (2017-2026)

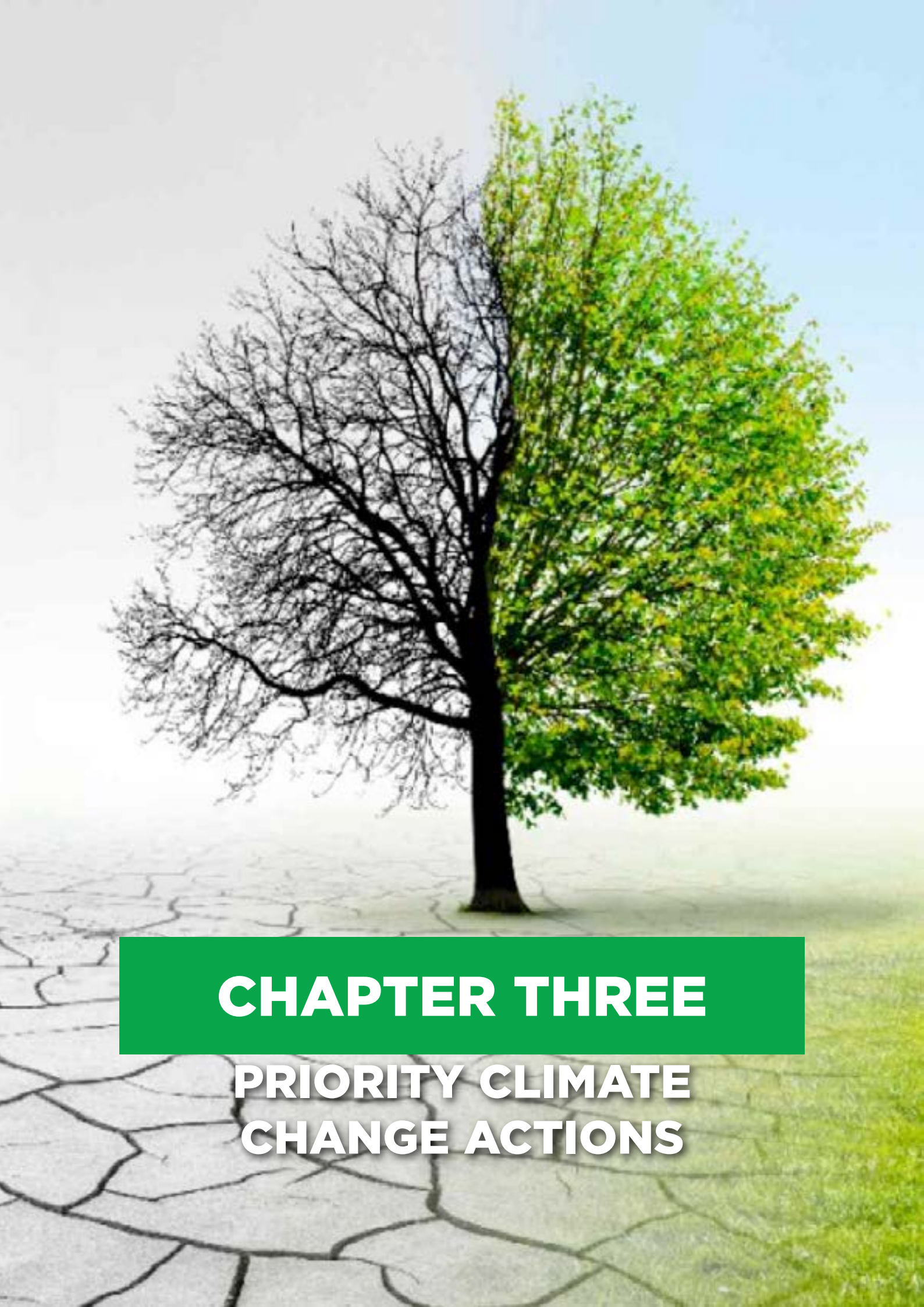
The objective of the Kenya Climate Smart Agriculture Strategy (KCSAS) is to adapt to climate change and build the resilience of agricultural systems while minimizing GHG emissions. Planned actions will lead to enhanced food and nutritional security, and improved livelihoods.

2.3.10 Climate Risk Management Framework (2017)

The Climate Risk Management Framework for Kenya integrates disaster risk reduction, climate change adaptation, and sustainable development so that they are pursued as mutually supportive rather than stand-alone goals. It promotes an integrated climate risk management approach as a central part of policy and planning at National and County levels.

2.3.11 National Climate Finance Policy (2018)

The National Climate Finance Policy promotes the establishment of legal, institutional, and reporting frameworks for access to, and management of climate finance. The goal of the policy is to further Kenya's national development goals through enhanced mobilization of climate finance that contributes to low carbon climate resilient development goals.



CHAPTER THREE

PRIORITY CLIMATE CHANGE ACTIONS

3.1 Identification of Strategic Priority Climate Change Action

This section focuses on investment priorities that strengthen the adaptive capacity and resilience of key livelihood, social and economic systems within the county. The priority actions reflect the inputs of the community, multi-sectoral stakeholders and vulnerable groups including; women, poor resource households, children, the elderly and PWDs that were captured through extensive community and multi-stakeholder engagement during the PCRA process.

The assessment process identified the climate change impacts on the Nyeri community's socioeconomic activities which include but are not limited to; crop failure, pests and Diseases, loss of livestock, increase of waterborne diseases, destruction of properties and loss of biodiversity. Strategic adaptation and resilience actions are prioritized due to the devastating impacts of risks and hazards including, Extreme temperatures, droughts, Floods, Mudslides/landslides and Frost. The hazards and the risks identified harm vulnerable groups including; women, poor resource households, children, elderly and Persons with Disability.

The priority actions are aligned with CIDP 2023-2027. The priority action will be key in addressing the negative impacts and will also benefit the community and vulnerable groups through; increased access to water, increase in agricultural productivity, food and nutrition security, clean and sustainable settlements, increased access to clean energy and low carbon technologies, reduced disaster risks among others.

The priority actions identified seek to address the stated objectives: As shown in table 3 - 1

Table 3.1: Priority Actions and objectives

Priorities	Objectives
Disaster Risk Management	Reduce risks that result from climate-related disasters, such as droughts, landslides and floods, to communities and infrastructure and enhance early
	warning systems to prevent, reduce and mitigate climatedisasters
Food and Nutrition	Increase food and nutrition security through enhanced agricultural productivity and resilience of theagricultural systems.
Water	Enhance climate change adaptation through enhancement of a resilient water sector.
Natural Resources andTourism	Promote sustainable management of natural resources and resilience in the tourism sector.
Health, Sanitation and Human Settlement	Climate Smart Healthcare system and resilient, healthy,clean and sustainable settlements.
Transport and Energy	Climate-proof energy and transport infrastructure whilepromoting renewable energy development.

3.2 Priority County Climate Change Actions

3.2.1 Food and Nutrition Security

Agriculture is the mainstay of the economy in Nyeri and has been negatively impacted by the climatic shocks. Agriculture is highly vulnerable to unpredictable weather patterns including extreme weather events. The changes in climate and weather patterns will expose the rain-fed farming systems, especially the arid and semi-arid lands, to more climate-related vulnerabilities. This will predispose farming communities to food insecurity and poverty through loss of the productive assets and the weakening of coping strategies and resilience. This can lead to a decline in overall food production and availability, affecting the nutrition of the local population.

Reduced food availability, particularly of nutrient-rich foods such as fruits, vegetables, and protein sources, can increase the risk of nutrient deficiencies and malnutrition, especially among vulnerable populations such as children, elderly and pregnant women.

Adaptive /Resilience Strategies.

Climate-smart agriculture (CSA) has been identified as a viable approach to provide solutions towards increased agriculture sector productivity while addressing the impacts of changing climate. Climate-smart agriculture (CSA) is an approach that helps to guide actions needed to transform and reorient agricultural systems to effectively support development and ensure food and nutrition security in a changing climate. The county is also committed to ensuring increased access to water for irrigation and drinking through; investing in water harvesting and storage technologies e.g. Water pans, Dams, roof water harvesting facilities, masonry Tanks, springs protection, water and irrigation projects and solar-powered boreholes.

The county also seeks to increase public awareness and knowledge about the importance of nutrition and its relationship to climate change. Conduct nutrition education programs that promote healthy eating habits, including the consumption of diverse and nutrient-rich foods. Target vulnerable populations such as pregnant women, infants, elderly and young children to ensure their specific nutritional needs are met. Overall implementation of County Nutrition Action Plan (CNAP) 2020/2021-2024/2025.

3.2.2 Water Sector and blue economy

The Nyeri County Climate Action Plan 2023-2027 addresses one of the county's greatest challenges, which is water scarcity. The decline in access to enough water as a climate change resilience strategy in the county has been exacerbated by the effects of climate change, thus making water a key action priority. The water scarcity in the county of Nyeri has been worsened by human activities e.g., Deforestation, lack of strategic water harvesting infrastructure and increase in population that have led to over-dependence on this finite water resource. The main sub-counties hit by water scarcity/ drought climatic hazards are Kieni East and West and Mukurweini sub-counties with the following wards being most affected: Naromoru/ Kiamathaga, Gakawa ward, Thegu River ward, Kabaru ward, Gatarakwa ward, Mweiga ward, Endarasha Mwiyogo, Mugunda ward, Gikondi ward & Rugi ward. Another major climatic hazard affecting the residents of this county is intense flooding, especially during the long rains.

As a result of deforestation and high population growth, most of these wards have turned to be residential and focus areas for infrastructural development. This unpredictable flooding characterized by intense rainfall and high temperatures has led to not only the destruction of crops, animal feeds and social amenities but also a lot of run-off water that goes without being harvested and recharged into the underground water aquifers. Most of the traditional water-re-

lated adaptation strategies have been deemed ineffective e.g., Shallow wells have been depleted due to the fall of the water table.

Adaptive /Resilience Strategies

The Nyeri County Climate Action Plan 2023-2027 seeks to enhance climate change adaptation through the establishment of a resilient water sector to ensure easy water access, and efficient water use for Agriculture, manufacturing, domestic, wildlife and other uses. This action will be achieved through the extension of water pipelines, construction and rehabilitation of Dams and water pans, exploitation of groundwater through drilling of boreholes equipped with solar-powered pumps and spring protection, rehabilitation of existing boreholes, and promotion of water harvesting technologies among others. This will be achieved through partnership with other key stakeholders including GOK, WSPs, Upper Tana Natural Resources development Projects, Tana Water Works Development Agencies, and Kenya Climate Smart Agriculture among others.

3.2.3 Natural Resources (Forestry & Wildlife) and Tourism

Nyeri county is focused on the sustainable utilization of natural resources including; wetlands and forests. These resources are faced with a myriad of challenges which render them unsustainable.

Nyeri county has parks which serve as private wildlife sanctuaries, that host local and foreign tourists which contribute to the County's economy. The nearby Mount Kenya and Aberdares National Park attract a good number of tourists while facilities and hotels such as Fairmont Mt Kenya Safari Club, Green Hills, The White Rhino, Outspan and Aberdares Country Club serve this market. Inadequate rainfall, floods in the lower regions, pollution and wildfires have a tremendous impact on these sanctuaries.
The county is rich in physical features with the main features being Mount Kenya, the Aberdare ranges and hills like Tumutumu, Nyeri, Karima, Gachirichiri, Gatumbiro and Ngamwa. They offer water catchments, biodiversity and conservation functions, and provide a variety of goods.

Deforestation and forest degradation are major problems in the county driven mainly by clearance due to rapid population growth; unsustainable utilization of forest products, including timber harvesting, charcoal production, and grazing in forests; and past governance and institutional failures in the forest sector. The negative impacts of deforestation, such as soil erosion and increased flooding, are exacerbated by climate change. Climate change is likely to affect the growth and development of tree species and extend the range of forest pests and pathogens resulting in reduced biodiversity and capacity to deliver important forest goods and services.

The wetlands are distributed in the county which includes dams, swamps and springs. The challenges facing the wetlands include; climate change, invasive species, conversion of wetlands to agricultural lands and community encroachment.

Adaptive strategies/Resilience

County Climate Action Plan 2023-2027 will focus on Building the climate resilience of the forests, wetlands and tourism sector.
The priority action focuses on investing in climate-resilient tourism facilities and programs, through the construction of modern drainage systems, capacity building for tourism porters and guides, Developing and supporting County game reserves community ranches and conservancies, and supporting conferences, information tourism and cultural centres.

To ensure sustainable utilization of wetlands the county seeks to ensure the creation of awareness to the community on the importance of wetlands, mapping and demarcation of all wetlands in the county, growing of bamboo and other water-friendly species and continuous monitoring and evaluation of wetlands,

The CCCAP priorities in forestry have the potential to address; drivers of deforestation and degradation; poverty and youth unemployment, diversification of forest value chains and increased opportunities for forest sector development. This will also be critical in mitigating the harmful effects of GHG emissions by acting as "sinks" through carbon sequestration. The priority action aims to promote the sustainable use and management of forest resources through; the establishment of green urban parks, afforestation and reafforestation programs, training and capacity building of key responsible personnel and commercial plantations.

Nyeri County seeks to sustain and restore the resilience of forests in the county by ensuring that forests can withstand and recover from climate-related stresses and disturbances such as droughts, wildfires, and epidemics of insects and diseases while adhering to the principles of sustainable forest management. Sustainable forest management will ensure that benefits derived
from forests meet current needs and still contribute to the requirements for long-term development.

3.2.4 Health, Sanitation and Human Settlement

The risk of malaria and other vector-borne diseases is projected to increase due to changing climate conditions. Rising temperatures would likely lead to greater incidences of malaria at higher altitudes of the County highlands and potentially increase in areas where malaria already occurs. Transmission intensity is projected to increase along with the length of the transmission season. Communities living at altitudes above 1,100 meters are more vulnerable to malaria due to lack of immunity, lack of preparedness, climate variability, and other factors (Kenya Malaria Strategy 2019–2023) Children under five years, pregnant women and immunosuppressed people are likely to be most affected. Additionally, the mental health impacts of climate change, such as stress and anxiety, were also cited during community engagements. Nyeri is one of the counties with the highest burden of Non-Communicable Diseases (NCDs). Close to half of reported mortality is due to NCDs, and about 700 new cancer cases are registered annually (MoH, 2020).

Climate-driven changes can upset agricultural systems, leading to diminished crop yields, reduced food availability, and altered nutritional content of food. This has led to changes in feeding habits, contributing to malnutrition and diet-related NCDs such as obesity, diabetes, and cardiovascular diseases. Climate change can also disrupt food systems, leading to malnutrition and food insecurity. Additionally, the mental health impacts of climate change, such as stress and anxiety, were also cited during community engagement.

The inception of human settlements requires the clearing of vegetation and forests thereby reducing vegetation cover thus catalyzing soil erosion, with the destabilizing of the soil during construction activities further exacerbating this situation. Deforestation and an increase in human settlements have a correlation effect of reducing the agriculturally productive land thus affecting the citizens of Nyeri who rely heavily on agriculture.

As rural-urban migration increases, the urban population increases pushing the urban poor to slums and environmentally fragile areas e.g. Steep slopes and low-lying areas further predisposing them to climate hazards such as landslides and flooding. Also, the increased population has led to increased land subdivision in the rural parts of Mathira, Tetu, Mukurweini, Othaya & Nyeri Central leading to increased settlements in environmentally fragile areas. Encroachment to water catchment areas further leads to depletion and increased pollution. Poor urban planning, poor solid waste disposal and inadequate drainage systems have led to increased urban flooding.

Nyeri County has three dumpsites i.e. Karindundu, Gikeu and Mweiga. In the recent past, there have been increased conflicts when it comes to waste dumping by the neighbouring communities of the

three dumpsites due to increased waste dumping from the other sub-counties. Further open solid waste dumping sites such as Karindundu & Gikeu are exposed to run-off leading to contamination of the surrounding water resources and negative health impacts.

Adaptive /Resilience Strategies

To reduce the impacts of climate change on human health, the CCAP has prioritized strategies that are geared towards enhancing food and nutrition in the county through CSA. Additionally, community sensitization on nutrition information has also been factored in. To reduce the cases of tropical and water borne diseases prevalence, the county has heavily invested in the health sector by enhancing efficient and equitable access to health services for Nyeri residents.

To climate-proof the county from the above hazards calls for innovative green building technologies, urban greening, integrated solid waste management, efficient land use management & development control systems such as LIMS, GIS labs & e-DAMS coupled with related policies and regulations and increased tenure security through planning, survey and issuances of ownership documents. The county has also developed spatial plans for proper decision-making and sustainable development. The county is committed to employing the above intervention of urban greening and rehabilitation of open spaces to act as carbon sinks, provide ground cover, improve infiltration, and aesthetics to minimize the heat island effects in urban areas within the county. This will be undertaken by greening the municipality through street trees/flower planting, increasing ground cover through planting of grass and rehabilitation of the existing parks. The CCCAP also provides for the development of a sustainable drainage system which will help in the reduction of urban flooding in major towns within the county.
Tenure security is central in the fight against climate change. The Intergovernmental Panel on Climate Change (IPCC) as per the report; Climate Change and Land stated that "land tenure is a key dimension in any discussion of land-climate interactions" (IPCC, 2020). Land tenure security enables the dweller to invest in the land including measures such as tree planting for aesthetic value and to demarcate the boundaries consequently aiding in mitigation of climate change. Conferment of tenure security to the squatters and dwellers of colonial villages within the county will play a critical role in combating climate hazards. This will be achieved by enhancing tenure

security of colonial villages and market centres through planning and survey and issuance of ownership documents.

The county's intent to mitigate GHG emissions from waste will be addressed in the context of integrated waste management; this will be achieved by acquiring 10 acres for the establishment of an Integrated Solid Waste Management within the county. Also, investments in waste handling machinery, plant and equipment will be enhanced through this CCCAP.

3.2.5 Manufacturing

The trade sector depends on products and services developed by other sectors of the economy, and therefore, any adverse climate change impacts of such sectors will likely impact trade. The agriculture and manufacturing sectors, which are key cogs for internal and international trade, are highly vulnerable to climate variability and extreme weather events. A successful trade sector will therefore require building resilience across the entire economy of Nyeri county. Climate change also impacts biodiversity and wildlife, with subsequent impacts on tourism. Of concern to Nyeri county tourism, climate change is projected to shift the distribution of wildlife species, reduce the population sizes of species, and in certain circumstances lead to extinction. The Cooperative unit has stabilized the management of cooperative societies as well as reduced the management wrangles within the coffee societies by enforcing the cooperative Act, hence improving governance. However, coffee and milk production has tremen-

dously decreased due to the increased frequency and intensity of droughts and flooding, which have decreased people's ability to cope with farming activities.

Adaptive /Resilience Strategies

Nyeri County seeks to work with relevant stakeholders to improve manufacturing and market access by constructing modern climate smart markets and green manufacturing. Further, it also aims to ensure a robust, diversified and climate-resilient trade sector that leads to attaining low-carbon development pathways. It further seeks to support cooperatives with climate-resilient investments which will enhance productivity and capacity building of the business community on mainstreaming of climate-resilient interventions in production and manufacturing.

3.2.6 Transport and Energy

Climate change events including extreme temperatures, heavy rains, and floods lead to damage to energy and transport infrastructure. These impacts increase incidences of delays, disruptions, damages, and failures across land-based, air transportation systems. These, and other climate change impacts have consequences for the design, construction, location, and operations of energy and transport infrastructure. Climate-proofing or proactive adaptation could be cost-effective for energy and transport infrastructure with a long lifespan. Climate-proofing as a means of addressing infrastructure-related climate change impacts is a key recommendation of Kenya's NAP, and is necessary to maximize potential development benefits. Climate proofing of infrastructure requires the factoring in of additional costs associated with the burden of climate change in the design, implementation, and maintenance of infrastructure. Reducing GHG emissions in the energy and transport sectors is required to achieve Kenya's mitigation NDC. The contribution of the country's energy sector to GHG emissions was expected to increase sharply between 2015 and 2030.

Adaptive /Resilience Strategies

For the successful implementation of the Nyeri Climate Change Action Plan 2023-2027, the transition to clean cooking is a priority action. It presents an opportunity for technological leap frogging on savings in energy, reducing GHG emissions, delivery of health and cost-saving benefits. Clean cooking is an opportunity for investment in innovation and technology development in the biomass energy sub-sector. The County will invest in renewable energy including solar, and wind energy among others.

3.2.7 Disaster Risk Management

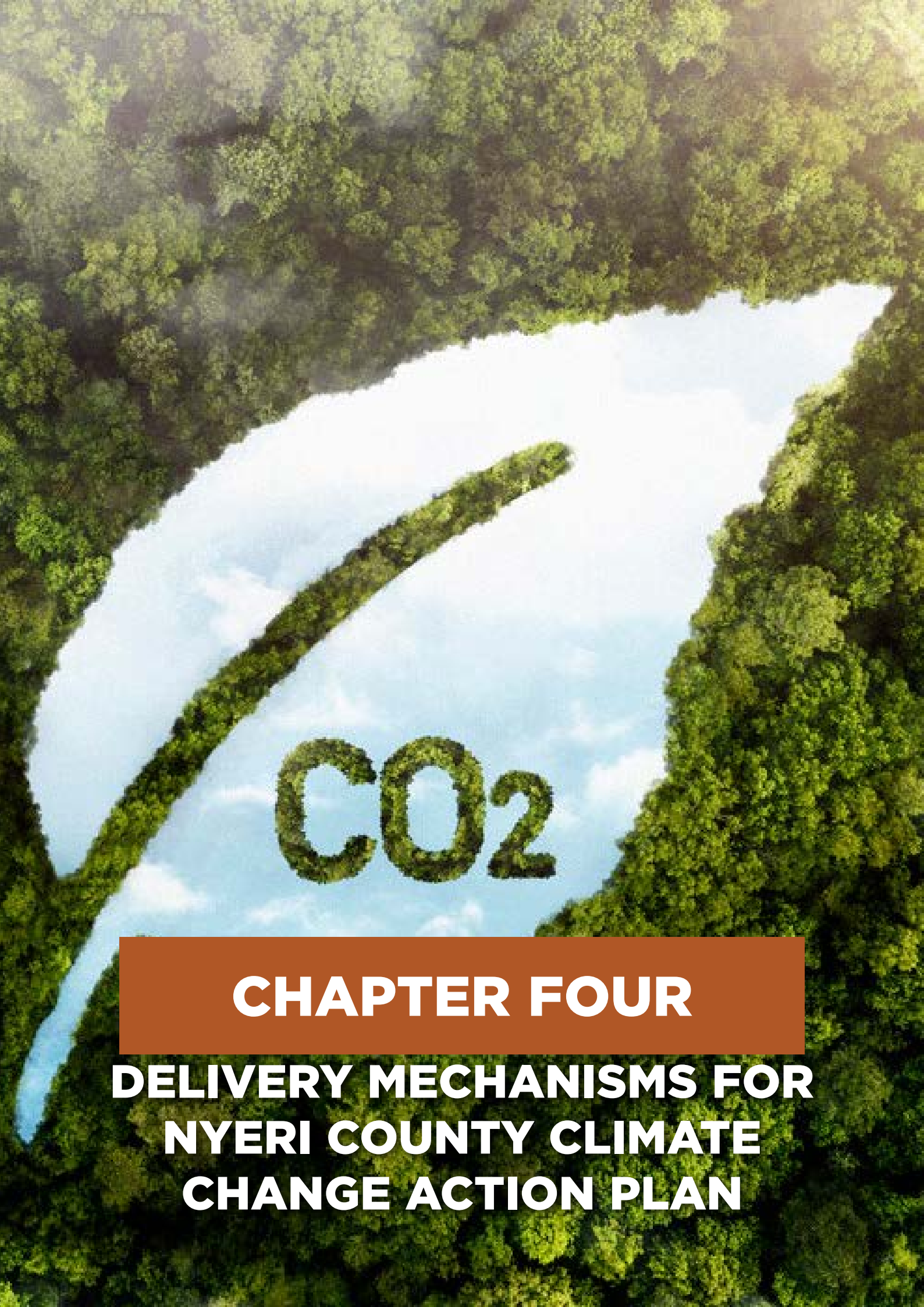
The main climate disasters experienced in Nyeri include; drought, flood and landslide/ mudslide as reported by communities. This has socioeconomic challenges at the community and household level and particularly to vulnerable groups such as women, the elderly, youth, children and persons with disability.

The drought has been a result of poor rain or failed rain season. In addition, the drought has negatively impacted the quantity and quality of production in agriculture resulting in food insecurity and reduced income generation. It has also led to an increase in the number of people with no access to water, loss of jobs and an increase in malnutrition cases.
In Nyeri, Kieni East, Kieni West, Mukurweini and some parts of Mathira and Tetu are prone to drought. Drought incidences are foreseen to increase due to the decrease in rainfall amount.
In Nyeri County, Kieni East and Kieni West are prone to floods. The negative impacts of floods include; crop failure and water borne diseases. The extended rainy season in the county has resulted in mudslides/ landslides, particularly in some parts of Mukurweini, Othaya and Tetu leading to crop loss, livestock loss, loss of biodiversity, loss of lives and destruction of property.

Adaptive /Resilience Strategies

The action aims to ensure that the disaster impacts are minimized and the capacity of

the community to cope with the disasters is enhanced. The actions include; Flood management plans, Drought and landslide management which includes, Early warning systems, Sensitization of farmers on flood proofing methods, Flood water harvesting technologies, construction of dams, digging of water pans, Construction and maintenance of infrastructure (Bridges, Culverts and drainages), Capacity building to the community to improve the ability of people to cope with disasters, rehabilitation of affected areas, construction and improvement of water cut off drains and drainage systems-hazard mapping, compensation of the victims as a result of properties destruction, rehabilitation of riparian areas, wetland protection and construction of artificial waterways. The established County Climate Change Fund will be key in implementing the identified strategic/ resilience actions on disaster management. In this line, it will reduce the exposure of the poor and vulnerable groups in the county.



CHAPTER FOUR

DELIVERY MECHANISMS FOR NYERI COUNTY CLIMATE CHANGE ACTION PLAN

4.1 Enablers

The successful implementation of the adaptation and mitigation measures highlighted in previous chapters in priority climate change areas necessitates a range of enabling actions. These enabling actions serve as the backbone for providing the necessary resources, information, expertise, and processes to facilitate the delivery and reporting of both adaptation and mitigation actions to the stakeholders and the government. The enabling actions described in this section include:

- Enabling policy and regulation
- Mainstreaming of CCCAP to CIDP
- Multi-stakeholder participation process
- Finance – County Climate Change Fund
- County Government structures

4.1.1 Enabling policy and regulation

Effective policy and regulation are essential for the successful implementation of CCAP. Kenya has developed a comprehensive policy and regulatory framework for climate change through the Climate Change Act of 2016, and the National Climate Change Policy of 2018. The Climate Change Act requires counties to develop binding laws and regulations to provide further interpretation of certain provisions and to support operationalization of the administrative aspects of the Act such as reporting requirements.

As such, Nyeri County developed the Nyeri County Climate Change Act, 2021. The Act sets out key provisions that support various players in climate action in the county. The Act establishes the County Climate Change Fund which is managed through county climate change climate fund regulations, 2021. The regulations were designed to inform local needs and conform to the Public Finance Management Act and other frameworks. The two legal and policy frameworks guide the establishment and utilization of County Climate Change Funds and enable climate finance to address County-specific local issues, through implementation of climate change resilient projects.

Both the County Climate Change Policy and County Climate Change Act play a key role in bringing on board all key stakeholders including the Private Sector as key players in climate action. The County Climate Act in particular provides for:

i. Representation of the private sector in the County Steering and Planning committees.
ii. Stakeholder engagement/consultation of all key players in Climate Change response.

4.1.2 Mainstreaming climate change in the CIDP

The County Integrated Development Plan (CIDP) is a blueprint for the counties that gives an overall framework for development. The integration of climate change into CIDP involves identifying and assessing climate change risks. and opportunities, setting climate change goals, and developing strategies for climate change mitigation and adaptation. Nyeri County faces a plethora of climate risks and hazards. There is a need to build resilience through strategic adaptation strategies. These strategies should be included in the CIDP and other county planning documents.

In this regard, the Nyeri County Integrated Development Plan 2023-2027 acknowledges climate change as a major emerging issue that needs to be addressed and integrated into the planning framework through cross-sectoral collaboration. To this end, the climate change unit has been included as a key player in the different sectors that form the implementation framework of the Nyeri County Integrated Development Plan 2023-2027. This inclusion ensured that climate change-related matters were not left out in the planning phase of the plan across the sectors, and it will also play a crucial role in guaranteeing that the sector-specific climate change actions have been implemented and the various climate change-related indicators monitored and evaluated. More specifically, the Nyeri County Integrated Development Plan 2023-2027, which is largely program-based has a Climate Change Specific Program whose objective is to enhance climate change mitigation and adaptation measures. Additionally, and as a result

of the integration of climate change across the sectors, the CIDP 2023-2027 has various climate change-related actions spread across the various programs in the five different sectors.

Furthermore, the Nyeri County Integrated Development Plan 2023-2027 aligns with local laws and regulations as well as international agreements on climate change such as the Paris Agreement, of 2015

.

4.1.3 Multistakeholder participation process

The multistakeholder approach is a collaborative approach to decision-making and problem-solving that involves engaging multiple stakeholders with different interests and perspectives in a process of dialogue and consensus-building. This approach will be adopted in the development and implementation of the county climate change action plan.

In Nyeri County, climate change poses a significant threat to the livelihoods of local communities, particularly those that rely on agriculture and natural resources. To address this challenge, the county government adopted a multistakeholder approach to developing and implementing a climate change action plan.

Public-private partnerships (PPPs) play a pivotal role in the successful execution of the CCAP (County Climate Change Action Plan). Throughout the county planning and budgeting processes, a wide array of stakeholders from both the public and private sectors have been extensively engaged, mirroring the collaborative spirit witnessed during the development of the CCAP. Furthermore, as the county endeavours to implement this CCAP, we will capitalize on the existing public-private partnerships, while also striving to establish new ones.

Resource mobilization stands as a critical component in facilitating the realization of the climate actions outlined in the Climate Change Action Plan. Public-private partnerships are instrumental in expanding the resource pool available for mobilization.

Public-private partnerships represent a potent tool for the effective implementation of the County Climate Change Action Plan. By harnessing the strengths of both sectors, the county is poised to make substantial strides in climate change mitigation and bolstering the climate resilience of our communities.

The first step in this process was to identify the key stakeholders who would be involved in the development and implementation of the action plan. These stakeholders included representatives from government agencies, civil society organizations, community groups, academic institutions, and the private sector. Each stakeholder group brought a unique perspective and set of skills to the process, and their involvement was critical to ensuring that the action plan was comprehensive, effective, and responsive to the needs of all stakeholders.

The next step was to establish a technical working group to oversee the development of the action plan. This group was composed of representatives from key departments including water, agriculture, environment, health, education, lands, meteorology, and Geographical information systems. This group was responsible for coordinating the process, conducting research, gathering data, and drafting the action plan. The working group used a participatory approach to engage stakeholders in the process. This involved a series of workshops, meetings, and consultations where stakeholders were given the opportunity to share their ideas, concerns, and recommendations. The working group also used a variety of tools and techniques to facilitate dialogue and consensus-building, including group discussions, brainstorming sessions, and consensus voting. The participatory tools utilized in stakeholders' engagements included resource maps, hazard maps, historical timelines and seasonal calendars.

Through this process, the TWG developed an action plan that identified key priorities and strategies for addressing climate change in Nyeri County. The plan included a range of interventions, including the promotion of sustainable agriculture, the restoration of degraded ecosystems, the development of renewable energy, and the promotion of climate-smart technologies and practices.

The final step in the process is to implement the action plan. This involves mobilizing resources, building partnerships, and establishing monitoring and evaluation mechanisms to track

progress and ensure accountability. The multis-takeholder approach is critical to the success of the implementation phase, as it shall ensure that all stakeholders remain engaged and committed to the process.

4.1.4 Finance – County Climate Change Fund

The establishment of a dedicated County Climate Change Fund is critical for financing CCAP initiatives. The fund can be used to finance CCAP activities such as research and development, public awareness campaigns, and infrastructure upgrades. The County government of Nyeri has enacted the County Climate Change regulations, 2021 in response to the urgent need to address the impacts of climate change. The act establishes a dedicated fund to finance activities and projects aimed at mitigating and adapting to climate change in the county.

The main objective of the Nyeri County Climate Change fund regulations 2021 is to mobilize financial resources to support climate change interventions in the county. The fund is intended to provide a reliable and sustainable source of financing for activities that contribute to reducing greenhouse gas emissions, promoting climate resilience, and improving the livelihoods of vulnerable communities.

The Nyeri County Climate Change Fund regulations ringfence at least one per cent of the County audited revenue account as initial capital for the fund. Other sources of financing for the fund as identified in the regulations include monies appropriated by the Nyeri County Assembly; Grants and loans from the National Climate Fund; Climate finance from National and International entities; Monies received from Public Benefit Organizations; Charges from climate change activities; Grants and donations from donors; any monies that accrue to the fund in any form, such as in the form of interest or any other form; and any other donations from a lawful sources.

The fund is managed by a county fund management committee, which is responsible for the overall governance and management of the fund. The committee is composed of chief officers, a fund administrator, director of climate change and other stakeholders. This ensures that the fund is managed in a transparent, accountable, and participatory manner. The Nyeri County Climate Change regulations 2021 also establishes clear guidelines and procedures for accessing the fund. To access the fund, individuals, groups, or organizations must submit proposals that are aligned with the objectives and priorities of the fund. Proposals are evaluated based on their relevance, feasibility, and potential impact on climate change mitigation and adaptation. The act also provides for the establishment of a monitoring and evaluation framework to track the performance and impact of the fund. This includes regular reporting on the fund's financial performance, as well as

Figure 4.1: The CCU organizational structure.

monitoring of the activities and projects that are supported by the fund.

4.1.5 County Government Structures

The county government structure for the Climate Change Unit is presented in the figure below. The unit will be responsible for implementing county climate change priority actions. The Governor is the appointing authority for the CECM. The Director and other technical officers reporting to this position are hired through the County Public Service Board.

4.1.6 Governance - Climate Change Planning Committees

The Nyeri County Climate Change Act,2020 established three Committees that are key enablers of the CCCAP. These include; the Nyeri County Climate Change Steering Committee, Nyeri County Climate Change Planning Committee and Nyeri County Climate Change Ward Planning Committees. Another key enabler of this Plan is the Nyeri Climate Change Unit. While the steering committee will major on the coordination/ formulation and overseeing climate change response, CCCAP, Climate Change Fund and monitoring the regulations governing this fund among others, the County Climate Change planning committee is tasked to oversee the implementation of response activities and projects under the Ward Climate Change Committee and carrying out monitoring and evaluation of the Climate Change response activities. The Climate Change Unit, headed by the director, will be offering analytical support, registry management matters, addressing of knowledge gaps, knowledge management, records keeping among others and as conferred through the act. The ward planning committee is tasked to carry out community climate change mobilizations, knowledge management at the ward level, technical support to communities at the ward level as well as participation in the budgetary Climate Change processes.

4.1.7 Climate Information Services (CIS) & Climate Data Access (CDA)

Under the CCCAP, CCU has established a knowledge management (KM) system to store and retrieve knowledge on climate change and related interventions. In this regard, this unit will ensure timely and accurate Climate data access and information services. Accurate climate data will bridge climate knowledge gaps and mine repositories for advanced climate-related adaptation interventions. The CCU officer responsible for KM will regularly audit the life cycle of knowledge management (identification, capture, development, sharing, and effective use) to identify gaps for continuous improvement.

The CCU will ensure the establishment of institutional partnerships with strategic and diverse partners representing research and development, academia, and private and public sectors in the county to enhance CIS & CDA development.

The county will prioritize a strategic partnership with KMD (Nyeri Office) to improve the provision of Climate Information Services (CIS), which includes immediate and short-term weather forecasts and advisories. Climate information will be important for farmers to manage risk, for planning standards and regulations, and for assessing climate change risks in environmental assessments. Climate information will be a critical element of early warning systems that help communities, especially vulnerable groups, cope with extreme weather events like droughts and floods. The climate information will be disseminated on various county platforms and local radio & TV stations to ensure the information reaches the target groups. The climate information will also be crucial to the Department of Agriculture as it will inform farmers on the best climate change adaptation and mitigation practices to be adopted.

4.1.8 Resilience Planning Tools

As a key enabler, Resilience planning tools will help identify potential hazards and threats, and then establish adaptation, mitigation, and recovery plans. Resilience planning will be guided by; mitigation and adaptation actions. Resilience planning will ensure;

- Communities have access to critical lifeline needs, services, and capital in the period following a disaster.
- Actions that reduce risk from natural and human-driven hazards over the long term,

reducing the likelihood that communities suffer from multiple disasters over time.

In the case of Nyeri County, there will be several climate change action resilience planning tools that will be used to help mitigate and adapt to the impacts of climate change. Some of these tools include:

i. **Climate Vulnerability and Risk Assessments:** The county through the Climate Change Unit will continuously conduct and coordinate climate risk vulnerability and risk assessment. This will help to identify the climate-related risks and vulnerabilities facing Nyeri County, including impacts on agriculture, water resources, and infrastructure. The assessment will be used to guide the development, implementation and review of climate change adaptation strategies and policies.

ii. **Greenhouse Gas Inventory:** The county will continuously monitor its greenhouse gas inventory through collaboration with relevant stakeholders. This will make it possible to estimate the county's greenhouse gas emissions and identify sectors that are contributing the most to climate change. The information gathered will be used to develop mitigation strategies and policies to reduce emissions.

iii. Climate Change Adaptation Plan: The plan will be instrumental in identifying strategies to reduce the vulnerability of key sectors to climate change impacts, such as agriculture, water resources, and infrastructure. The plan will also design measures to enhance resilience and reduce the negative impacts of extreme weather events.

iv. Early Warning Systems: Early warning systems will be developed and set up to provide alerts for extreme weather events, such as floods and droughts, and help to minimize the impacts on communities and infrastructure.

v. Public Awareness and Education: The county will leverage public awareness campaigns to increase understanding of the impacts of climate change and the actions that individuals and communities can take to reduce their vulnerability and increase resilience.

vi. Green Infrastructure: Green infrastructure, such as urban parks, green roofs, and wetlands, will be developed to provide multiple benefits, including carbon sequestration, water management, and biodiversity conservation.

vii. Natural Resource Management: Natural resource management is crucial for climate resilience. Nyeri County will adopt strategies to conserve and manage natural resources such as forests, water sources, and soil.

viii. Community-Based Adaptation: Community-based adaptation will involve working with local communities to identify their climate risks and develop solutions that are tailored to their needs. This approach recognizes the local knowledge and expertise of communities and promotes their participation in decision-making processes.

ix. Climate Finance: The county will continue making deliberate actions towards mobilizing funds and making investments in climate resilience projects. The county will explore different financing mechanisms such as grants, and public-private partnerships to fund climate resilience projects.

These tools will enable Nyeri County to take concrete steps towards addressing the impacts of climate change and enhance resilience to future climate-related challenges.

4.1.9 Monitoring and Evaluation(M&E)

Monitoring and Evaluation form part of the performance for results culture in the public service that ensures intended targets are achieved, remedies are taken when projects are off-track, and lessons learnt assist in future planning. Monitoring and Evaluation of the County Climate Change Action Plan will therefore form an important aspect of achieving its overall objectives.

Monitoring and Evaluation of the County Climate Change Action Plan will be conducted in line with the County Integrated Monitoring and Evaluation System (CIMES), whose main aim is to improve the effectiveness and quality of tracking the implementation of various development policies, strategies and programmes outlined in the action plan.

The Climate Change Directorate shall be responsible for M&E of this County Climate Change Action Plan (CCCAP) whose implementation will be reviewed regularly. The review will utilize reports from county departments, as well as inputs from relevant stakeholders.

Monitoring and Evaluation of the CCCAP will focus on demonstrating that investment in adaptation and mitigation actions leads to real climate results and development benefits that are linked to the Bottom-Up Economic Transformation Agenda, County Integrated Development Plan 2023-2027 and other relevant policy documents that guide the county development agenda. The monitoring and evaluation system will track the implementation and results of CCCAP, and climate finance raised to deliver on the action plan. This will provide the evidence base for planning, budgeting, and implementing future actions, seeking more support and informed reporting.

The monitoring and evaluation system to report on the implementation of CCCAP will include the development of reporting frameworks for the county departments and spending units and processes to compile, analyze and report on actions and results. The key to success is a workable monitoring and evaluation structure that is appropriate for a devolved governance system and for the available resources. The monitoring and evaluation system will:

- Ensure that all departments report on their progress and achievement of CCCAP actions.
- Ensure efficient reporting processes for the County Governments, and draw on established reporting procedures where possible, such as the county-integrated Monitoring and Evaluation system.
- Report on climate finance that supports the delivery of this CCCAP.
- dentify county-specific indicators that have baseline data and are tracked to measure climate-related impacts at the County level. This will help to align the tracking and measurement of climate change co-benefits with the National Government's Bottom-Up Economic Transformation Agenda, SDGs, and the County Government's development agenda.
- Use gender-aggregated data where possible and prioritize the collection of this data if it is not available.
- Track and measure GHG emissions on a sector basis at the county. However, it is important to note that measuring GHG emissions on an action or County basis might be costly and resource-intensive, and unlikely to generate robust information that is aligned with the national GHG inventory approach.
- It is therefore envisaged that the monitoring and evaluation process will be guided by the principles of systematic inquiry, integrity, and honesty, ensuring accurate, timely and reliable reporting of findings.

The implementation and coordination of climate change actions in Nyeri County will be guided

Table 4.1: Monitoring and Evaluation Reporting Template

No	Name of the Project	Location of the Project/ Name of Ward	Project Implementation Period	Source of Funds (County or donorfunds)	Budget Amount	Performance indicators	Target	Achievements	Challenges /Remarks	Recommendations

4.2 Implementation and Coordination Mechanisms

by; Institutions, legal frameworks and strategies. The Nyeri County Climate Change Act, 2021 and the Nyeri Climate Change Fund Regulations provide for the establishment of key institutions and committees. These will help in the efficient coordination and implementation of climate actions in the county.

Table 4.2: Roles of various institutions in CCCAP Implementation

No	Institution	Roles and Responsibilities
	Nyeri County Climat eSteeri Change ng Committee	➢ Coordination and overseeing climate change responses ➢ Ensuring the mainstreaming of climate change into county planning and development processes
		➢ Formulation and monitoring implementation of the CCCAP, county climate change policies, plans and strategies ➢ Mobilizing and administering the County Climate Change Fund ➢ Review, approve and monitor the implementation of Regulations for the administration and management of the fund Provide policy direction on research, training and dissemination of information relating to climate change to the public and among the different stakeholders in the county
		➢ Ensuring positive linkages, interactions and synergy between the county, neighbouring counties and national government in climate change response programming and action ➢ Ensure a coordinated approach to climate change response programs and action within the county government

	Climate Change Planning Committee	➢ coordinating, planning and implementation of projects and activities for climate change response in the county; ➢ coordinating the implementation of the CCCAP ➢ Establishing guidelines to be used by the Ward Planning Committee in formulating climate response activities for funding by the County Climate Change Fund; ➢ Supporting Ward Planning Committee in the development and implementation of climate change response activities; ➢ Providing oversight to the project evaluation process by the Ward Planning Committee and preparing appropriate reports to the Climate Change Unit ➢ Formulating and implementing a county monitoring, evaluation and reporting framework for climate change response

	Ward Climate Change Planning Committees	The functions of the Ward Climate Change Planning Committee shall be to ➢ Coordinating and mobilizing communities and other stakeholders in the ward to design and implement climate change response activities ➢ Facilitating public education, awareness creation, and capacity building at the Ward level on climate change, its impacts and strategies for respondingthereto ➢ coordinating, facilitating and managing community consultations on priority climate change response activities ➢ Participating in county planning and budgeting processes to ensure the mainstreaming of climate change and prioritization of climate change response in county developmentplans ➢ Facilitating public participation in climate change governance, implementation of agreed climate change response activities, and monitoring of those activities ➢ Coordinating and facilitating the provision of technical support to communities in the Ward in developing proposals on climate change response projects for funding by the County Climate Change Fund ➢ Overseeing implementation of climate change response projects funded by the County Climate Change Fund and reporting thereon to the Planning Committee ➢ Performing any other functions that may be assigned to it by the Planning Committee

	Climate Change Unit	➢ Providing analytical support on climate change to the various agencies and county government. ➢ Establishing and managing a county registry for appropriate mitigation actions by the public and private sectors. ➢ Serve as the county knowledge and information management centre for collating, verifying, refining and disseminating knowledge ➢ Optimizing the county's opportunities to mobilize climate financing ➢ Conducting civic education to promote awareness and understanding of climate change activities among stakeholders ➢ Conducting research and gap analysis to ensure continuous performance and improvement of the Unit;

	Fund Management Committee	➢ Providing oversight of the administration of theamounts of money drawn from the Fund. ➢ Mobilizing resources for the Fund ➢ Guiding the committees on the approval of expenditure plans ➢ Receiving reports from the Steering Committeefor its consideration and adoption. ➢ Approving all payments of climate change-funded projects and programs ➢ Analyzing the progress report from the SteeringCommittee

4.2.1 Directorate of Climate Change

The County Climate Change Unit is a secretariat for coordinating climate action across all departments of the County. The unit is headed by the Director in charge of Climate Change and is comprised of seconded staff from all key relevant departments. The CCU is mainly driven by the need to ensure a focal point for coordinated service delivery to low-carbon climate-resilient development initiatives. All county departments are covered by the CCU. It is also through this unit that priorities on the ground get identified and communicated to both the county and national governments for budgeting. Similarly, it is mandated under the PFMA to report on climate action as well as mobilize resources for the action from other sources—hence a key force in streamlining donor actions on the ground.

4.2.2 County Climate Change Committees

4.2.2.1 Nyeri County Steering Committee

The overall responsibility of the committee is to coordinate and oversee climate change response in the county. The committee is comprised of County Executive members from all the relevant key departments; Treasury, Agriculture, Water, Environment and Climate Change, Health, County Director of National Environment Management Authority, County Director National Environment Management Authority, Representatives of (Youth, Women and Persons Living with Disability), representative of Private Sector, Representative of Private Organizations and Fund administrator.
The County Executive Committee Member in charge of Climate Change is the Chairperson.

4.2.2.2 Nyeri County Climate Change Planning Committee

The overall function of the committee is to coordinate planning, and implementation of projects and activities for climate change response in the county. The committee comprises of; Chief Officer in charge of Climate Change who is the Chairperson, County Directors in charge of Climate Change, Environment, Natural Resources and Sanitation, Finance and Economic Planning, Agriculture, Water and Irrigation, Health, Meteorology, County representative, National Environment Management Authority, County drought coordinator, Administrator of the Fund, representative from duly registered public benefiting body, One representative from the private sector, one women representative.

4.2.2.3 Nyeri County Ward Climate Change Planning Committee

The Ward Climate Change Change Planning Committee is mandated to spearhead climate action in the grassroots. It comprises of the Ward administers, secretary from technical departments, an elder, woman representative, Community Based Organizations representatives, youth representative, and persons living with disability representatives. It's mandated co-ordinate and mobilize communities and other stakeholders in the ward to design and implement climate change response activities, facilitate public education, awareness creation, and capacity building at the ward level on climate change, its impacts and strategies for responding thereto and participate in county planning and budgeting processes with a view to ensuring the mainstreaming of climate change and prioritization of climate change response in county development plans.

Priority Areas & Strategic Objectives	PriorityActions	Expected Output	Key Performance Indicator	Responsible Institutions	Targeted Groups	Time Framee	Sourceof Funds	Indicative Budget (KES million)										
								Y1		Y2		Y3		Y4		Y5		Total Cost
								Target	Cost	Target	Cost	Target	Cost	Target	Cost	Target	Cost	
FOOD AND NUTRITION SECURITY **<u>Strategic Objectives</u>** **To Increase food and nutrition security through enhanced agricultural productivity and resilience of the agricultural systems**	Inputs support for crop production	Inputs procured and distributed	Number of tons of manure procured and distributed	CGN	Farmers	2023 -2027	CGN DPs NGOs	100	3.75	100	3.75	0	0	100	3.75	100	3.75	14.95
			No. of bags of fertilizer procured and distributed.	National and county govt NGOs	Farmers	2023-2027	NG CGN DPs NGOs	600	120	600	120	600	120	600	120	600	120	600
			No. of bags of agricultural Lime procured and distributed	NG CGN NGOs	Farmers	2023-2027	NG CGN DPs NGOs	10000	25	10000	25	10000	25	10000	25	10000	25	125
			Kgs. of certified seed procured and distributed	NG CGN NGOs	Farmers	2023-2027	NG CGN DPs NGOs	2000	7.2	2000	7.2	2000	7.2	2000	7.2	2000	7.2	36
	Agricultural Insurance	Insured farmers	No of farmers issued with insurance	NG CGN	Small scale farmers	2023-2027	NG CGN DPs NGOs	0	0	0	0	2000	10	2000	10	2000	10	30
	Food Aid & Cash transfer programs	Beneficiaries provided with food aid and cash transfer	Number of beneficiaries provided with food aid and or cash transfer	NG CGN NDMA	Persons with disabilities. the elderly. Women Youth and Children	2023-2027	NG CGN DPs NGOs	0	0	0	0	0	0	0	0	1500	10.8	10.8
	Nutrition and livelihood support	Procured and distributed fruit tree seedlings	Number of tree seedlings provided.	NG CGN NGOs, Individual	Farmers	2023-2027	NG CGN DPs NGOs	5000	2.5	10000	5	10000	5	10000	5	10000	5	23.5
			Number of fruit tree nurseries established	CGN	Farmers	2023-2027	CGN	0	0	4	5	0	0	0	0	0	0	20
		Sensitized Community members on nutritional information	Number of Community y members sensitized	CGN	Nyeri residents	2023-2027	CGN DPs	0	0	54000	1	54000	1	54000	1	54000	1	4
	Capacity building in climate smart	Sensitized youth in CSA	Number of youths sensitized.	NG CGN NGOs	Youth	2023-2027	NG CGN DPs NGOs	500	1	200	0.5	200	0.5	200	0.5	200	0.5	3

Priority Areas & Strategic Objectives	PriorityActions	Expected Output	Key Performance Indicator	Responsible Institutions	Targeted Groups	Time Framee	Sourceof Funds	Indicative Budget (KES million)										Total Cost
								Y1		Y2		Y3		Y4		Y5		
								Target	Cost	Target	Cost	Target	Cost	Target	Cost	Target	Cost	
	agriculture	Farmers trained on CSA technologies	Number of Farmers Trained	NG CGN NGOs	Farmers, SHGs, Cooperatives , CBOs, Youths, PWD , Women men, Elderly & children.	2023-2027	CGN DPs PPP CBOs	0	0	500	1	500	1	500	1	0	0	3
	Capacity build Youth in agribusiness	Youths trained in agribusiness	No. youth Trained of	NG CGN ABDP CBOs	Youth	2023-2027	NG CGN DPs CBOs PPP	00	0	500	1	500	1	500	1	500	1	4
	Promote Feeds bulk and feeding facilities	Established feed reserve (banks)	Number of feed reserves established	NG CGN, NDMA, FAO	CBOs, Institutions, SHGs and cooperatives	2023-2027	NG CGN DPs CBOs PPP	0	0	1	30	0	0	0	0	0	0	30
		Established livestock feed milling facilities across the county	Number of feed mills established	CGN, AKIFEMA , KEBS, NEMA, KIRDI, KALRO, Universities , Ministry of Gender & Social Services, Trade & Coop.	Community, Cooperative s, SHG, Youths, Women, Elderly, PWD	2023-2027	NG CGN DPs CBOs PPP	1	10	1	10	0	0	0	0	0	0	20
	Promotion of diversification of Income Generating Activities (IGAs) for resilience to Impacts of climate change	Procured and distributed improved chicks	Number of Improved poultry Chicks procured and distributed	CGN MOALF KALR GOK	PWD, vulnerable groups, Youths, elderly Women, CBOs, SHGs, & institutions	2023-2027	NG CGN DPs CBOs PPP	800 0	1	9000	1.5	10,000	1	12000	1.2	10,000	1.5	6.2
		Supported groups & with solar-powered egg incubators	The number of Solar- powered egg incubators distributed	NG CGN KIRDI	Women, Youth, PWD, children in public institutions	2023-2027	NG CGN DPs CBOs PPP	1	0.4	2	0.8	2	0.8	2	0.8	2	0.8	3.6
		Procured and distributed dairy goats	Number of dairy goats distributed	DGAK MOALF KALRO GOK	PWD, Youths, elderly; Women, SHGs& Public institutions (schools)	2023-2027	NG CGN DPs CBOs PPP	1400	1.4	1000	1.2	1700	1.5	2000	2	2000	2	8.1
		Procured and distributed modern bee	Number of Modern bee hives,	CGN, NG MOLF	Youths, PWD, Pastoral,	2023-2027	NG CGN DPs	83	0.498	100	0.6	100	0.6	100	0.6	100	0.6	2.9

Priority Areas & Strategic Objectives	PriorityActions	Expected Output	Key Performance Indicator	Responsible Institutions	Targeted Groups	Time Framee	Sourceof Funds	Indicative Budget (KES million)										
								Y1		Y2		Y3		Y4		Y5		Total Cost
								Target	Cost	Target	Cost	Target	Cost	Target	Cost	Target	Cost	
		hives, accessories, and equipment	accessories and equipment provided procured and distributed		Marginalize d, Women, Institutions, CBOs		CBOs PPP											
	Promote Market access	Procured and distributed milk coolants	Number of milk coolants procured and distribute d	NG CGN, KDB MOALF	Dairy cooperatives	2023-2027	NG CGN DPs CBOs PPP	1	0.6	2	1.2	2	1.2	2	1.2	2	1.2	54
		Established livestock marketing sales yards	Number of livestock sales yards established	NG CGN	Farmers Traders	2023-2027	NG CGN DPs CBOs PPP	0	0	1	1.25	1	1.20	1	1.2	1	1.25	4.9
	Input Support for aquaculture	Procured and distributed fingerlings	Number of Fingerlings procured and distributed d (000)	NG CGN ABDP CBOs	Fishmongers Youth, Men, Women PLWD and Institutions	2023-2027	NG CGN DPs CBOs PPP	150	4.5	100	3	100	3	100	3	100	3	16.5
		Procured and distributed fish feeds	Tons of fish feeds distributed	NG CGN ABDP CBOs	Fishmongers Youth, Men, Women PLWD and Institutions	2023-2027	NG CGN DPs CBOs PPP	4	15	4	15	4	15	4	15	4	15	60
	Promote productivity in fish farming	Lined and operationalize d Fishponds	Number of Lined and Operationalize d fishponds	NG CGN ABDP CBOs	Fish farmers CBOs Institutions	2023-2027	NG CGN DPs CBOs PPP	300	5	300	5	300	5	300	5	300	5	25
	Development of irrigation projects to enhance drought adaptation	Implemented irrigation projects	Number of irrigation projects implemented	NG CGN DPs	Farmers	2023-2027	CGN DPs PPP	0	0	4	200	3	180	3	180	2	160	920

Priority Areas & Strategic Objectives	PriorityActions	Expected Output	Key Performance Indicator	Responsible Institutions	Targeted Groups	Time Framee	Sourceof Funds	Indicative Budget (KES million)										Total Cost
								Y1		Y2		Y3		Y4		Y5		
								Target	Cost	Target	Cost	Target	Cost	Target	Cost	Target	Cost	
WATER AND BLUE ECONOMY **<u>Strategic Objective</u>** **Enhance climate change adaptation through establishment of a resilient water sector**	Establishment and rehabilitation of water and water harvesting infrastructure	Drilled, equipped and rehabilitated boreholes	Number of boreholes drilled, equipped and rehabilitated	NG CGN DPs	Community	2023-2027	CGN DPs PPP NG	4	28	6	42	3	21	2	14	3	21	126
		Rehabilitated/ de-silted dams	No. of dams rehabilitated and /or de-silted	NG CGN DPs	Farmers	2023-2027	CGN DPs PPP	1	10	3	30	4	40	1	10	1	10	100
		Constructed water tanks	No. of water tanks constructed	NG CGN DPs	Community	2023-2027	CGN DPs PPP	1	5	5	25	3	15	3	15	1	5	65
		Procured and distributed water tanks	No. of tanks procured and distributed	NG CGN DPs	Farmers Public institutions	2023-2027	CGN DPs PPP	200	6	200	6	200	6	200	6	200	6	30
		Constructed Mega- dams mega-dams	Number of Mega dams constructed	NG CGN DPs	Farmers, / Community	2023-2027	CGN DPs PPP	0	0	0	0	0	0	0	0	1	20000	20000
		Constructed and rehabilitated water intakes	Number of water intakes constructed and rehabilitated	CGN DPs PPP	Farmers, WSP, households.	2023-2027	CGN DPs PPP	1	5	2	10	2	10	1	5	1	5	35
		Water pans constructed	No of pans constructed	CGN DPs PPP	Farmers	2023-2027	CGN DPs PPP	0	0	40	9.2	40	9.2	40	9.2	40	9.2	36.8
	Capacity building and sensitization on sustainable water use	Trained water users	Number of trained users	CGN DPs PPP	Water Consumers & WRUA's	2023-2027	CGN DPs PPP	1000	1	2,000	2	2,500	2.5	300	3	1000	1	9.5
	Extension of Water supply	Water pipelines procured and installed	Number of kilometer of the water pipelines	NG/CGN DPs PPP	Water, Consumers, Community groups, Households, Water service providers.	2023 - 2027	CGN DPs PPP	900	1.5	900	1.5	900	1.5	900	1.5	900	1.5	3.5
NATURAL RESOURCES, ENVIRONMENT AND TOURISM. **<u>Strategic Objective</u>** **To promote sustainable use and management**	Afforestation, reafforestation and landscape restoration	Established county and community tree nurseries	No. of tree nurseries established	CGN	Farmers, near forest communities, CGN	2023-2027	CGN	1	1	0	0	0	0	0	0	0	0	1
		Established urban forests and arboretums	No. of established urban forests and arboretums	CGN	Urban community	2023-2027	CGN Development Partners	0	0	1	10	0	0	1	10	0	0	20
		On-farm trees distributed	No. of on-farm trees distributed	CGN	Farmers, near-forest communities,	2023-2027	CGN NG DPs	25,000	5	50,000	5	50,000	5	50,000	5	50,000	5	23.5

Priority Areas & Strategic Objectives	PriorityActions	Expected Output	Key Performance Indicator	Responsible Institutions	Targeted Groups	Time Framee	Sourceof Funds	Indicative Budget (KES million)										Total Cost
								Y1		Y2		Y3		Y4		Y5		
								Target	Cost	Target	Cost	Target	Cost	Target	Cost	Target	Cost	
of natural resources and promote sustainable tourism					institutions													
		Rehabilitated farmlands	Meters of rehabilitated farmlands	NG CGN NGOs FBOs DPs	Vulnerable	2023-2027	NG CGN DPs FBOs NGOs	0	0	4000	1.2	4000	1.2	4000	1.2	4000	1.2	4.8
		Rehabilitated forests and landscapes	Hectares of Rehabilitated forests and landscapes	CGN	Near-forest communities	2023-2027	CGN PPP	60	5	60	5	60	5	60	5	60	5	25
		Installed energy saving jikos	No. of Procured and installed Energy Saving Jikos	CGN NG PPPs Dps	Learning institution and Household	2023-2027	CGN DPs PPP	900	18	910	20	910	20	910	20	910	20	98
	Capacity building of community on NRM	Training undertaken	No. of training undertaken	CGN	Communities	2023-2027	CGN DPs	5	1.5	5	1.5	5	1.5	5	1.5	5	1.5	7.5
	Planning and Protection of ecologically sensitive areas	Surveyed and demarcated County forests	No of county forests surveyed	CGN	Neighboring communities , forest managers, CGN	2023-2027	CGN PPP	0	0	2	20	2	20	2	20	2	20	80
		Mapped riparian zones	No. of mapped riparian zones	CGN	Water resource users, farmers	2023-2027	CGN	10	1	10	1	10	1	10	1	10	1	5
		Rehabilitated riparian zones	No. of km rehabilitated	CGN	Water resource users, farmers	2023-2027	CGN	10	1	10	1	10	1	10	1	10	1	5
		Mapped Tourism and cultural sites	Number of Tourism and cultural sites mapped	CGN	Local communities	2023-2027	CGN	0	0	1	5	0	0	1	5	0	0	10
		Developed local eco-tourism sites	Number of eco-tourism sites	CGN	Local communities	2023-2027	CGN	0	0	1	5	1	5	0	0	0	0	10
HEALTH, SANITATION HUMAN SETTLEMENTS **<u>Strategic Objective</u>** **To Mainstream climate change adaptation into the health sector and increase**	Prevention and control of communicable diseases	Open Defecation Free (ODF) declared villages	Percentage of villages declared Open Defecation Free (ODF)	CGN	Nyeri residents	2023-2027	CGN DPs	0	0	99.5	3	99.7	3	100	3	100	3	12
		Promotion of Water, Hygiene and Sanitation (WASH) practices in institutions	No. of institutions with clean and safe WASH facilities.	CGN	Nyeri residents	2023-2027	CGN DPs	115	0	115	0	115	0	115	0	111	0	0
	Integrated solid Waste Management	Acquired land for ISWM	Number of land acres acquired	CGN	Nyeri citizenry Private waste handler	2023-2027	CGN DPs	0	0	0	0	10	50	0	0	0	0	50.0

Priority Areas & Strategic Objectives	PriorityActions	Expected Output	Key Performance Indicator	Responsible Institutions	Targeted Groups	Time Framee	Sourceof Funds	Indicative Budget (KES million)										Total Cost
								Y1		Y2		Y3		Y4		Y5		
								Target	Cost	Target	Cost	Target	Cost	Target	Cost	Target	Cost	
resilience on human settlements.		Established sanitary landfill	No. of landfills established	CGN	Nyeri citizenry	2023-2027	CGN, DPs	0	0	0	0	0	0	1	150	0	0	150
		Sensitization undertaken on SWM practices	Number of sensitizations undertaken	CGN	Nyeri residents	2023-2027	CGN DPs	0	0	4	0.4	4	0.4	4	0.4	4	0.4	1.6
		Procured specialized plants and machinery	Number of Specialized plants and machinery i.e. garbage trucks procured	CGN	Nyeri citizenry	2023-2027	CGN DPs	1	12	1	20.0	1	20.0	0	0	0	0	52.0
		Procured and distributed receptacles	Number of receptacles procured and distributed	CGN - Department of LHPPUD	Nyeri citizenry	2023-2027	CGN	0	0	10	5	10	5	10	5	10	5	20
	Sustainable land management.	Planned and surveyed villages and market centres	Number of villages and market centres planned and Surveyed	CGN - Department of LHPPUD	Squatters County Plot owners	2023-2027	CGN DPs	0	0	5	5.0	5	5.0	10	10.0	10	10.0	30.0
		Formulated development control policies and regulations	The number of development control policies and regulations.	CGN - Department of LHPPUD	Architects Engineers Physical Planners	2023-2027	CGN	0	0	1	3	0	0	0	0	0	0	3
		Installed GIS modules on LIMS and E-DAMS System	Number of modules installed	CGN - Department of LHPPUD	Nyeri citizenry Real estate Developers	2023-2027	CGN DPs	0	0	1	3.0	1	3.0	0	0	0	0	6
	Affordable housing.	Constructed affordable housing stock	Number of new affordable housing stock Constructed	CGN - Department of LHPPUD	Urban dwellers	2023-2027	CGN DPs PPP	0	0	2	50.0	2	50.0	2	50.0	2	50.0	200.0
MANUFACTURING **Strategic Objective** **To Increase climate resilience through enhanced manufacturing andproduction processes**	Optimized manufacturing and production processes	Installed greenhouse solar dryers	Number of greenhouse solar dryers installed	NG CGN NGOs DPs	Cooperative societies Estate farmers	2023-2027	NG CGN DPs NGOs	2	6	2	6	2	6	2	6	2	6	30
		Established cottage industries and incubation centres	Number of Cottage industries and incubation centers established	CGN	Nyeri residents	2023-2027	CGN	0	0	1	30	1	30	1	30	1	30	120
		Expanded/ established agricultural value-addition	Number of agricultural value-addition cooperatives	CGN	Agribusiness s farmers	2023-2027	CGN	1	1	1	1	1	1	1	1	1	1	5

Priority Areas & Strategic Objectives	PriorityActions	Expected Output	Key Performance Indicator	Responsible Institutions	Targeted Groups	Time Framee	Sourceof Funds	Indicative Budget (KES million)										Total Cost
								Y1		Y2		Y3		Y4		Y5		
								Target	Cost	Target	Cost	Target	Cost	Target	Cost	Target	Cost	
		cooperatives	established/ expanded															
		Constructed storage, aggregation and value addition processing centres	Number of aggregation centres and value addition and processing units constructed	NG CGN NGOs DPs	Farmers	2023-2027	NG CGN DPs NGOs	1	5	1	5	1	5	1	5	1	5	25
		Cooperative s and businesses sensitized on climate change actions	Number of Forums conducted	CGN PPPs	Cooperative s	2023-2027	CGN DPs	1	0.5	1	0.5	2	1	2	1	2	1	4
		Procured and distributed milk pasteurizers	Number of milk pasteurizers procured and distributed	NG CGN, KDB	Dairy cooperatives	2023-2027	NG CGN DPs CBOs PPP	0	0	1	10	1	10	1	10	0	0	30
	Establishment of Climate Proofed Markets	Established Climate Proofed infrastructures	Number of Markets established	NG CGN	Traders, Community	2023-2027	NG CGN DPs CBOs PPP	0	0	0	0	1	10	1	10	1	10	30
TRANSPORT AND ENERGY **Strategic Objective** **To develop a sustainable and climate-resilient infrastructure and provide reliable sustainable energy**	Non-motorized Transport	Developed walkways and cycling paths	KM of walkways developed	CGN, Dev Partners	Pedestrians, cyclists PWDs	2023-2027	CGN NG CDF	0	0	3	24	3	24	3	24	3	24	96
	Construction n of Bridges	Bridges constructed	No. of bridges constructed	CGN, Dev Partners	Community, Motorists	2023-2027	CGN NG PPP DPs	1	7	2	14	3	21	3	21	4	28	91
	Green energy technologies	Solarized streetlights	No. of existing streetlights solarized	CGN, Dev Partners	Traders, motorists, pedestrians	2023-2027	CGN NG PPPs DPs	0	0	60	12	60	12	60	12	60	12	48
		Solar installed in public facilities	Number of public facilities with solar installed	CGN	Public facilities	2023-2027	CGN DPs	5	5	8	8	8	40	8	40	4	20	73
		Biogas plants installed	No. of Biogas plants installed	CGN	Households, Community groups	2023-2027	CGN NG PPPs DPs	0	0	60	15	60	15	60	15	60	15	60
DISASTER RISK MANAGEMENT **Strategic Objectives**	Establish and relay timely and Reliable Climate Information Systems	Established and relayed timely and reliable Climate	Number of information CIS developed	CGN, KMD (Nyeri County)	Farmers, Communities living in disaster prone areas,	2023-2027	CGN DPs PPP	0	0	1	5	0	0	0	0	0	0	5

Priority Areas & Strategic Objectives	PriorityActions	Expected Output	Key Performance Indicator	Responsible Institutions	Targeted Groups	Time Framee	Sourceof Funds	Indicative Budget (KES million)										Total Cost
								Y1		Y2		Y3		Y4		Y5		
								Target	Cost	Target	Cost	Target	Cost	Target	Cost	Target	Cost	
To enhance early warning systems to prevent, reduce and Mitigate climate Disasters		Information System in the county			business community													
			% of the target communities who have access to climate information	CGN, NDMA, KMD (Nyeri County)	Farmers, Communities living in disaster prone areas, Business community	2023-2027	CGN DPs PPP	0	0	100 %	2	100 %	2	100%	2	100%	2	8
	Procurement and installation of 8 (1 per sub-county) Automatic Weather Stations (AWS)	Improved early warning reports	No of AWS's installed	KMD	Communities living in disaster prone areas	2023-2027	CGN DP	1	3	1	3	2	6	2	6	2	6	24
	Capacity building on disaster response	Trained staff on disaster response techniques	Number of staff trained	CGN NDMA DPs Humanitarian aid organizations	County staff	2023-2027	CGN DPs PPP	30	2	30	2	30	2	0	0	0	0	6
		Sensitized community on DRM	Number of community sensitizations done	CGN	All communities	2023-2027	CGN DPs PPP	5	0.4	5	0.4	5	0.4	5	0.4	0	0	1.6
	Mapping of disaster-prone areas	Mapped zones	Number of mapped zones	CGN	Farmers, communities living in disaster-prone areas, Business communities, investors	2023-2027	CGN DPs PPP	0	0	8	10	0	0	0	0	0	0	3

REFERENCES

CDLP (2022), Directorate Of Livestock Production Technical Annual Report 2021-2022, Nyeri.

CDLP (2022), Directorate of Livestock Production Technical Annual Report 2021-2022, Nyeri.

CGN (2021), The Nyeri County Climate Change Act 2021

CGN. (2020), County Nutrition Action Plan (CNAP) 2020/2021-2024/2025.
Climate change 2022: Mitigation of climate change (no date) IPCC Intergovernmental Panel on Climate Change. Available at: https://www.ipcc.ch/report/ar6/wg3/ (Accessed: 24 May 2023).
Climate change 2023 (no date) AR6 Synthesis Report. Available at: https://www.ipcc.ch/report/ar6/syr/ (Accessed: 24 May 2023).
Climate change widespread, rapid, and intensifying (no date) IPCC. Available at: https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/ (Accessed: 22 May 2023). (IPCC, 2021) Climate change widespread, rapid, and intensifying (no date) IPCC. Available at: https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/ (Accessed: 22 May 2023). (IPCC,
2021)
Constitution of Kenya, 2010. Available at: https://kdc.go.ke/wp- content/uploads/2021/12/Constitution-of-Kenya-2010-min.pdf (Accessed: 22 May 2023). Constitution of Kenya, 2010. Available at: https://kdc.go.ke/wp- content/uploads/2021/12/Constitution-of-Kenya-2010-min.pdf (Accessed: 22 May 2023).

County Government of Nyeri (2019), Nyeri County Draft Spatial Plan 2019-2029 Popular Version, Nyeri.

County Government of Nyeri (2019), Nyeri county spatial plan 2019-2029 popular version, Nyeri. The county government of Nyeri. Available at: https://suncsakenya.org/assets/files/NYERI.pdf (Accessed: 22 May 2023).
Draft Nyeri County Integrated Development Plan 2023- 2028. KIPPRA PPR Home. Available at: https://repository.kippra.or.ke/handle/123456789/670 (Accessed: 22 May 2023).
Freepik, Starline (no date) Custom template by Starline Available at here Accessed: 22 May 2023).

GoK (2014) The National Adaptation Plan 2015-2030 GoK (2016) The Climate Change Act 2016
GoK (2018) The National Climate Change Action Plan 2018-2022

GoK. (2015), Kenya Mental Health Policy 2015-2030. Nairobi: Ministry of Health

GoK. (2016), Kenya Environmental Sanitation and Hygiene Policy 2016- 2030. Nairobi: Ministry of Health

GoK. (2019), Kenya Malaria Strategy 2019–2023. Nairobi: Ministry of Health

GoK. (2021), National Non-Communicable Diseases Strategic Plan 2021/22 – 2025/26. Nairobi: Ministry of Health
IPCC — intergovernmental panel on climate change. Available at: https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15_Full_Report_HR.pdf (Accessed: 24 May 2023).
Kenya Health Information Systems. Available at: http://systems.health.go.ke/ (Accessed: 22 May 2023).

Kenya Health Information Systems. Available at: http://systems.health.go.ke/ (Accessed: 22 May 2023).
Melissa., M. Pouyan A., Harrigan T, Sean A. ((2017). Climate change and livestock: Impacts, adaptation, and mitigation., Michigan State University, USA
Melissa., M. Pouyan A., Harrigan T, Sean A. ((2017). Climate change and livestock: Impacts, adaptation, and mitigation., Michigan State University, USA
Ministry of Health. Available at: https://www.health.go.ke/ (Accessed: 22 May 2023). Ministry of Health. Available at: https://www.health.go.ke/ (Accessed: 22 May 2023).
National Climate Change Action Plan (NCCAP) 2018 - 2022. National Climate Change Action Plan (NCCAP) 2018 - 2022. | UNEP Law and Environment Assistance Platform. Available at: https://leap.unep.org/countries/ke/national-legislation/national-climate-change-action-plan-nccap-2018-2022 (Accessed: 22 May 2023).
National Climate Change Action Plan (NCCAP) 2018 - 2022. National Climate Change Action Plan (NCCAP) 2018 - 2022.
Publications - Kenya National Bureau of Statistics. Available at: https://www.knbs.or.ke/publications/ (Accessed: 22 May 2023). Publications - Kenya National Bureau of Statistics. Available at: https://www.knbs.or.ke/publications/ (Accessed: 22 May 2023).

The Kenya Dairy Board (2022), Bi-annual Survey on the Cost and Profitability of Milk Production in Kenya – First Bi-Annual Report (June-December, 2022)

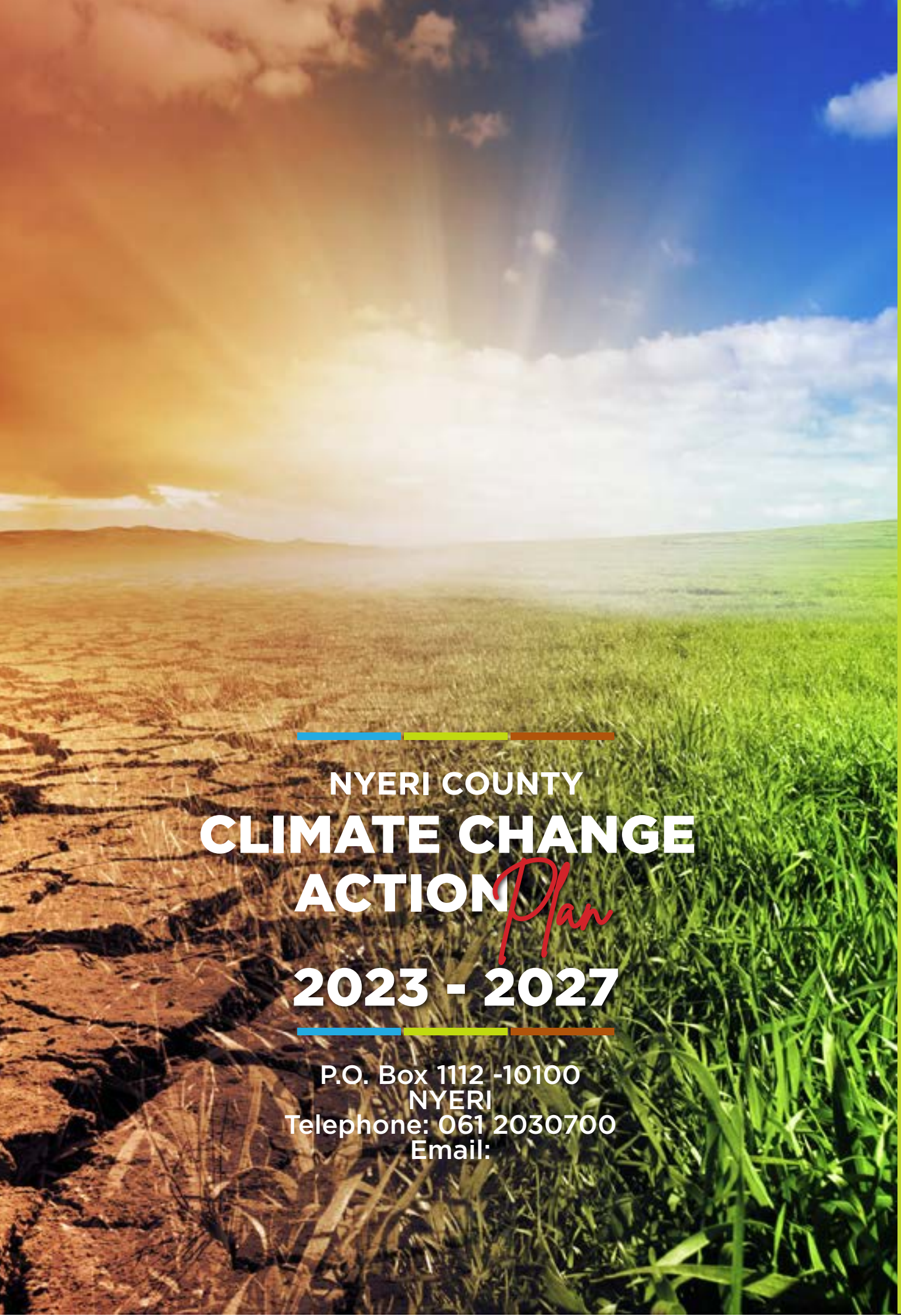
The Kenya Dairy Board (2022), Bi-annual Survey on the Cost and Profitability of Milk Production in Kenya – First Bi-Annual Report (June-December, 2022)

Travel company in Nairobi (no date) Viutravel. Available at: https://www.viutravel.com/ (Accessed: 21 May 2023).

World Bank; CIAT. 2015. Climate-Smart Agriculture in Kenya. CSA Country Profiles for Africa, Asia, and Latin America and the Caribbean Series. Washington D.C.: The World Bank Group.

World Bank; CIAT. 2015. Climate-Smart Agriculture in Kenya. CSA Country Profiles for Africa, Asia, and Latin America and the Caribbean Series. Washington D.C.: The World Bank

Group.
CGN. (2020), County Nutrition Action Plan (CNAP) 2020/2021-2024/2025.
GoK. (2016), Kenya Environmental Sanitation and Hygiene Policy 2016-2030.Nairobi: Ministry of Health
GoK. (2019), Kenya Malaria Strategy 2019–2023. Nairobi: Ministry of Health
GoK. (2021), National Non-Communicable Diseases Strategic Plan 2021/22 – 2025/26. Nairobi: Ministry of Health



NYERI COUNTY

CLIMATE CHANGE ACTION *Plan*

2023 - 2027

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