KIAMBU COUNTY

CLIMATE CHANGE ACTION PLAN

2023 -2027

OCTOBER 2023

FOREWORD

Climate change is acknowledged as one of the global challenges occasioned by an increase of concentration of greenhouse gases (GHGs) in the atmosphere. The sources of these gases are attributed to human activities such as the burning of fossil fuels, deforestation, and industrial processes. These emissions have led to a rise in global temperatures, altered weather patterns, and increased the frequency and intensity of extreme weather events which have continued impacting negatively on the ecosystems and social and economic development and wellbeing of societies across the world. In recognition of the severity of the impacts of climate change, concerted efforts at international and national level have been made to address this global crisis

The adoption of the United Nation Framework Convention on Climate Change (UNFCCC) in 1992 was the first international response to the climate change. The UNFCCC, the Kyoto Protocol and Paris Agreement set out frameworks to guide the efforts of the member parties in reduction of greenhouse gases in the atmosphere and consequently strengthen their response to the threat of climate change in the context of sustainable development.

As a signatory to the UNFCCC, the Kenyan Government has committed itself to addressing the climate change crisis through the establishment of policy, legal and institutional frameworks to guide and inform the country's response to climate change. Besides, the establishment of this framework is a demonstration of the Country's commitment to deliver on its Nationally Determined Contribution (NDC) under the Paris Agreement.

In Kiambu County, the effects of climate change are already being felt. Erratic rainfall patterns, prolonged droughts, and intense floods have become more common and continue threatening agricultural productivity, water availability, and food security. The county's rich agricultural sector, which contributes significantly to the local economy, is particularly vulnerable to these changes. Climate change also poses risks to the county's biodiversity, including the forests, wetlands and wildlife. In recognition of this climate crisis, the County enacted the Kiambu County Climate Change Act, 2021, which provides a framework and mechanisms to guide the County's responses to the impacts of climate change and facilitate its transition to a low carbon development pathway.

The Kiambu County Climate Change Action Plan (KCCCAP) 2023- 2027, which is aligned with the County's Development Integrated Plan (CIDP) 2023-2027) is the first 5-year sectoral plan in the county that will guide the county's responses to the impacts of climate change and assist the county transit to a low carbon development pathway.

I commit myself to ensuring that concerted efforts will be taken to ensure that adequate resources are mobilized and channeled towards the implementation of this plan through creation of partnership with local and international development partners and non-state actors.

I therefore call upon all relevant stakeholders, development partners and the people of Kiambu to remain steadfast in playing their respective roles and responsibilities in the implementation of this plan. This collective responsibility result in realization of an envisaged low-carbon County whose residents' vulnerability to impacts of climate change is reduced and their resilience is enhanced

H. E DR. PAUL KIMANI WAMATANGI

GOVERNOR

COUNTY GOVERNMENT OF KIAMBU

ACKNOWLEDGEMENT

This plan has been developed by the County Government of Kiambu with financial support from the World Bank and Development Partners namely Swedish International Development Cooperation Agency (SIDA) and Ministry of Foreign Affairs of Denmark International Development Cooperation Agency (DANIDA) through the Financing Locally-Led Climate Action (FLLoCA) Programme.

The Development of the plan is a product of intensive consultative process between the County Government of Kiambu and various stakeholders drawn from the national government, development partners, private sectors and community members all of whom need to be acknowledged due to their invaluable contribution towards the development of this plan. Special thanks go to:

- The FLLoCA Programme Implementation Unit (PIU) team domiciled at the National Treasury and Economic Planning for their financial and unwavering technical support through their well-coordinated physical and virtual trainings
- The County management team through the leadership of H.E Dr. Paul Kimani Wamatangi, the Governor of Kiambu for the support towards the formulation of this plan and approval of the work plan of all the planned activities that have resulted in the formulation of this plan
- The County Assembly Committee on Water, Environment , Energy and Natural Resources (WEENR) for lobbying for appropriation of funds into the County Climate Change
- The AG. Chief Officer Charles Gikonyo for facilitating and supporting the entire process
- The County Climate Change Unit (CCCU) core staff for the successful execution of all the planned activities that have resulted in the completion of the plan
- Much gratitude go to the cross sectoral technical working group that spearheaded the climate change action planning process. The team was drawn from the departments of Administration and Pubic Service, Finance, ICT and Economic Planning, Water, Environment, Energy and Natural Resources, Agriculture, Livestock, and Irrigation, Health Services, Education, Gender, Culture and Social Services, Roads, Transport, Utilities and Public Works, Trade, Tourism, Industrialization and Enterprise

Development, Lands, Housing, Physical Planning, Municipal Administration and Urban Development and Youth, Sports, and Communication. The time taken to analyze the data that informed the formulation of this plan will always be appreciated

- I also wish to appreciate Director in Charge of Energy and Climate Change, Madam Esther Kaguima with support of Eng. Jamlick Mwenda for the overall coordination of the teams to ensure the successful completion of the plan

I am equally, on behalf of the department, indebted to His Excellency, the Governor Dr. Paul Kimani Wamatangi for the political leadership and support accorded to the department.

The department of Water, Environment, Energy and Natural Resources shall take a lead role in ensuring that the prioritized climate change actions outlined in this plan are mainstreamed in all the sectors and county operations. I call upon all the stakeholders to partner with the county in the implementation of this plan.

DAVID K. KURIA

COUNTY EXECUTIVE COMMITTEE MEMBER WATER, ENVIRONMENT, ENERGY AND NATURAL RESOURCES

KIAMBU COUNTY CLIMATE CHANGE ACTION PLAN (KCCCAP) TASKFORCE

Table 1 County Climate Change Action Plan Task Force Members

S/N	NAME	DESIGNATION	DEPARTMENT
1.	Esther Kaguima	Director Renewable Energy and Climate Change	Water, Environment Energy and Natural Resources (WEENR)
2.	Samuel Wakangu	Director Forestry and Natural Resources	
3.	Andrew Kimani	Director Environment and Waste Management	
4.	Michael Kangethe	Social Safeguards Focal Point	Administration and Public Service
5.	Julius Mwololo	Director Housing and Community Development	Lands, Physical Planning, Housing, Urban Planning and Urban Planning
6.	Annie Koimbori	Director Crops and Irrigation	Agriculture, Livestock and Fisheries
7.	Ruth Ng'ang'a	Director Agri-Business	Agriculture, Livestock and Fisheries
8.	David Warwathe	Director Gender, Culture and Social Services	Education, Gender, Culture and Social Services
9.	Eng. Jamlick Mwenda	Assistant Director Renewable Energy and Climate Change	Water, Environment Energy and Natural Resources (WEENR)
10.	Anne Muchai	County Climate Change Fund Administrator	Finance, Economic Planning and ICT
11.	Dorcas Mugure	Monitoring, Evaluation and Learning Officer	County Climate Change Unit (CCCU)
12.	Martin Kimani	Senior Communication Officer	
13.	Olive W. Theuri	Assistant Director Fisheries	Agriculture, Livestock and Fisheries
14.	Anthony Gichuki	Director Livestock	
15.	Sophia Kamau	Deputy Director Economic Planning	Finance, Economic Planning and ICT
16.	Peter Gichuki	Deputy Director Administration	Administration and Public Service
17.	Annie Ngigi	Deputy Director Human Resources	
18.	Samuel K. Rono	Superintending Engineer	Roads Transport, Utility and Public Works
19.	Francis M. Njoroge	Public Health Officer	Health Services
20.	Grace W. Mwangi	Environment Officer	Water, Environment Energy and Natural Resources (WEENR)
21.	Isaac N. Ndirangu	Water Officer	Water, Environment Energy and Natural Resources

			(WEENR)
22.	Eliaph Karanja	Economist	Finance, Economic Planning and ICT
23.	Hellen Gathiani	GIS Officer	Lands, Physical Planning, Housing, Urban Planning and Urban Planning
24.	Lucy Muiruri	Chief Physical Planning Assistant	
25.	Charles Mwangi	Principal Physical Planning Officer	
26.	Deborah Haggith	GIS Officer	
27.	Jane Wanjiru	Skilled Casual	Water, Environment Energy and Natural Resources (WEENR)
28.	Jullia W. Githinji	Office Administrator	
29.	Magdalene Gateri	County Director Meteorology	Kenya Meteorological Department (KMD)

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ABBREVIATIONS AND ACRONMYS

CGK	County Government of Kiambu
CCCF	County Climate Change Fund
DANIDA	Danish International Cooperation Agency
FLLoCA	Financing Locally-Led Climate Action
KFS	Kenya Forest Service
WSP	Water Service Provider
CFA	Community Forest Association
FBOs	Faith Based Organizations
CBOs	Community Based Organizations
NGOs	Non- Governmental Organizations
MAUD	Municipal Administration and Urban Development
AWWDA	Athi Water Works Development Agency
GHGs	Greenhouse Gases
ICT	Information Communication Technology
KCCCAP	Kiambu County Climate Change Action Plan
KMD	Kenya Meteorological Department
NCCC	National Climate Change Committee
NCCPF	National Climate Change Policy Framework
NCFP	National Climate Finance Policy
NCSRS	National Climate Change Response Strategy
NDC	Nationally Determined Contribution
PIU	Programme Implementation Unit (PIU)
SIDA	Swedish International Development Cooperation Agency

UNFCCC	United Nation Framework Convention on Climate Change
WARUA	Water Resources Users Association
WEENR	Water, Environment Energy and Natural Resources

DEFINITION OF TERMS

Adaptive Capacity	Ability of a system to adapt to the impacts, cope with the consequences, minimize potential damages, or take advantage of opportunities offered by climate change or climate variability
Adaptation	Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects in order to moderate harm or exploit beneficial opportunities
Climate Change	Long-term shift in temperatures and weather patterns caused by significant changes in the concentration of greenhouse gases (GHGs) as a consequence of human activities and which is in addition to natural climate change that has been observed during a considerable period of time
Mitigation	Efforts that seek to prevent or slow down the increase of atmospheric greenhouse gas concentrations by limiting the current and future emissions and enhancing potential sinks for greenhouse gases
Resilience	Ability of a social, economic or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization and the capacity to adapt to stress and change
Vulnerability	Degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude and rate of climate variation to which a system is exposed, its sensitivity and its adaptive capacity

EXECUTIVE SUMMARY

The prolonged dry spells and floods that continue being experienced in the country coupled with unpredictable weather patterns is an evidence of climate change which is acknowledged as one of the global challenges facing mankind. Unless concerted efforts to address the challenges are taken by both the national and county governments, the realization of the country's development agendas will be compromised. The Climate Change Act 2016 identifies climate change as a shared responsibility between the national and county governments. Besides, the Act obligates ministries, counties, departments, agencies and private sectors to mainstream climate change responses into their functions and report on the progress of implementation of climate actions. These calls for a well-coordinated and structured framework that would prescribe appropriate measures and mechanisms for addressing climate change both at national and county levels. Hence, the development of this plan is a demonstration of compliance with the provisions of the Climate Change Act, 2016

The formulation of this plan was spearheaded by the cross sectoral technical working group drawn from ten departments of the county and the Kenya Metrological Department. The preparation of the plan was in compliance with the guidelines provided by the FLLoCA Programme Implementation Unit (PIU).

Chapter One presents the county background and the different steps in the participatory climate action planning process that led to the development of the CCCAP, including how women, youth, ethnic minorities, people living with disabilities and other marginalized and vulnerable groups were enabled to be active participants in the process. The underlying climate resilience context, the overview of climate change actions in the county and the integration of the climate Actions in the CIDP is also highlighted

Chapter three provides the national policy context and the county's enabling legal and policy framework. Chapter four identifies the strategic climate action priorities in the PCRA and the priority county climate change actions. Chapter five provides the delivery mechanisms for CCAP and the implementation and coordination mechanisms and the 2023-2027 KCCCAP implementation matrix is attached to the plan

CHAPTER ONE: INTRODUCTION

AN OVERVIEW OF KIAMBU COUNTY

1.1.1 Location, Size and Administrative Boundaries

Kiambu County is one of the 47 counties located in the central region of Kenya with a total area of 2,538.7 Km^2 according to the 2019 Kenya Population and Housing Census. It borders Nairobi and Kajiado Counties to the South, Machakos to the East, Murang'a to the North and North East, Nyandarua to the North West and Nakuru to the West. The County lies between latitudes 00 25‘and 10 20‘South of the Equator and Longitude 360 31‘and 370 15‘East.

Administratively, the County comprises of 12 Sub Counties which are further subdivided into 60 wards as indicated on table two

1.1.2 Demographic Trend

According to KPHC, 2019, the county’s population was reported to be 2,417,735 comprising of 1,187,146 males, 1,230, 454 Females and 135 intersex. This population was projected to be 2,602,250 by the year 2022 and 2,854,954 by 2027. The County was also reported to be having a population density of 952 persons per square kilometer in 2019 and was projected to be 1025 and 1125 persons per square kilometer in 2022 and 2027 respectively

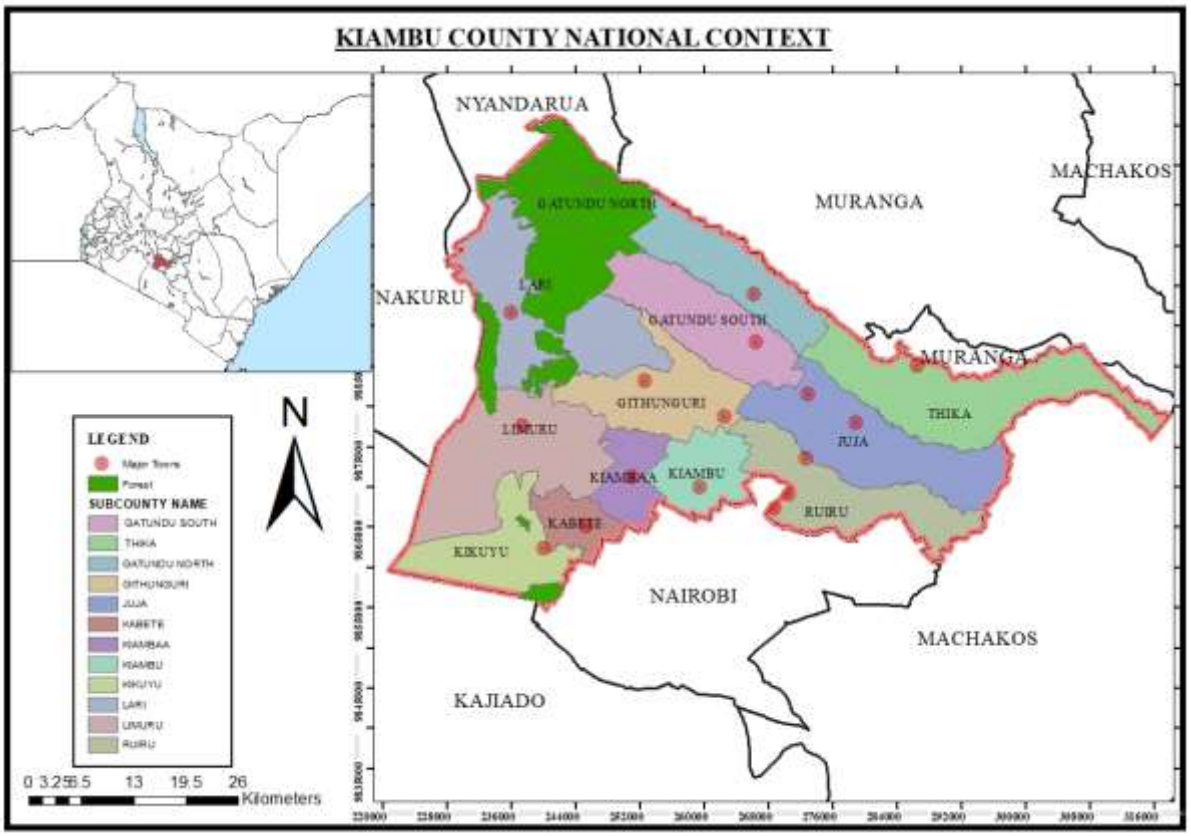

Figure 1: Location, Size and Administrative Boundaries of Kiambu County

Table 2 Number of Sub counties and Wards in the County

S/N	Sub County	Number of wards	Electoral Wards
1	Gatundu North	4	• Gituamba • Githobokoni • Chania • Mang'u
2	Gatundu South	4	• Kiamwangi • Kiganjo • Ndarugo • Ngenda

3	Githunguri	❖ 5	• Githunguri • Githiga • Ikinu • Ngewa • Komothai
4	Juja	5	• Murera • Theta • Juja • Witeithie • Kalimoni
5	Kabete	5	• Gitaru • Muguga • Nyathuna • Kabete • Uthiru
6	Kiambaa	5	• Cianda • Karuri • Ndenderu • Muchatha • Kihara
7	Kiambu	4	• Ting'ang'a • Ndumberi • Riabai

			• Township
8	Kikuyu	5	• Karai • Nachu • Sigona • Kikuyu • Kinoo
9	Lari	5	• Kinale • Kijabe • Nyanduma • Kamburu • Lari/Kirenga
10	Limuru	5	• Bibirioni • Limuru Central • Ndeiya • Limuru East • Ngecha/Tigoni
11	Ruiru	8	• Gitothua • Biashara • Gatongora • Kahawa Sukari • Kahawa Wendani • Kiuu • Mwiki • Mwihoko
12	Thika	5	• Township

			• Kamenu • Hospital • Gatuanyaga • Ngoliba
Total			**60**

1.1.3 Climatic Conditions

The county experience two rainy seasons namely the long rains which occur between March and Mayand the short rains experienced between October and December. The dry spell (period with less than 20 mm rainfall) occurs between July and September. This season is alsocoolercharacterizedwithdrizzlesandfrostinsomepartsoftheCounty.Aprilreceivesthe highest rainfall of more than 200 mm. The annual average precipitation in the county is 600-1300 mm. The northern region receivesanannualaverageprecipitationofmorethan1000mm.Historicalannualaveragerainfallan dtemperaturerecordsshowadirectional-spatialtrend, with peak values generally appearing in the northern parts of the county for precipitation and western parts of the county for temperatures. Figure two the rainfall distribution pattern in the county

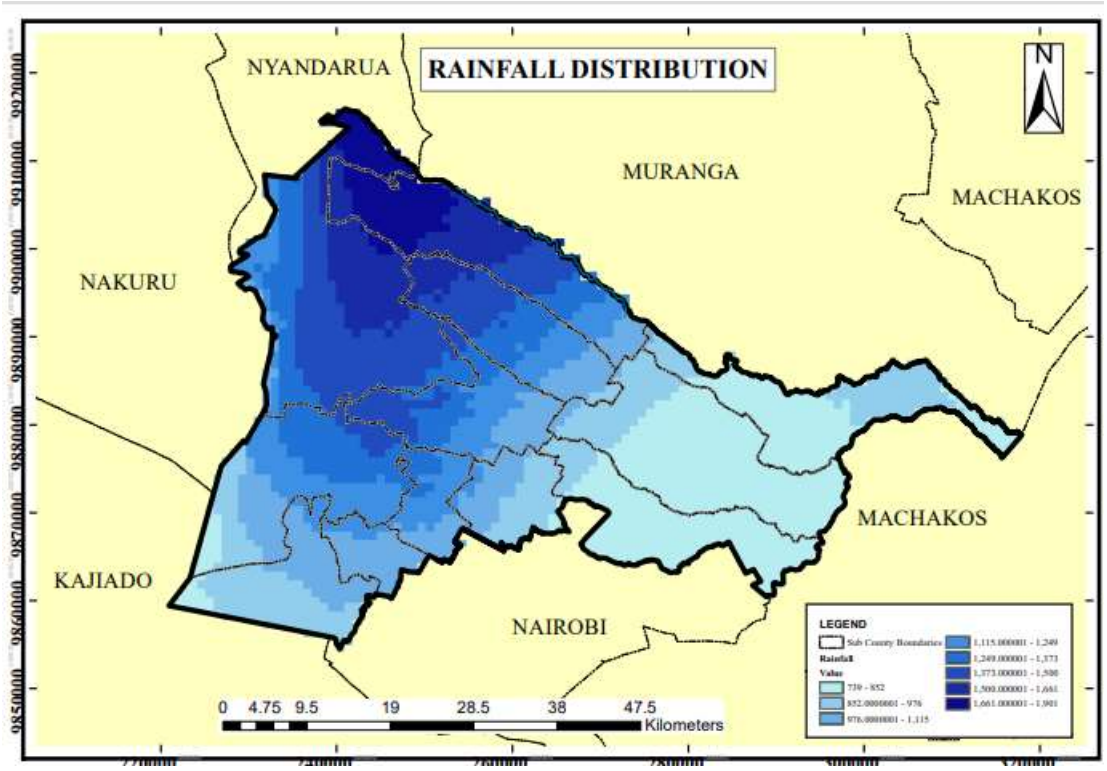

Figure 2 Rainfall Distribution Pattern in the County

The annual average temperature for the county is 15-23°C. The western areas of the county including the upper midland and the lower highland agro ecological zones experience annualaveragetemperaturesgreaterthan20°C. Lowest temperatures are recorded in the months of June to August whereas highest temperatures are recorded in the months of January to March. The county's average relative humidity ranges from 65 percent in February which is generally a hot month and 84 percent in the wet months of April and May.

1.1.4 Physical and Topographic Features

Kiambu County is divided into four broad topographical zones; Upper Highland, Lower Highland, Upper Midland and Lower Midland Zones. The Upper Highland Zone is found in Lari sub-county and it is an extension of the Aberdare ranges that lies at an altitude of 1,800-2,550 meters above sea level. It is dominated by highly dissected ranges and it is very wet, steep and an important water catchment area. The major forests in the County are also found in this zone, which are Kieni and Kinale with an acreage of 13,723.6 and 10, 504.87 hectares respectively.

The lower highland zone is mostly found in Limuru and some parts of Gatundu North, Gatundu South, Githunguri and Kabete sub counties. The area is characterized by hills, plateaus, and high-elevation plains. The area lies between 1,500-1,800 meters above sea level and is generally a tea and dairy zone, though some activities like subsistence and sheep farming are also practiced. The upper midland zone lies between 1,300-1,500 meters above sea level and it covers mostly parts of Juja and other sub counties with the exception of Lari. The landscape comprises of volcanic middle level uplands. The lower midland zone partly covers Thika, Limuru and Kikuyu sub counties. The area lies between 1,200-1,360 meters above sea level.

1.1.5 Geology and Soils

The county is covered by three broad categories of soils which are; high level upland soils, plateau soils and volcanic footbridges soils. These types are of varying fertility levels. Soils from high-level uplands are from volcanic rocks and very fertile, conducive for livestock keeping and growth of various crops such as tea, coffee, horticultural products, pyrethrum, vegetables, maize, beans, peas and potatoes among others. These soils are mostly found in Gatundu South, Gatundu North, Githunguri, Kiambu, Kiambaa, Lari, Kikuyu, Kabete and Limuru sub counties.

Low fertility soils are mainly found in the middle zone and the eastern part of the county which form part of the semi-arid areas. The soils are sandy or clay and can support drought resistant crops such as soya beans and sunflower as well as ranching. These soils are mostly found in parts of Juja, Thika Town, Ruiru, Kikuyu, Limuru, Gatundu North and Gatundu South sub counties.

Most parts of the county are covered by soils from volcanic footbridges. These are well drained with moderate fertility. They are red to dark brown friable clays, which are suited for cash crops like coffee, tea and pyrethrum. However, parts of Thika Town, Ruiru and Juja sub counties are covered by shallow soils, which are poorly drained, and these areas are characterized by low rainfall, which severely limits agricultural development. However, these areas are suitable for ranching and growth of drought resistant crops. The soils in the midland zone are dissected and are easily eroded. Other physical features include steep slopes and valleys, which are unsuitable for cultivation. Some parts are also covered by forests.

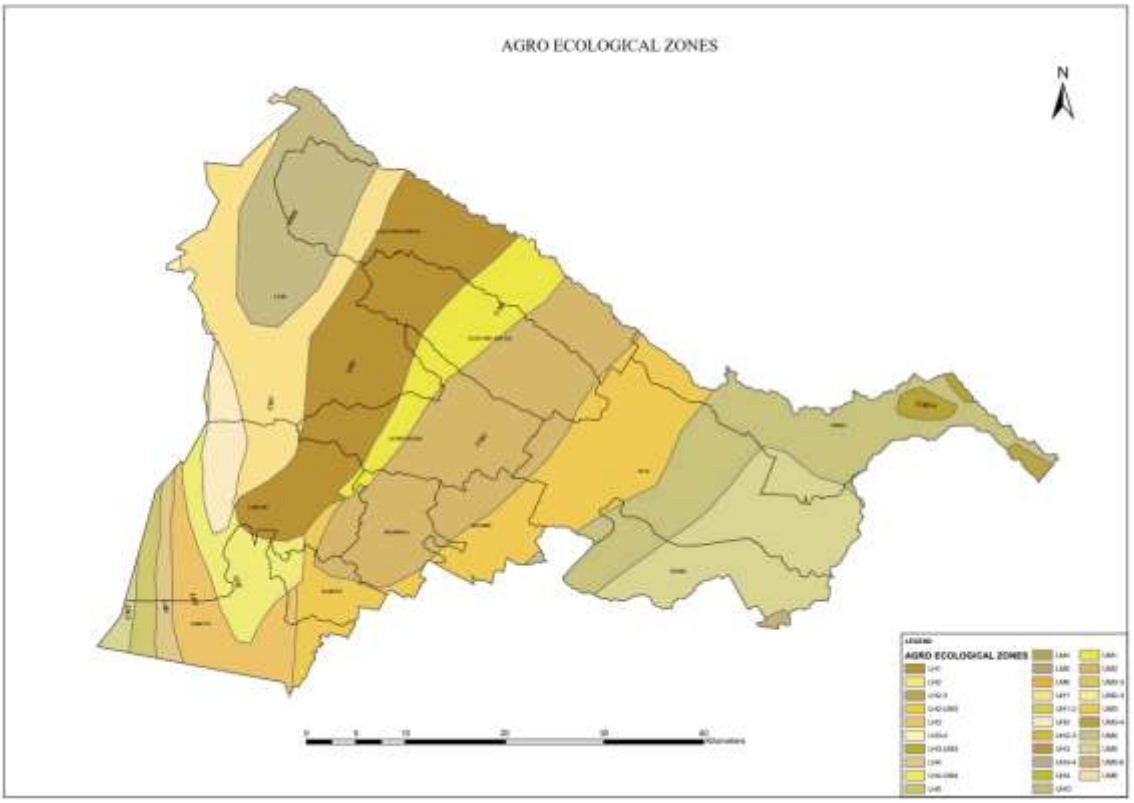

Table 3 County Agro-Ecological Zones

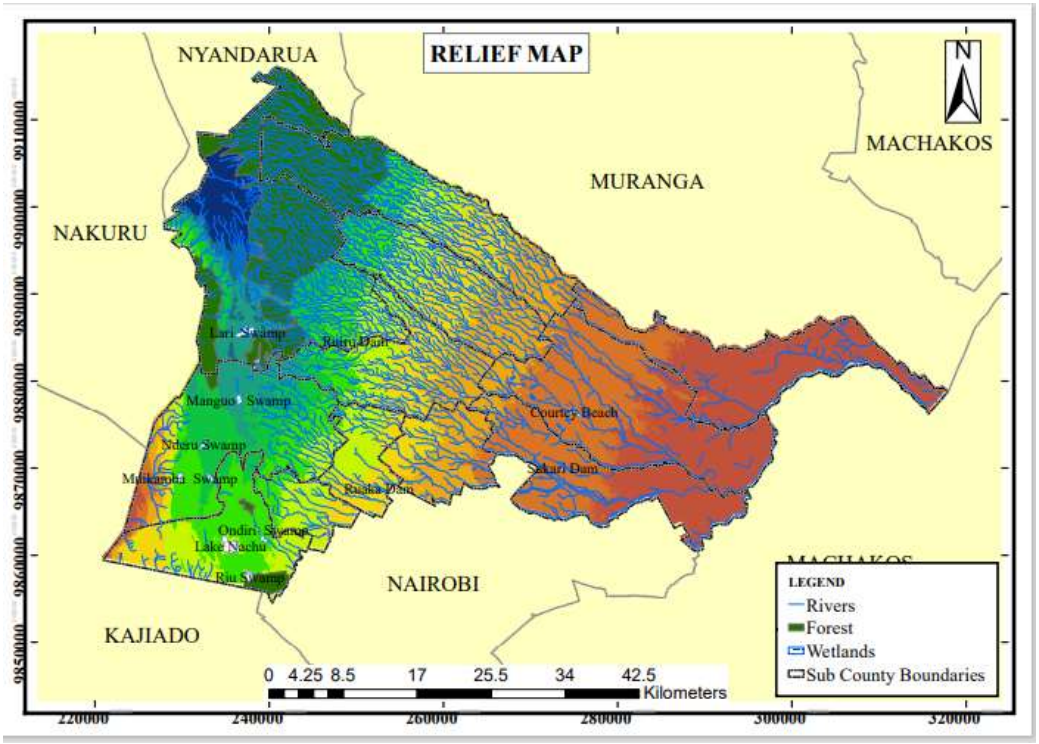

Figure 3 County Relief Map

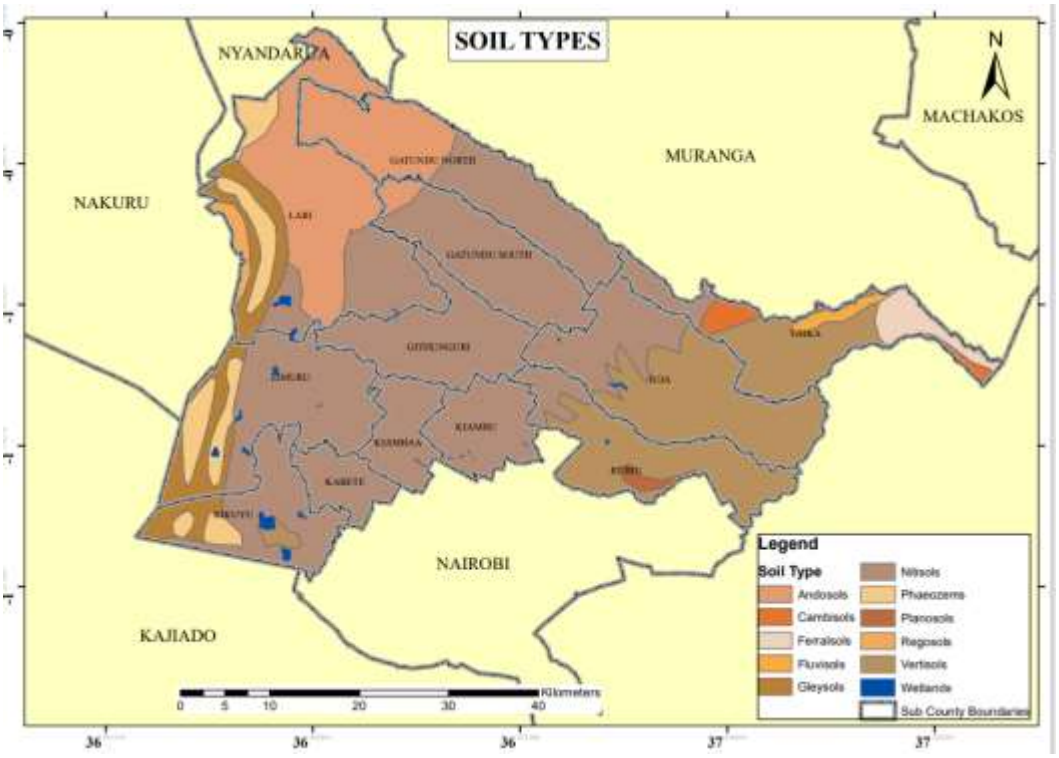

Figure 4 Types of Soils in the County

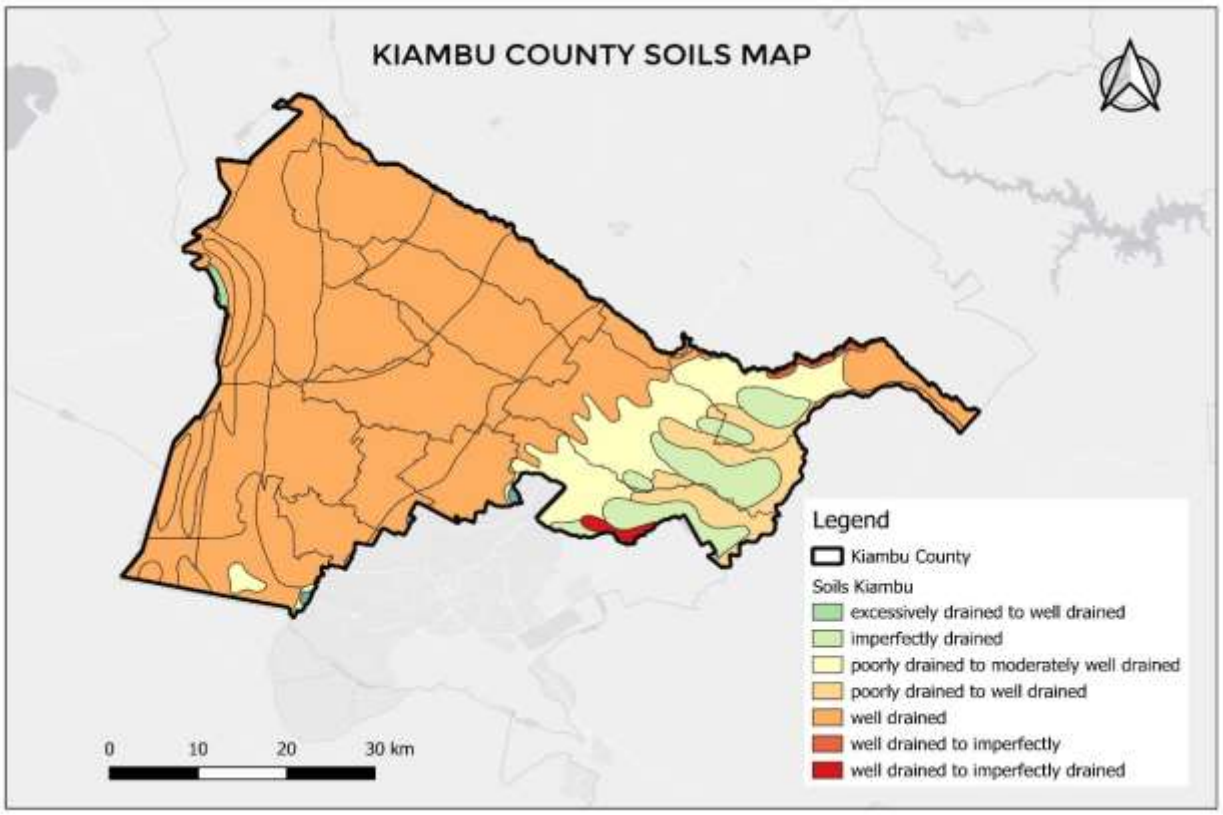

Figure 5 Soils of Kiambu Explained

1.1.4 Social Economic Activities need to improve

The County is predominantly an agricultural County with a high proportion of the population depending on agriculture for their livelihood with majority of household focusing on livestock keeping. Other economic activities are trade and real estate business especially in the urban areas of the county. The county is also highly dependent on its natural base, making it one of the counties that are highly vulnerable to the impacts of climate change

CHAPTER TWO: COUNTY CLIMATE CHANGE ACTION PLAN PROCESS

2.1 Purpose of the County Climate Change Action Plan

The Kiambu County Climate Change Action Plan (KCCCP) provides a guide for the county to mainstream climate change actions into the county's operations, functions and budgetary process. This is aimed at reducing the vulnerability and enhancing the resilience of the residents of Kiambu to the impacts of climate change

2.2 County Climate Change Action Plan (CCCAP) Process

The CCCAP is the final output of the climate risk assessment report which was undertaken at the ward level to assess the hazards and risks facing the communities at grassroots level with an aim of coming up with priority investment actions to address the identified hazards and risks. The entire process was as per the PCRA and Climate Action Planning process guidelines which involved the following steps

- Review of relevant documents such as the CIDP climate related policies and legislations and PCRA report by the cross sectoral technical working group that was formed and trained to spearhead the PCRA and the CCCAP process
- Drafting of first draft of the KCCCAP by the technical working group
- Collection of public inputs on the KCCCAP and validation exercise which was carried out at the County Headquarters on 14th July, 2023
- Incorporation of comments into the final draft of the KCCCAP
- Formulation of the final copy of the KCCCAP

2.3 Underlying Climate Resilient Context

2.3.1 Impacts of Climate Hazards in the County

The impacts of climate hazards identified by the community during the participatory climate risk assessment are summarized on table below:

Table 4 Impacts of Climate Hazards in the County

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S/N	HAZARDS	DIRECT IMPACT	INDIRECT IMPACT
1.	Pollution from industrial effluents, fumes from vehicles, mining activities and indiscriminate disposal of waste	Contamination of water sources Poor air quality Destruction of biodiversity Soil degradation	Compromised food safety Water and sanitation related illnesses
2.	Drought	Food shortages Famine Crop failure water scarcity, Drying up of rivers Scarcity of fodder	School dropouts Poverty and closure of various business activities. Influx of livestock (pastoralists) into the county causing competition for pastures and water resources.
3.	Flooding	Soil erosion Impassable roads Loss of human and animal life Damage to property and infrastructure Destruction of crops	High incidences of human and animal diseases Food shortages famine Financial instability Loss of livelihood
4.	Extreme temperatures	Destruction of crops through frost Respiratory illnesses and cold related illnesses such as arthritis High incidences of crop pests and diseases	Increased respiratory diseases Fire outbreaks Migration from cold areas to warmer one such as movement by the senior citizens from lari sub county to Naivasaha in Nakuru County

5.	Human wildlife and community conflicts	Damage to crops	Reduction of household income
	Land/mud slides	Crop and property destruction. Land degradation	Low crop yields
6	Erratic rains		Reduced productivity Reduced household income
7.	Strong winds	Damage to property Increased incidence of Respiratory diseases Damage to crops	Financial stress

2.3.2 County Climate Hazard Map

The major hazards identified by the community during the participatory climate risk assessment are summarized on table four and figure six

Table 5 Climate Hazards per Ecological Zone- insert a table where once can add a caption easily

ECOLOGICAL ZONES	WARDS	HAZARDS
Upper Highland	Kinale Kamburu Lari-Kirenga Kijabe Nyanduma	Extreme temperature (frost) Strong winds Landslides Flooding Drought
Lower Highland	Githobokoni Gituamba Kiganjo Ndarugu Githiga	Soil Erosion Mud slides Erratic rains
Upper Midland	Juja Murere Chania Mangu Ngenda Kiamwangi Ngewa Githunguri Ikinu,	Drought Extreme temperature, Erratic rains Pollution
Lower Midland Zones	Gatuanyaga Ngoliba Ndeiya Nachu Karai Kalimoni	Drought Extreme temperature Strong winds Human wildlife conflicts Flooding Pollution

	Witeithie Theta	

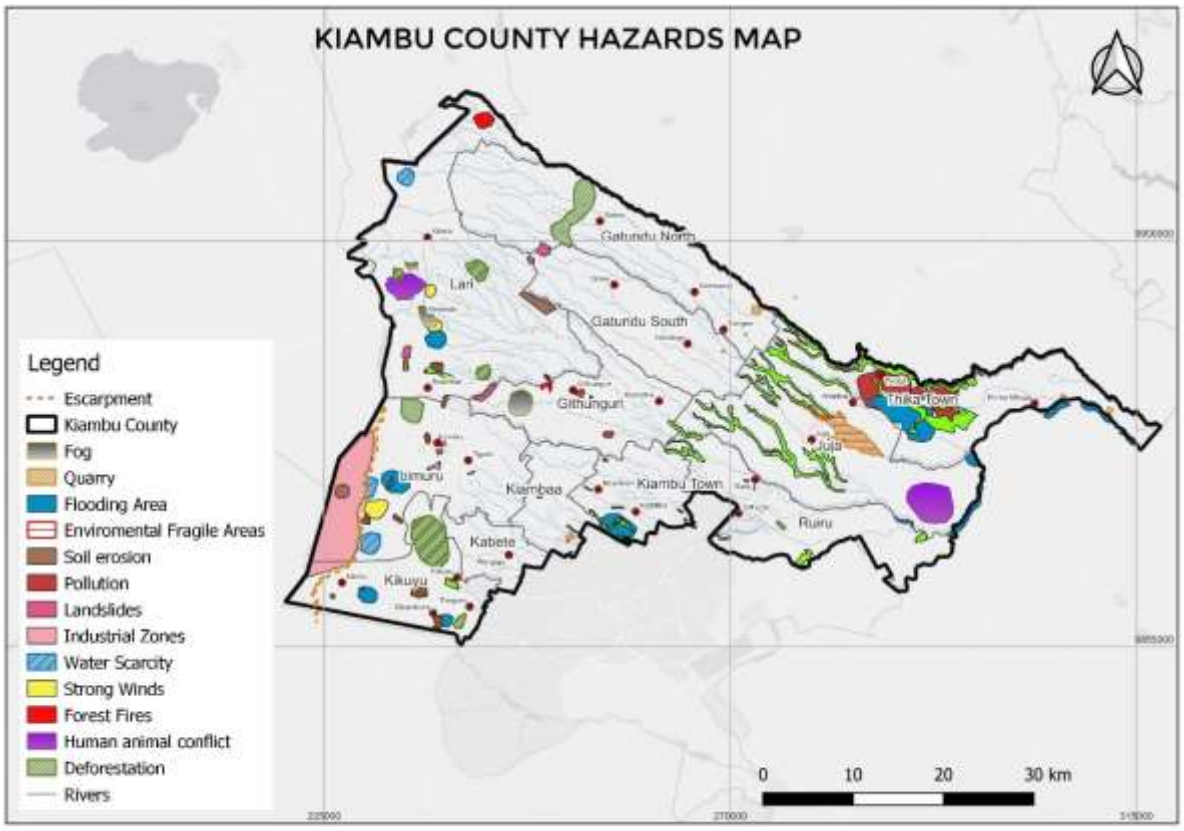

Figure 6 Kiambu County Hazard Map

2.3.4 Summary of Differentiated Climate Exposure and Vulnerability of Key Groups and Livelihoods in the County

Therearemanyfactorsthatdeterminetheseverityofclimatechangeconsequencesattheindividual level. They can be found in many realms: biophysical, social, cultural, economic, institutional, policy, infrastructure among many others. Women and youth are generally more vulnerable to the impacts of climate change than men because of their limited access to resources such as land. Their limited decision-making capacity in land sustainability issues also makes them more vulnerable.

The following category of groups were identified as the most vulnerable to climate hazards and risks in the county

- ❖ The elderly; they are more susceptible to extreme heat or cold and pollution leading to health issues. They have reduced mobility as a result of harsh climatic conditions such as flooding, making it challenging for them to escape or find relief and reaching medical facilities in case of weather-related health issues.
- ❖ People With Disabilities (PWDs); they are more prone to harsh climatic conditions such as extreme heat, cold and flooding, mobility limitations, reduced stamina, or compromised immune systems may make it difficult for them to seek shelter, evacuate, or engage in necessary protective measures.
- ❖ Youths and children; they are more prone to dropping out of school as a result of drought. They may also engage in risky behaviors, such as playing in polluted areas or swimming in unsafe water bodies increasing health risks.
- ❖ Orphans; because this group lack parental care, support and have limited access to resources, they may grapple to navigate and access basic needs increasing their vulnerability to the impacts of a harsh climate such as water shortage and pollution.
- ❖ Poor households; they are more prone to drought as they have little or no income. They are also more prone to over flooding as they live in areas with poor urban planning. Also prone to water shortages and poor management of wastes.
- ❖ Waste pickers who work in Kangoki dumpsites are exposed to extreme weather conditions such as extreme heat and exposure to rainfall as they are not sheltered. They are also likely to suffer from respiratory illness as a result of exposure to bad odour and respiratory illnesses

The Vulnerable

The following groups were identified as the most vulnerable to the impacts of climate change

Lari

a) The informal settlers in Kirasha, Kinale ward are more at risk during flooding as the settlement is located at the lowlands receiving all the water draining from the higher lands. Pollution of the Karemenu River poses a health hazard to the settlers as it's the source of water for household use. Due to their poor housing structures they are also more vulnerable to extreme cold temperatures. The settlement sits on the catchment of Karemenu River where the water table is high therefore risk of water contamination.

b) The elderly; they are more susceptible to extreme cold leading to respiratory illnesses and arthritis. They have reduced mobility as a result of harsh climatic conditions such as flooding, making it challenging for them to escape or find relief and reaching medical facilities in case of weather-related health issues.
c) PWDs; they are more prone to harsh climatic conditions such as extreme cold and flooding, mobility limitations, reduced stamina, or compromised immune systems may make it difficult for them to seek shelter, evacuate, or engage in necessary protective measures.
d) Youths and children; they are more prone to dropping out of school as a result of floods and extreme cold temperatures. They may also engage in risky behaviors, such as playing in polluted areas or swimming in unsafe water bodies increasing health risks.
e) Orphans; because this group lack parental care, support and have limited access to resources, they may grapple to navigate and access basic needs increasing their vulnerability to the impacts of a harsh climate such as water shortage and pollution.
f) Poor households; they are more prone to drought as they have little or no income. They are also more prone to over flooding as they live in areas with poor urban planning. Also prone to water shortages and poor management of wastes.

Limuru

a) Communities living in sloppy areas are prone to soil erosion and degradation thereby affecting crop yields.
b) Tea pickers from minority communities; are affected during drought when as tea production decreases affecting their income
c) Children; they are more prone to dropping out of school as a result of floods and extreme cold temperatures. They may also engage in risky behaviors, such as playing in polluted areas or swimming in unsafe water bodies increasing health risks.
d) Elderly; they are more susceptible to extreme cold leading to respiratory illnesses and arthritis. They have reduced mobility as a result of harsh climatic conditions such as flooding, making it challenging for them to escape or find relief and reaching medical facilities in case of weather-related health issues.
e) People with disability; they are more prone to harsh climatic conditions such as extreme cold and flooding. Mobility limitations, reduced stamina, or compromised

immune systems may make it difficult for them to seek shelter, evacuate, or engage in necessary protective measures.

f) Youths; those in transport sector such as boda boda face mobility challenges during floods and respiratory illnesses during extreme cold temperatures
g) Orphans; have limited access to resources, thus grapple to navigate and access basic needs increasing their vulnerability to the impacts of a harsh climate such as drought, water shortage and pollution
h) Poor households; during drought they have little or no income to access food and other basic commodities. They are also more prone to flooding as they live in areas with poor urban planning. Also prone to water shortages and poor management of wastes.
i) HIV victims; their immunity is compromised during extreme cold temperatures due to increase in respiratory diseases

Kikuyu

a) PWDs; these are at risk of accessing basic needs like food and clean water during drought and floods. Their mobility is also affected during floods when roads are impassible
b) Elderly; the extreme cold weather and dust during drought makes the elderly prone to respiratory diseases and arthritis. Poor access to food and nutrition can expose them to diet related illnesses. This is mainly in Nachu and Karai wards.
c) Women; Those in reproductive age face challenge in mobility while seeking health care during floods.
d) Youth; Most are in transport sector which is adversely affected during floods.
e) Children; they miss school due to respiratory illnesses and inadequate food during drought.

Kabete

a) Informal settlers in Gitigiti and Kosovo as vulnerable during floods due to poor sanitation conditions that make settlers prone to water borne diseases. They are also prone to extreme temperatures due to poor housing structures.
b) The elderly are more susceptible to extreme cold temperatures leading to respiratory illnesses. They also have reduced mobility during floods making it challenging for them to escape or reach medical facilities in case of illnesses.

c) PWDs; they are more prone to harsh climatic conditions such as extreme cold and flooding. Mobility limitations, reduced stamina, or compromised immune systems may make it difficult for them to seek shelter, evacuate, or engage in necessary protective measures.
d) Youths and children; they are more prone to dropping out of school as a result of floods and extreme cold temperatures or hunger during drought.
e) Orphans; they have limited access to resources and challenges in accessing basic needs hence increasing their vulnerability to the impacts of drought or floods.
f) Poor households; they are more prone to drought as they have little or no income. They are also more prone to over flooding as they live in areas with poor urban planning. Also prone to water shortages and poor management of wastes.

Kiambaa

a) Informal Settlers e.g. Kibagare – Karura; they are prone to poor sanitation during floods which could lead to water borne diseases.

b) PWDs; these are at risk of accessing basic needs like food and water during drought and floods. Their mobility is also affected during floods when roads are impassible
c) Elderly; the extreme cold weather and dust during drought makes the elderly prone to respiratory diseases and arthritis. Poor access to food and nutrition can expose them to diet related illnesses.
d) Women; Those in reproductive age face challenge in mobility while seeking health care during floods. For example in Muchatha ward.
e) Youth; Most are in transport sector which is adversely affected during floods.
f) Children; they miss school due to respiratory illnesses and inadequate food during drought. They also lack access to clean drinking water resulting to water borne diseases

Kiambu

a) The informal settlers in Ruturu- Ting'ang'a ward are more at risk during flooding due to inadequate sanitation facilities. Due to their poor housing structures they are also more vulnerable to extreme cold temperatures.

b) The elderly; they are more susceptible to extreme cold leading to respiratory illnesses and arthritis. They have reduced mobility as a result of harsh climatic conditions such

as flooding, making it challenging for them to escape or find relief and reaching medical facilities in case of weather-related health issues.

c) PWDs; they are more prone to harsh climatic conditions such as extreme cold and flooding, mobility limitations, reduced stamina, or compromised immune systems may make it difficult for them to seek shelter, evacuate, or engage in necessary protective measures.
d) Children; they are more prone to dropping out of school as a result of floods and extreme cold temperatures. There are increased respiratory illnesses during extreme temperatures.
e) Poor households; they are more prone to drought as they have little or no income. They are also more prone to over flooding as they live in areas with poor urban planning. Also prone to water shortages and poor management of wastes.

Ruiru

a) The elderly; they are more susceptible to extreme heat or cold and pollution leading to health issues. They have reduced mobility as a result of harsh climatic conditions such as flooding, making it challenging for them to escape or find relief and reaching medical facilities in case of weather-related health issues.
b) PWDs; they are more prone to harsh climatic conditions such as extreme heat, cold and flooding, mobility limitations, reduced stamina, or compromised immune systems may make it difficult for them to seek shelter, evacuate, or engage in necessary protective measures.
c) Youths and children; they are more prone to dropping out of school as a result of drought. They may also engage in risky behaviors, such as playing in polluted areas or swimming in unsafe water bodies increasing health risks.
d) Orphans; because this group lack parental care, support and have limited access to resources, they may grapple to navigate and access basic needs increasing their vulnerability to the impacts of a harsh climate such as water shortage and pollution.
e) Poor households; they are more prone to drought as they have little or no income. They are also more prone to over flooding as they live in areas with poor urban planning. Also prone to water shortages and poor management of wastes.

Githunguri

a) The farmers are affected through crop failures, death of livestock because of drought while during floods there is soil erosion
b) The sick, children and elderly cannot access food during floods and droughts as these extreme conditions lead to food shortages
c) The economically disadvantaged such as those in informal settlements cannot access basic commodities
d) There outbreak of diseases due to water contamination during floods and extreme weather conditions**.**

Juja

a) Children are vulnerable during floods due to impassable roads and open quarries left unattended. They are also affected by dust pollution which results in respiratory illnesses such as asthma causing school absenteeism.
b) PWDs are prone to hunger during drought since they have challenges meeting basic needs due to low incomes. Immobility is also a challenge during floods.
c) The elderly whose immune systems are weak are prone to respiratory diseases that are activated by strong winds during drought that cause dust pollution. They also face challenges accessing food during drought.
d) Farmer households are vulnerable due to crop failure which is common during extreme hot temperatures and drought.
e) Youth engaged in quarrying are prone to respiratory illnesses due to exposure to dust

Thika

a) Waste pickers in Kangoki dumpsite were found to be vulnerable to diseases to the nature of their work.

b) Street children are also vulnerable due to lack of socials safety nets.

c) Informal settlers in Kiandutu in hospital ward are vulnerable to water borne diseases during floods due to water contamination as a result of poor sanitation.
d) People living near Kangoki dumpsite in Kamenu ward are prone to water borne diseases due to water contamination during flooding.
e) Children are vulnerable to water borne illnesses during floods due to poor waste disposal. They are also affected by dust pollution during drought which results in respiratory illnesses such as asthma causing school absenteeism.
f) PWDs are prone to hunger during drought since they have challenges meeting basic

needs due to low incomes. Immobility is also a challenge during floods.

g) The elderly whose immune systems are weak are prone to respiratory diseases during drought are a result of dust pollution. They also face challenges accessing food during drought.

h) Farmer households are vulnerable due to crop failure and wildlife/ human conflict which is common in Ngoliba and Gatuanyaga wards during extreme hot temperatures and drought.

i) Youth engaged in transportation are challenged during floods.

Gatundu North

a) People living in sloppy areas are prone to landslides during extreme rainy conditions which loosens the soils and may cause destruction of homes and farms.

b) The elderly are more susceptible to extreme cold temperatures resulting in respiratory illnesses.

c) PWDs; They have reduced mobility as a result of harsh climatic conditions such as flooding, making it challenging for them to escape or find relief and reaching medical facilities in case of weather-related health issues.

d) Children are more prone to dropping out of school as a result of floods. They are also more susceptible to infections during extreme cold temperatures.

e) Farmer households are vulnerable to crop failure and animal/wildlife conflict as a result of drought. They are also more prone to flooding which results in crop and livestock destruction and further food insecurity.

Gatundu South

a) Farmer households are vulnerable to animal/wildlife conflict as a result of drought. They are also more prone to flooding which results in crop and livestock destruction and further food insecurity.

b) People living in sloppy areas are prone to landslides during extreme rainy conditions which loosens the soils and may cause destruction of homes and farms.

c) The elderly are more susceptible to extreme cold temperatures resulting in respiratory illnesses.

d) PWDs; They have reduced mobility as a result of harsh climatic conditions such as flooding, making it challenging for them to escape or find relief and reaching medical facilities in case of weather-related health issues.

e) Children are more prone to dropping out of school as a result of floods. They are also more susceptible to infections during extreme cold temperatures.

2.4 Overview of Climate Actions in the County

2.4.1 Mainstreaming of National Climate Action Plan (NCCCAP) in County Actions

In compliance with the provision of the Climate Change Act, 2016, the County Government of Kiambu enacted the Kiambu County Climate Change Act, 2021which prescribes the formulation a County Climate Change Action Plan as a mechanism for implementing the Act and for mainstreaming climate change actions in county operations.

2.4.2 Climate Change in County Integrated Development Plan (CIDP)

Through its CIDP, Kiambu County integrates the principle of sustainable land management as one of its missions. It aims at protecting biodiversity through rehabilitation of natural forests. The CIDP further acknowledges soil health issues in the county. It captures soil and water conservation as county functions and goes ahead to identify measures to promote agro forestry, increasing forest cover, and soil conservation. The CIDP encourages communities to adopt organic farming and especially the use of organic fertilizers

2.4.3 Other Key Climate Actions /Strategies in the County

With climate change being a cross cutting issue, its mainstreaming in all sectoral planning documents has been prioritized.

CHAPTER THREE: POLICY ENVIRONMENT

3.1 NATIONAL POLICY CONTEXT

In recognition of the adverse impacts of climate change on the ecosystem and social - economic sectors, the Kenyan government has formulated and adopted policies and legislations aimed at addressing the risks and challenges associated with climate change. This chapter therefore seeks to highlight some of the policies and legislations in the subsequent section that have informed the formulation of this action plan.

3.2 NATIONAL LEGAL AND POLICY FRAMEWORK

3.2.1 Constitution of Kenya, 2010

The Constitution of Kenya (2010) lays a foundation for the formulation of adaptation and mitigation legislation, policies, strategies and plans. In Article 11 under Culture, the Constitution recognizes the roles of science and indigenous technologies in development. Further, it provides that legislation will be enacted to recognize and protect ownership of indigenous seeds and plant varieties and use by communities. In Chapter 4, article 42 it guarantees the right to a clean and healthy environment. It provides that every Kenyan has a right to a clean and healthy environment. In Article 43 on Economic and Social rights, the constitutions states that "every person has a right to be free from hunger, and to have adequate food of acceptable quality". In chapter 5 on Land and Environment, article 69 provides for obligations in respect of the environment while Article 72 requires Parliament to pass legislation relating to the environment.

3.2.2 Climate Change Act, 2016

The objective of the Climate Change Act 2016 is to provide mechanisms and measures to improve resilience to climate change and promote low carbon development and provide a

regulatory framework for an enhanced response to climate change. The Climate Change Act adopts a mainstreaming approach, provides a legal basis for climate change activities through the NCCAP, and establishes the National Climate Change Council and the Climate Fund.

With this enactment, Kenya joins the league of nations that have taken concrete steps to domesticate the Paris Accord on Climate Change. The main objective of the Climate Change Act is to be applied in the development, management, implementation and regulation of mechanisms to enhance climate change resilience and low carbon development for the sustainable development of Kenya.

3.2.3 Energy Act, 2019

The Energy Act provides a useful supporting framework for the transition to a green economy with likely gains in environmental protection and climate change. The Act mandates the government to promote and encourage the development and use of renewable energy, including biodiesel, bioethanol, biomass, solar, wind and hydropower.

3.2.4 Forest Conservation and Management Act, 2016

The act protects existing forests and promotes reforestation and afforestation efforts towards increasing carbon storage capacity and reducing greenhouse gas emissions. The act also emphasizes on sustainable forest management practices, which help prevent deforestation, and ensure long-term viability of forest ecosystems. The act also emphasizes the involvement of local communities and indigenous people in forest conservation and management to foster a sense of ownership and stewardship, leading to more effective forest management and conservation. The Act establishes mechanisms for monitoring and enforcement to help address issues such as illegal encroachment, and unsustainable practices that contribute to deforestation and forest degradation. The act further promotes collaboration between government agencies, local communities, civil society organizations, and other stakeholders involved in forest conservation to foster knowledge and exchange best practices that aim at protecting and conserving the forests**.**

3.2.5 Community Land Act, 2016

Community Land Act (2016) gives rural and indigenous communities the legal right to own the land they live in and use for their livelihoods, culture, and homes. The Community Land Act provides a clear process which communities should follow to be able to register and govern their lands. This toolkit does not seek to replace the traditional/customary climate change resilience practices the communities have adopted over time, but rather to build on and strengthen them.

3.2.6 The Environmental Management and Coordination Act, 1999 (Amendment, 2015)

The Environment and Management Co-ordination Act (EMCA) 1999 is the operative law on matters concerning the environment. It is Kenya's first framework environmental law. It sets out general principles, creates administrative bodies, lays out environmental quality standards and provides for the inspection, enforcement and punishment of environmental offences The Environment and Management Co-ordination Bill 2022, seeks to repeal EMCA 1999. Importantly, the Bill introduces a proposal for the National Environment Management Authority (NEMA) to develop guidelines for integrating climate risk and vulnerability assessments as part of the environmental assessment study process.

Section 49 promotes the use of renewable energy and the planting of trees. Further Section 57 grants the relevant ministry the possibility to allow fiscal incentives under the form of tax rebates for private entities "that invest in plants, equipment and machinery for pollution control, re-cycling of wastes, water harvesting and conservation, prevention of floods and for using other energy resources as substitutes for hydrocarbons".

Section 50 sets the legal framework to ensure the conservation of biological diversity, and charges the relevant agency to "measure the value of unexploited natural resources in terms of watershed protection, influences on climate, cultural and aesthetic value, as well as actual and potential genetic value thereof." The document also contains a number of dispositions to protect forests.

3.2.6 Sustainable Waste Management Act 2022

Sustainable Waste Management Act, 2022 is developed to ensure material resources are used efficiently as prioritized by waste hierarchy, circular economy and clean production in order to reduce the amount of waste that is generated, deposited or discarded in the environment including the management of materials that would otherwise have been dumped or wasted in

a way that contributes to environmental, social and economic goals of sustainable development.

3.2.7 The Environmental Management and Coordination (Air Quality, Regulations, 2013

The Environmental Management and Coordination (Air Quality) Regulations set emissions standards for air pollution including greenhouse gas emissions. Under Section 14, occupiers and operators of certain types of facility are required to apply for emissions licenses and prohibited from emissions exceeding the levels set out in Schedule 3 of the Act. Greenhouse gases are listed as priority air pollutants in Schedule 2 of the Act.

3.2.8 Public Health Act CAP 242

This Act concerns the protection of public health in Kenya and lays down rules relative to, among other things, food hygiene and protection of foodstuffs, the keeping of animals, protection of public water supplies from pollution, the prevention and destruction of mosquitoes and the abatement of nuisances including nuisances arising from sewerage. The Act establishes the Central Board of Health and a district health management board in each district.

3.2.9 Kenya Vision 2030 and Its Medium-Term Plans (MTPs)

Kenya Vision 2030, is the country's development blueprint. Its objective is to help transform Kenya into a "newly industrializing, middle-income country providing a high quality of life to all its citizens by 2030 in a clean and secure environment" The Vision 2030 particularly recognizes that Agriculture will continue to play a crucial role towards the achievement of a sustained GDP growth rate of 10% annually. The Vision is based on three pillars: economic, social and political. The vision recognizes climate change as a risk that could slow the country's development. However, it did not identify actions to address climate change in its original form. 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.

3.2.10 National Climate Change Action Plan (NCCAP) 2018-2022

The NCCAP provides mechanisms to realize low carbon climate resilient development. It emphasizes sustainability, while prioritizing adaptation and enhanced climate resilience for vulnerable groups. NCCAP 2018-2022 has identified seven priority areas, including: Disaster Risk Management; Food and Nutrition Security; Water and the Blue Economy;

Forestry; Wildlife, and Tourism; Health, Sanitation, and Human Settlements; Manufacturing; and Energy and Transport.

NCAAP aligns with the Government's Big Four Agenda, and the Sustainable Development Goals (SDGs). NCCAP 2018-2022 seeks to increase the number of households and entities benefiting from devolved adaptive services; improve the ability of people to cope with drought and floods; improve the coordination and delivery of disaster management response; improve crop productivity through roll out of actions in the Kenya Climate Smart Agriculture (KCSA), 2017-2026; improve crop productivity by increasing the acreage under irrigation; increase productivity in the livestock and fisheries sectors through implementation of relevant actions in KCSA; and diversify livelihoods to adjust to the changing climate

3.2.11 National Climate Change Response Strategy (NCSRS), 2010

The National Climate Change Response Strategy is a strategic document with a multi-sectoral approach whose vision is for a prosperous and climate change resilient Kenya. The objective is to strengthen and focus nationwide actions towards climate change adaptation and Global Greenhouse Gas emission mitigation. In summary, the objective of the NCCRS is to respond to climate change by, among other aspects:

- Enhancing understanding of the global climate change negotiations process, international agreements, policies and processes and most importantly the positions Kenya needs to take in order to maximize beneficial effects.
- Assessing the evidence and impacts of climate change in Kenya; recommending robust adaptation and mitigation measures needed to minimize risks associated with climate change while maximizing opportunities.
- Enhancing understanding of climate change and its impacts nationally and in local regions; recommending vulnerability assessment, impacts monitoring and capacity building framework needs.

The NCCRS recognizes the link between climate change and food security: climate change affects the four components of food security, namely food availability, food accessibility, food utilization and food system stability. The strategy aims to help eliminate hunger, food insecurity and malnutrition. With a view to making agriculture more sustainable, sectoral adaptation and mitigation interventions are set out under Chapter 4. Adaptation measures include the prevention, tolerance or sharing of losses, changes in land use or activities, changes of location, and restoration.

The strategy also aims to reduce poverty, not only in urban but also in rural areas. Focus is given to increasing the resilience of livelihoods to disasters. Regarding governance, it is proposed that Ministry of Environment and Mineral Resources establishes a National Climate Change Steering Committee to help it gather and collate input and advice from key climate change stakeholders for its use in the coordination of Kenya's climate change activities. Also, the National Climate Change Activities Coordinating Committee (NCCACC) will continue to serve in its current advisory capacity.

3.2.12 National Adaptation Plan (NAP), 2015-2030

The aim of NAP is to consolidate the country's vision on adaptation supported by macro-level adaptation actions that relate with the economic sectors and county level vulnerabilities to enhance long term resilience and adaptive capacity. This NAP presents adaptation actions that cover the timeframe 2015-2030. NAP is aligned to MTP II in which climate change adaptation is represented in the drought risk management and ending drought emergencies, environment, water, energy, agriculture, livestock, and fisheries sectors. The NAP proposes macro-level adaptation actions and sub-actions in 20 planning sectors, categorizing them into short-, medium- and long-term time frames. The objectives of the NAP include:

- Highlight the importance of adaptation and resilience building actions in development
- Integrate climate change adaptation into national and county level
- Development planning and budgeting processes
- Enhance the resilience of public and private sector investment in the national transformation, economic and social pillars of Vision 2030 to climate shocks.
- Enhance synergies between adaptation and mitigation actions in order to attain a low carbon climate resilient economy
- Enhance resilience of vulnerable populations to climate shocks through adaptation and disaster risk reduction strategies.

3.2.13 National Climate Finance Policy, 2018

NCFP, 2018 outlines the role that climate financing could play in each of Kenya's most important economic sectors (agriculture, forestry, energy, transport, trade, tourism, manufacturing, water and sanitation, disaster risk management, and research and innovation). It describes the policy interventions the Kenyan government intends to make with respect to climate financing, including to establish a national Climate Change Fund, identify climate financing sources and create a national system for tracking them, enhancing Kenya's carbon trading system, and exploring the possibility of green bonds. It describes the current legal and

policy framework for climate financing that is relevant for Kenya, focusing on both domestic and international sources.

3.2.13 Sessional Paper No.1 of 2017 on National Land Use Policy

The overall goal of the national land use policy is to provide legal, administrative, institutional and technological framework for optimal utilization and productivity of land related resources in a sustainable and desirable manner at national, county and community levels. The Policy is cognizant of numerous factors that affect land use in Kenya which include geographic and ecological features, population distribution, social, historical, cultural and economic factors. Other key factors are administrative, institutional and policy instruments, investment, urbanization and land tenure. So as to ensure efficient, productive and sustainable use of land, key measures shall be taken by the government (both national and county) and all land users. These include: sound land use practices, conservation and enhancement of the quality of land and land-based resources and the proper management of demographic and health parameters. The Government shall institute mechanisms designed to induce land owners to put their land to productive use and encourage the application of efficient technology for the intensification of land use. Urban land use will be improved through measures such as establishing transparent, accountable, sustainable, comprehensive and participatory governance structures and decision-making processes.

3.2.14 National Climate Change Framework Policy, 2008

The National Climate Change Policy Framework (NCCPF) sets out the Government's commitments and responsibilities to address climate change. This policy framework will guide the development of adaptation and energy security measures, prepare to manage current climate variability and future climate projections.

The document sets five priority goals:

- Strengthen the Enabling Environment for Climate Change Adaptation and Mitigation, including Sustainable Financing.
- Adaptation and Reducing Risks for a Climate Resilient Future.
- Energy Security and Low-Carbon Future
- Disaster Preparedness, Response and Recovery
- Building Education and Awareness, Community Mobilization, whilst being mindful of Culture, Gender and Youth.

The National Climate Change Committee (NCCC) will further oversee the development of a Climate Change and Disaster Risk Management National Action Plan. This action plan will identify priority actions needed under each strategic goal, and align these with actions already identified under the National Action Plan for Disaster Risk Management 2008-2018.

3.2.15 Climate Risk Management Framework, 2017

The Climate Risk Management Framework for Kenya outlines how the government intends to harmonize its climate change and disaster risk policies. According to the framework, there are ten priority areas that overlap between climate change and disaster risk policies, which can be areas for government intervention. Specifically, the government intends to:

- Create an enabling policy and legal framework for integrated climate risk management (policy framework);
- Build capacity at national and county level for integrated climate risk management (capacity building);
- Analyze the level of exposure, vulnerability to disasters, and capacity at the local scale (exposure, vulnerability, and capacity);
- Involve communities at risk, and consider gender and marginalized groups (gender mainstreaming);
- Mobilize financial resources for climate risk management (resource mobilization);
- Mainstream climate risk management into sector programmes, plans and activities (mainstreaming climate risk management);
- Design and implement pilot projects for climate risk management at county and national level (pilot projects);
- Enhance research and dissemination of information about climate risk management (training, research, and outreach);
- Create platforms for sharing lessons and good practices on integrated climate risk management (learning).

3.2.16 National Energy Policy, 2018

The policy promotes use of renewable energy sources to reduce reliance on fossil fuels and reduce greenhouse gas emissions. It also highlights the importance of adopting energy-efficiency sources to reduce energy consumption and associated carbon emissions. It facilitates the transition to a low-carbon economy by encouraging sustainable practices such as cleaner cooking solutions. The policy also promotes sustainable land use practices to minimize vulnerability to climate-related risks and encourages research and development

initiatives in clean energy technologies, climate change mitigation, and adaptation strategies. Further it aids international collaboration, partnerships, technology transfer and financial support from various organizations, and development partners to help achieve Kenya's climate goals.

3.3 COUNTY ENABLING LEGAL AND POLICY FRAMEWORK

3.3.1 Kiambu County Climate Change Act, 2021

The Act provides for a framework and mechanism for mainstreaming climate change actions into the planning and decision making process and operations. Section 7 of the Act provides for the establishment of the County Climate Change Unit (CCCU) which shall serve as the secretariat for coordinating and mainstreaming climate change actions across all the departments in the county. The Act further acknowledges the County Climate Change Action Plan as an instrument for responding to climate change and further outlines what should be entailed in the plan.

3.3.2 Kiambu County Water and Sanitation Services Act, 2015

The Kiambu County Water and Sanitation Services Act, 2015, Part IV-V, ensure that water conservation areas are demarcated, conserved and protected for the purpose of conserving water. Initiate programmes that promote soil conservation and sustainable management of wetlands as well as flood flow management. Provide necessary sanitation services in the urban areas for sustainable Wastewater/effluent management

3.3.3 Kiambu County Sustainable Forest Management and Tree Growing Policy, 2023 (Draft)

The Act, facilitate legal and regulatory reforms that promote sustainability of the environment and forest resources, facilitate transition to green growth and chart ways of mitigating and adapting to climate change. It also enhances climate change resilience, water aquifer recharge and low emission development pathway in all economic sectors for sustainable development and posterity.

3.3.4 Kiambu County Citizen Petition and Participation Act, 2016.

The Act, establish modalities and a platform for citizen petition in the governance of the County and for connected purposes. It provides clear guidelines on citizen petition and participation on all matters affecting them including climate change related issues.

3.3.5 Kiambu County Food Safety Bill, 2021 (Draft)

The Act**,** make provision for protection of the public against health hazards in production, handling, processing, distribution, storage and sale of food and feeds.

3.3.6 Public Finance Management (Kiambu County Climate Change Fund Regulations, 2021) (Draft).

The Act defines the procedures for resource mobilization, administration, management, operations, and winding up of the Climate Change Fund. This Fund will provide funding for climate change activities identified in the County Integrated Development Plan (CIDP), County Climate Change Action Plan and County Climate Finance Framework and for connected purposes.

3.3.7 County Integrated Development Plan (2023-2027)

This is the key planning document aimed at guiding development for a period of five years. With climate change being a cross cutting issue, consideration to have climate change being mainstreamed in all the departments in the county has been provided for. The focus has been on climate actions aimed at enhancing the resilience of the residents of Kiambu and infrastructure to impacts of climate change as well as reducing their vulnerability. Some of the programmes aimed at realizing this are those aimed at increasing access to water supply at household and institutional level enhancing agricultural productivity, building resilience for the urban areas and informal settlements. Conversely, climate actions aimed at assisting the county transition to a low carbon development pathway are also integrated into the CIDP, key among them are transition to E- mobility, establishment of tree nurseries, tree growing, use of renewable energy mainly the solar energy and energy efficiency and conservation programmes and promotion of use of clean cooking technologies and fuels.

CHAPTER FOUR: PRIORITY COUNTY CLIMATE CHANGE ACTIONS

In this chapter a highlight of the identified hazards in the county and prioritized adaptation proposed by the community members in all the 60 wards during the participatory climate risk assessment which informed the preparation of this plan will be presented. Table five below summarizes the strategic investment priorities in the wards which have been clustered per Sub County.

Table 6 Kiambu County Strategic Adaptations Investment Priorities

Lari Sub County

Hazard	**Sector**	**Adaptation strategies**
Flooding	Agriculture	Building of gabions Tree planting Conservation of riparian reserves Install proper drainage channels/structures Proper civic education on soil conservation
Extreme Cold Temperatures	Agriculture	Afforestation Increase vegetation coverage within the forest e.g. bamboo trees Development, enactment and implementation of legislation on Carbon dioxide mining
	Health	Enhanced Universal health

Hazard	Sector	Adaptation strategies
		Awareness creation on warm house designs
	Transport and Infrastructure	Erect appropriate signage Proper road designs
	Education	Enhancement of feeding programmes Awareness creation on warm ECDE classes designs
	Water	Construction of green houses in the treatment facility
Landslides	Agriculture	Building of gabions Tree planting Conservation of riparian reserves Install proper drainage channels/structures Proper civic education on soil conservation
	Environment	-Install proper drainage channels/structures -Tree planting
Drought	Water	Increase public awareness on conservation of water Promote water efficiency through monitoring, reducing wastage Conservation of riparian land Construct water harvesting & storage structures Installation of cofferdams at Kireita forest Water control devices Invest in early warning systems and infrastructure
Drought	Environment	Establish water points around key biodiversity ecosystems Increase public awareness campaigns on natural resource

Hazard	Sector	Adaptation strategies
		and ecosystem management for communities in key biodiversity ecologies
	Agriculture	Invest in capacity building on soil management
		Installation of Irrigation systems Invest in early warning systems and infrastructure Subsidized farm inputs climate Smart agricultural farming
		Public awareness on conservation of animal feeds through silage, hay etc Introduction of appropriate and resilient breeds
	Health	Increased public awareness on disease prevention. Vaccination for animals
	Trade	Increase crop productivity through improved irrigation
Hailstorms	Agriculture	Invest in early warning systems Hail observations and monitoring

Limuru Sub County

Hazard	Sector	Adaptation strategies
Flooding	Agriculture & livestock	Building of gabions Tree planting Conservation of riparian reserves

Hazard	Sector	Adaptation strategies
		Install proper drainage channels/structures Proper civic education on soil conservation, crop rotation, adoption of early maturing plants & farm planning Promote IPM Promote runoff water harvesting e.g. by construction of water ponds Crop and livestock insurance
Flooding	Water	Construction of waste transfer stations, provision of waste bins/skips, Harvesting of rain water in markets, schools and hospitals
		Increase public awareness Enforce rules and regulations on waste & chemical disposal
	Health	Increased public awareness on disease prevention. Vaccination for animals. Early relocation of people and animals to safer grounds
	Transport and Infrastructure	Construction and maintenance of drainage systems Proper road designs
	Education	Landscaping of School compounds and paving of driveways/walkways, construction and maintenance of drainages, Early warning & preparedness
Drought	Water	Construct water harvesting and storage structures Conservation of water catchment areas and sources

Hazard	Sector	Adaptation strategies
		Water control devices such as sluice gates, valves and master meters Increase public awareness Invest in early warning systems and infrastructure
	Agriculture	Invest in capacity building of farmers on soil management Promote drought tolerant crop varieties Promote crop insurance Installation of Irrigation systems Invest in early warning systems and infrastructure Subsidized farm inputs, dam liners Promote Climate smart agricultural practices Engage youths in construction of soil and water conservation structures Promote Integrated pest management systems (IPM)
	Livestock	Conservation of animal feeds in form of silage, hay etc Introduction of appropriate and resilient breeds
Drought	Wildlife and Tourism	Provision of food and watering points Planting fruit trees Compensation of victims
	Fisheries	-Water harvesting

Hazard	Sector	Adaptation strategies
		-Climate smart aquaculture technologies e.g. raised ponds & re- circulatory systems -Adoption of resilient species e.g. catfish
	Health	Increased public awareness on disease prevention.
Extreme Cold Temperatures	Agriculture	Crop diversification Early planting Promote agronomic practices e.g. crop rotation Promote IPM
	Livestock	Proper housing for livestock
	Health	Enhanced Universal medical cover Awareness creation on warm house designs and clothing
	Transport and Infrastructure	Erect appropriate Road signages. Proper road designs
	Education	Enhancement of school, feeding programme. Construction of warm ECDE classrooms.
	Water	Construction of green houses in the treatment facility

Kikuyu Sub County

Hazard	Sector	Adaptation strategies
Drought	Water, Environment, Energy and	Promote water harvesting technologies

Hazard	Sector	Adaptation strategies
	Natural Resources	Solarization of boreholes Mapping and pegging of riparian reserves Promotion of water conservation and management measures Construction of water harvesting and storage facilities and structures for roof and surface run off Water saving control devices Awareness creation on water conservation and management Invest in early warning systems and infrastructure Enforcement of guidelines on integrated land use
Drought	Agriculture	-Engage youths in construction of soil and water conservation structures -Water harvesting for crop production -Installation of Irrigation systems -Promote drought tolerant crop varieties -Invest in early warning systems and infrastructure -Promote subsidized farm inputs
		-Promote crop insurance -Climate smart agricultural farming -Promote Integrated pest management systems (IPM)
		-Conservation of animal feeds through silage, hay etc -Introduction of appropriate and resilient breeds -Vaccination and disease control measures

Hazard	Sector	Adaptation strategies
		-Fencing off of forests -Provision of food and watering points for wildlife -Compensation of victims
	Fisheries	-Water harvesting -Climate smart aquaculture technologies e.g. raised ponds & re- circulatory systems -Adoption of resilient species e.g. catfish
	Education	-Water harvesting and storage -Increase access to water supply through drilling of boreholes and piped water supply -Introduction of school feeding programmes -Immunization programmes -Sensitization of learners on environmental conservation and climate change
	Trade Markets	-Construction of solar powered cold storage rooms -Establishment of post-harvest management facilities such as cold rooms -Improvement of designs of the markets to allow for free circulation of air and to shield the traders from extreme heat -Adoption of green designs of the markets
	Sector	**Adaptation strategies**
Extreme Cold Temperatures	Agriculture Livestock	-Crop diversification -Early planting -Promote agronomic practices e.g. crop rotation -Promote IPM Proper housing for livestock

Hazard	Sector	Adaptation strategies
Flooding	Agriculture & Livestock	-Construction of soil and water conservation structures -Promote runoff water harvesting e.g. by construction of water ponds -Crop and livestock insurance -Tree planting -Conservation of riparian reserves -Install proper drainage channels/structures -Proper farm planning
	Health	Unclogging of drainage systems
	Roads Transport, Utilities and Public works	Climate proof the transport infrastructure
	Water, Environment Energy and Natural Resources	Water management infrastructure Proper waste management

Kiambaa

Hazards	Sector	Adaptation strategies
Flooding	Agriculture	Construction of Soil and water conservation structures Promote water harvesting

		Tree planting Conservation of riparian reserves Installation of proper drainage channels/structures Proper civic education on soil conservation Implementation of County Spatial Plan
	Water	Design and Construction of Proper Storm water structures Reclamation and protection of wetlands Development, enactment and implementation of legislation on liquid and solid waste management
	Health	Increased public awareness on disease prevention. Vaccination for animals
	Transport and Infrastructure	Construction and maintenance of drainage systems Proper road designs Enforcement of relevant legislations (EMCA 1999, Water Act 2016)
	Education	Construction of proper drainage system

		Landscaping of school compound Water harvesting

Kiambu

Hazard	Sector	Adaptation strategies
Air pollution	Environment	Tree planting/incentives for carbon credit
	Health	Wearing of face masks
Flooding	Agriculture	Afforestation Zoning of agricultural land to avoid encroachment on agricultural areas Rain Water harvesting Opening up of waterways
	Physical infrastructure	Proper design of bridges and other road infrastructure Construction of drains Opening up of waterways Controlled development to allow for open spaces/water seepage zones
	Livelihoods	Proper design of bridges and other road infrastructure Soil and water conservation structures e.g. cut-off drains, bench terraces, water harvesting
	Trade	Proper design of bridges and other road infrastructure
	Health	Construction of drains Opening up of waterways
Drought	Environment	Afforestation Cleaning of rivers
	Health	Water harvesting Provision of potable water

	Agriculture	-Engage youths in the construction of soil and water conservation structures -Water harvesting for crop production -Installation of Irrigation systems -Promote drought-tolerant crop varieties -Invest in early warning systems and infrastructure -Promote subsidized farm inputs
	Livelihoods	Adopt farming practices Urban agriculture
	Trade	Construction of food reserves/silos
Extreme Temperatures	Environment	Planting of trees Provision of fire hydrants/firefighting equipment
	Health	Urban greenery and planting of trees
	Agriculture	Plant drought-resistant crops/fast-maturing plants
	Trade	Provision of cooling facilities

Ruiru

Hazard	**Sector**	**Adaptation strategies**
Flooding	Health	Unclogging of drainage systems
	Roads Transport, Utilities and Public works	Climate proof the transport infrastructure

	Agriculture, Livestock and Fisheries	Soil conservation measures Storm water management Tree planting
	Water, Environment Energy and Natural Resources	Water management infrastructure
		Public awareness on proper waste management Cleaning/ unblocking of waste water drainage systems
		Promote rehabilitation of quarries /derelict land Enforcement of guidelines on integrated land use
Drought	Water, Environment, Energy and Natural Resources	Promote water harvesting technologies Solarization of boreholes Mapping and pegging of riparian reserves Promotion of water conservation and management measures Construction of water harvesting and storage facilities and structures for roof and surface run off Water saving control devices

		Awareness creation on water conservation and management Invest in early warning systems and infrastructure Enforcement of guidelines on integrated land use
	Agriculture, livestock fisheries	Invest in capacity building on soil management Introduction of more climate tolerant fish species Adoption of drought tolerant crops Diversification of irrigation sources Practicing climate smart agriculture technologies Zero grazing and fodder conservation Invest in early warning systems and infrastructure
	Education	Water harvesting and storage Increase access to water supply through drilling of boreholes and piped water supply Introduction of school feeding programmes

		Immunization programmes Sensitization of learners on environmental conservation and climate change
	Trade Markets	Construction of solar powered cold storage rooms Establishment of post-harvest management facilities such as cold rooms Improvement of designs of the markets to allow for free circulation of air and to shield the traders from extreme heat Adoption of green designs of the markets

Githunguri

Hazard	**Sector**	**Adaptation strategies**
Drought	Water	Increase public awareness on climate change Construct water harvesting & storage structures installation of cofferdams Install Water control devices Invest in early warning systems and infrastructure
	Environment	Establish water points around key biodiversity ecosystems Tree planting Increase public awareness on natural resource and ecosystem management for communities in key biodiversity ecologies
	Agriculture	Invest in capacity building on soil

		management
		Implementation of County Spatial Plan
		Construction of soil and water conservation structures
		Installation of Irrigation systems Invest in early warning systems and infrastructure subsidized farm inputs Practice climate smart agricultural farming
	Livestock	Public awareness on conservation of animal feeds through silage, hay etc Introduction of appropriate and resilient breeds Vaccination of animals
	Health	Increase awareness on disease prevention Vaccination of animals
Flooding	Agriculture	Construction of Soil and water conservation structures Promote water harvesting Tree planting Conservation of riparian reserves Installation of proper drainage

		channels/structures Proper civic education on soil conservation Implementation of County Spatial Plan
	Water	Design and Construction of Proper Storm water structures Reclamation and protection of wetlands Development, enactment and implementation of legislation on liquid and solid waste management
	Health	Increased public awareness on disease prevention. Vaccination for animals
	Transport and Infrastructure	Construction and maintenance of drainage systems Proper road designs Enforcement of relevant legislations (EMCA 1999, Water Act 2016) Implementation of County Spatial Plan
	Education	Construction of proper drainage system Landscaping of school compound

		Water harvesting
Landslides	Agriculture	Construction of Soil and water conservation structures Tree planting
	Water	Design and construction of proper soil and water conservation structures Invest in early warning systems and infrastructure
	Environment	Increase Public awareness on environmental conservation Tree planting
	Trade	Increase public awareness on reducing activities on areas prone to mudslides
Pollution	Environment	Construction of green houses in the treatment facility Promotion of clean cooking
	Health	Increased public awareness on disease prevention.

Juja

Hazard	**Sector**	**Adaptation strategies**
Drought	Water	- Community Based Water Management activities (water harvesting/ storage / recycling / water rationing) Conservation of water catchment areas and sources Water control devices such as sluice gates, valves and master meters

		- Invest in early warning systems and infrastructure Invest in early warning systems and infrastructure
	Agriculture	Invest in capacity building of farmers on soil management Promote drought tolerant crop varieties Promote crop insurance Installation of Irrigation systems Invest in early warning systems and infrastructure Subsidized farm inputs, dam liners Promote Climate smart agricultural practices Engage youths in construction of soil and water conservation structures Promote Integrated pest management systems (IPM)
		Conservation of animal feeds in form of silage, hay etc Introduction of appropriate and resilient breeds
		- Habitat management - Community education

		- Compensation of victims - Apply – GPS tracking and camera traps to monitor movement
	Health	Increased public awareness on disease prevention.
Flooding	Agriculture & livestock	Building of gabions Tree planting Conservation of riparian reserves Install proper drainage channels/structures Proper civic education on soil conservation, crop rotation, adoption of early maturing plants & farm planning Promote IPM Promote runoff water harvesting e.g. by construction of water ponds Crop and livestock insurance
	Water	Construction of waste transfer stations, provision of waste bins/skips, Harvesting of rain water in markets, schools and hospitals
		Increase public awareness Enforce rules and regulations on waste & chemical disposal
	Health	Increased public awareness on disease prevention.

		Vaccination for animals. Early relocation of people and animals to safer grounds
	Transport and Infrastructure	Construction and maintenance of drainage systems Proper road designs
	Education	Landscaping of School compounds and paving of driveways/walkways, construction and maintenance of drainages, Early warning & preparedness systems

Thika

Hazard	**Sector**	**Adaptation strategies**
Drought	Water, Environment, Energy and Natural Resources	Promote water harvesting technologies Solarization of boreholes Mapping and pegging of riparian reserves Promotion of water conservation and management measures Construction of water harvesting and storage facilities and structures for roof and surface run off Water saving control devices Awareness creation on water

		conservation and management Invest in early warning systems and infrastructure Enforcement of guidelines on integrated land use
	Agriculture	-Engage youths in construction of soil and water conservation structures -Water harvesting for crop production -Installation of Irrigation systems -Promote drought tolerant crop varieties -Invest in early warning systems and infrastructure -Promote subsidised farm inputs
		-Promote crop insurance -Climate smart agricultural farming -Promote Integrated pest management systems (IPM)
		-Conservation of animal feeds through silage, hay etc -Introduction of appropriate and resilient breeds -Vaccination and disease control measures -Fencing off of forests -Provision of food and watering points for wildlife -Compensation of victims
	Fisheries	-Water harvesting -Climate smart aquaculture technologies e.g. raised ponds & re-

		circulatory systems -Adoption of resilient species e.g catfish
	Education	Water harvesting and storage Increase access to water supply through drilling of boreholes and piped water supply Introduction of school feeding programmes Immunization programmes Sensitization of learners on environmental conservation and climate change
	Trade Markets	Construction of solar powered cold storage rooms Establishment of post-harvest management facilities such as cold rooms Improvement of designs of the markets to allow for free circulation of air and to shield the traders from extreme heat Adoption of green designs of the markets
Flooding	Agriculture	Building of gabions Tree planting Conservation of riparian reserves Grass planting egvertiva grass

		Install proper drainage channels/structures
	Water	Design and Construction of Proper Storm water structures
	Health	Increased public awareness on disease prevention. Vaccination for animals Provision of mosquito nets
	Transport and infrastructure design	Provision of culverts and excavator Construction and maintenance of drainage systems Proper regulations on constructions Increase green areas Proper road designs
	Water, Environment Energy and Natural Resources	Water management infrastructure Proper waste management

Gatundu North

Hazards	**Sector**	**Adaptation strategies**
Drought	Water	Increase public awareness on conservation of water Promote water efficiency through monitoring, reducing wastage Construct water harvesting & storage structures Conservation of riparian land Water control devices Invest in early warning systems and infrastructure

	Environment	Establish water points around key biodiversity ecosystems Increase public awareness campaigns on natural resource and ecosystem management for communities in key biodiversity ecologies
	Agriculture	Invest in capacity building on soil management
		Installation of Irrigation systems Invest in early warning systems and infrastructure Subsidized farm inputs climate Smart agricultural farming
		Public awareness on Conservation of animal feeds through silage, hay etc Introduction of appropriate and resilient breeds
		Smart agricultural farming
	Health	Increased public awareness on disease prevention. Vaccination for animals
	Trade	Increase crop productivity through improved irrigation
Landslide	Agriculture	Planting of trees Increase public awareness campaigns on use of quarries
	Environment	Tree planting

		Increase public awareness on Environmental conservations
	Water	Soil and water conservation structures Invest in early warning systems and infrastructure Increase public awareness on reducing human activities on landslide prone areas
	Trade	Increase public awareness on reducing human activities on landslide prone areas
Flooding	Agriculture	Construction of Soil and water conservation structures Tree planting Conservation of riparian reserves Install proper drainage channels/structures Proper civic education on soil conservation
	Water	Design and Construction of Proper Storm water structures Conservation of riparian reserves and wetlands

		Development, enactment and implementation of legislation on liquid and solid waste management
	Health	Increased public awareness on disease prevention. Vaccination for animals
	Transport and Infrastructure	Construction and maintenance of drainage systems Proper road designs Implementation of County Spatial Plan
	Education	Design and Construction of Proper Storm water structures Landscaping of school compound Water Harvesting

Gatundu South

Hazard	**Sector**	**Adaptation strategies**
Drought Landslide	Agriculture	Promote Drought tolerant varieties and breeds Food conservation by value addition e.g. freezing, drying, packaging Conservation agriculture e.g mulching, zero-tillage

		Installation of Irrigation systems Invest in early warning systems and infrastructure Subsidized farm inputs climate Smart agricultural farming Government programs to buy livestock(destocking) Crops and livestock insurance
	Fisheries	-Water harvesting -Climate smart aquaculture technologies e.g. raised ponds & re-circulatory systems -Adoption of resilient species e.g catfish
	Water	Water harvesting and conservation in schools and public institutions Powering of boreholes within the ward using solar, Proper construction of sewer lines and drainages Enforcement of laws Planting windbreaker trees Harnessing wind /water power
	Health	Conduct Civic education about

		hygiene and sanitation Increased public awareness on disease prevention. Vaccination for animals
	Agriculture	Planting of indigenous trees Conducting civic education to create awareness on soil conservation measures Constructing proper drainage systems
	Roads, utilities and Transport	Putting up gabions
	Water	Rehabilitation or healing of quarries Design and Construction of Proper drainage away from the slope
	Trade	Increase public awareness campaigns on reducing human activities on landslide prone areas
Flooding	Agriculture	Construction of Soil and water conservation structures Tree planting Conservation of riparian reserves Install proper drainage

		channels/structures Proper civic education on soil conservation
	Water	Design and Construction of Proper Storm water structures Proper construction of pit latrines in schools Conservation of riparian reserves and wetlands Development, enactment and implementation of legislation on liquid and solid waste management
	Health	Increased public awareness on disease prevention. Vaccination for animals
	Transport and Infrastructure	Construction of Ndumiti bridge and Gaitabiri-KiandaKinene Maintenance of electric wires. Construction and maintenance of drainage systems

		Proper road designs Implementation of County Spatial Plan Construction of culverts Construction of guardrail
Human Wildlife Conflict	Agriculture	Compensation and Insurance to cover any damage - Installing electric fences or other physical barriers to create a separation between human settlements and wildlife habitats

CHAPTER FIVE: DELIVERY MECHANISM

5.1 Enabling Factors

The implementation of the KCCCAP will be dependent on a supportive policy, legal and institutional framework as summarized in the subsequent sections

5.1.1 Enabling Policy and Regulation

The implementation of the KCCCAP will be dependent on a supportive policy, legal and institutional framework as summarized in the subsequent sections

5.1.1 Enabling Policy and Regulation

The Kiambu County Climate Change Act, 2021 shall form the basis upon which the implementation of this plan will be actualized as per the provisions of Section 3 (2) which points out that the Act shall be applied by the County Government to :—

- Mainstream climate change responses into development planning, decision making and implementation
- Implement coordinated and integrated mechanisms to guide responses to climate change and its impacts by all actors and stakeholders
- Facilitate effective management of climate change impacts by enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change
- Promote, support and facilitate community-based and community initiated adaptation and mitigation activities

Equally, the implementation of this plan will be through the existing national policies and legislation and will be supported by relevant county legislation to be enacted and institutions. In particular the implementation process will be in conformity with the constitution of Kenya 2010 and specifically adhere to the provisions of articles 10, 42, 43, 69 and the fourth schedule. Equally the Kiambu County Climate Change Act, 2021 will form the basis upon which

5.1.2 Mainstreaming in the CIDP

The plan will also be aligned with the current CIDP in which consideration for mainstreaming of climate change in county operations and all sectors in the county has been made. A summary of some of the climate actions that have been mainstreamed in the CIDP is tabulated on table 6:

Table 7 Summary of Climate Actions Mainstreamed in the CIDP

SECTOR /DEPARTMENT	CLIMATE ACTIONS
Finance, ICT and Economic Planning	Developing of Modern solar powered data centers developed
	Solar powered ICT incubation centres constructed and equipped
Administration and Public services	Equipping of sub county office blocks with water harvesters
	Solarization of sub county offices
Agriculture	Training of Farmers on best crop varieties for various Agro-Ecological Zones (AEZ) and Agro-ecological farming
	Training farmers on soil fertility management
	Farmers trained on Integrated Pest Management (IPM) and safe handling of agricultural chemicals
	Farmers trained on best practices for harvest and post-harvest handling and packaging
	Installation of drip kits
	Training of Farmers trained on disease control
	Training farmers on modern fisheries and aquatic technologies
Water	Drilling of New Boreholes
	Construction of Ground tanks
	Solarization of boreholes
	Construction of Sewer lines
Health services	Procuring of hybrid vehicles
	Installation of solar powered equipment
Education Gender and culture	Renovating offices and fitting them with solar panels and water harvesting technologies
	Use of energy saving cook stoves in learning institutions
	Vulnerable members, street children rescued and rehabilitated and their shelters improved.
Youth Affairs, Sports and Communication	Equipping of office blocks with water harvesting devices
	Equipping of amphitheater with solar panels
Roads, Transport, Public Works and Utilities	Installation of solar street lights

5.1.3Finance-County Climate Change Fund (CCCF)

The financing mechanism for this plan shall be through the County Climate Change Fund established as per the provisions of Section 57 of the Kiambu County Climate Change Act. 2021.

5.1.4 Governance-County Government Structures

The figure below summarizes the structure of the county government of **Kiambu**

5.1.5 Institutional Roles and Responsibilities

The implementation of the Kiambu County Climate Change Action Plan (KCCCAP) will be dependent on involvement of stakeholders at different levels whose roles and responsibilities are summarized on the table below

INSTITUTIONS	ROLES AND RESPONSIBILITIES
Sector Departments	Mainstreaming of climate change actions in their operations
County Assembly of Kiambu	Appropriation of funds for climate actions into the County Climate Change Fund (CCCF) Oversight role Adoption and approval of climate change related policies and legislations
County Climate Change Unit (CCCU)	Serve as a secretariat for coordinating and mainstreaming climate change action across all the departments Approve and oversee implementation of county climate change action
Government Agencies and Ministries	Regulatory framework. Provide incentives Improve knowledge on climate change Financing research Fostering growth that help in coping with consequences of climate change since the poor are more vulnerable
Meteorological Department	Data collection and monitoring on weather elements Observation, analysis, and weather forecasting Dissemination of weather and climate information to the end users Dissemination of early warning systems, advisories and alerts for severe weather and extreme events

Non-Governmental Organizations (NGOs)	Improving knowledge sharing. Enhance collaboration. Knowledge co production Intermediary role in helping understand and consider climate change in decision making
Civil Society Organizations (CSOs)	Advocate need to address climate change. Reach out to policy decision makers to address specific environmental concerns on air pollution, access to water, renewable energy etc. Engage climate and environment related policy issues. Collaborate with government agencies
Development Partners	Implementation of climate related projects in energy, agriculture, water and health Capacity building of community organizations, county technical officials and other partners Funding and financing climate projects Technical assistance and support Monitoring, evaluation and learning.
Research Institutions	Offer expertise. Analyze options of curbing emissions and halting global warming. Provide innovations. Solve range of problems related to climate change. Evaluate climate change policies
Private Sector	Products and services for resilience. Mobilize green investments. Develop green infrastructure, reduce energy and water use. Finance adaption. Invest in renewable energy Digitization and de-carbonization of processes
Faith Based Organizations (FBOs)	Advocates of climate action. Offer humanitarian and disaster relief. Implementing agencies.

	Work closely with community stake holders
Media	Informative. Educating masses. Influencing peoples view and opinion on climate change. Issue early warnings on disasters. Comparative reporting

Table 8 Institutional Roles and Responsibilities

5.1.6 Implementation and Coordination Mechanisms

5.1.7 Directorate of Climate Change

The coordination of the implementation of the action plan shall be done by the Directorate of climate change.

Functions of the Directorate

The Directorate is charged with the following functions;

a) advising the Executive Committee Member on policy and strategic planning and all matters related to Climate Change in the County
b) Providing secretarial services to the Steering Committee
c) Implementing climate change policies, actions plans and strategies
d) Coordinating, mainstreaming and integrating climate change programs into the sectoral strategic plans
e) Establishing and maintaining a relationship with the county, regional and international organizations, institutions and agencies as may be appropriate for the implementation of the climate change policy and recommendations
f) Promoting and cooperating in the development, application and diffusion, including transfer of technologies and best practices
g) Establishment and implementation of an effective and efficient institutional framework for mainstreaming climate change responses across relevant sectors and to integrate it into the planning, budgeting, decision-making process

h) Enhance resilience against the negative effects of climate change and develop adaption and mitigation strategies
i) Develop reliable and affordable renewable energy for utilization in county operations with the surplus being netted to the national grid for revenue generation
j) Undertaking of formulation and implementation of policies related to climate change issues
k) Establish and maintain an effective and efficient institutional framework to mainstream climate change responses across relevant sectors and into integrated planning, budgeting, decision-making and implementation at county levels
l) Undertake research work on climate change mitigation, adaptation, development, implementation, monitoring and evaluation of programmes and initiatives aimed at enhancing communities' social, economic, and technical resilience while reducing their vulnerability to the impacts of climate change
m) Education, training and advocacy work on climate change issues
n) Ensure the implementation of the programmes, plans and activities relating to climate change;
o) Engage in creation of linkages and partnerships with various stakeholders and key-players in the sector
p) Take a lead role in the drafting and implementation of a sustainability policy that will guide all the operations of the county government to ensure that all development activities are undertaken in a sustainable manner

5.1.8 County Climate Change Unit

The Climate Change Unit (CCU) shall coordinate and oversee climate change responses in the county.

Functions of the CCCU

a) Set county-specific targets for climate change actions, and develop strategies to achieve the targets
b) Mainstream climate change issues into County Integrated Development Plans (CIDPs) and regularly update them

c) Capture activity data and coordinate their analysis, documentation and dissemination
d) Mainstream disaster risk reduction in development projects and spatial plans
e) Approve and oversee implementation of the county climate change actions
f) Advise departments and the county assembly on legislative and policy measures necessary for climate change response and attaining low-carbon climate-resilient development pathways
g) Develop public education, awareness strategies and implementation programmes
h) Identify research, training needs and methods to disseminate information relating to climate change to all stakeholders
i) Prepare quarterly, functional and annual reports for approval by the County Assembly
j) Establish and manage a climate change registry of actions by sectors, CSOs and the private sector
k) Identify low-carbon development strategies and coordinate related measurement, reporting and verification
l) Develop and coordinate strategies for building resilience
m) Coordinate with the sub-county and ward administrators to ensure a meaningful impact on the ground
n) Establish knowledge management centres on climate change at the sub-county level
o) Build the inter-county platform, particularly to strengthen policy dialogue on shared resources, peer learning and joint work planning at the sub-regional and regional levels
p) Identify training and awareness needs related to climate change
q) Data collection and analysis, as well as its communication to counties
r) Establish communication and information dissemination channels on climate change matters. The Climate Change Unit shall coordinate climate change actions together with the Steering Committee, the Technical Committee, the Sub-County Committee and the Ward Planning and Development Committee

5.1.9 County Climate Change Steering Committee

The Steering Committee shall coordinate and oversee climate change responses in the county, and in this regard shall

Functions of the Steering Committee

a. ensure mainstreaming of climate change into county operations, planning, decision making and budgetary processes
b. establish sub-committees on a need basis
c. coordinate formulation and monitor implementation of the County Climate Change Action Plan, County Climate Finance Framework and any other county climate change policies, plans and strategies
d. mobilize funds into and administer the County Climate Change Fund established under this Act
e. review, approve and monitor implementation of Regulations for administration and management of the County Climate Change Fund
f. review and make recommendations on the biennial report on implementation of the County Climate Change Action Plan and any other reports on climate change response interventions in the county
g. advise the county government on legislative, policy and other measures necessary for climate change responses and attainment of low-carbon climate resilient development
h. approve and oversee the implementation in the county of a comprehensive programme of climate change education, awareness creation and capacity building
i. provide policy direction on research, training and dissemination of information relating to climate change to the public and other stakeholders in the county
j. ensure positive linkages, interactions and synergy between the county, neighboring counties and the national government in climate change response programming and action;
k. ensure a coordinated approach to climate change response programming and action between the county government, the national government and among the different stakeholders in the county;
l. coordinate the formulation of a climate change reporting framework, preparation and dissemination of an annual report on climate change response activities in the county;

5.1.10 County Climate Change Technical Committee

There is established the Technical Committee which shall comprise of 15 members appointed by the Executive Committee Member.

Functions of the Technical Committee

The functions of the Technical Committee shall be;

- to coordinate planning and implementation of projects and activities for climate change responses in the county
- to coordinate implementation of the County Climate Change Action Plan and the County Climate Finance Framework
- to establish guidelines to be used by the Ward Planning and Development Committees in formulating climate response projects for funding by the County Climate Change Fund
- to support the Ward Planning and Development Committees in development and implementation of climate response projects
- to coordinate development and implementation of the County Climate Change Fund Regulations
- to advise the Steering Committee on strategies, priority programmes, projects and activities for climate change responses in the county
- to formulate and implement strategic actions to foster climate change education, awareness creation and capacity development in the county
- to coordinate research and knowledge management on climate change, its impact and strategies for responding thereto
- to prepare and disseminate an annual report on climate change response activities in the county
- to formulate and implement a county monitoring, evaluation and reporting framework for climate change responses
- to perform any other functions assigned to it by the Steering Committee

5.1.11 SUB COUNTY CLIMATE CHANGE COMMITTEES

Establishment of the Sub-County Committee

Functions of the Sub-County Committee

The functions of the Sub-County Committee shall be;

- to coordinate planning and implementation of projects and activities for climate change responses in the sub-county
- to coordinate implementation of the County Climate Change Action Plan and the County Climate Finance Framework at the sub-county
- to establish guidelines to be used by the Ward Planning and Development Committees in formulating climate response projects at the sub-county for funding by the County Climate Change Fund
- to support the Ward Planning and Development Committees in development and implementation of climate response projects at the sub-county
- to advise the Steering Committee on strategies, priority programmes, projects and activities for climate change responses in the sub-county
- to formulate and implement strategic actions to foster climate change education, awareness creation and capacity development in the sub-county
- to coordinate research and knowledge management on climate change, its impacts and strategies for responding thereto at the sub-county
- to prepare and disseminate an annual report on climate change response activities in the sub-county
- to formulate and implement a sub-county monitoring, evaluation and reporting framework for climate change responses
- to coordinate and supervise the implementation of climate change action plans in the sub-county
- to perform any other duty related to climate change matters as may be assigned by the Steering Committee from time to time.

5.1.12 Ward Planning and Development Committees
Functions of the Ward Planning and Development Committee

The functions of the Ward Planning and Development Committee shall be;

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

Table 9 Implementation Matrix

Kiambu County Climate Change Action Plan (CCCAP) Implementation Matrix

Priority Areas & Strategic Objectives	Priority Actions	Expected Output	Key Performance Indicators	Responsible Institutions	Targeted Groups	Time Frame	Source of funds	Planned Targets					Total Budget (Ksh. M)
								Year 1	Year 2	Year 3	Year 4	Year 5	
Disaster Risk Management Reduce risks to communities and infrastructure resulting from climate-related disasters such as droughts and floods	Invest in early warning systems and infrastructure (All Sub Counties)	Operational early warning system in place	No. of early warning systems established	WEENR	Communities and Institutions	2023-2027	Development partner CGK	1	2	4	4	1	102
	Drilling and equipping of boreholes	operational boreholes	No.of boreholes drilled and equipped	WEENR	Public Institutions & public utility land	2023-2027	Development partner CGK	4	6	8	5	2	150
	Solarisation of existing boreholes	Reduced Operation and maintenance cost	No. of boreholes solarised	WEENR	Public Institutions & public utility land	2023-2027	Development partner CGK	5	8	8	6	3	120
	Rainwater harvesting through roof catchment development	Enhanced water security	No.of roof catchments developed	WEENR	ECDEs and public health institutions	2023-2027	Development partner CGK	60	60	60	60	60	90

	Construction of water pans	Reduced vulnerability to flooding and droughts Enhanced water security	no. of water pans constructed	WEENR	Communities	2023 - 2027		2	6	6	6	3	118
	Increase public awareness on climate change (All Sub Counties)	Increased level of public awareness	No. of awareness campaigns undertaken	WEENR	Members of the public	2023 - 2027	Development partner CGK	2	5	5	5	3	50
	Capacity building of staff on climate change and disaster risk management (All Sub Counties)	Increased awareness on climate change and disaster management	No. of trainings undertaken	WEENR	County staff	2023 - 2027	Development partner CGK	1	4	4	4	4	8.5
	Design and construction of storm water drainage systems (All Sub Counties)	Stormwater structures in place	No. of kilometres of storm water structure constructed	CGK - MAUD	Communities	2023 - 2027	Development partner CGK	2	5	5	6	2	400
	Establishment of climate change resources centres (Juja, Kiambu, Kikuyu, and Lari Sub counties)	Functional resources centres	No. of resource centres established	WEENR	Community Institutions	2023 - 2027	Development partner CGK	1	1	1	1	1	75

Food and Nutrition Security Increase food and nutrition security through enhanced productivity and resilience of the agricultural sector in as low-carbon a manner as possible.	Construction of Soil conservation structures (Githunguri,Gatundu North, Limuru, Lari, Gatundu South, Juja, Kikuyu)	Farmers with Soil conservation structures	No. of farmers with Soil conservation structures	CGK - Agriculture	Farmers	2023 - 2027	Development partner, CGK, National Government	10	20	50	50	10	140
	Proper civic education on soil conservation(Githunguri,Gatundu North, Limuru, Lari, Gatundu South, Juja, Kikuyu)	soil conservation trainings done Farmers trained	No of soil conservation trainings done No of farmers Trained	CGK-Agriculture	Farmers	2023 - 2027	Development partner, CGK, National Government	10 500	20 1000	50 2500	50 2500	10 500	7 10.5
	Vaccination for animals(All Sub Counties	Vaccination campaigns done vaccine doses administered	No of vaccination campaigns done No of vaccine doses administered	CGK-Agriculture	Farmers	2023 - 2027	Development partner, CGK, National Government	12 500	48 1000	48 1000	48 1000	12 500	1.176 M 50M

	Invest in capacity building on soil management(Githunguri,Gatundu North, Limuru, Lari, Gatundu South, Juja, Kikuyu)	soil management trainings done Officers trained	No . of soil management trainings done No of officers trained	CGK-Agriculture	Farmers	2023-2027	Development partner, CGK, National Government	1 80	2 80	4 80	4 80	1 80	28.8
	Installation of Irrigation systems (Githunguri,Gatundu North, Limuru, Lari, Gatundu South, Juja, Kikuyu)	Irrigation systems installed	No of of Irrigation systems installed	CGK-Agriculture	Farmers	2023-2027	Development partner, CGK, National Government	10	20	50	40	20	70
	Subsidised farm inputs (All Sub counties)	Farmers accessing subsidised farm inputs	No of farmers accessing subsidised farm inputs	CGK-Agriculture	Farmers	2023-2027	Development partner, CGK, National Government	10,000	20,000	40,000	30,000	20,000	360 M
	Practice climate smart agricultural farming (Githunguri,Gatundu North, Limuru, Lari, Gatundu South, Juja, Kikuyu)	Farmers practising climate smart agricultural farming	No. of farmers practising climate smart agricultural farming	CGK-Agriculture	Farmers	2023-2027	Development partner, CGK, National Government	100	200	300	300	100	3M
	Public awareness on conservation of animal feeds through silage, hay etc (Githunguri,Gatundu	Public awareness campaigns on conservation of	No of public awareness campaigns on conservati	CGK-Agriculture	Farmers	2023-2027	Development partner, CGK, National Governm	20	50	140	100	40	10.5 M

	North, Limuru, Lari, Gatundu South, Juja, Kikuyu)	animal feeds done	on of animal feeds done				ent						
	Introduction of appropriate and resilient breeds (Juja, Thika, Ruiru, Limuru ,Kikuyu)	Appropriate and resilient breeds introduced	No of appropriate and resilient breeds introduced	CGK-Agriculture	Farmers	2023 - 2027	Development partner, CGK, National Government	10	20	60	40	20	12M
	Promote Integrated pest management systems (IPM) (All sub counties)	Integrated pest management systems in use	No. of Integrated pest management systems in use	CGK-Agriculture	Farmers	2023 - 2027	Development partner, CGK, National Government	50	100	200	150	100	6M
	Provision of subsidised crop and livestock insurance (All Sub Counties)	Farmers provided with subsidised crop and livestock insurance	No. of farmers provided with subsidised crop and livestock insurance	CGK-Agriculture	Farmers	2023 - 2027	Development partner, CGK, National Government	240	240	240	240	240	12M
	Enhancement of school feeding programmes(All sub counties)	schools on enhanced school feeding programme	No. of schools on enhanced school feeding programme	CGK-Agriculture	Farmers	2023 - 2027	Development partner, CGK, National Government	4	6	10	10	6	3.6M
Water and the Blue	Reclamation gazettement and	Wetlands and water	No. of wetlands	CGK WEENR	Community	2023 -	Development		1	1	1	1	20

Economy Enhance resilience of the water sector by ensuring access to and efficient use of water for agriculture, manufacturing, domestic, wildlife and other uses.	securing of wetlands and water sources (Ondiri, Manguo, Karai, Lari)	sources reclaimed gazetted and secured	reclaimed , gazetted and secured	National Government		2027	partner, CGK, National Gover						
	Marking and pegging of rivers (Bathi, Ruiru, Kiu, Ndarugu, Theta , Gatharaini, Kamiti, Thika, Kariminu)	Total length (Kms) of rivers marked and pegged	No, of rivers marked and pegged	CGK WEENR National Government	Riparians land owners	2023 - 2027	Development partner, CGK, National Gove		1	3	3	2	1.8
Forestry, Wildlife and Tourism Increase forest cover to 10% of total land area; rehabilitate degraded lands, including rangelands; increase resilience of the wildlife and tourism	Tree planting and growing (All sub counties)	Enhanced tree cover	No. of trees planted and grown	CGK-WEENR KFS WSP	Youth CFA WRUA Schools farmers FBOs CBOs NGOs	2023 - 2027	CGK Development partners National Government	80,000	100,000	100,000	100,000	100,000	20M
	Increase public awareness on environmental conservation and management (All Sub Counties)	Public awareness campaigns on environmental conservation and management done	No. of public awareness campaigns on environmental conservation and management done	CGK - WEENR AWWDA WSP WRA	Community	2023 - 2027	CGK Development partners National Government	1	4	4	4	2	15
	Development, enactment and	Natural resources	No. of Natural	CGK - WEENR	Community	2023 -	CGK Develop	0	1	1	0	0	10M

sector.	implementation of Natural resources laws (All Sub counties)	laws in place	resources laws in place			2027	ment partners						
Health, Sanitation and Human Settlements Reduce incidence of malaria and other diseases expected to increase because of climate change; promote climate resilient buildings and settlements, including urban centres; and encourage climate resilient solid waste management	Installation of biogas systems in public health facilities	Functional biogas systems in place	No. of health facilities installed with biogas	CGK - WEENR	Public Health Facilities	2023 - 2027	CGK Development partners	3	6	6	6	4	90
	Setting up of Material Recovery facilities	Improved waste management	No. of Material Recovery Facilities established	CGK - WEENR	Communities	2023 -202	CGK Development partners	4	4	4	4	4	220
Manufacturing Improve energy and resource	Formulation, implementation monitoring and review of plan, policy and legislative framework	Plan, strategies, policies and legislatio	No. of plan, strategies, policies and	CGK - WEENR	Communities	2023 -202	CGK Development partners	1	1	1	1	1	25

efficiency in the manufacturing sector	for energy conservation and management	ns formulated, implemented and reviewed	legislations in place										
Energy and Transport Climate-proof energy and transport infrastructure; promote renewable energy development; increase uptake of clean cooking solutions; and develop sustainable transport systems	Procurement and Installation of solar power systems (Public Health Facilities)	Health facilities solarised	No. of health facilities solarised	CGK - WEENR	Communities	2023-202	CGK Development partners	2	2	2	2	2	100
	Establishment and maintenance of electric charging stations /hubs) (All Sub Counties)	Transition to E Mobility	No. of charging points established and maintained	CGK-WEENR	Communities	2023-202	CGK Development partners	1	3	3	3	2	120

ANNEXES

The implementation of the Kiambu County Climate Change Action Plan (KCCCAP) will be dependent on involvement of stakeholders at different levels whose roles and responsibilities are summarized on the table below:

Institutions	Roles and Responsibilities
Sector Departments	Required to reduce Green House Gas emissions. Report annually on their green house gas emissions and what they doing to help adapt to climate change. Training ,guidance and information to increase action on climate change(skills and technical on carbon literacy) Set targets for achieving zero direct emissions and for reduced indirect emissions Annual reporting on resources used towards reducing emissions
County Assembly of Kiambu	Legislation and adoption of county climate change Action plan
County Climate Change Unit (CCCU)	Coordinate and oversee climate change response in the county and set county specific targets and develop strategies. Mainstream climate change issues in county integrated development plan. Capture data and coordinate analysis, documentation and disseminate. Mainstream disaster risk reduction in development projects and spatial plans Approve and oversee implementation of county

	climate change actions
Government Agencies and Ministries	Regulatory framework. Provide incentives Improve knowledge on climate change Financing research Fostering growth that help in coping with consequences of climate change since the poor are more vulnerable
Meteorological Department	Collects data and predict weather Generate reports Observe different meteorological characteristics over time Disseminate data and information
Non-Governmental Organizations (NGOs)	Improving knowledge sharing. Enhance collaboration. Knowledge co production Intermediary role in helping understand and consider climate change in decision making
Civil Society Organizations (CSOs)	Advocate need to address climate change. Reach out to policy decision makers to address specific environmental concerns on air pollution, access to water, renewable energy etc. Engage climate and environment related policy issues. Collaborate with government agencies
Development Partners	Promote flow of capital towards climate change positive investments. Partnering in mitigating climate change and addressing its

	impact. Building resilience
Research Institutions	Offer expertise. Analyze options for curbing emissions and halting global warming. Provide innovations. Solve range of problems related to climate change. Evaluate climate change policies
Private Sector	Provision of products and services for resilience. Mobilize green investments. Develop green infrastructure, reduce energy and water use. Finance adaption actions Invest in renewable energy Digitization and de-carbonization of processes
General Public /Community Members /Local Community	
Faith Based Organizations (FBOs)	Advocates of climate action. Offer humanitarian and disaster relief. Implementing agencies. Work closely with community stake holders
Media	Information sharing such as issue early warnings on disasters. Educating masses. Influencing peoples view and opinion on climate change. Comparative reporting

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