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BUNGOMA COUNTY CLIMATE CHANGE ACTION PLAN 2023-2027

INCREASE FOOD AND NUTRITION SECURITY

FOREWORD

Bungoma County is heavily dependent on agriculture and natural resources such as Mt. Elgon Forest, rivers, hills for growing the County economy and uplifting the standards of living of communities. However, in pursuit of development fueled by urbanization and high population growth rate, the County environment and natural resources have come under intense pressure from human-induced activities that are contributing to climate change. The impacts of Climate Change have been manifested in various sectors such as low yields and production in agriculture; water scarcity; climate related hazards such as floods which are threats to the sustainable development of Bungoma County and achievement of the Nation`s vision 2030.

Therefore, Bungoma County has a key obligation of mitigating and adapting to the effects of climate change in order to build community resilience. In line with this key obligation, the County developed a County Climate Change Policy to guide in ensuring all sectors of the County economy mainstream climate change in their programmes. Furthermore, in line with the National Climate Change Act, 2016, the County enacted a County Climate Change Fund Act, 2022 that put in place the necessary structures and financial mechanism of implementing climate change actions. The Bungoma County Climate Change Action Plan 2023 - 2027 is a product of Community engagements conducted across the 45 Wards during the Participatory Climate Change Risk Assessment. The County Climate Change Action Plan has been developed to give a roadmap to the implementation of climate actions especially at the community level to build resilience.

The implementation of this County Climate Change Action Plan shall require partnerships, stakeholder collaborations and contributions from the National Government, Private sector, development partners, the civil society organizations, faith-based organizations, other non- state actors, other well-wishers and individual citizens which will ensure it delivers the expected transformational outcomes for the benefit of the present and future generations.I personally commit to be at the forefront of these efforts as the Chair of the County Climate Change Steering Committee so as to ensure Bungoma County is Climate resilient.

H.E. HON. KENNETH MAKELO LUSAKA
THE GOVERNOR
COUNTY GOVERNMENT OF BUNGOMA

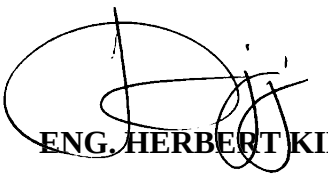
PREFACE

Climate change is a global concern that poses a threat to the socio-economic sectors, livelihoods, producer systems, resources and sustainable development of Bungoma County. The global temperatures have risen above the pre-industrial level resulting in global warming and rising sea levels. The 13th goal of the United Nations Sustainable Development Goals is to take urgent action to combat climate change and its impacts. The 13th UN SDG aims at strengthening the resilience and adaptive capacity with a special consideration of the least developed countries and the vulnerable groups.

The Bungoma County Climate Action Plan seeks to address the impacts of climate change in collaboration with the development partners and other stakeholders. The Climate Change Action Plan is guided by the Participatory Climate Risk Assessment, Bungoma County Climate Finance Policy 2020, Bungoma County Environmental Safeguard Policy 2019, Bungoma County Climate Change Act 2019 and other related policies, acts and regulations to ensure the mitigation and adaptation strategies are effective and sustainable.

The CCCAP identifies the sector priority areas; food nutrition security, water, sustainable energy, Transport and Infrastructure, Health sanitation and human settlement, environment and Natural Resources, where the situation analysis is done, the specific objectives and goals outlined and the proposed mitigation strategies, whom to partner with as well as the budget needed for implementation.

The climate change unit will spearhead the implementation of the proposed intervention strategies with the support of the Climate Change Planning Committees, Oversight from the County Steering Committee and other stakeholders.



ENG. HERBERT KIBUNGUCHY
COUNTY EXECUTIVE COMMITTEE MEMBER
DEPARTMENT OF ENVIRONMENT, CLIMATE CHANGE, WATER AND TOURISM

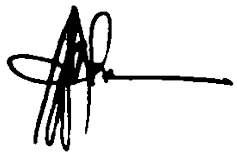
ACKNOWLEDGEMENT

Bungoma County Climate Action Plan was developed with financial support from the Financing Locally Led Climate Action (FLLoCA) Program, National Treasury and the County Government of Bungoma. The process has been successful owing to the goodwill of the Governor of Bungoma County H.E. Kenneth Makelo Lusaka and the Bungoma County Assembly Sector Committee on Climate Change. The contribution of the County Executive Committee Member in Charge of Climate Change, the County Chief Officer responsible for Climate Change affairs, the County Directorate of Climate Change and the County Climate Change Unit was immense in ensuring the development of this County Climate Change Action Plan. The development partners; The National Treasury`s FLLoCA Program Implementation Unit (PIU), and GIZ offered the needed resources and input during the Climate Change Action Plan formulation.

I appreciate the Technical Working Group which included representation from the Departments of Agriculture, Health, Water, Kenya Forest Service, Kenya Meteorological Department, Public Participation, Academia, and Civil Society Organizations under the coordination of the Directorate of Climate Change for working tirelessly to develop the Bungoma County Action Plan.

Finally, I acknowledge the efforts by the stakeholders, the Ward Climate change Planning Committees, the Members of the County Assembly, and the community for their active participation in proposing the investments resilience strategies in the wards and County.

Thank you.



STEPHEN WAMALWA MAKHANU
COUNTY CHIEF OFFICER
DEPARTMENT OF ENVIRONMENT, CLIMATE CHANGE AND TOURISM

EXECUTIVE SUMMARY

Development of this Bungoma county climate Change Action Plan 2023-2027 is anchored on the existing national climate change action plan, 2016 that requires Counties to develop and enact climate change action plans for mitigation and adaptation measures towards mainstreaming of Climate Change actions into County plans and functions. Bungoma County Climate Change Action Plan is a framework to provide a roadmap for coordination and implementation of community prioritized resilience investments.

The main objective of this climate change Action Plan is to guide planning, identification of priority areas, budgeting, coordination and implementation of climate action in Bungoma County. Specifically, the Action Plan shall guide utilization of finances under the Bungoma County Climate Change Fund, into which a minimum of 2% of the total County development Budget is apportioned for climate action in line with the Bungoma County Climate Change Fund Act, 2022. In addition, this climate change action plan shall enable mobilization of resources for climate actions from internal and external sources.

The development process of this action plan involved members of the community prioritizing their specific community climate change hazards alongside proposed strategies during the PCRA process. This led to development of ward specific climate change action plans. The consolidated ward climate change action plans formed the basis of county multi-stakeholder workshop with diversified participants including county sector departments, semi-autonomous government agencies, civil societies, disadvantaged groups, youths and women. This resulted in the development of Bungoma county climate change action plan 2023- 2027 that was presented to the cabinet for approval, and thereafter to the county assembly for approval and adoption.

This Action plan proposes response strategies for climate risks and their impacts identified during the Participatory Climate Risk Assessment in the County. The main climate change threats/hazards in the county include; heavy storms, flush Floods, drought/dry spell, landslides, pests and diseases, hailstones, strong winds and lightning. The most prevalent hazards are drought/dry spell, floods, hailstones, storms, strong winds, pests and diseases.

This action plan presents sector wise climate change response strategies prioritized by the communities during the PCRA process. Adaptation strategies for the water sector include; Water conservation, Protection of water catchment areas, Promotion of small-scale irrigation, Rain water

harvesting/roof catchment, Rehabilitation of boreholes and upgrading of water points to solar, Protection of water springs and Construction of water pans

In the agriculture sector, prioritized strategies entail promotion of climate smart agriculture, diversification of livelihoods, strengthening extension services, soil and water conservation and regulation of human activities in riparian areas. Other strategies include; Implementation of sustainable land management practices, Conservation agriculture, Promotion of climate smart agriculture in aquaculture, Livestock husbandry, Dissemination of climate information services and awareness creation on sustainable agriculture

Prioritized response strategies for the environment sector include: Institution greening, Reafforestation, Rehabilitation of degraded sites, Promotion of nature-based enterprises, Promotion of farm forestry fruit trees, Establishment of waste recycling facilities, Promotion waste compositing initiatives and Beautification of open green spaces.

Implementation of this plan will cost approximately KES. 1,099,800,000 for a period of five (5) years. FLLoCA will contribute approximately KES. 420 million equivalents to 38.19% for a period of three years. The remaining budget of 61.81% shall be realized through mainstreaming of climate change actions in various government ministries, departments, semi-autonomous agencies and other partners implementing climate change action through resource mobilization.

Technical Working Group Members

S/N	NAME	DESIGNATION
1.	Jane Gitau Mukonambi	County Director Climate Change (Technical Coordinator)
2.	Brian Wamalwa	Environmental Safeguards Focal Point
3.	Vincent Ong'ondi	Climate Change Officer
4.	Benjamin Juma	Climate Change Officer
5.	Jaqueline Makokha	Programme Accountant
6.	Sonny Wekesa	Monitoring and Evaluation Focal Point
7.	Gladys Situma	Social Safeguards Focal Point
8.	Dennis Barasa	Supply Chain Focal Point
9.	Tadayo Siboe	Finance Officer
10.	Salome Rubia	Administrative Assistant
11.	Lynder Kebaso	Agricultural Officer
12.	Stephen Sitati	Department of Trade and Energy
13.	Erick Muge	Livestock Officer
14.	Xavier Tunduli	Public Health Officer
15.	Robert Sawa	Natural Resources Expert
16.	Julius Wanyama	County Director Water
17.	Cynthia Nanyokia	Legal Officer
18.	Noah Eledi	County Director Meteorology
19.	Vincent Mahiva	County Director NEMA
20.	Junior Jacob	Communication
21.	George Wara	County Ecosystem Conservator
22.	Barret Wechuli	Warden, KWS Bungoma County
23.	Mercy Kisuya	County Grievance Focal Point
24.	Dr. John Makokha	Lecturer, Kibabii University

LIST OF ABBREVIATIONS AND ACRONYMS

CBOs	Community Based Organizations
CCCAP	County Climate Change Action Plan
CIDP	County Integrated Development Plan
CIS	County Information System
COK	Constitution of Kenya
CSA	Climate Smart Agriculture
CSO	Civil Society Organizations
CFA	Community Forest Association
FBO	Faith Based Organizations
FLLoCA	Financing Locally Led Climate Action
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GESIP	Green Economy Strategy and Implementation Plan
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
ITK	Indigenous Technical Knowledge
KALRO	Kenya Agriculture and Livestock Research Organization
KEFRI	Kenya Forestry Research Institute
KFS	Kenya Forest Service
KIRDI	Kenya Industrial Research & Development Institute
KMD	Kenya Meteorological Department
KMFRI	Kenya Marine and Fisheries Research Institute
KNBS	Kenya National Bureau of Statistics
KWS	Kenya Wildlife Service
LREB	Lake Region Economic Block
LPG	Liquified Petroleum Gas
MSME	Micro, Small and Medium Enterprises

NAMAS	Nationally Appropriate Mitigation Actions
NAP	National Adaptation Plan
NCCAP	National Climate Change Action Plan
NCCRS	National Climate Change Response Strategy
NDC	Nationally Determined Contribution
NEMA	National Environmental Management Authority
NGO	Non-Governmental Organization
NRW	Non-Revenue Water
NZOWASCO	Nzoia Water Services Company
PCRA	Participatory Climate Risk Assessment
PLWD	People Living with Disability
TWG	Technical Working Group
UNFCCC	United Nations Framework Convention on Climate Change
WCCPC	Ward Climate Change Planning Committee

DEFINITION OF KEY TERMS

Adaptation	Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
Adaptive capacity	The 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;
Climate Change	Change in the climate system that is caused by significant changes in the concentration of greenhouse gasses due to human activities, and which is in addition to the natural Climate Change that has been observed during a considerable period.
Environment	Has the meaning assigned to it in section 2 of the Environmental Management and Coordination Act 1999.
Global warming	Observed or projected gradual increase in global surface temperature. It is one of the consequences of Climate Change.
Greenhouse gases	Gases that absorb and emit radiant energy within the thermal infrared range. The main GHGs measured in a GHG inventory are, carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), per-fluorocarbons (PFCs), hydro-fluorocarbons (HFCs), sculpture hexafluoride (SF6) and nitrogen tri-fluoride (NF3).
Mitigation	Human interventions to prevent or slow down atmospheric GHG concentrations by limiting current or future emissions, and/or enhancing potential sinks for greenhouse gases.
Resilience	The 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	The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a system to the impact of hazards.

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CHAPTER ONE
BACKGROUND AND CONTEXT

1.1. INTRODUCTION AND BACKGROUND

1.1.1 Position and Size of Bungoma County

Bungoma County is one of the Counties within the Lake Region Economic Block (LREB). The County lies between latitude 00 28' and latitude 10 30' North of the Equator, and longitude 340 20' East and 350 15' East of the Greenwich Meridian. The County covers an area of 3032.4 Km2. It borders the Republic of Uganda to the North west, Trans-Nzoia County to the North-East, Kakamega County to the East and South East, and Busia County to the West and South West. The County is divided into 9 Sub counties, 45 Wards and 236 village units. The Sub Counties are: Kanduyi, Webuye West, Webuye East, Kimilili, Tongaren, Mt. Elgon, Kabuchai, Sirisia and Bumula.

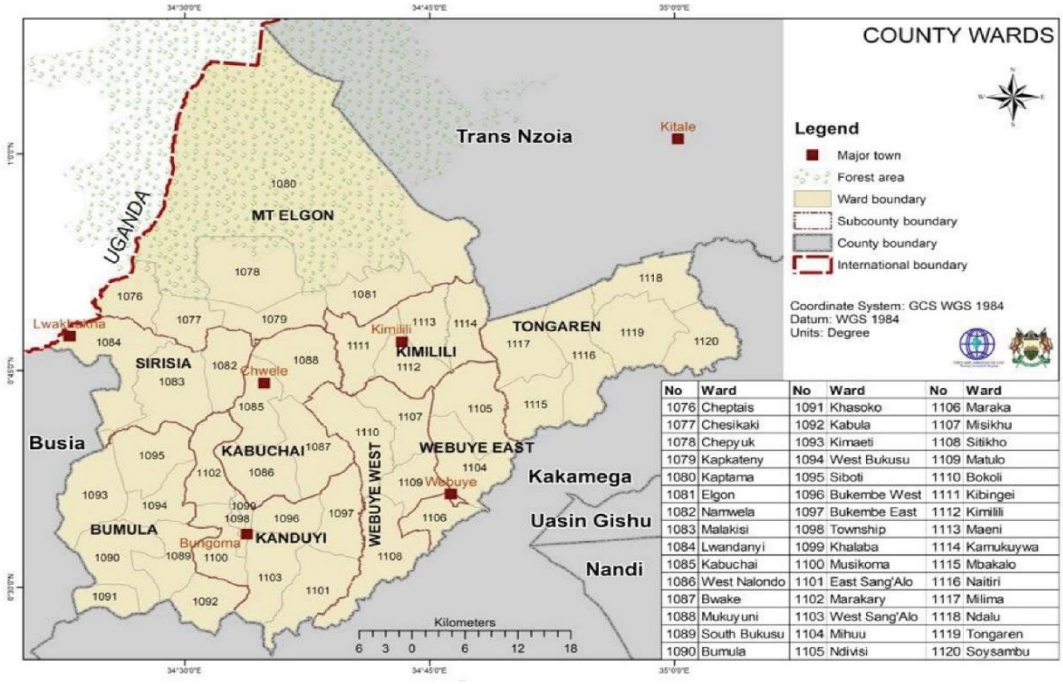

Figure 1: Map of Bungoma County

1.1.2 Socio-Economic status

The monetary poverty rate for Bungoma is 35.5% which is nearly the same as the national rate of 35.7% with approximately 525,509 people in Bungoma being monetarily poor. When disaggregated by age groups, 69% of children in Bungoma are multidimensionally poor. This is 17-percentage points higher than the national average of 52.5%. Among the youths, 71% are multidimensionally poor compared to a national average of 48.1% while for the elderly population, 75% are multidimensionally poor compared to a national average of 55.7%.

The main economic activities are agriculture, transport and storage which contribute the most to the Gross County Product (GDP) at 44.2% and 11.6% respectively. Education, water supply and waste management, wholesale and retail, real estate activities, manufacturing and construction are other socio-economic activities (KNBS Gross County Product report 2021). The County has a multidimensional poverty rate of 74.2 % representing a total of 1,063,914 people against a national average of 55.7%.

1.1.3 Environment, Water and Natural Resources

The County covers a land area of 3032.4 km2, out of which 618 km2 is gazetted forest reserve, 61 km2 is non gazetted forest, and 50.7 km2 is Mt. Elgon National Park. The major forested areas in the County include Mt. Elgon and Chepkitale Forests; Mt. Elgon National Park, Mt. Elgon Forest Reserve and Chepkitale game reserve; Sangalo, Kabuchai and Chetambe hills; The county's current forest cover is 14.8% while tree cover is 21%. Although the County houses one of the 5 water towers in Mt. Elgon Forest, only 25.8% of the County residents have access to clean potable water which is below the National average of 57%.

The major physical features include Mt. Elgon, several hills (Chetambe, Sang'alo and Kabuchai), rivers (Nzoia, Kuywa, Sosio, Kibisi and Sio-Malaba/Malakisi), waterfalls such as Nabuyole and Terem. Mt. Elgon and Sang'alo hill have attractive caves.

The rate of urbanization and increasing population has led to increased solid waste generation which stands at over 400 tons per day.

1.1.4 Agriculture

The agriculture sector contributes 44% to the County Gross Product. The crops, livestock and fisheries sub-sectors are the main components of the agricultural sector. The average farm size in the county is 2.5 acres with variations in the food basket areas of Mt. Elgon and Tongaren which range from 10 - 50 acres. The area under food crops is 202,494 ha while that under cash crops is 19,091 ha.

The major food crops grown in the County include maize, beans, finger millet, sweet potatoes, bananas, sorghum, Irish potatoes and assorted vegetables. Cash crops include; - sugarcane, coffee and tea though significant production of cotton, palm oil, tobacco and sunflower are present.
Main livestock in the County include cattle, sheep, goats, donkeys, pigs, rabbits, poultry and bees. The most common livestock is indigenous chicken and cattle whose production is low. Apiculture and aquaculture are being embraced by members of the community.

1.1.5 Energy

About 36.4% of households in Bungoma County use solar energy for lighting, 21.6% use electricity while 18.5% use Paraffin and 0.2% use Biogas and Gas lamp.

According to Kenya National Bureau of Statistics (KNBS) 2019, Bungoma has 357,714 households. Firewood is the most common cooking fuel being used by 78.3% of the households, down from 85% in 2013, 11.0% use Charcoal, 7.2% use LPG (Gas) up from 1% in 2013, 2.6% use Paraffin up from 2.0% in 2013, 0.4% use Biogas, 0.4% use Electricity and 0.2% of the residents use solar.

1.2. PURPOSE AND PROCESS OF DEVELOPING ACTION PLAN

1.2.1. Purpose of Bungoma climate change action plan

The purpose of developing Bungoma County Climate Change Action Plan is to provide a roadmap in building resilience to the impacts of climate change in the county. This Climate Change Action Plan will guide in the coordination of climate actions in the County in addition to the Participatory Climate Risk Assessment. This action plan prioritizes major county climate risks, drivers of vulnerability and proposes actions for mitigation and adaptation at the community level to address the identified risks and impacts.

1.2.2. Objectives of the Action Plan are: -

a) To identify and prioritize climate change threats/hazards in the county through the PCRA Process

b) To propose interventions to address the identified climate threats/hazards and impacts in the county

c) To promote mainstreaming of climate actions in various sectors in the county with sector specific strategies.

d) To provide a guiding framework for resource mobilization both from internal and external sources for climate actions.

1.2.3. Development Process

The development process of this Action Plan is anchored on the Nation Climate Change Act, 2016 that provides a regulatory framework for an enhanced response to climate change and promotes mainstreaming of climate change actions into County Government functions.

In this regard, a multi-sectoral and integrated approach has been adopted with the community at the Centre of identification and prioritization of climate change risks, hazards and impacts for informed planning and implementation.

Initial development process involved members of the community prioritizing their specific community climate change hazards alongside proposed strategies. This led to development of ward

climate change action plans. The consolidated ward climate change action plans formed the basis of county multi-stakeholder workshop with diversified participants including county sector departments, semi-autonomous government agencies, civil societies, disadvantaged groups, youths and women.

The final climate action plan was subjected to the county cabinet for approval with subsequent forwarding to the county assembly for approval and adoption. This resulted in the development of Bungoma county climate change action plan 2023- 2027.

1.3. UNDERLYING CLIMATE RESILIENCE CONTEXT

The county boasts of a variety of livelihoods/assets/resources that have been affected negatively by the climate change threats/hazards. The intensity and frequency of climate change risks in the county such as increased temperatures and erratic rainfalls have induced climate change hazards. Climate change hazards occurring in the county include; heavy storms, flush Floods, drought/dry spell, landslides, pests and diseases, hailstones, strong winds and lightning. The effects have been felt across the sectors such as agriculture, water, gender, energy and trade, health, environment and natural resources.

The spatial distribution of climate hazards across the county is determined by the prevailing landscape formation and agro-ecological zones alongside human activities.

1.3.1 Impacts Of Climate Hazards in The County

The communities in the county are susceptible to the impacts of Climate Change. However, these hazards have affected diverse groups differently according to their level of vulnerability. The measure of vulnerability is dependent on severity, magnitude, extent and resilience mechanisms to adapt and mitigate the prevailing climate threats/hazards across the county.

The induced impacts of climate change hazards in the county include; soil erosion, loss of soil fertility, drying of crops, water shortage, wildfires, increased emergency of pests and diseases, land degradation, human and animal death, loss of income, pollution and outbreak of pests and diseases.

Drought/dry spell has impacted the agriculture sector by causing crop failure, loss of pasture and fodder and also increased pests and diseases due to increased temperature. Forestry sector has also been directly impacted by drought through drying of forest cover and wildfires. The energy sector

is also affected due to reduced water levels leading to low hydroelectric power generation and power rationing. In the water sector it has caused drying of water sources such as rivers resulting in human livestock conflict due to inadequate water.

Figure 2: Impact of prolonged dry spell on maize planation in Tongaren

Floods have led to soil erosion and soil siltation consequently causing loss of productive agricultural land and loss of crop, aquaculture and livestock productivity. Flooding has been observed to directly affect livestock by encouraging outbreak of bacterial, fungal and viral diseases, destruction of grazing fields and pasture and holding areas and shelters, leading to unhygienic conditions in those areas. Flooding has also affected human beings by causing death, displacement of homes, and destruction of infrastructure and spread of water-borne diseases.


Figure 3: Flooding in Bungoma town and landslides at Namwela in Sirisia sub-county

Increased incidences of pests and diseases as a result of prolonged drought and rising temperature has negatively impacted on the agriculture sector by causing crop failure, low crop yields, increased pests and vector borne diseases in livestock resulting in low production and death of livestock. Increased existence of vectors such as mosquitoes has resulted in the health sector recording high occurrences of malaria.

Figure 4: Pests infestation on maize plantation at Sikimbilo in Webuye west sub-county

1.3.2 County Climate Chage Hazard Map

Historically (defined as 1985-2015), Bungoma County has had monthly temperatures of 15-29°C. The long rainy season, which runs between February and June, is wetter than the second rainy season, experienced between late July and December. A dry season (characterized by fewer than 80 mm rainfall) is experienced from December to February.

The total annual rainfall has remained stable since 1985 and is expected to decrease slightly until 2040. A slight increase is expected from 2041 to 2060 for the long rainy season. For the short rainy season, the trends show an increase since 1985 which will continue. The mean annual temperatures trends show an increase since 1985 for both seasons and these will continue in the future.

The erratic and extreme weather conditions (precipitation and temperatures) have increased the intensity and frequency of climate changes threats/hazards. The main climate change threats/hazards in the county include; heavy storms, flush Floods, drought/dry spell, landslides, pests and diseases, hailstones, strong winds and lightning. The most prevalent hazards in the county are drought, floods, hailstones, storms, strong winds, pests and diseases.

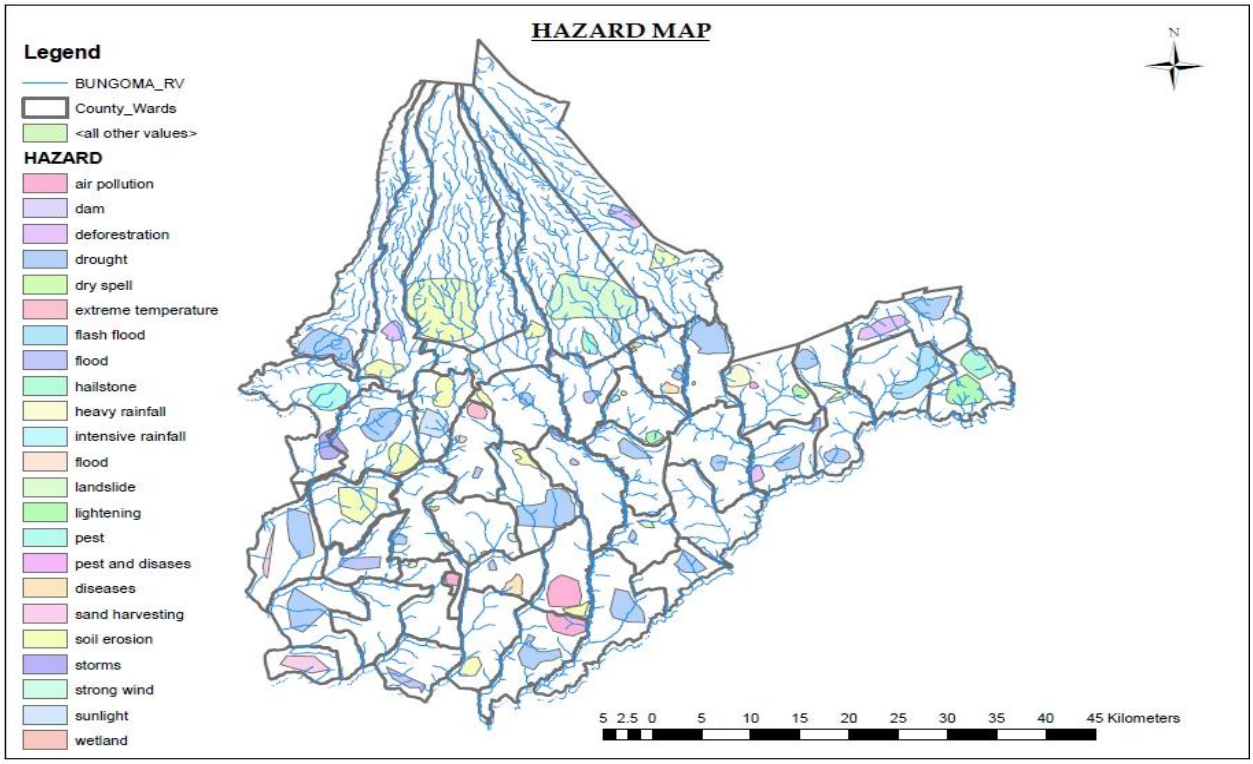

Figure 1: Bungoma County Climate Hazard Map

1.3.3 Summary of Differentiated Climate Exposure and Vulnerability of Key Groups and Livelihoods in The County

The communities are highly susceptible to the impacts of Climate Change however, these hazards have affected diverse groups differently according to their level of vulnerability.

Children and the elderly are most affected since they are malnourished leading to low immunity in their bodies due to inadequate food. Furthermore, there are increased truant children, who also walk long distances in search of water and firewood.

Persons living with disability are sickly and also lack the strength to look for food and water. Children and expectant mothers are more vulnerable to vector borne diseases such as malaria which is spread by mosquitoes.

Indigenous People in Bungoma County such as the ndorobos and ogieks are adversely affected by the prolonged drought as most of them depend on the forest fruits which dry out. They also practice small scale farming and keep livestock, livelihood that is affected with the flooding and landslides in Mt. Elgon Sub-County. In their mitigation strategies that they implement to sustain their livelihoods, the Indigenous People have lost their cultural diversity.

Women are affected highly by prolonged drought due to water scarcity and scarcity of food commodities for their households. Farmers are most affected by the hazards as they interfere with their agricultural activities in terms of delay in planting, pre- and post-harvest losses, crop failure due to unpredictable rainfall whose outcome is food insecurity and poverty.

Most businesses depend on electricity however, business people have incurred losses as a result of power black outs and rationing as a result of bad weather and low water levels to generate more hydroelectric power.

1.4. BRIEF OVERVIEW OF CLIMATE CHANGE ACTIONS IN THE COUNTY

1.4.1. Mainstreaming of National Climate Action Plan in County Actions

Bungoma County Government has mainstreamed climate actions in different county plans and guiding legal and regulatory frameworks to implement sectoral activities in line with the national climate change action plan of 2016. This has brought on board diversified groups including vulnerable in the planning, identifying, implementing and monitoring climate actions in the county through mainstreaming climate change actions. This has been brought out clearly in the current CIDP III of Bungoma county that has given climate change actions a priority by mainstreaming across different county sectors as required by the national climate change action plan.

The county government developed climate change fund act,2022 that established climate change fund for resource mobilization internally and externally to implement climate actions in the county. Through the county climate change fund act, inclusive structures have been established from the ward and community level to ensure that climate actions are integrated in county activities, initiatives and developments by all actors in the county.

1.4.2. Climate Change in County Integrated Development Plan

Climate actions are prioritized in the Bungoma County Integrated Development Plan (CIDP III) 2023-2027 to enhance community resilience to the prevailing climate change negative impacts in the county through planning, identification, implementation and coordination of climate actions in the county. The CIDP provides for community engagements on climate actions at all levels.

Mainstreaming of Climate Change actions in county sectors have been prioritized in the CIDP III for enhanced implementation of climate actions. This was informed by the participatory climate risk assessment that the community identified, prioritized and proposed ward specific climate actions in line with the prevailing climate change risks and impacts at large.

1.4.3. Other Key Climate Change Actions/Strategies in The County

The adverse effects of climate change have been felt in various sectors across the County including; Agriculture, Health, Water, Environment, Energy, Transport and Infrastructure. The County Government of Bungoma is working with other stakeholders such as the GIZ, Masinde Muliro university of science and technology, CSOs, FBOs, CBOs, and other partners to come up with resilience actions to mitigate the climatic change induced hazards. Some of the adaptation

strategies developed are effective while others require support and innovation to make them more effective in order to impact the livelihoods of the people across different sectors as discussed below.

Agriculture and livestock	● Conservation agriculture (Crop rotation, minimum tillage, soil cover) ● Agroforestry and crop diversification ● Small scale irrigation ● Crop insurance ● Early warning systems ● Breeding adaptive varieties of crops and livestock ● Knowledge and skill enhancement ● Regenerative Agriculture and agroforestry/carbon credit ● Use of alternative feeds such as bananas and sugarcane stalks, silage and hay, formulated feeds ● rehabilitation of ponds. ● Vaccination
Environment & Natural Resources	● agroforestry, afforestation and reforestation ● rehabilitation of degraded areas ● Sustainable Waste Management (Compositing, Reduce, Re-use and Re-cycle) and disposal.
Energy	● Alternative source of energy. ● construction of more dams. ● Use of renewable energy sources, solar panels, biogas, green lights.
Health	● Water treatment ● Drain stagnant water ● Vaccination of both human and livestock
Water	● Water treatment ● Rehabilitation of water infrastructure ● Protection water springs and water catchment areas

	● Gravity water supply. ● Roof and underground water harvesting and storage infrastructure ● Drilling and upgrading of existing Boreholes. ● Desalination of dam. ● Digging of Shallow wells

CHAPTER TWO
POLICY ENVIRONMENT

2.1. NATIONAL POLICY CONTEXT

2.1.1 The National Perspective

Kenya as a country is prevalent to the impacts of climate change as a result of fluctuating temperatures and erratic rainfall in addition to the natural causes that have resulted to climate change impacts such as droughts, landslides, floods and increased prevalence of pests and diseases.

Drought has most recently been witnessed during the following years: 2010-2011, 2016-2017 and 2020-2023. Severe floods are projected to leave about 5.4 million people in Kenya without adequate access to food and water between March and June 2023 while Erratic Rainfall Patterns adversely affect agricultural productivity given that the country is highly dependent on rain-fed agriculture. Kenya's priority actions in line with the Paris agreement to Strengthen capacities at all levels for accurate prediction and response to climate change disasters.

Kenya is committed to abate Greenhouse gases emissions by 32% by 2030 (GHG) through Nationally Determined Contribution (NDC) that provides intervention to achieve the same as a country.

2.1.2 National Legal and Policy Framework

Constitution of Kenya 2010 - Article 42 of the Constitution of Kenya, 2010 makes it a right for every Kenyan to reside in a clean and healthy environment. It puts emphasis on sustainable development which forms the basis of climate change policy framework.

Climate Change Act, No. 11 of 2016 - The main objective of the Act is to govern the development, management, implementation and regulation of mechanisms to enhance climate change resilience and low carbon development for the sustainable development by: Mainstreaming of climate change responses into development planning, decision making and implementation; building resilience and enhancing adaptive capacity to the impacts of climate change; formulation of programmes and plans to enhance the resilience and adaptive capacity of human and ecological systems to the impacts of climate change

National Climate Change Response Strategy (NCCRS), 2010 - The objective of the strategy is to respond to climate change by: 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 providing a conducive and enabling policy, legal and institutional framework to combat climate change; and, providing concerted action plan, resource mobilization plan and robust monitoring and evaluation plan.

National Climate Change Framework Policy-2016 - The main objective of the policy is to enable a coordinated, coherent and effective response to the local, national and global challenges and opportunities presented by climate change. The policy identifies the adaptive capacity of individuals and communities as being key to improving their socio-economic situations

The National Climate Change Action Plan (NCCAP) - The National Climate Change Action Plan (NCCAP) 2018-2022 was developed pursuant to the provisions of the Climate Change Act, 2016. The Action Plan contains detailed actions that the country intended to take to tackle climate change from 2018 to 2022. The plan specifically seeks to: Align climate change actions in the country with the Government's development agenda, including the Big Four Agenda with inclusivity of all the actors.

The National Adaptation Plan (NAP) - The objectives of the NAP are to: 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.

2.2 COUNTY ENABLING LEGAL AND POLICY FRAMEWORK

Bungoma county has enacted legislative and planning frameworks for effective panning, financing, implementation and overall coordination of climate actions in the county, that include: Bungoma County Climate Change Fund Act, 2022 - The objective of the Act is to create a Fund in the County for the purpose of facilitating Climate Finance for: - initiating and coordinating financing of climate change adaptation and mitigation projects at the community level; facilitating community-initiated climate change adaptation and mitigation projects; coordinating collection

and dissemination of climate change information to the public to create awareness and preparedness.

Bungoma County Climate Change Policy,2020 - The goal of the policy is to ensure that climate change is mainstreamed into all sectors of the County to build climate change resilience as per the Paris Agreement and to facilitate the County`s attainment of Sustainable Development Goal (SDG) No. 13.

Bungoma County Climate Finance Policy,2020 - The goal is to enhance the County`s efforts in mobilizing climate change finances to achieve the County`s low-carbon climate resilient development goals to contribute towards attaining the Country`s NDC. The Bungoma County Climate Finance Policy aims to among others encourage and facilitate private sector participation in climate relevant financing opportunities.

Bungoma County Environment and Social Safeguards Policy,2020 - The overall objective of the Bungoma County Environmental and Social Safeguard Policy (BCESSP) is to ensure social and environmental sustainability is systematically mainstreamed into the County`s programmes and projects.

CHAPTER THREE
PRIORITY CLIMATE CHANGE ACTIONS

3.1. IDENTIFICATION OF STRATEGIC CLIMATE CHANGE ACTIONS IN THE PCRA

The County Participatory Climate Risk Assessment (PCRA) process involved communities identifying the hazards and impacts on their livelihoods in addition to the local responses to the hazards.

The community proposed different strategic adaptation and Investment priorities across the sectors as per the engagements of the Ward stakeholders led by ward climate change planning committees that developed ward specific climate change action plans with priority interventions across different sectors: -

3.2. PRIORITY CLIMATE CHANGE ACTIONS

SECTOR	PRIORITY CLIMATE ACTIONS
Agriculture	• Implementation of sustainable land management practices • Conservation agriculture • Promotion of climate smart agriculture in aquaculture • Livestock husbandry • Dissemination of climate information services • Sensitization and awareness creation on sustainable agriculture
Water	• Water conservation • Protection of water catchment areas • Promotion of small-scale irrigation • Rain water harvesting/roof catchment • Rehabilitation of boreholes and upgrading of water points to solar • Protection of water springs • Construction of water pans
Environment and Natural Resources	• Institution greening • Reafforestation • Rehabilitation of degraded sites • Promotion of nature-based enterprises • Promotion of farm forestry fruit trees

	• Establishment of waste recycling facilities • Promotion waste compositing initiatives • Beautification of open green spaces
Energy	• Promotion of clean, affordable and quality alternative renewable energy sources through; • Clean lighting solutions • Alternative cooking energy solutions • Renewable sources of energy – biogas • Installation of solar PV in market places
Health	• Reduction in malaria and other climate change diseases and incidences • Strengthening climate information services-early warning system • Establishment of eco-San toilets

CHAPTER FOUR
DELIVERY MECHANISMS FOR CLIMATE CHANGE ACTION PLAN

4.1. ENABLING FACTORS

Implementation of this action plan will require other cross cutting enabling factors for effective execution of adaptation and mitigation actions to enhance resilience against climate change impacts in the county.

4.1.1. Enabling Policy and Regulations

The implementation of the Bungoma County Climate Change Action Plan 2023 -2027 will be guided by the existing legal frameworks. The existing legal frameworks include; Bungoma climate change policy, Bungoma climate finance policy, Bungoma environment and social safeguards policy and Bungoma county climate fund act, 2022**.** The framework established an appropriate institutional framework for climate governance in the county such as the county climate change steering committee, climate change planning committee and ward climate change planning committees with clear outline of responsibilities and functions that guide the coordination, oversight and management of CCCAP 2023-2027.

4.1.2. Mainstreaming In The CIDP

The Bungoma County Climate Change Action Plan 2023 -207 has prioritized Climate Change investment priority actions which have been mainstreamed across the relevant sectors of agriculture, water, energy, health. etc. as presented in the Bungoma County Integrated Development Plan 2023 -2027. This shall form the basis of sectoral planning and budgeting across the various sectors for enhanced climate change mitigation and adaptation to build community resilience.

4.1.3. Multi-Stakeholder Participation Processes

This Climate Change Action Plan was developed through a multi-stakeholder engagement process. The Identification of climate risks and the response strategies involved multi-stakeholder consultative processes. The Process involved participation of communities at ward level, women, youth, elderly, PWDs, FBO and civil societies. In addition, the process involved engagement of practitioners in technical, professional and academic spheres in the relevant sectors.

Stakeholder engagement processes shall continue in the implementation of the action plan as guided by the Bungoma County Climate Change Fund Act, 2022 which calls for community consultation forums in identification and implementation of climate change projects.

4.1.4. Finance-County Climate Change Fund

Bungoma county climate change fund act, 2022 establishes Climate Change Fund to finance, facilitate and coordinate county climate change mitigation and adaptation programmes proposed in this climate change action plan. The climate change fund shall be financed through various sources, key among them being Moneys appropriated annually by the County Assembly constituting a minimum of two percent (2%) of the annual development budget of the County. The County Government of Bungoma shall also mobilize resources externally for climate action.

4.1.5. Climate Information Services and Climate Data Access

The County Department of Meteorological Services is responsible for generating climate/weather information. Timely dissemination of climate information is required for enhanced resilience of citizens against climate shocks.

The County Government shall partner with the KMD in generation and dissemination of climate data such as: historical data, weather Forecasts, early warnings and advisories The climate information service plan shall provide relevant and timely information to various key actor such as farmer groups for decision making and in turn enhance community resilience to the impacts of climate change.

4.1.6. Measurement, Reporting and Verification

The monitoring system will track implementation and results of CCCAP 2023-2027, and the climate finance raised to deliver on the action plan. This will provide the evidence base for planning and implementing future actions, seeking support, and national and international reporting for the sector priority climate actions. In addition to the MRV system, it is expected that reviews and evaluations of the Action Plan will take place on a five-year cycle or when the need arises to provide the basis for updating the plan.

The County climate change Monitoring and Evaluation plan will guide the tracking, measuring, monitoring and reporting of the CCCAP 2023-2027. Review and evaluation of Bungoma climate

change action plan will be multi-sectoral with the inclusion of departments, Ward Climate Change Planning Committees and other stakeholders such as the private sector and civil society.

4.1.7. Institutional Roles and Responsibilities

Institution	Roles and Responsibilities
Directorate of Climate Change	o Facilitating and coordinating planning and budgeting for climate change activities o Organizing and facilitating community level participatory vulnerability and capacity assessment o Monitoring and supporting implementation of county climate resilience actions by respective departments
Sector County Departments	o Sectoral departmental technical design and implementation of climate change actions o Mainstreaming climate change actions within CIDP o Setting targets for climate actions and developing actions to achieve them o Mobilizing additional resources for county climate change action o Identifying county climate change actions capacity gaps and proposing strategies to fill the gaps o Managing environment and social risks of climate actions o Reporting on progress of climate change actions and use of climate funds
County assembly	o Approving necessary legislations for climate change o Approving climate change annual plans and budget as part and parcel of county annual planning and budget o Oversight of climate change actions o Approval and adoption climate change reports for subsequent reporting to the national directorate of climate change
Semi-autonomous agencies	o Providing technical and analytical assistance based on identified needs

	○ Helping counties to identify low carbon development strategies ○ Helping counties in monitoring, reporting and verification (MRV) actions ○ Ensuring enforcement of and compliance of environment standards ○ Conducting environmental screening ○ Creating awareness on environmental standards
Non-state actors (international and local NGO	○ Capacity building and awareness creation for communities ○ Supporting implementation of climate resilient actions, and monitoring and evaluation ○ Providing input into county Social Risk management frameworks
Community based organization	○ Community advocacy and engagement in activity selection, planning and implementation ○ Capacity building for local entities and communities ○ Local dissemination of information
Academia/research institutions	○ Provide science-based evidence for prioritizing climate change actions ○ Generation of climate knowledge ○ Piloting innovative activities and technologies ○ Capacity building county staff, CBO, on climate change effects and adaptation ○ Develop learning programmes for SRM

4.2. IMPLEMENTATION AND COORDINATION MECHANISMS

The County has established structures to coordinate the implementation of climate change actions in the county as guided by the Bungoma climate change fund Act, 2022. They include; climate change steering committee, climate change planning committee, climate change unit and ward climate change planning committees.

4.2.1. Bungoma County Ward Climate Change Planning Committees

Bungoma county ward climate change ward planning committees established under section 14 of Bungoma climate change fund act, 2022 is mandated with the following responsibilities: -

- Coordinate and mobilize communities and other stakeholders in the ward to design and implement climate change response activities;
- Facilitate research and knowledge management at the ward level on climate change, its impacts and strategies for responding thereto;
- Facilitate public education, awareness creation, and capacity building at the ward level on climate change, its impacts and strategies for responding thereto;
- Coordinate, facilitate and manage community consultations on priority climate change response activities;
- Participate in county planning and budgeting processes with a view to ensuring the mainstreaming of climate change and prioritization of climate change response in county development plans;
- Facilitate public participation in climate change governance, implementation of agreed climate change response activities, and monitoring of those activities;
- 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;
- Monitoring implementation of climate change response projects at ward level funded by the County Climate Change Fund and report thereon to the Planning Committee; and,

4.2.2. Bungoma County Climate Change Unit

Bungoma county climate change unit is headed by county director of climate change with representations from different key county departments mainstreaming climate change actions including water, agriculture and livestock, energy, environment, natural resources, health and office of the county attorney. The climate change unit is mandated to do the following: -

- Annual Work Plan and Budget preparation for Climate Change Programs
- Preparation of M&E plan and coordination of M&E activities
- Monitoring functioning of County and Ward Climate Change Planning Committees
- Monitoring progress of Climate Change Institutional Support activities

- Coordinate verification of all beneficiaries of any donor funds
- Undertake Participatory Climate Risk Assessments
- Reporting on all Grievance Redress Mechanism activities
- Lead person in preparation of all Climate Change Reports

4.2.3 Bungoma County Climate Change Planning Committee

Section 8. of the Bungoma climate change fund act, 2022 established the County Climate Change Planning Committee appointed by the County Executive Committee Member for the time being responsible for matters of Environment and Climate Change to perform the following functions;

- Undertake internal and external resource mobilization;
- Review, prioritize and sequence projects submitted by Ward Climate Change Planning Committees based on the set criteria;
- Provide additional technical support to improve the Ward Climate Change Planning Committees proposals;
- Organize inter-ward meetings to review, refine and collate proposals from wards into a list of prospective proposals for funding;
- Receive, consider and recommend funding proposals and projects and forward to the County Climate Change Steering Committee for approval;
- prepare and submit an annual report on climate change response activities in the County;
- formulate and implement a county monitoring, evaluation and reporting framework for climate change response;
- Undertake Capacity building and training of ward planning committees and

4.2.4 Bungoma County Climate Change Steering Committee

Section 21 of the Bungoma climate change fund act, 2022 established a county climate change Steering Committee appointed by the Governor to perform the following climate change functions:-

- mainstream climate change projects, programs and activities in county planning and budgeting and ensure their approval and inclusion in the county integrated development plan;
- approve the County climate change funding proposals as recommended by the county planning climate change planning committee.

- approve all payments of climate change funded projects and programs;
- receive and approve project proposals for funding;
- receive and consider progress reports from the County Planning Committee;
- approve capacity building activities for the Steering Committee, County Planning Committee and the Ward Climate Change Planning Committees; ensure coordination among institutions implementing climate change programs so as to minimize duplication of effort;
- receive and consider reports on challenges and disputes identify obstacles on the implementation of climate change programs and make proposals for resolving the obstacles;
- monitor disbursement; oversee budget execution;
- ensure smooth flow of information across the lead agencies;
- mobilize resources for climate change actions in the county;

IMPLEMENTATION MATRIX

Priority Action	Expected Output/Outcome	Key Performance Indicators	Responsible Institutions	Group Targeted/ Area	Source Of Funds	Total	Indicative Budget (KES. Millions)				
							23/24	24/25	25/26	26/27	27/28
KRA 1: Agriculture											
Strategic Objective 1: To increase food and nutrition security by enhancing productivity and resilience of the agricultural systems											
Outcomes: Increased agricultural value chain productivity											
Outcome indicator: % Increase in agricultural value chain productivity											
Increased Agricultural crop Productivity	Increased agricultural productivity by through SLM practices: Agroforestry, integrated soil fertility management, Planting leguminous crops, Conservation agriculture, crop rotation, Integrated crop and livestock management, Mulching, rain water harvesting	Number of SLM technologies identified, prioritized and promoted	CCU Agriculture	Farmers	Gok/FL LoCA/ Partners	17.57	2.87	3.15	3.5	3.85	4.2
		No of value chain actors adopting SLM technologies	CCU Agriculture	Farmers/farmer groups	Gok/FL LoCA/ Partners	32.63	5.33	5.85	6.5	7.15	7.8
		Acreage of land under SLM technologies	CCU Agriculture	Farmers/farmer groups/institutions	Gok/FL LoCA/ Partners	25.1	4.1	4.5	5.0	5.5	6.0
		Number of farmers adopting conservation agriculture/ Acreage under conservation agriculture	CCU Agriculture	Farmers	Gok/FL LoCA/ Partners	30.12	4.92	5.4	6.0	6.6	7.2
		Number of farmers putting crop residue into alternative use	CCU Agriculture	Farmers	Gok/FL LoCA/ Partners	10.04	1.64	1.8	2.0	2.2	2.4

	Increased efficiency in agricultural resource use	Number of farmers adopting precision agriculture practices	CCU Agriculture	Farmers	Gok/FL LoCA/ Partners	20.08	3.28	3.6	4.0	4.4	4.8
Increased Aquaculture Productivity	Enhanced sustainable productivity in aquaculture	Number of aquaculture farmers adopting CSA and GG technologies in production	CCU Agriculture	Farmers	Gok/FL LoCA/ Partners	27.61	4.51	4.95	5.5	6.05	6.6
increased Livestock Value Chains Productivity	Improved waste management practices among farmers	No of farmers adopting livestock waste management practices	CCU Livestock	Farmers	Gok/FL LoCA/ Partners	12.55	2.05	2.25	2.5	2.75	3.0
	Improved and sustainable livestock productivity	Number of farmers adopting good livestock husbandry practices	CCU Livestock	Farmers	Gok/FL LoCA/ Partners	35.14	5.74	6.3	7.0	7.7	8.4
	Improved decision making among farmers	Number of farmers receiving climate information services	CCU Agriculture	Farmers	Gok/FL LoCA/ Partners	7.53	1.23	1.35	1.5	1.65	1.8
	enhanced governance and engagements among stakeholders	Number of legal frameworks developed and reviewed	CCU Director	All stakeholders	Gok/FL LoCA/ Partners	17.57	2.87	3.15	3.5	3.85	4.2
	improved awareness on climate smart technologies among stakeholders	Number of sensitizations on climate smart agricultural technologies	CCU Agriculture/ Livestock	All stakeholders	Gok/FL LoCA/ Partners	10.04	1.64	1.8	2.0	2.2	2.4
	Improved social inclusion in project implementation	No of vulnerable and marginalized groups (VMG) participating in	CCU Social Safeguards	Farmers/ Farmer groups	Gok/FL LoCA/	5.02	0.82	0.9	1.0	1.1	1.2

		climate action investments (women/PLWD, Indigenous, youth, elderly)			Partners						
KRA 2: Water											
Objective(s): To enhance sustainable use and management of water resources.											
Outcomes: Increase access, use and management of water resources											
Outcome indicator: % increase in HH accessing water resources											
Increased access and management of water resources	Increase efficiency on water resource management	No of households practicing water conservation	CCU Natural Resources	Farmers/ Farmer groups	Gok/FL LoCA/ Partners	20.08	3.28	3.6	4.0	4.4	4.8
		No of water catchment areas protected	CCU Water	Farmers/ Farmer groups	Gok/FL LoCA/ Partners	24.1	4.1	4.5	5.0	5.5	5.0
		No of farmers practicing small scale irrigation practices	CCU Agriculture	Farmers/ Farmer groups	Gok/FL LoCA/ Partners	19.28	3.28	3.6	4.0	4.4	4.0
		No of households adopting efficient irrigation technologies	CCU Agriculture	Farmers/ Farmer groups	Gok/FL LoCA/ Partners	19.28	3.28	3.6	4.0	4.4	4.0
	Improved access to water resources for domestic and agricultural use	No of entities licensed to use water resources	CCU Water	Farmers/ Farmer groups/ Institutions	Gok/FL LoCA/ Partners	12.05	2.05	2.25	2.5	2.75	2.5

		No of households with rain water harvesting structures.	CCU Water	Farmers	Gok/FL LoCA/ Partners	24.1	4.1	4.5	5.0	5.5	5.0
		No of households accessing water sources with chlorine dispensers	CCU Water	Farmers	Gok/FL LoCA/ Partners	12.05	2.05	2.25	2.5	2.75	2.5
	Increased availability of clean and safe water to households	No of boreholes rehabilitated	CCU Water	Farmers/ Farmer groups/ Institutions	Gok/FL LoCA/ Partners	24.1	4.1	4.5	5.0	5.5	5.0
	Reduced cost of accessibility to water	No of high yielding water points upgraded to solar systems	CCU Water	Farmers/ Farmer groups/ Institutions	Gok/FL LoCA/ Partners	19.28	3.28	3.6	4.0	4.4	4.0
		No of water springs protected	CCU Water	Farmers/ Farmer groups/ Institutions	Gok/FL LoCA/ Partners	24.1	4.1	4.5	5.0	5.5	5.0
		No of water pans constructed	CCU Water	Farmers/ Farmer groups/ Institutions	Gok/FL LoCA/ Partners	12.05	2.05	2.25	2.5	2.7	2.5
	Improved social inclusion in project implementation	Number of legal frameworks developed and reviewed	CCU Director	All stakeholders	Gok/FL LoCA/ Partners	16.87	2.87	3.15	3.5	3.58	3.5

		Number of sensitizations on sustainable water resource management	CCU Natural Resources	All stakeholders	Gok/FLLoCA/ Partners	9.64	1.64	1.8	2.0	2.2	2.0
		No of vulnerable and marginalized groups (VMG) participating in climate action investments (women/PLWD, Indigenous, youth, elderly)	CCU Social Safeguards	Farmers/ Farmer group	Gok/FLLoCA/ Partners	4.82	0.82	0.9	1.0	1.1	1.0
KRA 3: Environment and Natural Resources											
Objective: To increase overall county forest and tree cover to over 20% and 30% respectively for improved livelihoods.											
Outcomes: Improved livelihoods and ecosystems sustainability.											
Outcome indicator: % increase in tree/ forest cover (HA)ns											
Conservation and protection	Increased tree cover	Number of trees planted in institutions	KFS/NRM/CBOs	Institutions	Gok/FLLoCA/ Partners	47.75	7.65	8.4	9.15	9.9	10.65
	Increased forest cover	Acreage of land reafforested	KFS/NRM/CBOs	Community	Gok/FLLoCA/ Partners	33.55	5.61	6.16	6.71	7.26	7.81
	Restored hills and quarries	Number of degraded sites restored	KFS/NRM/CBOs	Countywide	Gok/FLLoCA/ Partners	18.3	3.06	3.36	3.66	3.96	4.26
Improving community livelihoods	Improved livelihoods	Number of nature-based enterprises established- apiculture	CBO/NRM	Countywide	Gok/FLLoCA/ Partners	30.5	5.1	5.6	6.1	6.6	7.1

		Number of farm forestry fruit trees planted (mango, macadamia. etc)	CBO/NRM	farmers	Gok/FL LoCA/ Partners	36.6	6.12	6.72	7.32	7.92	8.52
	Enhanced governance and stakeholder engagement	Number of legal frameworks developed and reviewed	CCU - NRM	community	Gok/FL LoCA/ Partners	15.25	2.55	2.8	3.05	3.3	3.55
	Enhanced knowledge on sustainable NRM	Number of sensitizations on sustainable natural resource management	CCU - NRM	community	Gok/FL LoCA/ Partners	18.3	3.06	3.36	3.66	3.96	4.26
Objective: To enhance sustainable solid waste management.											
Outcomes: Enhanced sustainable solid waste management in the county											
Outcome indicator: Tonnage of solid waste reduced											
Environmental protection and management	Reduced quantities of waste collected and transported to dumpsites, improved livelihoods among community members	Number of solid waste recycling facilities developed	NEMA/ Department of Environ	Community/ Institutions	Gok/FL LoCA/ Partners	30.5	5.1	5.6	6.1	6.6	7.1
		Number of composting initiatives undertaken	NEMA/ Department of Environment	Community/ Institutions	Gok/FL LoCA/ Partners	45.75	7.65	8.4	9.15	9.9.	10.65
		Number of receptacles (3in1 liter bins) fabricated and installed	NEMA/ Department of Environment	Community/ Institutions	Gok/FL LoCA/ Partners	24.4	4.08	4.48	4.88	5.28	5.68
	Increased tree cover	Number of open green spaces beautified	NEMA/ Department of Environment	Community/ Institutions/ urban centres	Gok/FL LoCA/ Partners	6.1	1.02	1.12	1.22	1.32	1.42

KRA 4: Health Sanitation and human settlement											
Objective: To enhance awareness on adoption of climate related disease preventive measures											
Outcomes: reduced incidence of climate change disease											
Climate change related disease control	Reduced incidences of malaria and vector borne diseases in the community, Increased Community-level interventions on climate sensitive diseases and adaptation and mitigation through awareness creation.	% reduction in Malaria and other vector borne diseases	CCU/ Department of Health	Community	GOK/FLLoCA/ Partners	60	8	10	12	14	16
	Enhance early warning systems for disease surveillance and monitoring	No of early warning systems provided for disease surveillance	CCU/ Department of Health	Community c	GOK/FLLoCA/ Partners	30	4	5	6	7	8
	Enhanced use of feacal matter in clean energy production;	Number of Eco-San toilets	CCU/ Department of Health	Community/institutions	GOK/FLLoCA/ Partners	60	8	10	12	14	16
KRA 5: Sustainable energy											
Objective: To promote use of alternative energy sources in Bungoma County											
Outcomes: Improved access to alternative energy solutions											
Outcome indicator: % increase in HH accessing alternative energy solutions											
Promote clean, affordable, a	Increased no of households adopting	Number of households adopting clean lighting solutions	CCU/Department of Energy/	Communities/ Institution	GOK/FLLoCA/	37.5	5.0	6.25	7.5	8.75	10.0

nd quality alternative renewable energy sources	alternative clean lighting solutions		REREC/Partners		Partners						
	Increased no of households adopting alternative cooking solutions to reduce over reliance on wood fuel	Number of households adopting alternative cooking energy solutions (LPG, stoves and jikos)	CCU/Department of Energy/ REREC/Partners	Communities/ Institution	GOK/FLLoCA/ Partners	52.5	7	8.75	10.5	12.25	14
	Increased no of households adopting use of renewable energy from biogas	Number of households adopting Renewable sources of energy – biogas	CCU/Department of Energy/ REREC/Partners	Communities/ Institution	GOK/FLLoCA/ Partners	52.5	7	8.75	10.5	12.25	14
		Number of markets with installed solar PV for SME use	CCU/Department of Energy/ REREC	Communities/ Institutions/ Farmers	GOK/FLLoCA/ Partners	7.5	1	1.25	1.5	1.75	2
						Total	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**
						1,099.8	**178.48**	**196**	**221**	**241.72**	**261.8**

REFERENCES

1. Lake Victoria Basin Climate Change Adaptation Strategy and Action Plan, (2018-2023)
2. 3rd Bungoma County Integrated Development Plan, (2023-2027)
3. The Bungoma County Climate Change Finance Policy, (2020)
4. The Bungoma County Climate Change Policy, (2020)
5. The Bungoma County Environmental and Social Safeguard Policy (2019)
6. Climate Risk Profile: Kenya (2021): The World Bank Group.
7. Republic of Kenya, (2018), National Climate Change Action Plan (Kenya) (2018-2022).
8. Republic of Kenya, (2016): National Climate Change Adaptation Plan (2015 -2030)
9. The Climate Change Act, 2019 (No. 11 of 2016)
10. Kenya Meteorological Department forecasts
11. The National Solid Waste Management Strategy (2015)
12. Bungoma county climate change risk profile (2021)
13. Ahmed Iftikhar, Rifat Hayat, Ali Safdar, Ummay Amara, & Khalid Rabia, Soil beneficial bacteria and their role in plant growth promotion, (2010).