



BUNGOMA COUNTY CLIMATE CHANGE POLICY, 2020

**DEPARTMENT OF ENVIRONMENT, NATURAL RESOURCES, WATER
AND TOURISM**

ABBREVIATIONS AND ACRONYMS

AFOLU	- Agriculture, Forestry and Other Land Use
CEC	- County Executive Committee
CIDP	- County Integrated Development Plan
CSR	- Corporate Social Responsibility
DRR	- Disaster Risk Reduction
EMCA	- Environmental Management and Coordination Act
GESIP	- Green Economy Strategy and Implementation Plan
GHG	- Green House Gases
GIS	- Geographic Information System
HAP	- Household Air Pollution
KBM	- Knowledge Base Management
KPHC	- Kenya Population and Housing Census
M&E	- Monitoring and Evaluation
NCCAP	- National Climate Change Action Plan
NCCRS	- National Climate Change Response Strategy
NDC	- National Determined Contribution
POP	- Persistent Organic Pollutants
PWD	- People with Disability
RE	- Renewable Energy
RS	- Remote Sensing
TIPS	- Transition Implementation
UNFCC	- United Nations Framework Convention on Climate Change
WHO	- World Health Organization

CHAPTER ONE:

CONTEXT AND RATIONALE FOR THE COUNTY CLIMATE POLICY

1.0. Introduction

The chapter presents the context within which the county's climate change policy is developed. It outlines policy and legal frameworks with regard to the same at both National and County levels. It explains how the national level policies and legal frameworks are domesticated and contextualized at the county level. It also summarizes the rationale for the policy and the drivers of climate change in Bungoma County. Finally, it provides insights into the process of developing the policy.

1.1. Background

Climate Change is a threat to the development of the global economy and the greatest impediment to achievement of sustainable development goals. This can be proven as current global weather extremes affect millions of people resulting in food and water insecurity in addition to affecting agricultural productivity.

In Kenya, Climate Change has resulted in extreme weather events that has led to loss of lives, reduced agricultural productivity, displacement of populations, destruction of infrastructure among other adverse impacts. Bungoma County has also not been spared with increased cases of flooding, landslides, drought, resulting in displacement of people, damage to infrastructure and low agricultural yields.

Climate Change presents enormous challenges and opportunities for mankind everywhere as it has to be tackled in order to ensure sustainable development is achieved.

1.2. Context and Rationale for the Policy

Bungoma County's economy is dependent on its natural resource base making it highly vulnerable to climate change. The Nation's development blue print anchored in planning documents such as Kenya's Vision 2030 and Sustainable Development Goals (SDGs) identifies agriculture which is the County's leading source of income and natural resources as key sectors. The two sectors high vulnerability to climate change, makes tackling climate change a priority for all. It should be emphasized that the climate of the Lake Victoria Basin of which Bungoma County forms part is projected to change with extreme weather events such as unreliable climatic conditions resulting in decreased yields and food insecurity in the region.

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Evidence of Climate Change Impacts within the County is as follows:

- a. As highlighted earlier analysts suggest that climate change has already struck the East African Countries with the Lake Victoria basin worst hit. This is evidenced by decrease in quality and quantities of ground and surface water and decreased yields due to unreliable climatic conditions.
- b. Increasing occurrence of climate-associated disasters such as floods, prolonged drought and landslides are already visible
- c. Increased cultivation of hilltops, wetlands and riparian land that has resulted in soil erosion has seen sedimentation of our rivers and streams that have contributed to increased and intense flooding in the lower regions of the County and the neighbouring Counties of Busia, Siaya and Kisumu
- d. Unpredictable weather conditions such as increased temperatures leading to reduced yields have been witnessed.
- e. A combination of encroachment and clearing of vegetation, Illegal logging and charcoal burning has witnessed loss of forest cover and consequently biodiversity loss thereby affecting ecosystem services
- f. Pollution of our rivers and streams through excessive use of fertilizers and pesticides, release of raw and untreated sewage into our rivers and streams threatens our fresh water ecosystems
- g. Increased cases of destructive invasive species and pests such as the dodder plant and fall army worms,
- h. Increased conflicts over natural resources between communities residing in the upper regions of Mt. Elgon and those on the lower regions;
- i. Outbreak and prevalence of climate-related diseases.

Therefore, given the above threats to Bungoma County concerted efforts must be put in place to secure the future of the County in terms of ensuring food, water and energy security.

The Bungoma County Climate Change Policy has been influenced and guided by various policies enacted at the National level and ratifications by the National Government such as:-

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- I. The Green Economy Strategy and Implementation Plan (GESIP) 2016 -2030 which is the country's blueprint in advancing towards a low-carbon, resource efficient, equitable and inclusive socio-economic transformation.
- II. The National Climate Change Act, 2016 that provides a regulatory framework for an enhanced response to climate change and promotes mainstreaming climate change actions into County Government functions and states as follows;
 - a) A county government shall, in performance of its functions, integrate and mainstream climate change actions, interventions and duties set out in this Act, and the National Climate Change Action Plan into various sectors.
 - b) A county government shall, in developing, updating and approval of the County Integrated Development Plan, and the County Sectoral Plans mainstream the implementation of the National Climate Change Action Plan, taking into account national and county priorities,
 - c) The Governor of a county shall designate a County Executive Committee Member to coordinate climate change affairs.
 - d) Subject to the Act and the Constitution, a county government may enact legislation that further defines implementation of its obligations under this Act, or other climate change functions relevant to the county or such other related purposes.
 - e) A county government shall at the end of every financial year, through the designated County Executive Committee Member, submit a report on progress of implementation of climate change actions to the County Assembly for review and debate, and a copy of this report shall be forwarded to the National Directorate of Climate Change for information purposes.
- III. 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 Policy and legal instruments in Kenya are evolving towards an integrated framework given the fact that since the 1990s significant efforts have been initiated for a comprehensive framework.

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- IV. The National Climate Change response Strategy (NCCRS) launched in 2010 and the National Climate Change Action Plan 2018 - 2022 both policy documents aim to strengthen and focus nationwide actions towards climate change adaptation and greenhouse gas (GHG) emission mitigation
- V. United Nations Framework Convention on Climate Change (UNFCCC) was ratified in 1994 and thereafter in 2002 submitted its first national communication and second national communication in 2015. The nation is already preparing the third communication.
- VI. In 2005 Kenya ratified the Kyoto Protocol which seeks to reduce the emission levels that contribute to climate change and thereafter submitted the Nationally Determined Contribution (NDC) at the Paris Conference of Parties to the Kyoto Protocol in 2015
- VII. The Environmental Management and Coordination (EMCA) Act 1999; EMCA (Amendment) Act 2015 that is the basis of all National legislations with environmental conservation for posterity being the main goal.

It is based on these aforementioned provisions that this policy has been developed to mainstream climate change actions into Bungoma County Government functions

1.3. Drivers of Climate Change in Bungoma County

The County is characterized by a steady population growth rate, high population density, decreasing agricultural productivity and water scarcity in some parts of the County. A combination of low agricultural productivity and a rapid population growth rate increases food insecurity, general poverty and environmental degradation. Environmental degradation and Climate Change are key development challenges emphasized in the Bungoma County Integrated Development Plan (CIDP) 2018 – 2022.

The key drivers of environmental degradation within the County that is the main cause of climate change include: - uncontrolled and illegal logging, charcoal burning, household and institutional (including public schools) demand for wood fuel and increased encroachment on riparian and gazetted areas. The water tower which is Mt. Elgon Forest Reserve has not been spared with certain areas such as Kaberwa and Kaboywo whose forest cover has also decreased due to extensive clear felling of trees without re-forestation. Variability of rainfall caused by climate change impacts most heavily on those least able to cope: farmers on marginal land dependent upon on rain-

fed agriculture. Unreliable and low harvest levels affect household livelihoods and results in general poverty in the community. This in turn drives further encroachment on the County's marginal lands including forests, riparian areas and hilltops, undermining these ecosystems and provoking soil erosion and environmental degradation. Forest and tree cover is reduced even further when poverty pushes people to illegally fell trees or sell on-farm trees to either pay school fees or meet other cash needs.

1.4. Process of Developing the Policy

The development of the Bungoma County Climate Change Policy was informed by the National Climate Change Action Plan (NCCAP, 2018-2022), the National Climate Change Act, 2016 whose objectives is to encourage low carbon climate resilient development. A participatory formulation process was adopted involving the technical team from the Department with the cooperation and assistance from the County Environment Committee, Kenya Forest Service, Kenya Wildlife Service, County Executive Committee Member for Trade, Industrialization, County Attorney, the County Assembly Sectoral Committee on Environment, Natural Resources, Water and Tourism and the whole County Assembly of Bungoma.

CHAPTER TWO:

POLICY FRAMEWORK (GOAL, OBJECTIVES AND GUIDING PRINCIPLES)

2.0. Introduction

This chapter provides the policy direction with regard to climate change in Bungoma County through outlining the goal and specific objectives with regard to the same. It also spells out the guiding principles that will underpin the implementation of the policy.

2.1. Policy Direction

2.1.1. Goal

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.

2.1.2. Policy Objectives

The main objectives of Bungoma County Climate Change Policy include;

- a) To appropriately address County climate change challenges for sustainable development;
- b) To promote conservation of natural resources for posterity;
- c) To integrate climate change into all County development projects and programmes;
- d) To ensure effective stakeholder and community participation is enhanced in climate change adaptation and mitigation initiatives;
- e) To strengthen County inter-departmental mechanisms on climate change;
- f) To enable effective and proper resource mobilization available at both International, National and County level to combat climate change;
- g) To contribute towards Kenya's role in addressing climate change challenges.

2.2. Guiding Principles

The implementation of this Policy will be guided by the following principles:

- a) **Right to a clean and healthy environment:** The Constitution of Kenya 2010 makes this a right for all Kenyans.
- b) **Right to sustainable development:** Environmental Conservation

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encompassing climate change mitigation and adaptation shall be given priority on all County development programmes for attainment of Sustainable Development Goals as per the County Integrated Development Plan 2018-2022.

- c) **Partnership:** prioritize building partnerships, collaborations and synergy from the public, government, public benefits organization, civil society, private sector as well as vulnerable communities including women, youth and Persons with Disability
- d) **Stakeholder Engagement and Public Participation:** consultations, negotiations and consensus building shall be key.
- e) **Equity and social inclusion:** fair and equitable distribution of resources and benefits to all communities including marginalized and vulnerable communities such as *ogiek*, *tachoni*, *bongomek* and *batura*
- f) **Accountability:** the mobilisation and utilisation of financial resources shall be undertaken with integrity and transparency, in order to achieve optimal results in county climate change responses.
- g) **Cost effectiveness:** County climate change priority interventions will be undertaken bearing in mind that there must be value for money.

CHAPTER THREE: OPPORTUNITIES AND STRATEGIC POLICY INTERVENTIONS FOR CLIMATE CHANGE MITIGATION AND ADAPTATION IN BUNGOMA COUNTY (COUNTY PRIORITY AREAS)

3.0. Introduction

This chapter outlines the County's priority intervention measures for climate change. It identifies key sectors that shall be the main focus for both Climate Change Adaptation and Climate Change Mitigation interventions for the County to build resilience to climate change.

Overall Policy Interventions:

The County Government in collaboration with relevant stakeholders shall undertake:

- a) *Participatory county level assessments of climate change risks and vulnerability,*
- b) *Community and stakeholder engagement, capacity building and sensitization to increase awareness of climate change impacts and interventions,*
- c) *Development of gender and community specific climate change mitigation and adaptation plans,*
- d) *Development of County climate change financing mechanisms for mitigation and adaptation*
- e) *Development of County Climate change adaptation finance tracking systems*

Sectoral Opportunities and strategic policy interventions on climate change adaptation and mitigation:

3.1. Water Resources

The County is home to one of the five major water towers in the Country in Mt. Elgon Forest Ecosystem. Encroachment and deforestation, onto the fragile areas of the ecosystem and specifically upper catchments contributes to environmental degradation that not only causes climate change but also affects the quality and quantity of water within the ecosystem.

Challenges affecting water resources include;

- a) Soil erosion leading to siltation and flooding,
- b) pollution through discharge and disposal of wastes,
- c) car washing,

- d) over-exploitation of riparian land vegetation such as papyrus reeds,
- e) overfishing
- f) sand harvesting
- g) increased drilling of boreholes coupled with unplanned siting of pit latrines.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) Enhance awareness on climate change impacts and the water sector including promoting public and institutional awareness on water conservation (catchment protection, recycling, waste water management) and efficient water use including irrigation systems, rain-water harvesting and gravity flow water supply schemes*
- b) Identify, map and profile suitable sites for water storage facilities such as dams and water pans*
- c) Control sand harvesting by developing regulations to ensure sustainable sand harvesting practices;*
- d) Protect groundwater through technical management measures like regulatory frameworks, water licensing and adopt integrated water resources management concepts;*
- e) Promote conservation practices such as afforestation and re-forestation in the water catchments;*
- f) Enforce existing legislation e.g. Water Act, EMCA and implement the National Water Master Plan;*
- g) Enhance county capacities in remote sensing and geographic information system (GIS) techniques for monitoring temporal changes in natural resources.*

3.2. Agriculture and Livestock

3.2.1. Agriculture

The County Integrated Development Plan (CIDP) 2018 -2022 identifies agriculture as the single largest sector that is most vulnerable to climate change despite the sector being the leading source of income in the County. The main crops grown for subsistence include beans, maize, sorghum, finger millet, potatoes, groundnuts and assorted vegetables. The main cash crop grown in the County is sugarcane, tobacco, tea and coffee.

Greenhouse gas (GHG) emissions from agriculture and livestock sectors accounted for about 14% of world's total GHG emissions. These emissions are essentially Methane (CH₄) and Nitrous Oxide (N₂O), 79%, and 21% respectively and originated mainly from three sub-sectors:

- a. Enteric fermentation in cattle (all in the form of Methane);
- b. Releases of Nitrous Oxide from agricultural soils/ Nitrous Fertilizer;
- c. and Manure management.

Challenges include;

- a) unpredictable weather/climatic conditions;
- b) pests and diseases;
- c) land fragmentation and poor land tenure;
- d) decreasing soil fertility;
- e) inadequate extension services
- f) weak marketing channels;

The County Government in collaboration with relevant stakeholders, shall undertake the following measures:

Policy Intervention Measures

- a) *Conduct climate risk and vulnerability assessments of the agriculture value chain and create awareness on the impacts of climate change and their interventions;*
- b) *Develop and maintain quality database on crop, soil and climate-related parameters to identify ideal cropping patterns for each sub county;*

- c) *Facilitate research work and dissemination of information on climate change impact assessment and productivity projection studies;*
- d) *Collaborate with relevant organizations (national and international) such as the Kenya Meteorological Department to make reliable climatic predictions at various intervals to assess the corresponding likely impacts on various crops and to develop/plan appropriate adaptation measures;*
- e) *Promote climate-smart agriculture with an emphasis on adoption of appropriate farm forestry practices.*

3.2. 2. Livestock

The main livestock reared include; cattle, pigs, goats, sheep, poultry, rabbits and bee keeping. The livestock sub-sector is the highest contributor of GHG within the agricultural sector due to the large number of livestock and lack of improved feeds.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a. *Create awareness on better breeds of livestock which have higher productivity of milk and meat and are less prone to heat stress and more drought tolerant;*
- b. *Conduct capacity building in indigenous knowledge, livestock insurance schemes, early warning systems, early action, livestock management and breeding;*
- c. *Support development of new feeds especially for dry seasons and promote feed conservation techniques and fodder banks in the arable areas;*
- d. *Promote livelihood diversification and market access (indigenous poultry, beekeeping, rabbits, emerging livestock - quails, guinea fowls, ostriches etc.);*
- e. *Improve farm practices by adopting modern techniques such as zero grazing;*
- f. *Improve nutritional quality of feed through the use of multi-nutrient blocks (MNB) prepared from urea, molasses, vitamins and minerals;*
- g. *Improve the extension system and enhance use of media to allow effective and timely communication of climatic predictions and corresponding advice to the farming community;*
- h. *Construction of water storage facilities such as dams and water pans*

3.2.3. Fisheries

Fish harvesting takes place in rivers, streams, dams and fish farms/ponds across the County. The fish produced include; tilapia, cat fish and mud fish.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) Undertake risk and vulnerability assessment of the fisheries value chain,*
- b) Develop and implement a pilot project on climate resilient fish species and the related value chain,*
- c) Promote the up scaling of climate resilient strategies/ technologies in fisheries and climate resilient fish varieties.*

3.3. Health

Climate variability such as high temperatures and cold waves, heavy or too little precipitation and strong winds do have serious implications for human health. The county has witnessed an increase in vector, air and water-borne diseases as a result of climate change a good example being malaria in Mt. Elgon due to expansion of breeding area for disease causing pests as a result of environmental degradation.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) Assess health vulnerabilities of the communities in areas most likely to be affected by adverse impacts of climate change and build their capacities to reduce their health vulnerabilities to climate change;*
- b) Design appropriate climate change related interventions for the health sector;*
- c) Enhance early warning systems for climate change related diseases, which includes enhancing existing databases on health sector indicators amongst others;*
- d) Enhance preventive measures and resources such as vaccines, personal protective equipment, pest & vector control, quality medications and clean drinking water are available to the general public easily and cost effectively particularly during climate related extreme events;*
- e) Enhance proper management of wastes such as municipal waste, e-waste, persistent organic pollutants (POPs) and healthcare wastes.*

3.4. Forestry

The County forest cover is estimated at 14.86% which include Mt. Elgon Forest Reserve and few forests on hills, institutions and private farms. Forests are key resources in climate change mitigation and adaptation due to their ability to act as sinks for absorbing CO₂ and other GHG from the atmosphere. It must be emphasized that the County's forest cover is vulnerable and diminishing at a faster rate due to encroachment for settlement and agricultural expansion in addition to illegal logging and charcoal burning due to overdependence on wood fuel. Low levels of afforestation within the county is likely to impact negatively on various aspects of the economy given the critical role that forests play.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) Support and build capacity of community forest associations in the county;*
- b) Enhance participatory scenario planning with communities;*
- c) Support community and farm forestry development*
- d) Encourage local, national and international collaboration in research on forests biodiversity and forest management systems adapting to climate change;*
- e) Promote adoption of participatory forest management approach including implementation of the Transfer Implementation Plan for devolved forestry functions (TIPS)*
- f) Aggressively promote afforestation and reforestation programs with species suited to the looming climate change by setting clear annual planting targets,*
- g) Document and utilize indigenous knowledge while managing various types of forest in the context of changing climate;*
- h) Expand and demarcate protected areas in the county with respect to ecological parameters including conservation of wildlife and its habitats;*
- i) Establish and expand existing tree nurseries at Sub County and ward levels to stimulate tree planting.*
- j) Encourage REDD+ interventions to address drivers of deforestation and forest degradation.*

3.5. Infrastructure

Infrastructure is key for social-economic development as it connects communities, industries and businesses across the County. Wear-and-tear on infrastructure which generally includes an element of minor climate impacts such as solar break-down of paint or major damage or destruction during extreme events e.g. flood must be taken into account.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) Conduct an assessment of whether existing and planned infrastructural assets are compatible with a low carbon climate resilient economy;*
- b) Promote the concept of green economy in infrastructural development;*

3.6. Tourism

Bungoma County has a wide variety of tourist sites key among them being the Mt. Elgon Forest Reserve. The tourism industry has contributed to degradation through: unsustainable management of resources such as water, electricity; congestion of tourists in wildlife areas in addition to developments within wildlife corridors. Climate change has also impacted negatively on the sector with human-wildlife conflicts over dwindling natural resources, loss of biodiversity and proliferation of invasive species becoming common.

Policy Intervention measures

The County Government in collaboration with relevant stakeholders shall:

- a) Conduct a climate risk and vulnerability assessment of the tourism sector;*
- b) identify, map and conserve tourism sites including cultural and historic sites, botanical gardens, biodiversity high potential areas and sites with scenic beauty among others;*
- c) Promote diversification of climate resilient tourism products;*
- d) Build capacity and raise awareness on impacts of climate change on the tourism sector to relevant departments, partners and the community;*
- e) Develop climate resilient action plans for the sector;*
- f) Design a pilot project that enhances resilience in the tourism sector;*

3.7. Energy

Efficient and reliable energy supply is fundamental for development of all sectors of the economy. The County Energy Sector has a key role to play in Climate Change Mitigation and Adaptation as over 80 % of the County residents rely on wood fuel and Charcoal. This contributes to environmental degradation that must be addressed through appropriate mechanisms in order to combat climate change. Access to reliable, affordable energy is a key component of building climate resilience.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) Conduct risk and vulnerability assessments of energy infrastructure;*
- b) Promote alternative renewable sources of energy such as wind, solar and biogas*
- c) Enhance access to clean energy by households for cooking and lighting such as electricity, liquefied petroleum gas;*
- d) Continue the rehabilitation of water catchment areas in order to provide sustainable ecosystem services, including energy production.*

3.8. Other Vulnerable Eco-Systems

3.8.1. Hills

Hills in Bungoma play important role as micro-water towers and harbor remnant forests. The most likely climate change risks to the hills in Bungoma County are:

- a) Increased human destruction for wood fuel and timber;
- b) Overgrazing;
- c) expansion of agricultural land resulting in topsoil erosion;
- d) and human settlement.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) Carry out detailed studies to identify the most fragile and resilient ecosystem in all ecological zones;*
- b) Develop programmes to prevent agricultural expansion to the hills;*
- c) Promote afforestation of hills using indigenous tree species;*
- d) Promote slope stabilization measures during road construction;*
- e) Restrict commercial and development activities detrimental to hilly ecology;*

3.8.2 Wetlands

The County's wetlands play an important role in maintaining and sustaining regional ecological processes that support globally important biodiversity such as bird migration routes and fish breeding sites. There has been a dramatic change in the ecosystem of the wetlands in Bungoma County in the last decade, affecting its ability to function as a habitat for various flora and fauna. These changes are mainly due to encroachment of wetlands for agriculture and settlement.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) promote conservation and management of all wetlands in the County through community sensitizations; enforcement of laws regulating conservation of wetlands; and creating artificial wetlands;*
- b) ensure control of siltation of wetlands by reducing deforestation and felling of timber in catchments areas;*

3.9. Disaster Preparedness

Climate Change is likely to increase climate-related natural disasters with the projected increase in the frequency and intensity of extreme climate events, including floods, droughts, landslides triggered by heavy rains. Urban flooding due to blockage of storm water drainage or poor storm water drainage systems. Climate change projections are scenario based, hence, contain some degree of uncertainties. But in spite of this there are strong indications that in Lake Victoria Region, climate change is intensifying the above-mentioned hazards. The County is already experiencing impacts of climate change that are too visible to ignore. Furthermore, poor designs and planning has resulted in temporary urban flooding. Encroachment on drainage paths and wetlands has also resulted in temporary urban flooding and displacement. Most disasters or hazards that lead to destruction cannot be prevented; their impacts however, can be minimized by adaptive and preparedness measures.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) Establish early warning systems and develop communities' evacuation plans for vulnerable areas;*

- b) enhance community participation in early warning information dissemination and disaster risk reduction activities, particularly in developing evacuation plans;*
- c) Strengthen flood forecasting, drought monitoring & early warning system in the county;*

Opportunities and strategic policy interventions in the socio – economic realm:

3.10. Poverty

Climate change is a serious risk to poverty reduction efforts and threatens to undo decades of development efforts. While climate change is a global phenomenon, its negative impacts are more severely felt by poor people in underdeveloped countries. They are more vulnerable because of their high dependence on natural resources, their limited technical capacity and insufficient financial resources to cope with climatic extremes. Poverty reduction is at the top of all development agenda at the national and county level. With the onset of climate change, the plight of the poor is becoming even more miserable. Therefore, it is imperative to incorporate the possible impacts of climate change on the communities living in the conditions of deprivation and poverty into future developmental plans for Bungoma.

The United Nations Sustainable Development Goals (SDGs) have specified a way forward by combining efforts towards poverty alleviation along with management of climate change impacts and environmental degradation effects.

High poverty level is one of the major developmental challenges in Bungoma County. Poverty levels are higher in the urban areas (70 per cent) compared with rural (63 per cent). The main causes of poverty include, collapse of local agro-based industries, unemployment and low agricultural productivity.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) Integrate poverty-climate change nexus into economic policies and plans;*
- b) Promote implementation of the national population planning strategies and programs,*
- c) Strengthen community level climate change adaptation and mitigation measures to build their resilience to climate change;*

- d) Improve access of poor communities to appropriate technologies for crop production, integrated pest management and credit facilities for agricultural development;*

3.11. Marginalized and Vulnerable Groups

Climate change is likely to affect marginalized and vulnerable communities and people disproportionately as they are more vulnerable and have the least resources to adapt. Marginalized and vulnerable groups are found to be more vulnerable during extreme climate events and disasters.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) Undertake a comprehensive study on the gender-differentiated impacts of climate change with particular focus on gender difference in capabilities to cope with climate change adaptation and mitigation strategies,*
- b) Develop gender-sensitive criteria and indicators related to adaptation and vulnerability as gender differences in this area are most crucial and most visible;*
- c) Develop climate change adaptation measures on local and indigenous knowledge.*

Opportunities and strategic policy interventions in the realm of support and operational mechanisms:

3.12. Capacity Building & Institutional Strengthening

Expertise to address climate change is low in the county. Bungoma is hardly prepared to meet the 21st century's biggest challenge of climate change as far as human resources and institutional capacities are concerned. Insufficient trained human resource is a big constraint, in part, due to brain drain, limited investment in climate change education and lack of demand and opportunity for skilled individuals in the County.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

Institutional Mechanisms

- a) Establish climate change desks within departments, at sub-county levels and ward levels;*

- b) Establish the County Climate Change Steering Committee, County Climate Change Planning Unit, Ward Climate Change Committees for coordinating all climate change activities at county and national levels;*
- c) Improve the inter-ministerial and inter-departmental decision making and co-ordination mechanism on climate change issues at the County level;*
- d) Strengthen the county institutional framework for undertaking tasks related to the implementation of national and international obligations on climate change;*
- e) Ensure the integration and mainstreaming of climate change in developmental, and that climate change and socio economic development are pursued as inseparable twin objectives;*
- f) Ensure that agriculture, water, fisheries, forests, energy and Disaster Risk Reduction (DRR) related vulnerabilities induced by climate change, get duly integrated and addressed in all relevant county policy documents;*
- g) Identify the county institutional needs to develop the capacity for climate change adaptation and mitigation;*
- h) Create a County, Sub-county and Ward Implementing Entities to deal with adaptation and mitigation projects at all levels;*
- i) Create a mechanism for public private partnership and non-state actors in climate change technology innovation.*

Capacity Enhancement

- a) Networking and collaboration with institutions of higher learning to promote learning on climate change;*
- b) Strengthen county climate change science related institutions, in particular the universities, in terms of necessary financial support;*
- c) Develop Knowledge Base Management (KBM) and networking with strategic climate change research establishments to ensure benefits from international scientific advancements;*
- d) Provide training and support, at ward, sub-county and county levels, to the concerned officials and experts of line ministries and departments to further their knowledge and capacities on climate change issues;*

- e) Explore and provide training opportunities to enhance capacity for preparing projects and implementation of programs in the climate change area;*
- f) Enhance disaster mitigation and preparedness capacities at all levels;*
- g) Enhance capacity to undertake comprehensive assessment of economic implications of climate change impacts on various sectors with and without using different adaptation measures;*
- h) Develop county GHG emissions inventory and strengthen institutional capacities to ensure regular updates;*
- i) Develop an institutionalized system to regularly measure and monitor GHG emissions from various sectors including trans-boundary pollution and maintain a database;*
- j) Expand and upgrade meteorological services and monitoring stations in various parts of the county including sub county and ward levels;*
- k) Develop capacity for making reliable projections of climate change scenarios, seasonal forecasts and inter-annual forecasts for different parts of the county;*
- l) Actively participate in new national and international initiatives;*
- m) Promote the use of GIS/remote sensing (RS) based studies to assess and quantify the past temporal trends and monitor the future changes in river water levels, deforestation, wetland loss, land degradation (salinity, water logging) and soil erosion;*
- n) Establish a county resource centre for climate information sharing and networking of regularly updated climate change related data.*

3.13. Community Sensitization and Awareness Creation

Public education and outreach are vitally important to create broad awareness of climate change issues and its impacts. As such the importance of communicating with the general public and engaging stakeholders in climate change related issues is fully recognized by the County.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) Conduct countywide surveys on the awareness level and capability of key stakeholders and other potential partners;*

- b) Develop a county climate change awareness program involving communities, various ministries and departments, civil society and private sector;*
- c) Ensure advocacy and mass awareness regarding importance of water and energy conservation impacts of climate change on various sectors including forest ecosystem, biodiversity etc. using mass media, public-private partnership, civil society, learning institutions and community mobilization;*

3.14. Research, Innovation and Technology Transfer

Climate change being one of the most difficult and complex threat the world faces, needs innovative technological solutions to solve both mitigation and adaptation challenges. At the 21st UNFCCC Conference of Parties (COP21), Parties to the Convention agreed to set-up a special “Technology Framework” for the development and transfer of new technologies from developed to developing countries.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) Ensure that the technology needs to support actions on mitigation and adaptation are determined and are based on local priorities;*
- b) Promote the development and use of local technologies in combination of innovation and technological advancement in the field of climate change as an effective way to implement the adaptation and mitigation measures;*
- c) Establish infrastructure necessary for promoting innovation at grassroots level, learning institutions including vocational training institutions, polytechnics, universities and research institution;*
- d) Establish partnerships for technology transfer and development with Industries, Higher learning institutions, international research organization and village polytechnics*
- e) Find technological breakthrough to harness the potential of renewable energy resources in the county;*
- f) Explore the viability of new technological breakthroughs in the field of biofuels for use in Bungoma County;*
- g) Promote technology transfer for designing and manufacturing of emission monitoring equipment for installation near urban and industrial areas*

- h) Set a base for technology transfer and absorption at technical institutions, village polytechnics and universities;*
- i) Establish a system for climate monitoring, modelling and early warning systems connected to all the farmers in the county;*
- j) Develop new breeds of crops and livestock which are early maturing and less vulnerable to impacts of climate change;*
- k) Carry out research on proper land use systems and safe carbon emission.*

3.15. Regional, National and International Climate Change Cooperation

Climate Change is a global phenomenon that affects all spheres of life. Therefore, Bungoma County shall seek and encourage cooperation to enhance its efforts to combat climate change.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) Support exchange of meteorological data within national, regional and international weather monitoring organizations including that obtained from high altitude monitoring stations;*
- b) Network and partner with national and international weather organizations to receive real time hydrological data in the region for improved flood forecasting and warning systems or services;*
- c) Work with neighboring counties to undertake initiatives on management of mountain ecosystems, particularly water catchments and their contribution to sustainable development and livelihoods and to showcase climate change findings;*
- d) Help establish institutional linkages between national institutions to facilitate sharing of knowledge, information and capacity building programs in climate change related areas;*
- e) Seek establishment of a regional Inter-County Expert Group on Climate Change to develop clear policy direction and guidance for regional cooperation;*
- f) Undertake together with other neighboring counties advocacy and awareness programs on climate change, and promote the use of green technology and best practices for transition to low-carbon, sustainable and inclusive development in the region.*

3.16. Resource Mobilization/Finances

There is urgent need for finance in addressing climate change. The developed countries have a responsibility to provide climate change financing under the UNFCCC based on the principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR&RC) and the financial mechanisms developed within and without the UNFCCC. To secure an appropriate share from this initiative, expected to be available in near future, a county needs to create an enabling environment, which can facilitate and attract this funding.

Policy Intervention Measures

The County Government in collaboration with relevant stakeholders shall:

- a) Continue to assess how best to position the Bungoma vis-a-vis other counties in order to secure climate finance;*
- b) Commit up to 2% of the county development budget to climate change interventions;*
- c) Collaborate with accredited entities to explore opportunities for access and effective use of the opportunities available internationally for adaptation and mitigation efforts e.g. through Green Climate Fund (GCF), Adaptation Fund (AF), Global Environmental Facility (GEF), World Bank's Forest Carbon Partnership Facility (FCPF) etc;*
- d) Establish a "Bungoma County Climate Change Fund" for financing climate change related projects. The Climate Change Fund to be incorporated in the County Annual budgets;*
- e) Develop Public-Private-Civil Society partnership for financing and implementation of climate change adaptation and mitigation projects;*
- f) Create domestic carbon market opportunities by introducing appropriate investment framework linked with national/regional banking institutions;*
- g) Develop mega project proposals on climate change to attract Global Climate Finance;*

CHAPTER FOUR: POLICY IMPLEMENTATION FRAMEWORK

4.0. Introduction.

This Chapter outlines the institutional framework within which the Policy shall be implemented. It highlights key Departments/Sectors that shall be key in ensuring the Policy is successfully implemented in addition to various entities that shall be constituted to ensure the Policy objectives are achieved.

4.1 Institutional Framework

The Climate Change Act, 2016 stipulates that a County Executive Committee Member in Charge of Climate Change Affairs shall be appointed by the Governor. The Act Mandates County Governments to mainstream climate change in all their sectors and to undertake formulation of subsequent County legislations on climate change.

The implementation of Climate change interventions at the County or within the confines of this policy shall be spearheaded by the Department of Environment and subsequent legislations by the Department shall put in place an institutional framework from the ward level to the County level to oversee Climate Change matters.

4.2 Other key co-ordinating ministries and authorities

In addition to the Department of Environment, two other key departments will have special role to play. They are;

1. The Department of Finance

The main functions of the department will be to:

- a. Ensure that county, sectoral, sub-county and ward budgets and indicative planning figures integrate climate change through appropriate provisions for the implementation of the policy and its strategy
- b. Facilitate the introduction of relevant financial mechanisms and tools (IFMIS segment 8) to the relevant stakeholders, as per the implementation strategy, to support financial resource mobilization and investment for the implementation of the policy

2. Department of Economic Planning

The main functions of Economic Planning will be to:

- a. Ensure that the ministries, departments and agencies concerned integrate climate change through adequate provisions in their annual work plans for the implementation of the climate change policy, building on the guidance provided

in the costed implementation strategy but consistent with all relevant county policies and legislations;

- b. Review quarterly and semi-annual reports from the ministries, departments and agencies concerned, to ensure that resource use is in line with expected and actual progress in implementing the policy;
- c. Ensure that (there are short and long-term work plans) these agreed work plans are implemented, through a review of quarterly and semi-annual reporting by the institutions concerned and appropriate follow-up actions;
- d. Mainstreaming climate change into County Integrated Development Plan (CIDP) and County Strategic Plans (CSP) as set out in the National Climate Change Action Plan 2018 -2022

4.3. Other departments

All County sectors are expected to mainstream climate change in their development plans and projects. The Departments are expected to have a designated climate change unit that shall spearhead the mainstreaming of climate change into their sector plans and oversee their implementation. The units are expected to forward their reports to the CECM responsible for matters of Environment and Climate Change who is tasked with preparing a consolidated annual progress report on the overall implementation of the policy, for consideration by the County Assembly and with a copy to the National Climate Change Directorate.

4.4. At the decentralized level

Climate Change Committees will be established at the ward level. All departments will ensure that climate change issues in their sectors are integrated into the Sub-county and Ward development plans. The Committees will be charged with a responsibility of identifying climate change priorities within their jurisdiction.

Adequate provision will be made at these levels to allocate budgets to each sector to implement the identified climate change policy priorities, along with the setting of relevant performance indicators. They will be expected to report to the respective department at the county level on quarterly basis on the progress of implementation of respective priorities, attainment of expected results and performance targets.

CHAPTER FIVE: POLICY MONITORING AND EVALUATION, REPORTING AND REVIEW

5.0. Introduction

This Chapter outlines how the implementation of the Policy will be monitored and evaluated. It highlights the structures within which Reporting shall be done to ensure the Policy objectives are achieved and when it shall be reviewed.

5.1. Monitoring and Evaluation

Bungoma County shall prioritize continuous tracking the implementation of this Policy and evaluating its outcomes. This shall help identify potential shortfalls within the Policy, recognize implementation challenges and enable policy review.

Each Department outlined with specific responsibilities will have to ensure implementation of the relevant priority intervention measures using means and mechanisms at its disposal. The implementation of Climate Change mitigation and adaptation interventions will be spearheaded by Departmental Climate Change Units and Climate Change Mitigation and Adaptation shall also form part of the Performance Contracting. The Departmental Climate Change Units in collaboration with various stakeholders and partners in the course of project implementation will monitor and evaluate the policy intervention measures outlined in the policy and their contribution towards achieving the objectives of the policy and report to the Department of Environment. The M&E of the Policy shall also be aligned to the CIDP, sector plans and annual development plans and adopt a participatory approach that promotes active engagement of stakeholders.

The subsequent legislation shall also establish other monitoring and evaluation units that shall be in charge of ensuring the County Climate Change Policy is implemented accordingly.

5.2. Reporting

Kenya as a party to the Kyoto Protocol is mandated to submit national communications on climate change actions every four years as per the UNFCCC requirements. Likewise, these Communications must include reports from Bungoma County indicating climate change mitigation and adaptation measures being undertaken, support received or needed.

The Departmental Climate Change Units shall report annually on the implementation of this Policy and their interventions to the County Executive Committee Member responsible for matters of Environment and Climate Change. The reports will form part of the annual County Climate Change Response Report that shall be approved by the County Climate Change Steering Committee and presented to the County Assembly and copied to the National Climate Change Directorate to form part of Kenya's reporting under UNFCCC.

5.3. Operationalization and Review of the Policy

Operationalization of the county climate change policy priorities and actions will require significant planning and budgeting that shall be the basis of a County Climate Change Action Plan initiated by the CECM in charge of Environment and Climate Change and developed through a participatory process. The action plan will form a basis of mainstreaming climate change actions into various sectoral plans and the CIDP. The implementation of the policy will undergo an independent external evaluation in 5 years' time. The recommendations resulting from this evaluation will feed into the revision process for the policy.

Annex I - Terminologies

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 or potential of a system to respond successfully to climate variability and change, and includes adjustments in both behaviour and in resources and technologies.

Capacity building

In the context of climate change, the process of developing the technical skills and institutional capability in developing countries to enable them to address effectively the causes and results of climate change.

Carbon market

A trading system through which countries or other entities may buy or sell units of greenhouse gas emissions in an effort to meet their national limits on emissions, either under the Kyoto Protocol or under other agreements, such as that among member states of the European Union. The term comes from the fact that carbon dioxide is the predominant greenhouse gas, and other gases are measured in units called "carbon dioxide equivalents."

Carbon sequestration

The process of removing carbon from the atmosphere and depositing it in a reservoir or "sink", such as soil or trees

Climate

The average pattern for weather conditions occurs over a long time period not less than 30 years. Weather refers to the atmospheric conditions at a specific place at a specific point in time. Climate has always varied because of natural causes. Increasingly, however, human increases in GHG emissions causing changes in climate as well.

Climate Change

Changes in global or regional climate patterns, including changes in temperature, wind patterns and rainfall. In particular, climate change refers to a change apparent from the mid to late 20th century onwards and attributed largely to human activities that increase levels of GHG emissions, especially atmospheric carbon dioxide produced by the use of fossil fuels. Climate change is sometimes referred to as global warming, which specifically refers to the long-term trend of a rising average global temperature.

Climate Finance

Local, national or international financing that may be drawn from public, private and alternative sources of financing, and is critical to addressing climate change because large-scale investments are required for adaptation and mitigation.

Climate Resilience

Closely linked to adaptation, building climate resilience includes reducing vulnerability to climate change, making sure that the impacts of climate change are avoided or cushioned, and enabling people to respond to climate risks.

Conference of the Parties

The supreme governing body of the UNFCCC, which meets once a year to review the Convention's progress. The word "conference" is not used here in the sense of "meeting", but rather of "association".

Deforestation

The long-term or permanent loss of forest cover. The term implies transformation of forest into another land use, which is caused and maintained by a continued human-induced or natural perturbation.

E10

E10 is a mixture of conventional unleaded petrol and ethanol. E10 means it is 90 per cent petrol and 10 per cent ethanol.

Greenhouse gases

The atmospheric gases responsible for causing global warming and climate change. The major GHGs are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). Less prevalent -- but very powerful -- greenhouse gases are hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆).

Intergovernmental Panel on Climate Change (IPCC)

Established in 1988 by the World Meteorological Organization and the UN Environment Programme, the IPCC surveys worldwide scientific and technical literature and publishes assessment reports that are widely recognized as the most credible existing sources of information on climate change. The IPCC also works on methodologies and responds to specific requests from the UNFCCC's subsidiary bodies. The IPCC is independent of the UNFCCC.

Kyoto Protocol

An international agreement standing on its own, and requiring separate ratification by governments, but linked to the UNFCCC. The Kyoto Protocol, among other things, sets binding targets for the reduction of GHG emissions by industrialized countries.

Low Carbon Development Pathway

A national development plan or strategy that encompasses low-emission economic growth. Transitioning to this pathway means taking actions, where possible, to encourage GHG emissions that are lower than business-as-usual practice; and reducing the human causes of emissions by moving toward a resource efficient economy that is as low-carbon as possible and enhancing carbon sinks.

Mitigation

In the context of climate change, a human intervention to reduce the sources or enhance the sinks of greenhouse gases. Examples include using fossil fuels more efficiently for industrial processes or electricity generation, switching to solar energy or wind power, improving the insulation of buildings, and expanding forests and other "sinks" to remove greater amounts of carbon dioxide from the atmosphere.

Measurement, Reporting and Verification Plus (MRV+)

An integrated framework proposed for Kenya to measure, monitor, verify and report results and impacts of mitigation, adaptation and climate finance actions, and the synergies between them.

National Adaptation Plan

BUNGOMA COUNTY CLIMATE CHANGE POLICY, 2020

A document prepared by developing countries that identifies urgent and immediate needs for adapting to climate change.

National Climate Change Action Plans

National plans of action, prepared at five-year intervals, that set out in detail the requirements and costs for the design and implementation of the various climate change interventions required for Kenya to attain low carbon climate resilient development.

Public Private Partnerships (PPPs)

Public-Private Partnerships are an association between government and private sector through which private financing is utilized to perform a public function, at a profit to the private sector.

Sustainable development

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Technology Transfer

A broad set of processes covering the flows of know-how, experience and equipment for mitigating and adapting to climate change among different stakeholders.

United Framework Convention on Climate Change (UNFCCC)

An international treaty signed by 195 countries that entered into force in 1994. The objective of the Convention is “...stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate systems...”

Vulnerability

The 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.