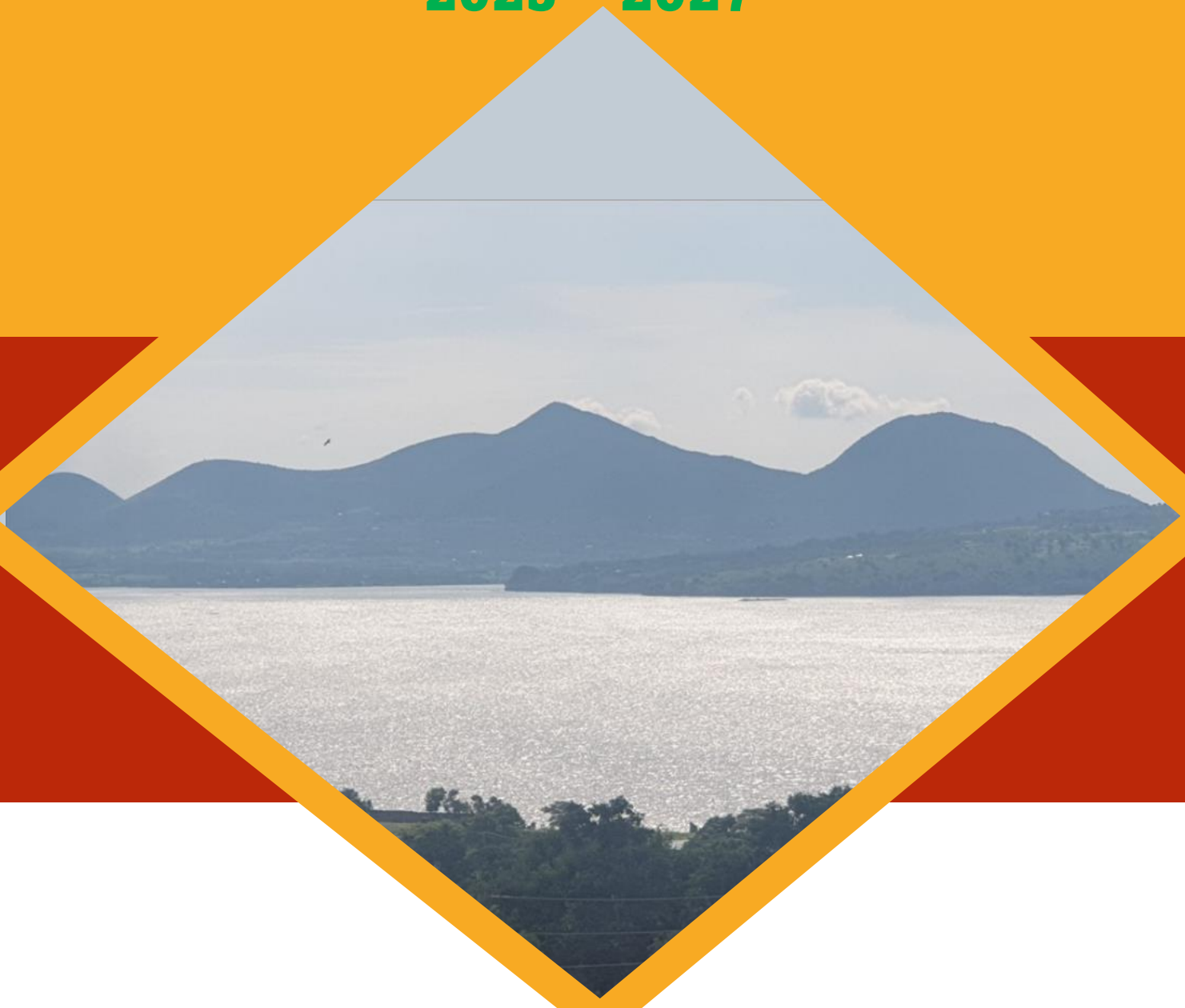
HOMA BAY COUNTY

CLIMATE CHANGE ACTION PLAN

2023 – 2027



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The County Executive Committee Member
Department of Water, Sanitation, Irrigation, Environment, Energy, Forestry and Climate Change

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Foreword

Our climate is already changing, and the impact will be felt hardest by millions of people living in Africa. These impacts destroyed vital infrastructure, disrupted food and water supplies, flooding of homes, schools, and hospitals - disproportionately affecting the poorest and most vulnerable. As a County, we must invest in and build a low-carbon, climate-resilient future to be better prepared to deal with current and future climate impacts. The Homa Bay County Climate Change Action 2023-2027 Plan on Adaptation and Resilience is important and timely. It lays out a strategy to boost our efforts on adaptation and resilience within six areas of focus; Water, Fisheries, and the Blue Economy; the environment and forestry; food and nutrition security; disaster risk management; energy, transport, and manufacturing; and, health, sanitation and human settlements. Each of the six areas of focus have specific strategic objectives which include: Main objectives of the Plan for each area are (i) enhancement of the resilience of the water sector by ensuring access to, and efficient use of water for agriculture, domestic and recreation (ii) enhancement of environmental protection and increasing the County's forest cover (iii) enhancement of food security and increasing agricultural productivity (iv) reducing risks to communities and infrastructure resulting from climate related disasters (v) enhancing access to and use of renewable energy sources and (vi) mainstreaming climate change adaptation into the health sector and increasing the resilience of human settlements to the impacts of climate change.

To successfully tackle the adaptation and resilience challenge, we will work with communities, national government, the private sector, civil society, and the wider family of development and climate finance institutions.

I am committed to ensuring the implementation of this action plan to build the resilience of communities and the productive sectors in the County to the impacts of climate change. It is up to each one of us to do everything possible to address climate change and its devastating impacts. If we do not, the future generations will never forgive us.

H.E. Gladys Wanga
Governor, Homa Bay County

Acknowledgement

This Climate Change Action Plan (2023-2017) would not have been possible without the support and hard work of the team from the Directorate of Climate Change of the Water, Sanitation, Irrigation, Environment, Energy and Climate Change, community and various stakeholders who provided data and information. I would like to thank Her Excellency the Governor, Gladys Wanga, for providing effective and structured leadership to deliver this Plan. The team would like to acknowledge the technical support from the County Secretary, Prof Benard Muok, in drafting the Action Plan. We also appreciate the support from the Technical Working Group for their guidance and support, which helped ensure that the commitments outlined in the document align with the scale of the global need for adaptation.

The Department's Directorate of Climate Change played a crucial role in developing this Climate Change Action Plan (2023-2027); they were prolific, resolute, and committed all the way through. We give special recognition to the County Climate Change Steering Committee, the County Climate Change Technical Committee, the Ward Climate Change Committee Members, and the Technical Working Group on the formulation of the HCCCAP for their immense contribution to the success of this process.

Much appreciation to Dr Caleb Olweny, Dean, School of Agricultural and Food Sciences, Jaramogi Oginga Odinga University of Science and Technology (JOOUST) who provided the technical backstopping in the development of this HCCCAP.

I take this opportunity to thank the entire team involved in formulating this CCCAP, including County Government of Homa Bay officials, our development partners, key stakeholders, and the community for their unreserved commitment to the process. I have no doubt whatsoever that the 2023-2027 HCCCAP will be successfully implemented.

Dr. Joash Aloo (Ph. D)
County Executive Committee Member
Water, Irrigation, Sanitation, Environment, Energy, Forestry & Climate Change.

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Abbreviations and Acronyms

ATAR	Adaptation Technical Analysis Report
BUR	Biennial Update Report
CBD	United Nations Convention on Biological Diversity
CBIT	Capacity Building Initiative for Transparency
CCCF	County Climate Change Fund
CCD	Climate Change Directorate
CDM	Clean Development Mechanism
CEC	County Executive Committee
CFA	Community Forestry Association
CIDP	County Integrated Development Plan
CIS	Climate Information Services
CO2	Carbon dioxide
COG	Council of Governors
CSA	Climate-Smart Agriculture
CTCN	Climate Technology Centre and Network
EAC	East African Community
EDE	Ending Drought Emergencies
FAO	Food and Agriculture Organization
GCF	Green Climate Fund
GDC	Geothermal Development Corporation
GEF	Global Environment Facility
GESIP	Green Economy Strategy and Implementation Plan
GHG	Greenhouse gas
IPCC	Inter-Governmental Panel on Climate Change
KAA	Kenya Airports Authority
KALRO	Kenya Agriculture and Livestock Research Organization
KAM	Kenya Association of Manufacturers
KCAA	Kenya Civil Aviation Authority
KenGen	Kenya Electricity Generating Company Ltd.
KEPSA	Kenya Private Sector Alliance
KETRACO	Kenya Electricity Transmission Company
HCCCAP	Homa Bay County Climate Change Action Plan
KEBS	Kenya Bureau of Standards
KEFRI	Kenya Forest Research Institute
KENHA	Kenya National Highways Authority
KES	Kenya Shilling
KeRRA	Kenya Rural Roads Authority
KFS	Kenya Forest Service
KISWAMP	Homa Bay Integrated Solid Waste Management Plan
KMD	Kenya Meteorological Department
KNBS	Kenya National Bureau of Statistics
KPA	Kenya Ports Authority
KURA	Kenya Urban Roads Authority
LULUCF	Land use, land-use change and forestry
M&E	Monitoring and evaluation
MAI	Ministry of Agriculture and Irrigation

MEF	Ministry of Environment and Forestry
MENR	Ministry of Environment and Natural Resources
MITC	Ministry of Industrialization, Trade and Cooperatives
MOE	Ministry of Energy
MOTIHUD	Ministry of Transport, Infrastructure, Housing and Urban Development
MRV	Measurement, Reporting and Verification
MSME	Micro, small and medium enterprise
MTAR	Mitigation Technical Analysis Report
MTP	Medium Term Plan
MWS	Ministry of Water and Sanitation
NAMA	Nationally Appropriate Mitigation Action
NAP	National Adaptation Plan
NCA	National Construction Authority
NCCAP	National Climate Change Action Plan
NCCC	National Climate Change Council
NCCRC	National Climate Change Resource Centre
NDA	National Designated Authority
NDC	Nationally Determined Contribution
NDEF	National Drought Emergency Fund
NDMA	National Drought Management Authority
NEMA	National Environment Management Authority
NHIF	National Hospital Insurance Fund
NIE	National Implementing Entity
NMT	Non-Motorized Transport
NPBM	National Performance and Benefit Measurement
NTSA	National Transport and Safety Authority
REA	Rural Electrification Authority
REDD+	Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
SDG	Sustainable Development Goals
SLEEK	System for Land-based Emissions Estimation in Kenya
StARCK+	Strengthening Adaptation and Resilience to Climate Change in Kenya
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
WRA	Water Resources Authority
WRUA	Water Resource Users Association

Measurement Units

ha	Hectare
m3	Cubic metre
MCM	Million cubic metre
MtCO2e	Million tons of carbon dioxide equivalent
MW	Megawatt

Definition of Terms

Adaptation means an 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 refers to the ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences (*IPCC, 2014, Fifth Assessment Report (AR5) Glossary).*

The **carbon market** is a market that is created from the trading of units of GHG emissions. A carbon credit or offset is a monetary unit of measurement representing the removal of one tonne of carbon dioxide equivalent from the atmosphere. Carbon credits are generated by projects that deliver measurable reductions in GHG emissions.

Climate change means a change in the climate system caused by significant changes in the concentration of greenhouse gases as a consequence of human activities and which is in addition to natural climate change observed during a considerable period.

Global warming refers to the gradual increase, observed or projected, in global surface temperature, as one of the consequences of climate change.

The primary **greenhouse gases** that are measured in a GHG inventory are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulphur hexafluoride (SF6) and nitrogen trifluoride (NF3).

Mitigation means human interventions that seek to prevent or slow down the increase of atmospheric greenhouse gas concentrations by limiting current or future emissions and enhancing potential sinks for greenhouse gases.

MtCO2eq or MtCO2e is an abbreviation for million tonnes of carbon dioxide equivalent or GHG emissions expressed as an equivalent amount or concentration of carbon dioxide.

REDD+ is the acronym for reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries. It is a mitigation mechanism that creates a financial value for the carbon stored in forests by avoiding deforestation and increasing the carbon stock in existing forests.

Resilience refers to the capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaptation, learning and transformation (*IPCC, 2014, AR5 Glossary).*

Vulnerability refers to the propensity or predisposition to be adversely affected. Vulnerability encompasses various concepts and elements, including sensitivity or susceptibility to harm and lack of capacity to cope and adapt. (*IPCC, 2014, AR5 Glossary.*

Executive Summary

The Homa bay County Climate Change Action Plan 2023-2027 has been development in line with the provisions of the Homa bay County Climate Change Act of 2022. The plan will be implemented concurrently with the Homa bay County integrated Development Plan (CIDP) 2023-2027. This is envisaged to generate synergies in their implementation, monitoring, evaluation, and reporting. The action plan will guide climate change actions and investments for the next five years.

The plan was formulated following a participatory process which began with the county-wide participatory climate risk assessment, following a guideline provided by the Financing Locally Led Climate Action (FLLoCA) program Project Implementation Unit. The plan is underpinned by the principles of locally led climate action key amongst them being devolving of decision making to the lowest appropriate level and addressing structural inequalities faced by women, youth, children, disabled and displaced people.

Homa Bay County faces various climatic hazards key amongst them being floods and droughts whose impacts are felt across all the productive sectors of the County's economy including agriculture; water; forestry; fisheries and, livestock. Some of the impacts of the climatic hazards include: Damage to crops in the fields; outbreak of crop and livestock pests and diseases; destruction of fish breeding grounds; destruction of water and sanitation infrastructure; and, increased incidences of waterborne diseases.

Climate change impacts the County in differentiated ways in term of space, scale and magnitude. These impacts are also felt differently by various groups of people in the county. It has been established that the most vulnerable group of people to the impacts of climate change are women, children, youth People with Disabilities, the displaced and marginalized communities. This action plan has been formulated with particular focus on how to build the adaptive capacity of these groups to the impacts of climate change.

Based on the identified hazards the communities have identified priority climate change adaptation actions that include: Adoption of agroforestry practices; protection of storm water ways; integrated lake front planning and development; diversification of livelihoods away from agriculture; adoption of climate smart agricultural practices such growing of drought resistant crop varieties and planting of early maturing crops.

The action plan has synthesized the findings of the participatory climate risk assessment and categorized the required actions into six major priority areas of action with specific strategic objectives and key performance indicators. The priority climate action areas and their strategic objectives are summarized in the table below.

	Priority Areas of Action	Strategic Objectives
1.	Water, Fisheries, and the Blue Economy	Enhance resilience of the water sector by ensuring access to, and efficient use of water for agriculture, domestic, recreation and other uses.
2.	The Environment and Forestry	Enhance environmental protection and increase the County's tree and forest cover.
3.	Food and Nutrition Security	Enhance food security and increase agricultural productivity in the County.
4.	Disaster Risk Management	Reduce risks to communities and infrastructure resulting from climate-related disasters such as droughts and floods.
5.	Energy, Transport & Manufacturing	▪ Enhance access to and use of renewable energy sources and technologies. ▪ Enhance use of energy efficient modes of transport. ▪ Enhance energy and water efficiency in the manufacturing sector.
6.	Health, Sanitation & Human Settlements	Mainstream climate change adaptation into the health sector and increase the resilience of human settlements to the impacts of climate change.

These priority actions are to be implemented over the next fiver years (2023-2027) with an estimated total implementation budget of Ksh. 2,260,000,000 (Two billion, two hundred and sixty million Kenya Shillings). It is expected that the action plan will be funded through County Government annual budgetary appropriations, grants received from the national treasury such as the Financing Locally Led Climate Action (FLLoCA) program; donations received into the County Climate Change Fund (CCCF) and other monies appropriated towards climate action in the County.

1.0 Background and Context

1.1 Introduction & Background

Homa Bay County is an ethnically homogenous county inhabited by the Luo community. However, there are a few tribes like Abasuba-speaking people in Suba South and other ethnic communities found within the major urban centres like Oyugis, Kendu Bay, and Homa Bay municipality. The County's capital is situated in Homa Bay municipality, which is also the most significant urban centre in terms of population. The major economic activities are agriculture (livestock, crop production, and fisheries), medium and small-size trade, mining, and quarrying, among others.

The County is home to the famous Ruma National Park and has 16 islands with unique flora and fauna and an impressive array of physiographic features with great aesthetic value of nature. The County is a member of the 14-member Lake Region Economic Block (LREB) and a champion of Blue Economy development.

Homa Bay County is one of the 47 Counties in Kenya and lies between latitudes 0°15' South and 0°52' South and between longitudes 34° East and 35°C East. The County covers an area of 4,267.1 Km^2 inclusive of the water surface, which on its covers an area of 1,227 km^2.

The County is located in Southwestern Kenya along Lake Victoria, where it borders Homa Bay and Siaya counties to the North, Kisii and Nyamira counties to the East, Migori County to the South, and Lake Victoria and the Republic of Uganda to the West.

The County is divided into two main relief regions, namely the lakeshore lowlands and the upland plateau with several rivers, namely Awach Kibuon, Awach Tende, Maugo, Kuja, Rangwe and Riana rivers, most of which originate from Kisii and Nyamira counties. The climate is inland equatorial, with temperatures ranging from a mean annual minimum of 17.1°C to a mean maximum of 34.8°C, with rainfall amounts of between 250mm and 700mm per annum.

The Lake Victoria basin is known for its rich biodiversity, but environmental degradation and climate change pose a significant challenge to its existence. Environmental pollution and unsustainable/unregulated resource use have significantly contributed to the ongoing biodegradation, with hundreds of aquatic and terrestrial species going extinct. The situation is further exacerbated by the changing climate, characterized by prolonged drought and periods of intense rainfall and flooding. These changes are negatively impacting livelihoods and human wellbeing. Over 10 per cent of the basin's population gradually becomes chronically food insecure,

requiring support for short-term emergency food relief and sustainable long-term development programs. Addressing the current challenges from recent and future climate change will be challenging.

Heat, drought, and floods impact the people living in Homa Bay, and human health is increasingly at risk. It is also estimated that the temperature in western Kenya, where Homa Bay lies, could increase by 0.9^{o}C and 1.1^{o}C by 2025. Homa Bay's economy depends on climate-sensitive sectors such as agriculture, water, energy, tourism, wildlife, and health. The increasing intensity and magnitude of weather-related disasters in Homa Bay aggravates pressure, mostly over natural resources, and contributes to security threats.

The growing population in the region and the changing climate have resulted in severe environmental concerns in the County. These challenges include poor land use planning, lack of proper liquid and solid waste management; unregulated point and non-point source pollution; dropping water levels; Increase in silt loads entering the Lake; catchment degradation (Land and forests); lack of protection of wetlands; and loss of biodiversity and ecosystem services and the recent rising of Lake Victoria water level.

Climate Change has multiple effects on livelihoods, animal and plant health, the environment, and ecosystem stability and resilience. Studies done in several countries show that many people are aware of health and environmental threats posed by climate variability. The Homa Bay County Integrated Development Plan (CIDP) III (2023 -2027) identifies environmental degradation and climate change as crucial development challenges. Further, the following phenomena have been pointed as among the leading climate change threats in the area:

a. Recent observations have suggested climate change has badly affected the Lake Victoria Basin (LVB) and other East African countries. The deteriorating water quality and quantity, loss of biodiversity and declining agricultural productivity due to climate change are no longer potential threats but rather threats that have already struck and caused the region repeated misery;

b. These extreme climate change impacts are already visible and are associated with climate events such as flooding, droughts, and tropical storms, all of which are projected to be more intense, frequent and unpredictable;

c. Increased siltation of Lake Victoria caused by more frequent and intense floods;

d. Increased temperature resulting in enhanced heat- and water-stressed conditions, particularly in drier areas, leading to reduced agricultural productivity;

e. Decrease in the already scanty forest cover due to climatic conditions adversely affecting species diversity and consequent ecosystem services;

f. Threat to freshwater ecosystems due to pollution and invasive species;

g. Increased conflicts between upper riparian and lower riparian regions on sharing of water resources;

h. Increased health risks and climate change-induced migration;

The above threats cause major survival concerns for Homa Bay, particularly in terms of the County's water, food and energy security considerations. It is against this background that Homa Bay County undertook to develop its climate change policy, which was completed in 2021. The policy's goal is to ensure that climate change is mainstreamed in the economically and socially vulnerable sectors of the economy and steer Homa Bay County towards climate resilience, blue economy, and green development pathway. To adequately implement the policy, the County Government of Homa Bay has made a concerted effort to develop the County Climate Change Action Plan 2023-2027.

1.1.1 Purpose and Process of the HCCCAP

The Homa Bay County Climate Change Act, 2022 provides for the formulation of a five-year Homa Bay County Climate Change Action Plan (HCCCAP) to run concurrently with the current National Climate Change Action Plan and County Integrated Development Plan (CIDP). The CCAP will guide the County's climate change actions and investments for the next five years, beginning 2023 to 2027. It is aligned with the current National Climate Change Action Plan and responds to the specific needs and circumstances of the County. This HCCCAP contains the climate change needs, which include adaptation, resilience, mitigation and disaster management and response assessment for the County. It articulates the climate change response implementation plan informed by the climate change needs and response assessment and specifies measures and mechanisms guiding the County towards achieving low carbon, climate-resilient sustainable development.

The HCCCAP contains measures for mainstreaming climate change into the County's development decisions and across all sectors; it includes measures for enhancing public awareness for effective

participation in climate change response and; consists of a framework for monitoring, evaluating and reporting on the implementation of the plan.

The formulation of the HCCCAP went through a participatory and inclusive process that began with a climate risk assessment in all the wards in the County. The participatory climate risk assessment (PCRA) and the formulation of the HCCCAP were underpinned by the eight principles of locally led climate action, namely: Devolving decision-making to the lowest appropriate level; addressing structural inequalities faced by women, youth, and children; disabled and displaced people. Indigenous peoples and marginalized ethnic groups; investing in local capabilities to leave an institutional legacy; building a robust understanding of climate risk and uncertainty; collaborative action and investment; ensuring transparency and accountability; flexible programming and learning; and providing patient and predictable funding that can be accessed more easily.

Following the participatory climate risk assessment was a series of guided steps that culminated in formulating this HCCCAP. The first step was the review of various documents that included: The PCRA report; the Homa Bay CIDP 2023-2027; the National Climate Change Action Plan (NCCAP) 208-2022; the FLLoCA PCRA-HCCCAP guidelines; the Constitution of Kenya, 2010; and, a number of policies, plans and legislations relevant to climate change action planning.

The second step involved the collection of public input, which began at the County level participatory climate change action planning workshop. The communities at the ward level were given a chance to make their contributions to the broad thematic areas of the HCCCAP. Other stakeholders, such as NGOs, CBOs and MDAs, also gave their input. The third step involved drafting the HCCCAP, which was undertaken by the Technical Working Group convening at a location for three days. The Technical Working Group synthesized all the information obtained in steps one and two to put together the draft HCCCAP. The draft HCCCAP was then presented to key stakeholders at a validation workshop to address gaps in the plan and refine proposed actions based on realistic situational assessment. The validation workshop involved multi-sectoral experts and representatives of the various stakeholder groups involved in the consultative meetings in step two. Participants reflected the strong gender and social inclusion focus of FLLoCA, with 50% of participants from women, youth, ethnic minorities, people living with disabilities and other marginalized and vulnerable groups. The validated draft HCCCAP was then emailed to various stakeholders for further analysis. This was meant to give an opportunity to those

stakeholders who may have yet to get the chance to provide their input. The County Climate Change Steering Committee reviewed the draft HCCCAP at this stage and provided valuable insights to further improve the document. Following this step, the Technical Working Group prepared a second draft of HCCCAP, incorporating the information obtained to post the validation workshop. The Technical Working Group then held a session with the County Executive Committee to take them through the draft HCCCAP highlighting the key priorities and investment options and to seek the approval of the document. The County Executive Committee then approved the final draft of the HCCCAP. The Technical Working group again organized a session with the County Assembly Committee on Water, Irrigation, Sanitation, Environment, Energy, Forestry and Climate Change to give them critical insights on the document before being presented to the County Assembly for adoption and approval. Following this step, the County Assembly's approval for the HCCCAP was obtained, paving the way for its official launch by the Governor of Homa Bay County.

1.2 Underlying Climate Resilience Context

1.2.1 Impacts of Climate Hazards on the County

The major climate hazards identified during the participatory climate risk assessment are Droughts and flooding, mainly caused by fluctuations in temperature and precipitation. The greatest climatic risk to the County identified is the emergence of crop and livestock pests and diseases from the conditions created by the two major climate hazards (drought and flooding).

The impacts of droughts and floods are felt across all the major productive sectors of the County's economy. The County's productive sectors are mainly agro-based and include: Agriculture; livestock; fisheries; water; health; and, infrastructure. These sectors are highly exposed to the climatic hazards and are a key factor in the vulnerability of communities to the impacts of climate change in the County.

Table 1 below summarizes the impacts of the climatic hazards in the differentiated into how the various hazards impacts the various productive sectors in the County.

Table 1: Impacts of climatic hazards on the County

Climatic Hazard	Exposed Sector	Impacts on Productive Sector
Floods	Agriculture (Crops)	▪ Damage to crops in the fields during flooding. ▪ Outbreak of crop diseases and pests (fall army warms etc) ▪ Loss of productive agricultural land due to rise in lake water levels
	Livestock	▪ Loss of livestock grazing fields due to flooding ▪ Outbreak of fungal diseases due to prolonged wet periods ▪ Unhygienic conditions in livestock holding spaces/shades/pens due to prolonged wet periods.
	Fisheries	▪ Destruction of fish breeding grounds ▪ Increased difficulty in getting fish to market due to destruction of roads caused by flooding. ▪ Destruction of fish landing grounds due to rise in lake water levels
	Water	▪ Destruction of water and sanitation infrastructure due to flooding ▪ Increased difficulty in accessing water sources due to destruction of roads by floods.
	Health	▪ Increased incidences of waterborne diseases due to prolonged wet periods ▪ Destruction of health facilities in flood prone areas ▪ Increased incidences of infectious diseases in dry periods ▪ Increased incidences of injuries and deaths due to flooding ▪ Increased vulnerability of those living with diseases such as HIV and AIDS
	Transport & Infrastructure	▪ Increased pressure on transport facilities and infrastructure ▪ Destruction of roads, institutions ▪ Displacement of populations ▪ Increased difficulty in market access, health facilities and other amenities ▪ Loss of investments in infrastructure
Drought	Agriculture (Crops)	▪ Extreme loss of soil moisture due to elevated temperatures ▪ Crop failures due to drought and extreme heat ▪ Outbreak of crop pests and diseases. ▪ Loss of crop productivity due to long dry spells and droughts
	Livestock	▪ Depletion of livestock water sources due to prolonged droughts and dry spells. ▪ Loss of income to livestock farmers ▪ Loss of pasture and grazing fields
	Fisheries	▪ Reduced water levels in rivers affects fish breeding upstream from river deltas. ▪ Prolonged droughts negatively affect survival of fish species such as mad fish. ▪ Loss of income by fishers
	Water	▪ Depletion of underground water sources due to prolonged droughts and dry spells ▪ Drying up of rivers and ponds due to prolonged dry spells and droughts
	Health	▪ Increased pressure on the health system due to increased incidences of communicable diseases mainly caused by general water scarcity. ▪ Reduced productivity of the population due to heat stress

1.2.2 Suggested Community Adaptation Strategies to the Climate Hazards in Homa Bay County

Table 2: Suggested Community Adaptation Strategy to the Climate Hazards in Homa Bay County

Climatic Hazards	Suggested community adaptation strategy/priorities
Floods	a) Agroforestry practices and systems b) Building of drainage systems c) Construction of dykes and dams d) Sinking of water pans e) Improved farming practices f) Early warning systems g) Improved technology use h) Planting of trees that consume a lot of water e.g. eucalyptus i) Planting of trees along the riverbanks j) Lakefront planning and development. k) Establishment of fish cage and fishpond farming l) Establishment of modern fish markets away from the lake shores
Drought	a) Agroforestry practices and systems b) Use of drought tolerant crops c) Irrigation d) Tree planting e) Water harvesting technology. f) Climate smart agriculture g) Blanching (food preservation technique) h) Construction of dams and pans i) Use of pesticides j) Planting of early/fast maturing crops k) Drilling and equipping of boreholes. l) Feeding programs in schools
Pests and diseases	a) Spraying of livestock and crops b) Use of cattle dips. c) Provision of extension services. d) Use of herbicides. e) Quarantine of animals and humans

1.2.3 Homa Bay County Climate Hazard Map

The county is highly affected by climatic hazards. Lakeshore areas of Suba South, Northern Rangwe (Kochia) and the western part of Karachuonyo (Kobala) are highly prone to floods due to rising water levels and increased sand harvesting along the lakeshore. Ndhiwa sub-county has moderate hazards due to prevailing favourable climatic conditions. Parts of Rachuonyo South, Suba South, Rangwe, Rachuonyo East, Ndhiwa and Suba North are prone to drought. Pests and diseases have affected most farmers throughout the county, with increased resistance to pesticides and favourable climatic conditions for some pests and diseases to thrive. This has put the county under severe pressure to curb to adapt or mitigate the hazard.

Figure 1:Flood Prone Areas in Homa Bay County

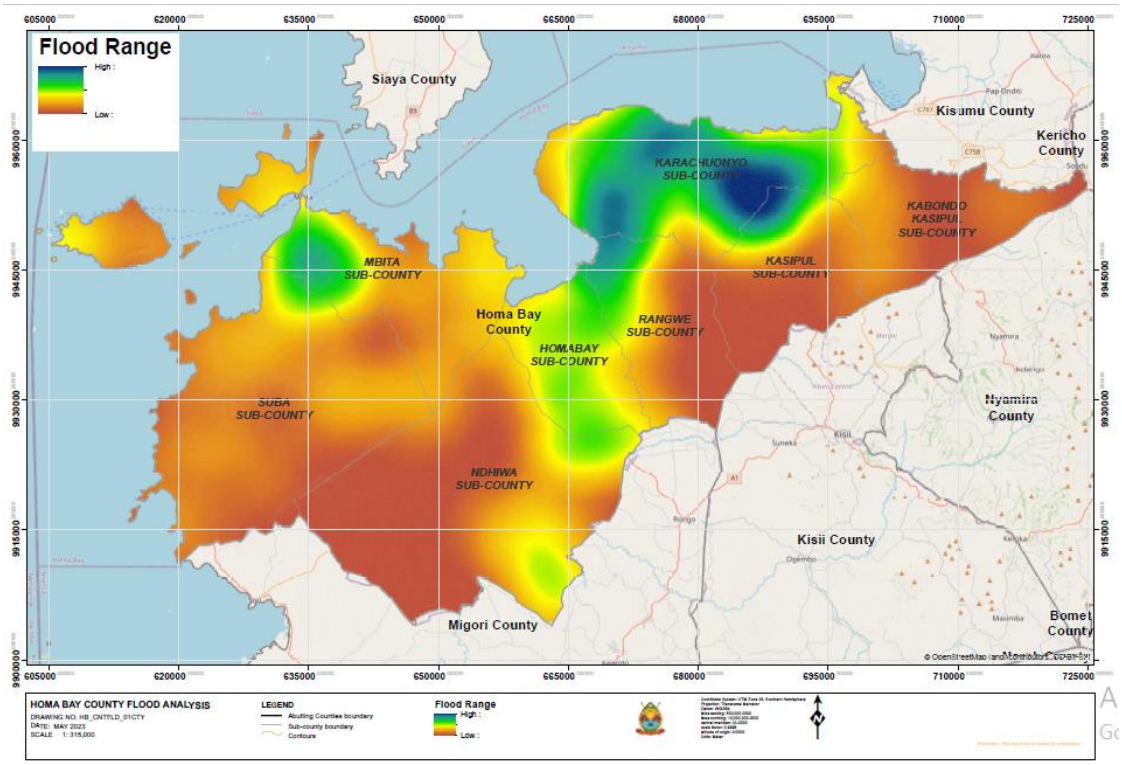
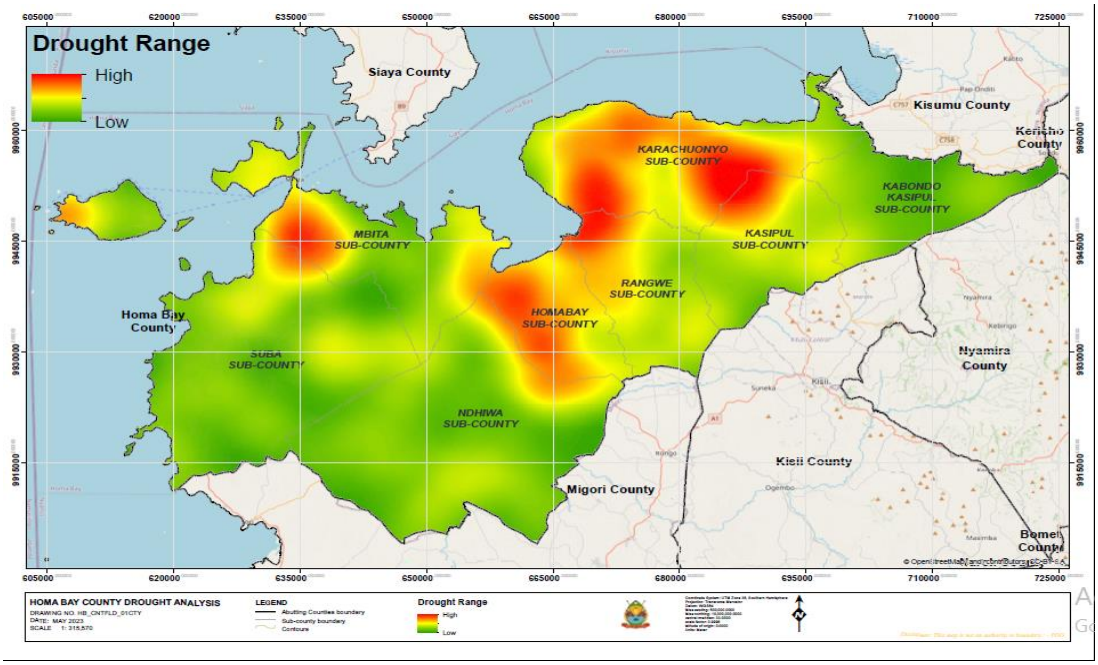


Figure 2: Drought prone areas in Homa Bay County



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

In the community engagement forums and at the county-level climate risk assessment workshop, the most vulnerable groups of people to climate change were identified, as presented in Table 3 below.

Table 3: Summary of differentiated climate exposure & vulnerability of key groups and livelihoods in the county

	Vulnerable Group	Characteristics	Livelihood/Domestic Roles	Resources that Group relies on
1.	Women	▪ Childbearing ▪ Single mothers ▪ Widowed ▪ Inadequate access to resources ▪ Gender based violence. ▪ Sex workers ▪ Elderly	▪ Small scale traders (mainly in markets) ▪ Subsistence farming ▪ Domestic chores ▪ Care givers ▪ Farm hands	▪ Farmlands ▪ Markets ▪ Water resources (lakes, rivers, forests) ▪ Women groups
2.	People with Disability (PWDs)	▪ Stigmatized ▪ Defilement ▪ Discriminated ▪ Physically challenge ▪ Mental challenges ▪ Street begging ▪ Different mobility styles ▪ Vulnerable to diseases ▪ Limited or no ability to carry out certain activities	▪ Household chores ▪ Manual and low paying jobs ▪ Farm hands ▪ Cobblers ▪ Potters ▪ Repair and maintenance of electronics	▪ Donations from well wishers ▪ Government support ▪ Own labour ▪ Natural resources (Sand, Stones)
3.	Children	▪ Orphaned ▪ Neglected ▪ Child labour ▪ Defilement ▪ Naïve ▪ Voiceless	▪ Household chores ▪ Farmhands ▪ Small scale trading	▪ Government programmes ▪ Caregivers ▪ Natural resources (land, water, forests)
4.	The Elderly	▪ Old to very old age ▪ Old aged, induced disability (blindness, mobility challenges, speech challenges) ▪ Full dependance on caregivers) ▪ Ill health ▪ Cannot easily access resources ▪ abandonment	▪ Mostly play advisory and leadership roles in the family ▪ Are sources of cultural knowledge. ▪ Important sources of historical climate information	▪ Natural resources (livestock, land, water, forests) ▪ Transfers from family members) ▪ Own investments ▪ Government pension schemes ▪ NGO financing schemes
5.	Youth	▪ Resource poor ▪ Full of energy ▪ Have huge potential in unexplored talents ▪ Rush in decision making ▪ At various stages of attaining academic achievements	▪ Casual jobs (farm hands, assistants, construction) ▪ Permanent and salaried employment ▪ Boda Boda riders ▪ Small scale trading ▪ Fishing	▪ Own talents ▪ Academic qualifications ▪ Natural resources (Land, water, livestock, forests) ▪ Government Programmes (youth fund, uwezo fund, tenders)

		▪ Prone to engagement in crime and socially deviant behaviors ▪ Adventurous	▪ Talent based employment (sports, music, film) ▪ Artists ▪ Innovation	
6.	Resource poor households	▪ Unemployment of the household head ▪ Inability to educate children ▪ Lack of access to productive resources ▪ Lack of adequate land ▪ Low level of education of household heads ▪ High number of people living in as single household ▪ High dependence on nature based economic activities ▪ High incidences of child labour	▪ Engagement in wage paying casual labour jobs ▪ Women are mostly engaged in domestic chores ▪ The men engage in environmentally destructive activities such charcoal burning, sand harvesting ▪ Small holder farming entirely rain-fed	▪ Natural resources (land, water, forests, livestock) ▪ Transfers from relatives ▪ Artisanal skills such s tailoring, shoe repair, carpentry, masonry and metal smiths

These vulnerable groups of people are found in every community in the County and are well-embedded in society. For PWDs, institutions are established to educate them on academic and life skills. An example is the Sikri School for blind and deaf students in Rachuonyo South Sub-County.

The vulnerable groups do not enjoy equal access to and control of important resources and assets in the community, making them more vulnerable to climate change. In this regard, women are the most affected since they do not have land ownership rights, given the County's cultural practices on land ownership and inheritance. Similarly, PWDs, the youth and children are discriminated against in resource use and allocation.

On the decision-making front, vulnerable groups still face challenges since they are not fully consulted and involved. Again, women are most affected in this regard, given the persistent and culturally driven patriarchal tendencies prevalent in the County.

1.3 Brief Overview of Climate Change Actions in the County

There has been gradual progress in implementing climate change actions in the County anchored in the second generation CIDP 2018-2022. During this period focus was on restoration of degraded landscapes and ecosystems with some progress reported that included efforts to restore degraded hill tops in the County such Gwassi hills, Gembe hills and Homa hills. So far, a policy and legislative framework for climate change action has been established including the carrying out of a climate

risk and vulnerability assessment for the County. Since coming into office of the current County Government administration, rapid progressive actions have been taken on climate change including enactment of the Homa Bay County Climate Change Act, establishment of the institutional framework for climate change and implementation of activities such as allocating resources for tree planting for every road construction project. Other actions that have been undertaken include: establishment of partnerships geared towards financing climate change actions. Such partnerships include the agreement between Homa Bay County and the United Cities and Local Government of Africa (UCLGA) for implementing climate resilience projects.

1.3.1. Mainstreaming of NCCAP in County Action

The Kenya Climate Change Act, which was signed into law in May 2016, provides the primary framework for governing climate change across Kenya. The main objectives of this law are to promote climate action at the county level and strengthen accountability for climate action. In addition, Kenya has developed the National Climate Change Action Plan 2018-2022. This plan aims to strengthen the country's path towards sustainable, climate-resilient development while achieving low carbon climate resilient development. It builds on the previous Action Plan spanning the period 2013-2017. Homa Bay County has endeavored to mainstream the NCCAP by incorporating, integrating, and aligning climate change in the various sectors (either in policies or plans) to achieve a resilient economy. Moreover, the county emphasizes using climate change as a risk analysis tool.

1.3.2 Climate Change in CIDP

The county governments are critical, functional co-financiers with an emergent, increasingly vital role in becoming Implementing Entities of low carbon, climate resilient initiatives. To contribute to Kenya's ambitious updated NDC, Homa Bay County has aligned its County Integrated Development Plans (CIDPs) 2023-2027 and County Sector Plans with the National Climate Change Action Plan 2018-2022, Climate Change Act 2016 and Kenya National Adaptation Plan 2015-2030. This involves intensive county planning, budgeting and implementation across multiple sectors. Among the areas captured in the current CIDP include waste management, environmental protection, increasing county forest cover, establishment of green spaces in urban areas, climate change governance, climate change mainstreaming, low carbon resilient growth, and climate financing.

1.3.3 Other Key Climate Actions/Strategies in the County

The Homa Bay County Government has embarked on efforts to strengthen locally led adaptation (LLA) which focuses on strengthening capacity both at local institutional and community levels. The specific interventions are: Strengthening the County government's institutional and policy frameworks on resilience, which include the development of a County Climate Resilience Action Plan (CCRAP) and County Climate Resilience Investment Plan (CCRIP); Development of a County Climate Resilience Innovation Hub and Nodes for Homa Bay County; application of nature based solution, climate innovation and involvement of youth in climate intervention, which include establishment of the Governor's Youth Climate Change Resilience Innovation Award Scheme as well as youth led tree planting activities

2.0 Policy Environment

2.1 The Global & Regional Context

Kenya is a signatory to most, if not all the Multilateral Environmental Agreements (MEAs) thus, the global policy and legal framework on climate change applies to Kenya in accordance with article 2 (6) of the Constitution of Kenya. Table 4 below gives a summary of the global and regional policies and laws and their relevance to Homa Bay County.

Table 4: The Global & regional policy context

Instrument	Description	Relevance to Homa Bay County
Sustainable Development Goals (SDG)	The goals for climate change (SDG13) and protecting, restoring, and promoting sustainable use of terrestrial ecosystems (SDG 15) and mainstreaming other relevant goals considering climate change impacts and climate actions across all the SDGs.	The county government of Homa Bay links the Global Sustainable Development Goals within the county multisectoral functions across various departments for their effective implementation.
United Nations Convention on Climate Change (UNFCCC)	This convention was aimed to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with climate systems.	The framework provides and guides all county government planning and actions on climate change.
The Kyoto Protocol	Commits developed countries in transition to market economics to reduce the overall GHG emissions.	Guides county government planning on mitigation actions including carbon trade
The Paris Agreement	Aims to strengthen the global response to the threat of climate change by keeping global temperature rise to well below 2^0c above pre-industrial levels.	Guides development of mitigation actions in terms of voluntary contributions at county level. Major impetus for county assessment of emission levels.
The Stockholm Convention on Persistent Organic Pollutants.	Aimed to eliminate or restrict the production and use of persistent organic pollutants	Guides county policies on replacement of use of hydrofluorocarbons.
The Sendai Framework for Disaster Risk Reduction 2015-2030.	Is a voluntary agreement that recognizes that the state has the primary role in reducing disaster risk, but that responsibility should be shared with other stakeholders, including subnational governments, the private sector, and other stakeholders.	Drives county planning on climate related disaster risks such as floods and drought.
African Union's Agenda 2063	Commits member states to climate change action that prioritizes adaptation including a climate-resilient agricultural development program.	Sets targets for national entities developing planning actions to enhance climate mitigation and resilience, which cascades to counties.
The African Forest Landscape Restoration Initiative (AFR100)	Aimed to bring 100m Ha of land in Africa under restoration by 2030	Sets targets for counties to achieve landscape restoration by improving the forest cover in the county.

2.3 The National Climate Policy & Legal Framework

The Kenya national climate policy and legal framework is summarized in Table 5 below.

Table 5: The national climate policy & legal framework

National Framework	Description
Constitution of Kenya 2010	Article 42 of the Constitution **guarantees every person the right to a clean and healthy environment** and to have the environment protected for the benefit of present and future generations through the measures prescribed by Article 69.
Kenya Vision 2030 (2008) and its Medium-Term Plans	Kenya Vision 2030 – the country's development blueprint – recognized climate change as a risk that could slow the country's development. Climate change actions were identified in the Third Medium Term Plan (2018-2022) recognized climate change as a cross-cutting thematic area and was mainstreamed in climate change actions in sector plans. The Fourth Medium Term Plan (2023-2027) recognizes climate change mitigation and adaptation as a critical approach towards recovery strategies to re-position the economy on a steady and sustainable growth trajectory after negative effects of Covid-19 pandemic.
National Climate Change Response Strategy (2010)	Kenya's National Climate Change Response Strategy was the first national policy document on climate change. It aimed to advance climate change adaptation and mitigation into all government planning, budgeting, and development objectives.
National Climate Change Action Plan (2013-2017)	Kenya's National Climate Change Action Plan, 2013-2017, was a five-year plan that aimed to further Kenya's development goals in a low carbon climate resilient manner. The Plan set out adaptation, mitigation and enabling actions.
National Adaptation Plan (2015-2030)	Kenya's National Adaptation Plan, 2015-2030, was submitted to the UNFCCC in 2017. The NAP provides a climate hazard and vulnerability assessment and sets out priority adaptation actions in the 21 planning sectors in MTP II.
Kenya's Nationally Determined Contribution (NDC) (2016 Updated)	Kenya's NDC under the Paris Agreement of the UNFCCC includes mitigation and adaptation contributions. Regarding adaptation, "Kenya aims to ensure a climate-resilient society. This is to be achieved through mainstreaming climate change adaptation into the medium-term plans (MTPs) and County Integrated Development Plans (CIDPs) and implementing adaptation actions." The mitigation contribution "Kenya seeks to abate her GHG emissions by 32% by 2030 relative to the (business as usual) BAU scenario of 143 MtCO2eq." This is in line with the sustainable development agenda.
Climate Change Act (No. 11 of 2016)	The Climate Change Act (No. 11 of 2016) is the first comprehensive legal framework for climate change governance for Kenya. The Act's objective is to "Enhance climate change resilience and low carbon development for sustainable development of Kenya." The Act establishes the National Climate Change Council (Section 5), Climate Change Directorate (Section 9), and Climate Change Fund (Section 25).
Kenya Climate-Smart Agriculture Strategy (2017-2026	The Kenya Climate-Smart Agriculture Strategy (KCSAS) objectives are to adapt to climate change and build the resilience of agricultural systems while minimizing greenhouse gas emissions. The actions will lead to enhanced food and nutritional security and improved livelihoods.

Climate Risk Management Framework (2017)	The Climate Risk Management Framework for Kenya integrates disaster risk reduction, climate change adaptation, and sustainable development so that they are pursued as mutually supportive rather than stand-alone goals. It promotes an integrated climate risk management approach as a central part of Policy and planning at the National and County levels
National Climate Change Framework Policy (2018)	The National Climate Change Framework Policy aims to ensure the integration of climate change considerations into planning, budgeting, implementation, and decision-making at the National and County levels and across all sectors.
National Climate Finance Policy (2018)	The National Climate Finance Policy promotes the establishment of legal, institutional, and reporting frameworks to access and manage climate finance. The Policy's goal is to further Kenya's national development goals through enhanced mobilization of climate finance that contributes to low carbon climate-resilient development goals.
Bottom-Up Economic Transformation Agenda 2023-2027	The Government of Kenya Bottom-Up Economic Transformation Agenda establishes priorities areas for 2023 to 2027. The Plan identifies five critical sectors that form its core pillars. These are agriculture, micro, small and medium enterprise (MSME) economy, housing and settlement, healthcare and the digital superhighway and creative economy. Sector plans and budgets are to be aligned to the Kenya Bottom-Up Economic Transformation Agenda Kenya Bottom-Up Economic Transformation Agenda
National Climate Change Action Plan (2018-2022)	National Climate Change Adaptation Action Plan (2018-2022) aims to further Kenya's development goals by providing mechanisms and measures to achieve low carbon climate-resilient development in a manner that prioritizes adaptation.
Agriculture Sector Transformation and Growth Strategy 2019-2029	Agricultural Sector Growth and Transformation Strategy (ASTGS) 2019-2029 will help to transform agriculture sector in Kenya, drive 100% food and nutrition security, and ensure food is affordable, especially for those most in need. Sector plans and budgets are to be aligned to the Agricultural Sector Growth and Transformation Strategy (ASTGS) 2019-2029 to match the transformation needs.
Climate Smart Agriculture Strategy 2017-2026	Climate Smart Agriculture (CSA) Strategy 2017-2026 guides actions needed to transform and reorient agricultural systems to effectively support development and ensure food security in a changing climate. CSA aims to achieve three main objectives: sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing and/or removing greenhouse gas emissions, where possible.

2.4 The Sub-National Climate Policy & Legal Framework

The climate change policy and legal framework in Homa Bay County includes the Homa Bay County Climate Change Policy 2021, the Homa Bay County Climate Change Act, 2022 and the Homa Bay County Climate Change Fund Regulations, 2022.

2.4.1 The Homa Bay County Climate Change Policy 2021.

The overall goal of the policy is to achieve an industrialized, healthy, and wealthy county with adaptive and resilient communities through sustainable development based on allowing carbon green and blue economy. The policy provides a framework for addressing the numerous climate change challenges in the County with guidance on the mainstreaming of climate change action into all county development plans, policies, and programmes; enhancement of community and stakeholder capacity to implement climate change adaptation and mitigation measures; and establishment of mechanisms for assessing, monitoring, and reporting the impacts of climate change programs.

The policy gave specific policy statements on The establishment of a regulatory framework and governance structures for effective implementation of adaptation and mitigation measures; mainstreaming of climate change adaptation and mitigation in all county government policies, plans and programs; establishment of a mechanism for assessing, monitoring and reporting the impacts of climate change actions; facilitation of research and technology transfer for sustainable use and management of county resources; restoration and maintenance of critical ecosystems for environmental stability; facilitation of effective mobilization and utilization of financial resources for implementing climate change actions; and, enhancement of community stakeholder capacity to implement climate change adaptation and mitigation measures.

The policy further outlines measures for incorporating cross-cutting themes such as gender inclusion, youth engagement and inclusion of PWDs and other marginalized groups in climate change actions in the County.

2.4.2 The Homa Bay County Climate Change Act, 2022

The Homa Bay County Climate Change Act, 2022 is a product of the Homa Bay County Climate Change which recommended the establishment of a legislative framework for climate change action in the County. The Act principally provides an appropriate legal framework and mechanism for mainstreaming climate change actions in the County.

The Act provides for a coordination and oversight mechanism for climate change action by establishing the Homa Bay County Climate Change Steering Committee. It establishes an institutional framework for planning and implementing climate change actions in the County. This framework includes the Homa Bay County Climate Change Technical Committee and the Homa Bay County Ward Climate Change Committees. The Act further provides measures and actions for responding to climate change which includes the formulation of the five-year County Climate Change Action Plan. Further, it makes provisions for reviewing the HCCCAP biennially. The Act makes provisions on duties relating to climate change which includes provisions on climate change audit and penalties; mainstreaming of climate change actions in public entities; mainstreaming of climate change actions in private entities; climate change inspection and enforcement; and the preparation of an annual county climate change response report and presentation of the same to the County Assembly. A provision is made in the Act for public participation and access to information which includes: The preparation of a county strategy for climate change education and public awareness; public participation and capacity building in the formulation of climate change response plans; and access to information. Finally, the Act establishes the Homa Bay County Climate Change Fund to provide funding for priority climate change actions in the County.

2.4.3 The Homa Bay County Climate Change Fund Regulations, 2022

The Homa Bay County Climate Change Fund Regulations, 2022 were formulated pursuant to section 45 of the Homa Bay County Climate Change Act, 2022. The regulation enables the establishment and management of the County Climate Change Fund (CCCF) with provisions on: sources of the fund; mobilization of resources to the fund; fund oversight; appointment of the Fund Administrator; procedure for application of funding; and, the operation of bank accounts for the fund. It also specifies how monies are to be disbursed from the fund including: The allocation of funds to the wards; reporting procedures; financial governance; maintenance of records; complaints handling mechanism; and, financial reporting.

3.0 Priority Climate Change Actions

3.1 Identification of Priority Climate Change Actions in the PCRA

To identify priority climate change actions, the County conducted a participatory climate risk assessment in all the 40 Wards. Through this, the Action Plan has been developed to identify strategic areas for climate action over the next five years, recognizing that climate change is likely to limit the achievement of the County's development plans. For example, food security is threatened by climate change-driven declines in agricultural productivity. Other negative climate impacts include increasing vector-borne diseases, livestock and agricultural pests and diseases, drought, and damage to infrastructure, including homes, schools, and hospitals.

The priority climate change actions reflect the input of stakeholders; vulnerable groups, including women, youth, persons with disabilities, and members of marginalized and minority communities; private sector; civil society; and other experts. These climate change actions are mainstreamed in the County Integrated Development Plan-2023-2027 to ensure that strategic climate change actions are taken up across the County and in all relevant sectors.

In the PCRA process, communities identified the climatic risks and hazards and how they are affected. The communities further identified priority actions to address the impacts of the climatic hazards and risks. The community priority climate change actions focus on four distinct thematic areas of: Water, fisheries, and the blue economy; the environment and forestry; food and nutrition security; disaster risk management; energy transport and manufacturing; and, health, sanitation and human settlements. The priority areas and their strategic objectives are summarized in the Table 6 below.

Table 6: Priority climate change action in the county

	Priority Areas of Action	Strategic Objectives
7.	Water, Fisheries, and the Blue Economy	Enhance resilience of the water sector by ensuring access to, and efficient use of water for agriculture, domestic, recreation and other uses.
8.	The Environment and Forestry	Enhance environmental protection and increase the County's tree and forest cover.
9.	Food and Nutrition Security	Enhance food security and increase agricultural productivity in the County.
10.	Disaster Risk Management	Reduce risks to communities and infrastructure resulting from climate-related disasters such as droughts and floods.
11.	Energy, Transport & Manufacturing	▪ Enhance access to and use of renewable energy sources and technologies. ▪ Enhance use of energy efficient modes of transport. ▪ Enhance energy and water efficiency in the manufacturing sector.

12.	Health, Sanitation & Human Settlements	Mainstream climate change adaptation into the health sector and increase the resilience of human settlements to the impacts of climate change.

The priority climate change actions identified by communities have been synthesized to formulate the Homa Bay County Climate Change Action Plan 2023-2027. The plan outlines the actions to be implemented towards climate change mitigation and adaptation in the County for the next five years and will be instrumental in achieving the following:

a) Enabling cross-sectoral actions on, and investments in climate change adaptation and mitigation.
b) Contribution towards the achievement of the priority actions of the National Climate Change Action Plan 2023-2027 (Disaster risk management; food and nutrition security; water, fisheries, and the blue economy; forestry, wildlife, and tourism; health, sanitation, and human settlements; manufacturing; Energy; and, transport).
c) Contribution towards the achievement of the Homa Bay County Integrated Development Plan (CIDP) 2023-2027).
d) Enhancing the adaptive capacity and resilience of communities, with an emphasis on vulnerable groups within the County.

3.2 Priority Climate Change Actions

3.2.1 Water, Fisheries, and the Blue Economy

The Action Plan addresses the challenges of water scarcity. The decline in access to quality water is exacerbated by climatic hazards such as drought and has the potential of undermining the County's development goals as contained in the CIDP 2023-2027 . Water is part of the blue economy which is defined as the "sustainable use and economic development of both aquatic and marine spaces, including oceans, coasts, lakes, rivers and underground water."

The primary water sources in the County are Lake Victoria, shallow wells, rivers, unprotected springs, boreholes, and roof catchment systems. During the dry season, some water sources run dry, forcing people to take longer to fetch water. Over 40% of households in low-income settlements spend about 20 minutes accessing water and, in some areas, over one hour. Women and children spend more time searching for water than men and boys. This consumes many productive time and schooling hours, leading to poor education for girls and reduced family income.

Homa Bay County lies on the shores of the expansive Lake Victoria and has a huge potential to achieve sustainable development through the Blue Economy approach. The County is endowed with inland waters of Lake Victoria and rivers, Kuja, Awach, Awach Tende, and Miriu. Homa Bay County, one of

the largest fish producers in Kenya, has some of the most active BMUs. It has 135 beaches with 147 fish landing sites. Each of the beaches is managed by a BMU chairperson with committee members.

The fish industry has been hampered by traditional technologies (such as boats and rafts), inadequate cooling storage facilities and a processing plant within the County, leading to losses. The fish stock in the Lake has also been dwindling due to overfishing, disposal of liquid and solid waste, illegal fishing gear, and harmful fishing methods. Water hyacinth and hippo grass remain significant hindrances and have hampered fishing and modern fishery. Erratic rains due to climate change have affected the water supply with impacts on food production. In early 2018, many urban areas faced acute water shortages following a prolonged dry spell, and many rivers dried up, impacting rural and urban areas. Rural women are particularly affected because of impacts on their households and small-scale agribusinesses and the need to walk long distances to obtain water. Women and girls are primary water collectors for domestic use and can be exposed to gender-based violence.

The Action Plan contains measures to enhance the resilience of the water sector by ensuring adequate access to and efficient use of water for agriculture, domestic, recreation and other beneficial uses.

Table 7: Priority actions for water, fisheries, and the blue economy

	Actions	Outputs/Outcomes	Key Performance Indicators	Targeted Groups
1.	Increase access to and supply of water	Water infrastructure developed to increase access to and supply of water.	▪ Number of boreholes sunk and equipped with solar pumps. ▪ Number of springs protected. ▪ Number of rehabilitated water pans ▪ Number of newly developed water pans	▪ The local communities ▪ Farmers ▪ Women ▪ Children ▪ PWDs ▪ Marginalized communities ▪ Youth
		Rural water schemes revived and rehabilitated.	▪ Number of rural water schemes rehabilitated. ▪ Number of rural water schemes revived	
		Promotion of water harvesting and storage.	▪ Number of roof catchment systems installed. ▪ Number of water storage facilities (tanks) installed. ▪ Number of households accessing water from catchments.	
2.	Improve capture fisheries and the development of aquaculture	Improved sustainability of fisheries resource utilisation.	▪ No. of fishermen trained on sustainable fisheries resource utilisation. ▪ Number of Beach Management Units trained and sensitized on sustainable fisheries utilization. ▪ Number of fish breeding sites identified and demarcated.	▪ The fisherfolk. ▪ Beach Management Units. ▪ Local communities ▪ Marginalized groups and communities.

		Increased aquaculture productivity	▪ Number of fish farmers trained. ▪ Number of model fish farms established.	▪ Fish farmers ▪ Women and youth ▪ PWDs ▪ Local communities
3.	Promote development of a climate resilient blue economy	Sustainable use of wetlands.	▪ Number of wetlands conservation activities carried out. ▪ Number of communities sensitized and trained on sustainable use of wetlands.	▪ Local communities ▪ Women and youth ▪ Farmers
4.	Enabling Actions	▪ Develop Homa Bay County Blue Economy Master Plan to provide a blueprint to guide the long-term holistic development of the Blue Economy		
		▪ Develop a water harvesting policy for households and institutions		

3.2.2 The Environment & Forestry

Forests play a crucial role in carbon sequestration and thus enhance the climate change mitigation potential. Homa Bay County has 29 gazetted forests covering a total area of 113,698.68 Ha (1136.97km²). These forests are Gwassi, Lambwe, Wire, Kodera, Homa Hills, Got Otaro, Rangwe Hill, God Nyaingu, God Jope, Asego Hill, Nyasore, Samanga Hill, God Kopolo, Urianda, Aywaya Hill, Nyakanyiemba, Lugongo, Chabera, Agai Hill, Kamondi Hill, Mfangano, Gembe, Got Okombo, Got Oogo, Ruri, Simenya, Rabuor Hill, Kolosasi Hill and Kimani. The forest cover in Homa Bay County is 3.18 per cent instead of the targeted 10 per cent forest coverage, against the national forest cover at 7.4 per cent.

Population growth, agricultural expansion, over-dependence on wood fuels, and low afforestation levels have accelerated deforestation in the County. These exacerbate the County's vulnerability to the impacts of climate change. Climate change will likely have a multi-faceted adverse impact on the ecosystem, particularly the already vulnerable forestry sector. Consequently, the most likely impacts of climate change will be decreased productivity, changes in species composition, reduced forest area, unfavorable conditions for biodiversity, higher flood risks and the like.

The Lake Victoria basin, which Homa Bay is part of, is rich in biodiversity, although the rapidly increasing human population threatens natural habitats. Thirty-one amphibians, 28 reptilians and 44 mammalian species have been recorded on various Lake Victoria basin sites. Inshore waters, satellite water bodies and fringe wetlands support several species of reptiles, the commonest of which are the Nile crocodile (*Crocodylus nilo*ticus) and snakes such as African rock python (*Python sebae*), mambas and cobras.

In addition, there are several biodiversity high potential areas in the County, such as Ondago Wetland and Ruma National Park (for Birds). Ruma is the only protected area in Kenya where *Hirundo atrocaerulea (*blue swallow*)*, a scarce intra-African migrant bird, is regularly recorded. *Hirundo atrocaerulea* arrives in Kenya from the breeding grounds in southern Tanzania around April and departs in September. They depend on moist grassland for feeding and roosting. There have been several recent records of this swallow within the park, but its status is uncertain. *Cisticola eximius* (Black-backed cisticola), a species thought to be extinct in Kenya, has also recently been rediscovered in Ruma. In addition, Ruma National Park is the only place in Kenya where one of Africa's rarest antelopes and the third largest of Kenya's antelopes, the roan (or Korongo as it is known in Swahili), is found.

Table 8: Priority actions for the environment & forestry

	Actions	Outputs/Outcomes	Key Performance Indicators	Targeted Groups
1.	Afforest and reforest degraded and deforested areas of Homa Bay County	Increased forest cover in the County	▪ Number of community tree nurseries established. ▪ Total area of deforested areas planted with trees. ▪	▪ Communities ▪ Farmers ▪ Community Forest Associations. ▪ Marginalized communities ▪ Women ▪ Youth ▪ PWDs
		Capacity of Community Forest Associations (CFA) developed	▪ Number of CFAs identified. ▪ Number of CFAs trained. ▪ Number of CFAs submitting regular reports on their activities.	
2.	Promotion of agroforestry in the County	Increased tree cover in the County	▪ Total area of land under agroforestry. ▪ Number of schools involved in tree planting. ▪ Number of tree planting campaigns mounted. ▪ Number of trees planted.	▪ Communities ▪ Farmers ▪ Marginalized communities ▪ Women ▪ Youth. ▪ PWDs
		Enhanced skills and knowledge on agroforestry in the county	▪ Number of farmers sensitized and trained on agro forestry. ▪ Total number of farmers practicing agroforestry. ▪ Total area of land under agroforestry in the County.	▪ Communities ▪ Farmers ▪ Marginalized communities ▪ Women ▪ Youth ▪ PWDs
3.	Establish incentive schemes for environmental conservation	Communities, farmers, and institutions benefitting from their environmental conservation efforts	▪ Number of communities and farmers benefitting from carbon credit schemes.	▪ Communities ▪ Farmers ▪ Marginalized communities ▪ Women ▪ Youth ▪ PWDs
4.	Enabling Actions	▪ Develop guidelines and standards for the establishment of green zones as required by the 2016 Forest Act. This requires linkage with county physical planning and development control functions.		
		▪ Build the capacity of county-level institutions for the efficient transfer and implementation of the devolved functions with respect to community forests		

3.2.3 Food and Nutrition Security

Homa Bay County has the potential to feed itself and export surplus to neighboring counties. However, it faces perennial food shortages and food insecurity due to low productivity, driven by pests/diseases, low soil fertility, inadequate staff at the ward level, high poverty levels, and dependency on rain-fed agriculture. The situation is exuberated by the changing climate, which has increased climate hazards like drought, floods, pests, and diseases.

Increased food insecurity due to climate change

Climate shocks significantly impact the annual growth rate of the agriculture sector, and this growth (or decline) greatly impacts the national economy and the Homa Bay County economy. The agriculture sector is highly susceptible to the vagaries of weather, including temperature increases, precipitation changes, and extreme events.

Climate change impacts have differentiated effects on natural and human systems. Some regions in Homa Bay County, such as Kobala and Nyangweso, West Karachuonyo, Lambwe, and parts of Ndhiwa, are highly exposed to the adverse effects of floods. In contrast, prolonged dry spells, higher temperatures, and heat stress, including North Karachuonyo, North and South Suba, Rangwe and Kokwanyo in Rachuonyo East regions, threaten agricultural production in other areas. Small-scale farmers depending on rain-fed farming for their livelihoods and with limited opportunities to acquire inputs and financial assets are unequipped to fight the negative consequences of climate change. They are, thus, by far, the most vulnerable groups.

Many impoverished women suffer the impacts of climate change more than men because of a lack of input in decision-making, insecure land tenure and limited access to land, and limited access to livestock and technology. To ensure success, these climate actions include focused interventions to address gender because women account for 75% of the labour in the agriculture sector. Gender-aware agricultural extension services are essential to ensure women receive, use, and benefit from vital information such as Climate Information Services. Farmer field schools are a participatory and effective way to transfer knowledge to, and learn from, women farmers.

Some climate actions to increase food and nutrition security will be supported through ongoing programmes, including the Kenya Climate Smart Agriculture Strategy Implementation Framework, National Agricultural Rural Inclusive Growth Project, Kenya Cereal Enhancement Programme – Climate-Resilient Agricultural Livelihoods, insurance pilot programmes, and partnerships with the World Agroforestry Centre and International Livestock Research Institute.

Table 9: Priority actions for food and nutrition security

	Actions	Outputs/Outcomes	Key Performance Indicators	Targeted Groups
1.	Improve crop productivity	Increased quality and quantity of crop harvests in the county.	▪ Number of farmers receiving improved and drought resistant seeds. ▪ Total quantity of improved and drought resistant seeds distributed to farmers in the County. ▪ Number of farmers adopting improved crop varieties.	▪ Farmers ▪ Children ▪ Women ▪ Youth ▪ Agricultural Extension Workers ▪ Communities
		Reduction in post-harvest losses	▪ Number of farmers trained on post-harvest handling. ▪ Number of Agricultural Extension Workers trained on post-harvest handling.	
2.	Improve livestock productivity	Enhanced quality of livestock products in the County	▪ Number of Artificial Insemination facilities acquired. ▪ Number of dairy farmers trained on climate smart dairy farming. ▪ Number of poultry farmers trained on modern and climate smart poultry farming. ▪ Number of livestock farmers trained on improved beef production. ▪ Number of farmers adopting new livestock farming practices such as pig farming and dairy goat farming.	▪ Farmers ▪ Children ▪ Women ▪ Youth ▪ Agricultural Extension Workers. ▪ Communities
3.	Increase access to practical farming skills and knowledge	Farmer skills and knowledge transfer platforms created	▪ Number of demonstration farms established in the County. ▪ Number of communities and farmers benefiting from the skills and knowledge transfer platforms.	▪ Farmers ▪ Communities ▪ PWDs ▪ Women ▪ Youth
4.	Enabling Actions.	▪ Provide access to climate resilient technologies (irrigation, soil management, harvesting, disease and pest surveillance and control, EWS etc)		

3.2.4 Disaster Risk (Droughts and Floods) Management

The Homa Bay County government recognizes the increased threat of extreme weather and how climate change impacts the County's economic and social Development. Like other parts of the country, Homa Bay faces the vagaries of weather brought about by Climate change. Rivers are breaking their banks, and the water levels on Lake Victoria have risen to an all-time high,

destroying investments and affecting fishing activities. Flooding has displaced thousands of people.

Floods in Homabay County mainly occur when the flow rate of rivers Kibuon, Sondu Miriu, Awach Tende, Kuja and other seasonal rivers, exceed the capacity of their channels, particularly at bends or meanders in the waterway, therefore, flooding homesteads around those areas. Other causes of floods that have been noted in flood-prone areas such as Kinda, Rawi, Doho, Gera in Mbita and Seka in Gwassi is due are due to heavy siltation that is attributable to alluvial deposits as a result of poor soil cultivation and poor drainage systems. Incidences of surface and flush floods are also rampant on the slopes and plains around the hills in the County such as Homa Hills, Gwassi Hills, Ruri Hills and Wire Hill.

The County has had to deal with severe incidences of drought, which has disrupted food systems, including crops and livestock production and water for domestic use. The conversations among inhabitants are the same from Suba South to Karachuonyo North. It is a story of unbearable long treks by women and girls to fetch water. Besides livestock, people are also forced to withstand long queues to get the scarce resource.

The priority climate actions promote a proactive, rather than reactive, approach to climate-related disasters. The actions work to ensure that disasters are curtailed, do not result in emergencies, and build the capacity of people to cope with the impacts of climate change. The actions include community level flood and drought early warning systems; implementation of flood management plans (that include water storage, drainage networks, reforestation, and rehabilitation of riparian areas); and, allocation of funds for locally identified priority adaptation actions, and community-level capacity building to raise awareness and educate on disaster management and flood hazards.

Table 10: Priority actions for disaster risk management

	Actions	Outputs/Outcomes	Key Performance Indicators	Targeted Groups
1.	Improve the ability of people to cope with drought	Drought early warning systems developed	▪ Number of households reached by the drought early warning system. ▪ Number of farmers using the drought early warning system. ▪ Number of community sensitization sessions held on drought management.	▪ Communities ▪ Farmers ▪ Women ▪ Children ▪ Youth ▪ The elderly ▪ PWDs
		Improved water harvesting and storage	▪ Number of households adopting water harvesting and storage practices. ▪ Number of farmers adopting water harvesting and storage practices.	

2.	Improve the ability of people to cope with and infrastructure to withstand floods.	Implementation of flood prevention and management activities	▪ Number of check dams constructed on flood prone rivers and streams. ▪ Number of flood control dykes constructed. ▪ Number of storm drainage channels rehabilitated. ▪ Number of storm drainage channels constructed. ▪ Number of community sensitization sessions held on flood control and management in the County.	▪ Communities ▪ Farmers ▪ Women ▪ Children ▪ Youth ▪ The elderly ▪ PWDs
3.	Improve coordination and delivery of disaster risk management	Improved management of disaster risks in the County	▪ Number of Disaster Risk Management Committees trained. ▪ Number of trainings conducted for Disaster Risk Management Committees. ▪ Number of Disaster management and rescue centers established. ▪ Number of weather stations established across the County to support downscaling of global and national climate models for more accurate prediction.	▪ Disaster risk management committees. ▪ County Government staff ▪ Stakeholders. ▪ Women ▪ Youth ▪ PWDs.

3.2.5 Energy, Transport & Manufacturing

Homa Bay County is keen on limiting GHG emissions from the County to contribute towards the national targets of limiting GHG emissions by 32% by 2030 relative to the BAU scenario of 143 MtCO2eq and support the global efforts in addressing climate change. The Action Plan presents the County Government's actions to reduce and target emissions from the energy sector.

Most households and institutions (schools and hospitals) in Homa Bay County rely on biomass (fuelwood and charcoal) energy for cooking, which is the main driver of deforestation and forest degradation. The primary sources of renewable energy that have been exploited in the County for electricity generation are co-generation by sugar companies and biomass. The Sukari Industry sugar factories in the County also use biomass (bagasse) for electricity generation. The transition to clean cooking – through the uptake of liquefied petroleum gas (LPG) and other alternative fuels in urban areas and improved biomass cookstoves in rural areas – is more than energy per se. It improves the health of women and children and protects forests.

Using biomass fuels for cooking is a pressing health, social, and environmental problem. Women and children are disproportionally affected by this challenge, suffering from toxic smoke, time, poverty, and the consequences of deforestation. The use of clean cooking technologies should be

integrated into community development initiatives and activities involving women. They are the most affected and can potentially drive the achievement of the desired outcomes.

According to the United Nations Environment Programme (UNEP) the transport sector contributes approximately one quarter of all energy related greenhouse gas (GHG) emissions. Although over 50 % of the population in the County does not rely on fossils fuels powered means of transportation, the County Government recognizes the need to develop an energy efficient transportation system in the County.

The manufacturing sector in the County though nascent, requires to integrated energy and water efficiency mechanisms to ensure sustainability into the future. With the increasing impacts of climate change, resource scarcity is projected to persist thus, the fledgling manufacturing sector in the County must be prepared to function with the scarce resources available. In the County's quest to develop a green manufacturing sector, the youth will play a leading role given their propensity towards innovation and use of technology. Thus it is the County Government's intention to fully incorporate the youth in the development of the manufacturing sector promoting youth owned manufacturing ventures.

The climate actions focus on improving energy and resource efficiency, including energy efficiency in the transport the manufacturing sector.

Table 11: Priority actions for energy, transport, and manufacturing

	Actions	Outputs/Outcomes	Key Performance Indicators	Targeted Groups
1.	Develop and promote the use of renewable and clean energy resources in the County.	Enhanced uptake of clean cooking solutions	▪ Number of adopting the use of clean cookstoves. ▪ Number of households using clean energy (LPG gas, briquets, biogas) for cooking. ▪ Number of sensitization campaigns mounted on clean cooking. ▪ Number of schools and institutions using clean cooking energy and technologies in the County.	▪ Communities' ▪ Households ▪ Women ▪ PWDs ▪ Youth ▪ Children ▪ Institutions (schools and hospitals)
		Enhanced management and efficient use of biomass	▪ Number of communities sensitized on sustainable use of biomass for energy. ▪ Number of Community Forest Associations trained on sustainable use of biomass for energy.	
		Increased uptake of renewable sources of energy and technology	▪ Updated inventory of renewable energy sources in the County. ▪ Number of households using solar for lighting. ▪ Number of households using solar energy for cooking.	

			▪ Number of renewable energy technicians trained in the County. ▪ Number of renewable energy technology vendors and traders identified and trained in the County. ▪ Number of renewable energy technology innovations supported in the County.	
2.	Promote non-motorized and energy-efficient modes of transport	Increased use of energy efficient modes of transport in the County	▪ Number of boda boda riders using electric motorbikes. ▪ Number of boda boda riders sensitized on the use of electric motor bikes. ▪ Number of Solarized electric motor bike charging bays developed in the County.	▪ Urban dwellers ▪ Planners ▪ Youth ▪ Boda boda riders. ▪
		Non-motorized transport systems developed	▪ Number of sensitization sessions for communities to embrace non-motorized transportation modes such as bicycles and walking held in the County. ▪ Number of non-motorized transportation infrastructure developed in the County. ▪ Number of physical and spatial development plans integrating non-motorized transport systems. ▪ Number of bicycles parking bays developed in the County.	▪ Planners ▪ Urban communities. ▪ Youth ▪ Women ▪ PWDs.
3.	Promote the development of green manufacturing infrastructure and services	Development of environmentally efficient aggregation and industrial facilities	▪ Number of climate smart aggregation facilities developed in the County. ▪ Number of energy audits carried out in the industrial park. ▪ Energy efficiency measures implemented in the development of the aggregation and industrial facilities. ▪ Water efficiency measures integrated in the development of the aggregations and industrial facilities.	▪ Investors ▪ Youth ▪ Planners ▪ Farmers
4.	Enabling Actions	▪ Conduct an Access to Energy Baseline Emissions survey for the County		
		▪ Enhance application of special economic zones legislation, and planning laws that encourage clustering of industries into zones to enhance symbiosis and increase shared industrial efficiency measures.		

3.2.6 Health, Sanitation and Human Settlements

Sustainable human settlements and sanitation services are essential for human health. The Action Plan proposes an integrated approach to climate actions that address sustainable human settlements, health, and sanitation services.

Climate-related threats to human health

The risk of malaria and other vector-borne diseases is projected to increase due to changing climate conditions. Homa Bay County falls among the Counties with the highest malaria cases, rendering the communities living within the County devastated and affected by malaria coupled with the related causes. The urban centres within Homa Bay County, such as Homa Bay Town, concentrate populations, economic activities, and built environments, increasing the risk of flooding, heat waves, and other climate and other weather hazards. The most affected populations are the urban poor, who tend to live near polluted grounds, and unstable structures vulnerable to collapse in heavy rains. This is especially true in informal settlements and other low-income areas, where high population density and lack of infrastructure aggravate these problems. Improving the resilience of the built environment in human settlements is needed, including flood control, green building technologies, and waste management.

Drainage systems in towns like Kendu Bay, Mbita, Ndhiwa, Homa Bay, Oyugis, Magunga, Kadongo, Rangwe and others are dysfunctional. The municipalities need a comprehensive and strategic response to solid waste management. Improperly managed solid waste can accumulate in areas otherwise intended for water runoff and flood control, and such conditions make municipalities and towns vulnerable to floods and contaminated water from moderate rainfall, let alone intense and heavy rain expected with climate change. Solid waste dumping sites are open in Homa Bay and are often exposed to runoff during heavy rains, leading to contamination of water resources and negative health impacts.

Table 12: Priority actions for health, sanitation, and human settlements

	Actions	Outputs/Outcomes	Key Performance Indicators	Targeted Groups
1.	Reduce the incidences of malaria, vector-borne disease, HIV, and nutritional related diseases including Non-Communicable Diseases (NCDs)	Improved health of communities to enhance climate change adaptation	▪ Number of communities sensitized on malaria prevention and management. ▪ Percentage reduction in the number of new HIV infections per 1000 uninfected population. ▪ Proportional increase in the uptake and utilization of malaria treatment services. ▪ Number of awareness creations campaigns on Non-Communicable Diseases held in the County. ▪ Number of awareness creation campaigns held on nutritional related diseases in the County.	▪ Communities ▪ Women ▪ Children ▪ Youth PWDs ▪ Community Health Volunteers. ▪ Health Workers ▪ Health service providers

2.	Promote sanitation services and hygiene.	Improved sanitation and hygiene conditions in the County.	▪ Percentage reduction in mortality rate attributed to unsafe water, unsafe sanitation, and lack of hygiene.	▪ Communities ▪ Women ▪ Children ▪ Youth PWDs ▪ Community Health Volunteers. ▪ Health Workers ▪ Health service providers.
3.	Climate proof drainage infrastructure in human settlements	Flooding controlled in human settlements.	▪ Number of new flood ways constructed in select urban centers in the County. ▪ Number of existing flood ways rehabilitated in the County.	▪ Municipalities management and boards ▪ Urban centers ▪ Communities ▪ Marginalized groups.
4.	Improve solid waste management in human settlements	Recycling of waste promoted in human settlements to divert waste away from disposal sites	▪ Number of households sensitized on the 3 Rs of waste management. ▪ Number of commercial waste handlers trained on the 3 Rs of waste management. ▪ Number of waste sorting facilities established in the County.	▪ Households ▪ Communities ▪ Commercial waste handlers ▪ Youth ▪ PWDs ▪ Women.
5.	Enabling Actions	▪ Develop and implement a county resettlement policy framework that sets out safeguard mechanisms against involuntary resettlement and forced evictions from homes when land is acquired for development projects. Implement alternative approaches to land acquisition, other than compulsory acquisition, where possible		
		▪ Develop a policy for green building and green building codes and regulations that account for climate information.		
		▪ Develop Homa Bay County Waste management plans and regulations that are consistent with the National Waste Management Strategy and other relevant policies.		

4.0 Delivery Mechanisms

4.1 Enabling Factors

This HCCCAP is developed and will be implemented within an environment enabled by a number of policies, laws, regulations, and financing mechanisms described below.

4.1.1 Enabling Policy and Regulations

The national climate change policy framework and the county climate change policy framework described in part two of this document provide the basis for the institutional and governance structure for implementing this HCCCAP. The Homa Bay County Climate Change Fund Regulations, 2022, provides a mechanism for financing the investment priorities identified in this HCCCAP, including to the lowest levels in the communities.

4.1.2 Capacity Development and Knowledge Management

Managing the impacts of climate change is particularly difficult for governments, given the scale and uncertainty involved, the complex and cross-cutting nature of climate change, the urgency required and the power asymmetries that exist between the different actors. Most countries are struggling to build the capabilities needed to tackle climate change across central and local governments and non-state actors. As a result, institutional capacity building for managing climate change has gained particular attention at the international level.

Under the Paris Agreement, all parties committed to responding to the needs and contexts of countries with the least capacity and those particularly vulnerable to the adverse effects of climate change. Article 11 states that capacity building must be an effective, iterative process that is participatory, cross-cutting and gender-responsive. The Paris Committee on Capacity Building (PCCB) was formed at COP 22 to oversee the implementation of Article 11 to identify and address capacity gaps.

Capacity-building efforts tend to focus solely on government partners. Still, a broader constituency of supportive actors outside government is essential for building political commitment, providing expert advice and delivering adaptation. Strengthening the constituency also helps create a shared positive vision and enables more meaningful and constructive public engagement in the policy debate and programme implementation.

The need for more trained human resources is a significant 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. The County needs more climate change scientists, modelers and technologists. Similarly, there are a few credible institutions in Kenya to deal with comprehensive climate change science, modelling, management, adaptation, mitigation, and policy issues. To address the deficiencies in climate change-related requirements, human resources and institutions, the Homa Bay County Government shall:

(a) Undertake institutional training assessments to identify the specific climate change training needs in the County;

(b) Build capacity of communities through farmer field schools (FFA)

(c) Build capacity of user groups such as CFAs, WRUAs etc.

(d) Provide institutional strengthening support

(e) Establish partnerships with institutions of higher learning to package and support short and long-term training courses on climate change-related issues;

(f) Ensure institutional strengthening of the existing climate change department, committees, working groups and relevant institutions dealing with climate change matters;

(g) Build the capacity of the County staff to monitor and report to the County Assembly and national climate change directorate as per the provisions of the Climate Change Act 2016;

(h) Develop Knowledge Base Management (KBM) and networking with strategic climate change research establishments to ensure benefits from international scientific advancements;

(i) Provide training and support at village, ward, sub-county and County levels to further their knowledge and capacities on climate change issues;

(j) Explore and provide training opportunities to enhance capacity for preparing projects and implementation of programs in the climate change area;

(k) Develop capacity for making reliable projections of climate change scenarios, seasonal forecasts and inter-annual forecasts for different parts of the County in collaboration with the Kenya Meteorology Department (KMD);

(l) Develop the capacity of key staff to participate in national and international processes actively;

(m) Establish a county resource centre for climate information sharing and networking of regularly updated climate change-related data. This could be linked to the National Climate Change Resource Centre and Maarifa Centre at the Council of Governors (CoG);

(n) Develop a County climate change awareness program involving communities, various ministries and departments, civil society and the private sector; and,

(o) Ensure advocacy and mass awareness regarding the importance of climate change's water and energy conservation impacts on various sectors, including the forest ecosystem, biodiversity, learning/exchange visits, mass media, public-private partnership, civil society, learning institutions and community mobilization.

4.1.3 Gender Mainstreaming

Gender inequality coupled with the climate crisis is one of the greatest challenges of our time. It poses threats to ways of life, livelihoods, health, safety and security for women and girls around the world. In nearly every country, women and girls face systemic barriers that bar them from full and equal participation in the workforce and the formal economy more broadly. While the specific challenges confronting women vary, the fundamental imperative is the same everywhere. Those who are most affected by climate change today–women, girls and marginalised communities–must be involved in the design and implementation of climate response actions to ensure the equal sharing of benefits. Because women possess unique knowledge and experience, particularly at the local level, their inclusion in decision-making processes is critical to effective climate action. In this This Action Plan goes out of its way to mainstream gender in all the activities. The Action Plan also recognises other vulnerable segments of the society such as the youth, minorities and people with disabilities (PWD). The overall target of this Action Plan is to ensure that 60% of all the beneficiaries are women, youth and PWD. This will be achieved by supporting women, youth and PWD led actions as indicated in the Action Plan.

4.1.4 Research, Innovation and Partnerships

Climate change is one of the world's most challenging and complex threats, and it 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 developing and transferring new technologies from developed to developing countries.

Data is critical in understanding the underlying risks and vulnerabilities. Floodplain risk management plans should be developed based on flood risk studies. Improved hydrological and post-event data collection will significantly assist in managing flood risks. Such studies must include ongoing consultations with the community and other stakeholders and evaluate various structural and nonstructural measures. Risk analysis should also be carried out for areas vulnerable to shoreline hazards, including inundation. Current hazard modelling should be expanded to develop a consistent county model that can be integrated with other risk information that has more detail at ward, sub-county and city levels. Collecting rainfall, water level, and flow discharge data is required to determine an area's flood behaviour, which in turn is required to design most, if not all, mitigation options. Collecting and maintaining inventory information on buildings, infrastructure, and other assets, as well as on the location of people, will assist in quantifying the impacts of natural hazards.

The County Government understands the need for research and innovation and shall take the following actions:

(a) Promote the development and use of local technologies in combination with innovation and technological advancement in the field of climate change as an effective way to implement adaptation and mitigation measures;

(b) Establish infrastructure necessary for promoting innovation at the grassroots level, learning institutions including vocational training institutions, polytechnics, universities and research institutions;

(c) Establish partnerships for technology transfer and development with industries, higher institutions of learning, international research organizations and village polytechnics;

(d) Promote technology transfer for designing and manufacturing of emission monitoring equipment for installation near urban and industrial areas in Homa Bay County;

(e) Establish a system for climate monitoring, modelling and early warning systems connected to all the farmers in the County;

(f) Promote the development and adoption of new breeds of crops and livestock which are early maturing and less vulnerable to the changing climate;

(g) Research proper land-use systems and safe carbon emission, including strengthening collaboration in indigenous technologies in flood management and water harvesting, crop management and other agrarian best practices;

(h) Establish a research and innovation fund to support research and innovation activities;

(i) Develop county GHG emissions inventory and strengthen institutional capacities to ensure regular updates; and,

(j) Develop an institutionalized system to regularly measure and monitor GHG emissions from various sectors, including transboundary pollution and maintain a database.

4.1.5 multi-stakeholders

Homa Bay County has in place a Civic Education and Public Participation Act that provides the legal framework for civic education and public participation in programmes in the County. The Act outlines the process of undertaking public involvement in the County. There are mechanisms in place to engage stakeholders such as Civil Society Organizations (CSOs), Community-Based Organizations (CBOs), NGOs, and MDAs whenever necessary. The engagement is in the form of collaborations in implementing projects, information sharing, and participation in formulating policies, plans and strategies. The County administrative structure comprising of the Sub-County and Ward Administrators provides an effective platform for reaching out to communities at the local levels in County. The Directorate of Climate Change runs a climate change stakeholder forum that is utilized in mobilizing for multi-stakeholder engagement exercises.

4.1.6 Finance- County Climate Change Fund

The priority climate finance and resource mobilization actions are set out in implementing the Homa Bay County Climate Finance Policy, 2019. The actions emphasize designing and launching the Climate Change Fund, developing a climate finance and resource mobilization strategy, private sector financing, and accessing national and international funding opportunities.

The actions will help the County Government of Homa Bay effectively mobilize, manage, and track climate finance actions. A priority is the operationalization of the Climate Change Fund, which will be overseen by the County Climate Change Council and allocate funding for priority mitigation and adaptation actions. The action includes the establishment of the regulations and management and oversight functions. Work will also be undertaken to link the national fund with County Climate Change Funds.

4.1.7 Transparency: Measurement, Reporting and Verification Plus (MRV+)

The Paris Agreement under the UNFCCC sets out an enhanced transparency framework for action and support. Kenya will be expected to provide information on mitigation, adaptation and support received, including:

- National GHG inventory to enable tracking of progress on implementing and achieving the mitigation component of the NDC.
- Information related to climate change impacts, vulnerabilities, and adaptation.
- Information on financial, technology development and transfer, and capacity building needs and support received from developed countries.

As provided in the National Climate Change Act 2016, the County Executive Committee member in charge of climate change shall submit a report to the National Climate Change Directorate County with a copy to the County Assembly on an annual basis.

4.1.8 Governance- County Government Structure

Homa Bay County Government structure is based on the provisions of the County Governments Act 2012 that provides for the establishment of at most ten (10) county government departments. The Act also provides for the oversight of the executive arm of the County Government by establishing the County Assembly. Homa Bay County Government comprises ten departments, each performing distinctive roles and responsibilities. The schematic in Figure 3 below presents a summary of the structure of the Homa Bay County Government.

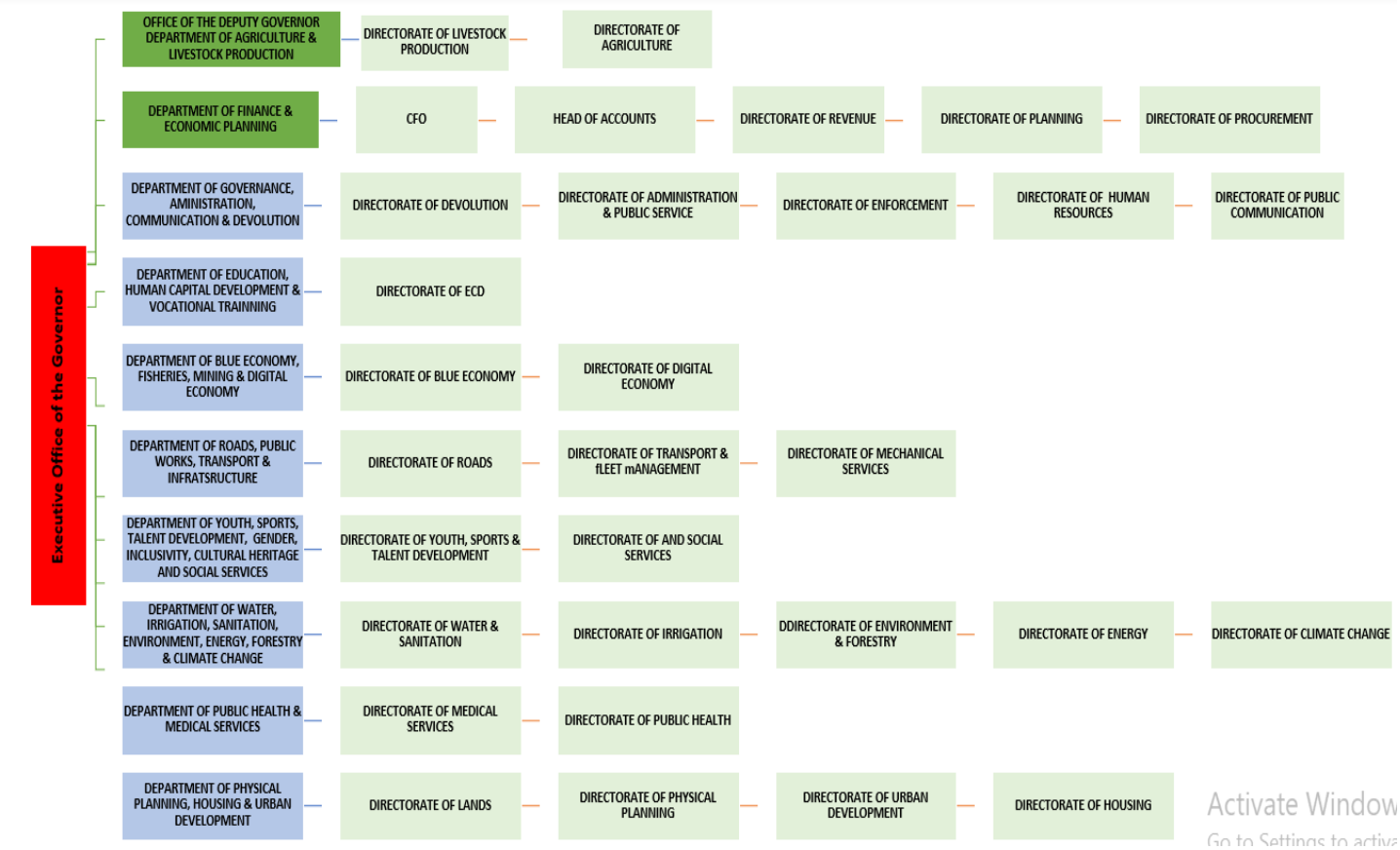


Figure 3: Homa Bay County Government structure

All the County Government departments have an extension into the eight sub-counties down to the ward level. This County Government structure enables the delivery of the priority actions contained in the HCCCAP by utilizing the existing structure and charging each county government department to deliver on climate change actions in their respective sectors.

4.1.9 Governance-Climate Change Planning Committees

The Homa Bay County Climate Change Act of 2022 establishes a climate change coordination and oversight framework and an institutional framework for climate change planning and implementation. This is made of the Homa Bay County Climate Change Steering Committee, the Homa Bay County Climate Change Technical Committee, and the Homa Bay County Ward Climate Change Committees.

The Homa Bay County Climate Change Steering Committee

The Homa Bay County Climate Change Steering Committee (CCCSC) has 11 members, with the Governor as the Chairperson. Other members of the committee are The CECMs in charge of climate change, finance and agriculture; three community representatives; a representative of

development partners; a representative from a professional body working on climate change; a chairperson of the climate change fund; and a representative from a faith-based organization.

The CCCSC is charged with the overall responsibility of coordinating and overseeing climate change response in the County. Other roles and responsibilities the CCCSC plays are mobilization of funds into the county climate change fund and coordinating the formulation and monitoring of the implementation of the HCCCAP and the County Climate Finance Framework. The CCCSC is also mandated under the Homa Bay County Climate Change Fund Regulations to oversee the management of the CCCF.

The Homa Bay County Climate Change Technical Committee

The Homa Bay County Climate Change Technical Committee (CCCTC) comprises 12 members and is chaired by the CECM in charge of climate change. Other members include County Chief Officers in charge of finance and agriculture; county directors in charge of climate change, public health and disaster management; the county representative of the National Environment Management Authority; the County Director of Meteorology; the County Ecosystem Conservator; two representatives of Civil Society Organizations (CSO); and, the Fund Administrator. The CCCTC is charged with the overall responsibility of coordination, planning and implementation of projects and activities for climate change response in the County.

The Homa Bay County Ward Climate Change Committees (WCCC)

The Homa Bay County Ward Climate Change Committees have been established in all 40 wards, with each ward committee comprising nine (9) members and chaired by the respective Ward Administrator. Other members of the WCC are County officers in charge of climate change, agriculture and forestry; a youth representative; a representative of PWDs; two community representatives; and a representative of CBOs. The WCCs are charged with the overall responsibility of coordinating and mobilizing communities and other stakeholders in the ward to design and implement climate change response activities.

4.1.10 Climate Information Services and Climate Data Access

The County Government will collaborate with the Kenya Metrological Department for the provision of Updated and downscaled weather information that will be used for planning climate change related activities. Of relevance will be the sourcing of accurate climate data to assist

farmers in the County in planning their activities which will be crucial in achieving the objective of the priority action area on food and nutrition security.

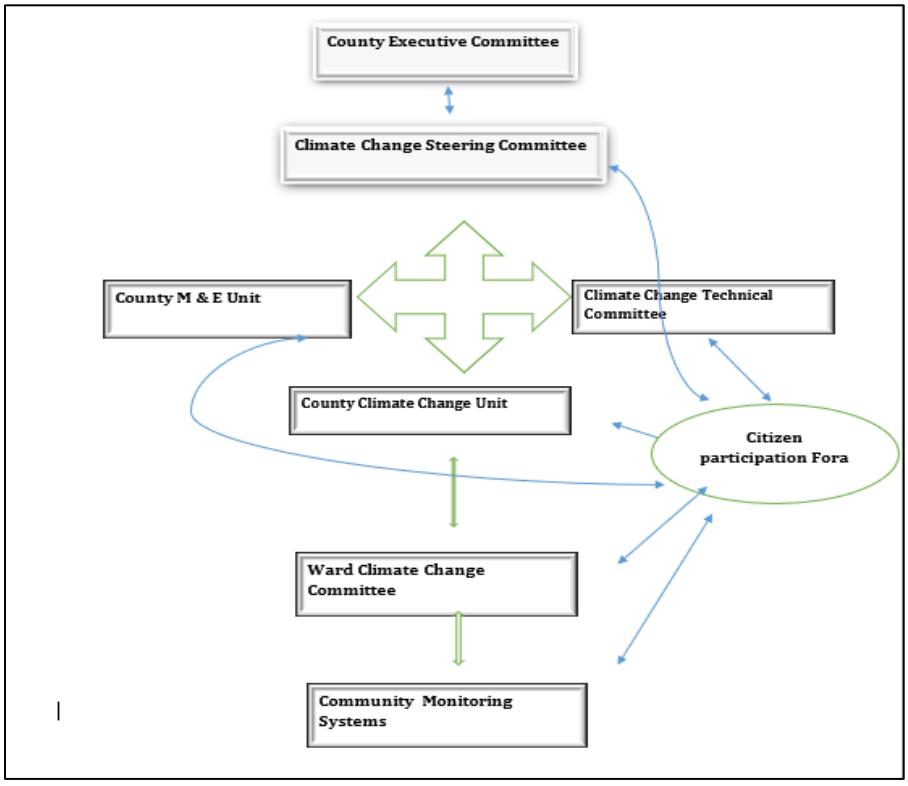
4.1.11 Resilience Planning Tools

Climate resilience planning has been mainstreamed into the existing County planning processes following the provisions of the county climate change policy and Act. The County has adopted existing national climate change planning tools such as the Nationally Determined Contributions (NDCs), the National Adaptation Plan (NAP) and the National Climate Change Action Plan (NCCAP). At the County level, we utilize the climate change policy as a resilience planning tool, the CIDP 2023-2027, the Annual Development Plans (ADP) and the annual budgets. The Participatory Climate Risks Assessment Report (PCRA) and this HCCCAP are important addition to this list.

4.1.12 Measurement, Reporting & Verification

The existing County measurement, reporting and verification framework will be adapted for the HCCCAP, including the existing county climate change institutional framework, as shown in Figure 4 below

Figure 4: Homa Bay County measurement, reporting and verification framework



4.1.13 Institutional Roles & Responsibilities

The institutions enumerated in Table 13 below will play various roles in implementing the HCCCAP.

Table 13: Institutions and their roles in the implementation of the HCCCAP

No.	Institution	Role in Implementation of the HCCCAP
1.	County Executive Committee	▪ Approval of budgets and authorization of expenditure. ▪ Development of policies and plans
2.	The County Climate Change Unit	▪ Overall coordination of the implementation of the HCCCAP ▪ Preparation of budgets, plans, and programmes for the implementation of the HCCCAP. ▪ Collecting and consolidating implementation monitoring data for the HCCCAP. ▪ Providing the multi-sectoral linkages for the implementation of the HCCCAP
3.	County Assembly	▪ Oversighting the implementation of the HCCCAP ▪ Representing the interests of the public in the HCCCAP implementation processes ▪ Appropriating budgetary resources towards the implementation of the
4.	County Government Departments	▪ Implementing priorities within their sectors ▪ Provision of technical input in implementing the HCCCAP ▪
5.	National Climate Change Directorate	▪ Advising on policies and strategies ▪ Monitoring and evaluating Public Projects and Programmes
6.	Development Partners	▪ Providing budgetary and extra-budgetary support ▪ Providing technical assistance towards formulation, implementation and evaluation of the HCCCAP ▪ Implementing programmes in the HCCCAP
7.	Civil Society Organizations	• Promoting participatory engagement in and moral responsibility towards the implementation of HCCCAP • Implementing programmes in the HCCCAP
8.	Private Sector	• Providing goods and services • Creating enabling conditions for growth and employment creation
9.	Media	• Relaying, limiting, expanding, and reinterpreting information. • Creating and shaping public opinion • Protecting public interest captured in the HCCCAP

4.2 Implementation and Coordination Mechanisms

4.2.1 The Executive Committee Member in Charge of Climate Change

The County Government of Homa Bay has appointed a County Executive Committee Member (CECM) in charge of the Climate who is mandated to coordinate the planning, Implementation, monitoring, and reporting of all climate change activities in the County.

4.2.2 The Homa Bay County Climate Change Steering Committee

The Steering Committee is the overall body charged with supervising the planning, implementation, monitoring, and reporting of all climate change activities in the County.

4.2.3 The County Climate Change unit

The unit is the implanting arm of the steering committee and acts as the operational nerve center for all climate change activities in the county. The unit headed by a director ensures the smooth running of the day-to-day activities on climate change.

4.2.4 Other Key Departments

Climate action being a multi-sectoral endeavor call for the involvement of other departments and agencies within the County Government structure. These include the department of finance, economic planning and budgeting which is crucial in ensuring that funds are budgeted for, allocated and disbursed to facilitate climate action.

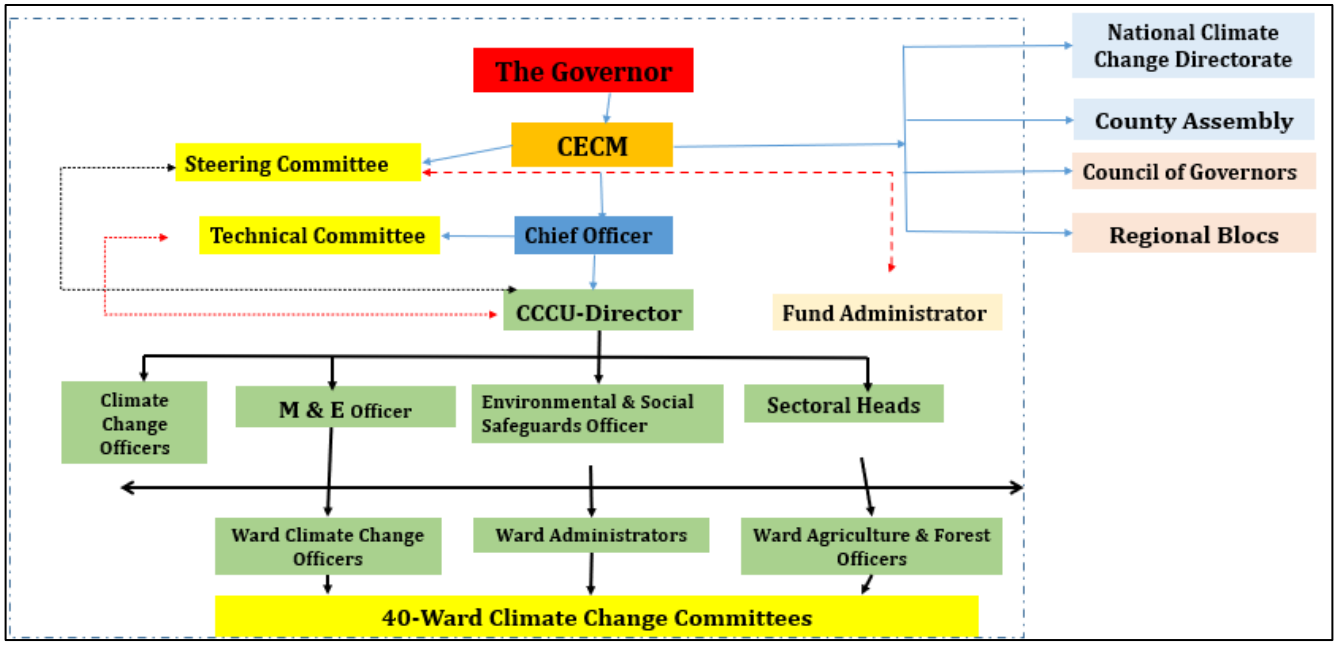
The departments of agriculture, water, environment and forestry, fisheries, the blue economy, housing and urban development, energy and transport will be key in the implementation of this plan given that the priority actions address challenges that are based in their various sectors.

4.2.5 The Ward Climate Change Committees

The Ward Climate Change Committees are primarily responsible for planning and implementing climate change activities at the ward level. The committees will be central to the implementation of the action plan given their presence at the community level where the planned actions are to be implemented. They will also be key in providing fast line project monitoring, verification and reporting that will help in ensuring a comprehensive reporting on the implemented climate actions.

Figure 5 below summarizes the established climate action coordination and implementation mechanism in the County. The structure provides an accountable framework for the implementation of the HCCCAP, which includes climate change action planning, implementation, monitoring, and oversight. The National Climate Change Directorate and the Council of Governors provide the link to the National Government system and extend to the national framework for climate change oversight which rests with the National Climate Change Council chaired by the President, which is in turn oversight by the National Assembly.

Figure 5: The action plan coordination and implementation mechanism



4.3 Implementation Matrix

Table 14: The Implementation matrix 2023-2027.

Priority Action Area 1: Water, Fisheries, and the Blue Economy. ***Strategic Objective:*** *Enhance resilience of the water sector by ensuring access to, and efficient use of water for agriculture, domestic, recreation and other uses.*						
	Actions	**Expected Outputs/Outcomes**	**Key Performance Indicators**	**Time Frame**	**Responsibility**	**Target Groups**
1.1.	Increase access to and supply of water	Water infrastructure developed to increase access to and supply of water.	▪ Number of boreholes sunk and equipped with solar pumps. ▪ Number of springs protected. ▪ Number of rehabilitated water pans ▪ Number of newly developed water pans	2023-2027	▪ Department of Water ▪ Directorate of Climate Change. ▪ CECM Climate Change. ▪ Department of Fisheries & the Blue Economy	▪ The local communities ▪ Farmers ▪ Women ▪ Children ▪ PWDs ▪ Marginalized communities ▪ Youth
		Rural water schemes revived and rehabilitated.	▪ Number of rural water schemes rehabilitated. ▪ Number of rural water schemes revived	2023-2027		
		Promotion of water harvesting and storage.	▪ Number of roof catchment systems installed. ▪ Number of water storage facilities (tanks) installed. ▪ Number of households accessing water from catchments.	2023-2027		
1.2.	Improve capture fisheries and the development of aquaculture	Improved sustainability of fisheries resource utilisation.	▪ No. of fishermen trained on sustainable fisheries resource utilisation. ▪ Number of Beach Management Units trained and sensitized on sustainable fisheries utilization. ▪ Number of fish breeding sites identified and demarcated.	2023-2027		▪ The fisherfolk. ▪ Beach Management Units. ▪ Local communities ▪ Marginalized groups and communities.
		Increased aquaculture productivity	▪ Number of fish farmers trained.			▪ Fish farmers ▪ Women and youth

			▪ Number of model fish farms established.			▪ PWDs ▪ Local communities
1.3.	Promote development of a climate resilient blue economy	Sustainable use of wetlands.	▪ Number of wetlands conservation activities carried out. ▪ Number of communities sensitized and trained on sustainable use of wetlands.	2023-2027		▪ Local communities ▪ Women and youth. ▪ Farmers
Priority Action Area 2: The Environment & Forestry. ***Strategic Objective:*** *Enhance environmental protection and increase the County's tree and forest cover.*						
	Actions	**Expected Outputs/Outcomes**	**Key Performance Indicators**	**Time Frame**	**Responsibility**	**Target Groups**
2.1.	Afforest and reforest degraded and deforested areas of Homa Bay County	Increased forest cover in the County	▪ Number of community tree nurseries established. ▪ Total area of deforested areas planted with trees.	2023-2027	▪ CECM Climate Change. ▪ Department of Agriculture ▪ Department of Environment and Forestry ▪ Directorate of Climate Change	▪ Communities ▪ Farmers ▪ Community Forest Associations. ▪ Marginalized communities ▪ Women ▪ Youth. ▪ PWDs
		Capacity of Community Forest Associations (CFA) developed	▪ Number of CFAs identified. ▪ Number of CFAs trained. ▪ Number of CFAs submitting regular reports on their activities.	2023-2027		
2.2.	Promotion of agroforestry in the County	Increased tree cover in the County	▪ Total area of land under agroforestry. ▪ Number of schools involved in tree planting. ▪ Number of tree planting campaigns mounted. ▪ Number of trees planted.	2023-2027		▪ Communities ▪ Farmers ▪ Marginalized communities ▪ Women ▪ Youth. ▪ PWDs
		Enhanced skills and knowledge on agroforestry in the county	▪ Number of farmers sensitized and trained on agro forestry. ▪ Total number of farmers practicing agroforestry. ▪ Total area of land under agroforestry in the County.	2023-2027		▪ Communities ▪ Farmers ▪ Marginalized communities ▪ Women ▪ Youth. ▪ PWDs

2.3.	Establish incentive schemes for environmental conservation	Communities, farmers, and institutions benefitting from their environmental conservation efforts	Number of communities and farmers benefitting from carbon credit schemes.	2023-2027		▪ Communities ▪ Farmers ▪ Marginalized communities ▪ Women ▪ Youth. ▪ PWDs
3.0	**Priority Action Area 3: Food and Nutrition Security.** ***Strategic Objective:*** *Enhance food security and increase agricultural productivity in the County.*					
	Actions	**Expected Outputs/Outcomes**	**Key Performance Indicators**	**Time Frame**	**Responsibility**	**Target Groups**
3.1.	Improve crop productivity	Increased quality and quantity of crop harvests in the county.	▪ Number of farmers receiving improved and drought resistant seeds. ▪ Total quantity of improved and drought resistant seeds distributed to farmers in the County. ▪ Number of farmers adopting improved crop varieties.	2023-2027	▪ Department of Agriculture ▪ CECM climate change ▪ Directorate of climate change.	▪ Farmers ▪ Children ▪ Women ▪ Youth ▪ Agricultural Extension Workers. ▪ Communities
		Reduction in post-harvest losses	▪ Number of farmers trained on post-harvest handling. ▪ Number of Agricultural Extension Workers trained on post-harvest handling.	2023-2027		
3.2.	Improve livestock productivity	Enhanced quality of livestock products in the County	▪ Number of Artificial Insemination facilities acquired. ▪ Number of dairy farmers trained on climate smart dairy farming.	2023-2027		▪ Farmers ▪ Children ▪ Women ▪ Youth ▪ Agricultural Extension Workers. ▪ Communities.

			▪ Number of poultry farmers trained on modern and climate smart poultry farming. ▪ Number of livestock farmers trained on improved beef production. ▪ Number of farmers adopting new livestock farming practices such as pig farming and dairy goat farming.			
3.3.	Increase access to practical farming skills and knowledge	Farmer skills and knowledge transfer platforms created	▪ Number of demonstration farms established in the County. ▪ Number of communities and farmers benefiting from the skills and knowledge transfer platforms.	2023-2027		▪ Farmers ▪ Communities ▪ PWDs ▪ Women. ▪ Youth
4.0.	**Priority Action Area 4: Disaster Risk (Droughts & Floods) Management.** ***Strategic Objective**: Reduce risks to communities and infrastructure resulting from climate-related disasters such as droughts and floods.*					
	Actions	**Expected Outputs/Outcomes**	**Key Performance Indicators**	**Time Frame**	**Responsibility**	**Target Groups**
4.1.	Improve the ability of people to cope with drought	Drought early warning systems developed	▪ Number of households reached by the drought early warning system. ▪ Number of farmers using the drought early warning system. ▪ Number of community sensitization sessions held on drought management.	2023-2027	▪ Department of Disaster Risk Management. ▪ Directorate of climate change. ▪ Department of Water ▪ CECM climate change	▪ Communities ▪ Farmers ▪ Women ▪ Children ▪ Youth ▪ The elderly. ▪ PWDs
		Improved water harvesting and storage	▪ Number of households adopting water harvesting and storage practices. ▪ Number of farmers adopting water harvesting and storage practices.	2023-2027		

4.2.	Improve the ability of people to cope with and infrastructure to withstand floods.	Implementation of flood prevention and management activities	▪ Number of check dams constructed on flood prone rivers and streams. ▪ Number of flood control dykes constructed. ▪ Number of storm drainage channels rehabilitated. ▪ Number of storm drainage channels constructed. ▪ Number of community sensitization sessions held on flood control and management in the County.	2023-2027		▪ Communities ▪ Farmers ▪ Women ▪ Children ▪ Youth ▪ The elderly. ▪ PWDs
4.3.	Improve coordination and delivery of disaster risk management	Improved management of disaster risks in the County	▪ Number of Disaster Risk Management Committees trained. ▪ Number of trainings conducted for Disaster Risk Management Committees. ▪ Number of Disaster management and rescue centers established. ▪ Number of weather stations established across the County to support downscaling of global and national climate models for more accurate prediction.	2023-2027		▪ Disaster risk management committees. ▪ County Government staff ▪ Stakeholders. ▪ Women ▪ Youth. ▪ PWDs.

5.0.	**Priority Action Area 5: Energy, Transport & Manufacturing.** ***Strategic Objectives:*** ▪ *Enhance access to and use of renewable energy sources and technologies.* ▪ *Enhance use of energy efficient modes of transport.* ▪ *Enhance energy and water efficiency in the manufacturing sector.*					
	Actions	**Expected Outputs/Outcomes**	**Key Performance Indicators**	**Time Frame**	**Responsibility**	**Target Groups**
5.1.	Develop and promote the use of renewable and clean energy resources in the County.	Enhanced uptake of clean cooking solutions	▪ Number of adopting the use of clean cookstoves. ▪ Number of households using clean energy (LPG gas, briquets, biogas) for cooking. ▪ Number of sensitization campaigns mounted on clean cooking. ▪ Number of schools and institutions using clean cooking energy and technologies in the County.	2023-2027	▪ Department of Energy ▪ Department of Transport. ▪ Department of Industry and Investments ▪ Directorate of climate change ▪ CECM climate change	▪ Communities' ▪ Households ▪ Women ▪ PWDs ▪ Youth ▪ Children. ▪ Institutions (schools and hospitals)
		Enhanced management and efficient use of biomass	▪ Number of communities sensitized on sustainable use of biomass for energy. ▪ Number of Community Forest Associations trained on sustainable use of biomass for energy.	2023-2027		
		Increased uptake of renewable sources of energy and technology	▪ Updated inventory of renewable energy sources in the County. ▪ Number of households using solar for lighting. ▪ Number of households using solar energy for cooking. ▪ Number of renewable energy technicians trained in the County. ▪ Number of renewable energy technology vendors and traders identified and trained in the County.	2023-2027		

			▪ Number of renewable energy technology innovations supported in the County.			
5.2.	Promote non-motorized and energy-efficient modes of transport	Increased use of energy efficient modes of transport in the County	▪ Number of boda boda riders using electric motorbikes. ▪ Number of boda boda riders sensitized on the use of electric motor bikes. ▪ Number of Solarized electric motor bike charging bays developed in the County.	2023-2027		▪ Urban dwellers ▪ Planners ▪ Youth ▪ Boda boda riders
		Non-motorized transport systems developed	▪ Number of sensitization sessions for communities to embrace non-motorized transportation modes such as bicycles and walking held in the County. ▪ Number of non-motorized transportation infrastructure developed in the County. ▪ Number of physical and spatial development plans integrating non-motorized transport systems. ▪ Number of bicycles parking bays developed in the County.	2023-2027		▪ Planners ▪ Urban communities. ▪ Youth ▪ Women. ▪ PWDs.
5.3.	Promote the development of green manufacturing infrastructure and services	Development of environmentally efficient aggregation and industrial facilities	▪ Number of climate smart aggregation facilities developed in the County. ▪ Number of energy audits carried out in the industrial park. ▪ Energy efficiency measures implemented in the development of the	2023-2027		▪ Investors ▪ Youth ▪ Planners. ▪ Farmers

			aggregation and industrial facilities. ▪ Water efficiency measures integrated in the development of the aggregations and industrial facilities.			
6.0.	**Priority Action Area 6: Health, Sanitation & Human Settlements.** ***Strategic Objective:*** *Mainstream climate change adaptation into the health sector and increase the resilience of human settlements to the impacts of climate change.*					
	Actions	**Expected Outputs/Outcomes**	**Key Performance Indicators**	**Time Frame**	**Responsibility**	**Target Groups**
6.1.	Reduce the incidences of malaria, vector-borne disease, HIV, and nutritional related diseases including Non-Communicable Diseases (NCDs)	Improved health of communities to enhance climate change adaptation.	▪ Number of communities sensitized on malaria prevention and management. ▪ Percentage reduction in the number of new HIV infections per 1000 uninfected population. ▪ Proportional increase in the uptake and utilization of malaria treatment services. ▪ Number of awareness creations campaigns on Non-Communicable Diseases held in the County. ▪ Number of awareness creation campaigns held on nutritional related diseases in the County.	2023-2027	▪ Department of Health ▪ Department of housing and urban development. ▪ Directorate of climate change ▪ CECM climate change.	▪ Communities ▪ Women ▪ Children ▪ Youth PWDs ▪ Community Health Volunteers. ▪ Health Workers. ▪ Health service providers
6.2.	Promote sanitation services and hygiene.	Improved sanitation and hygiene conditions in the County.	▪ Percentage reduction in mortality rate attributed to unsafe water, unsafe sanitation, and lack of hygiene.	2023-2027		▪ Communities ▪ Women ▪ Children ▪ Youth PWDs ▪ Community Health Volunteers. ▪ Health Workers ▪ Health service providers.

6.3.	Climate proof drainage infrastructure in human settlements	Flooding controlled in human settlements.	▪ Number of new flood ways constructed in select urban centers in the County. ▪ Number of existing flood ways rehabilitated in the County.	2023-2027		▪ Municipalities management and boards ▪ Urban centers ▪ Communities ▪ Marginalized groups.
6.4.	Improve solid waste management in human settlements	Recycling of waste promoted in human settlements to divert waste away from disposal sites	▪ Number of households sensitized on the 3 Rs of waste management. ▪ Number of commercial waste handlers trained on the 3 Rs of waste management. ▪ Number of waste sorting facilities established in the County.	2023-2027		▪ Households ▪ Communities ▪ Commercial waste handlers ▪ Youth ▪ PWDs. ▪ Women.

4.4 Action Plan Implementation Budget

Table 15: Implementation Budget 2023-2027

Priority Area	Expected Outputs/Outcomes	Source of Fund	Indicative Budget					
			Total	Yearly Indicative Budget				
				FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Water, Fisheries, and the Blue Economy	▪ Water infrastructure developed to increase access to and supply of water. ▪ Rural water schemes revived and rehabilitated. ▪ Promotion of water harvesting and storage.	▪ Exchequer ▪ CCCF ▪ FLLoCA ▪ Donations ▪ Grants	160,000,000	32,000,000	32,000,000	32,000,000	32,000,000	32,000,000
The Environment & Forestry	▪ Increased forest cover in the County. ▪ Capacity of Community Forest Associations (CFA) developed. ▪ Increased tree cover in the County. ▪ Enhanced skills and knowledge on agroforestry in the county. ▪ Communities, farmers, and institutions benefitting from their environmental conservation efforts	▪ Exchequer ▪ CCCF ▪ FLLoCA ▪ Donations ▪ Grants	80,000,000	16,000,000	16,000,000	16,000,000	16,000,000	16,000,000
Food and Nutrition Security	▪ Increased quality and quantity of crop harvests in the county. ▪ Reduction in post-harvest losses. ▪ Enhanced quality of livestock products in the County. ▪ Farmer skills and knowledge transfer platforms created	▪ Exchequer ▪ CCCF ▪ FLLoCA ▪ Donations ▪ Grants	900,000,000	180,000,000	180,000,000	180,000,000	180,000,000	180,000,000
Disaster Risk Management	▪ Drought early warning systems developed. ▪ Improved water harvesting and storage. ▪ Implementation of flood prevention and management activities	▪ Exchequer ▪ CCCF ▪ FLLoCA ▪ Donations ▪ Grants	260,000,000	52,000,000	52,000,000	52,000,000	52,000,000	52,000,000

	▪ Improved management of disaster risks in the County							
Energy, Transport and Manufacturing.	▪ Enhanced uptake of clean cooking solutions. ▪ Enhanced management and efficient use of biomass. ▪ Increased uptake of renewable sources of energy and technology. ▪ Increased use of energy efficient modes of transport in the County. ▪ Non-motorized transport systems developed. ▪ Development of environmentally efficient aggregation and industrial facilities	▪ Exchequer ▪ CCCF ▪ FLLoCA ▪ Donations ▪ Grants	600,000,000	120,000,000	120,000,000	120,000,000	120,000,000	120,000,000
Health, Sanitation and Human Settlements.	▪ Improved health of communities to enhance climate change adaptation. ▪ Improved sanitation and hygiene conditions in the County. ▪ Flooding controlled in human settlements. ▪ Recycling of waste promoted in human settlements to divert waste away from disposal sites	▪ Exchequer ▪ CCCF ▪ FLLoCA ▪ Donations ▪ Grants	260,000,000	52,000,000	52,000,000	52,000,000	52,000,000	52,000,000
TOTAL			**2,260,000,000**	**452,000,000**	**452,000,000**	**452,000,000**	**452,000,000**	**452,000,000**

4.5 Statement on the Action Plan Implementation Budget

It is estimated that the action plan will cost a total of Ksh. 2,260,000,000 (Two billion, two hundred and sixty million Kenya Shillings) to implement over the five-year period (2023-2027) of implementation. It is expected that the action plan will be funded through County Government annual budgetary appropriations, grants received from the national treasury such as the Financing Locally Led Climate Action (FLLoCA) program; donations received into the County Climate Change Fund (CCCF) and other monies appropriated towards climate action in the County.

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