REPUBLIC OF KENYA

COUNTY GOVERNMENT OF LAMU

LAMU
COUNTY CLIMATE CHANGE ACTION PLAN (CCCAP)
2023-2027

FOREWORD

We, in Lamu County, just as the rest of the global community stand at a critical moment in human history, when climate change is becoming increasingly evident, threatening humankind, his assets and resources including the functioning of various ecosystems. Kenya recognizes this threat and has taken steps to address the impacts of climate change. Climate actions in Kenya focus on enhancing the adaptive capacity of its citizens and economy.

Recognizing the climate change impacts in Lamu, the county is moving in tandem with the national and global efforts in designing actions that will enhance the resilience of our residents as well as design programs and projects including enacting policies and other legislative instruments to enhance the resilience of our economy moving into the future.

Climate change knows no boundaries; its effects transcend political affiliations and economic considerations thus requiring urgent collective action from all levels of society and governments. To illustrate our commitment to collective action, we proudly present Lamu County Climate Change Action Plan 2023-2027. The action plan addresses key climate related hazards including rising sea levels, drought, floods, stormy winds, pests and diseases among other critical hazards identified by communities in Lamu during the PCRA exercise.

The Lamu CCCAP is a product of extensive research, collaborative engagements with experts and communities across all the 10 wards. The CCCAP provides a roadmap to adapt to the changing climate, contribute to global mitigation efforts and mainstream climate change considerations across all sectors. We are determined to seize the opportunities presented to create a future where our county becomes a model for sustainable development, setting an example for Kenya and the rest of the world

I recognize that implementing this Action Plan will require bold leadership and huge resources. While we may not have the finances, the County will actively seek partnerships with regional, national, and international stakeholders, leveraging their expertise and resources to drive meaningful change. I commit to provide the necessary leadership to drive the process forward. By acting now and acting together, we can safeguard our environment, protect vulnerable populations, create green jobs, and preserve the natural beauty of our County for generations to come.

We invite all residents, businesses, and organizations to join us on this transformative journey. Together, we can shape a sustainable future and ensure that our county remains a thriving, resilient, and vibrant place for all. Let us unite in our efforts, leaving no one behind, as we take decisive action to combat climate change and secure a better world for future generations.

……..

H.E ISSA ABDALLA TIMAMMY

GOVERNOR

LAMU COUNTY

ACKNOWLEDGEMENT

The Lamu CCCAP is a critical policy document in addressing the challenges of climate change and promoting sustainable development. Lamu County is particularly vulnerable to climate change due to its coastal location and reliance on natural resources. The CCCAP will enhance climate resilience, inte.g.rate climate considerations into development plans, and promote sustainable management of natural resources. It provides a framework for engaging local communities and stakeholders, attract climate finance and investments, and provide policy guidance for effective climate action. Implementing the CCCAP will enhance the adaptive capacity of the county residents and economy, reduce GHG emissions, and create a sustainable and resilient future.

As the CECM in charge of Climate change, I remain grateful to H.E. Issa Timamy - Governor of Lamu for his leadership, guidance and personal commitment during the preparation of this CCCAP.

I specifically thank our strategic partners for their support during the PCRA and CCCAP development process. I thank Nature Kenya, USAID-Kuza, Kenya Red Cross Society, Wetlands International and Lamu Environment Foundation among other critical partners.

Special thanks to the Chief Officer Public Health, Sanitation and Environment Mr. Mohamed Rashid Dirie for the Overall Guidance that enabled the county to meet all strict deadlines given by the Governor. I recognize the efforts and commitments of the County Multi Sectoral technical working group led by Director Climate Change Mr. Mohammed Abubakar for the invaluable input and guidance in the preparation of this plan. The technical team is second to none and committed everything to deliver the Lamu CCCAP

The County is also grateful to Mr. George Odera (Project Manager, Nature Kenya) for steering the process in a highly professional manner.

The focus now shifts to implementation of the recommended actions which no doubt will address community concerns. I give my personal undertaking and that of the Climate Change Unit that the action plan will be implemented with dedication and commitment, bringing on board all relevant stakeholders and ensuring value for money

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RAPHAEL MUNYUA
DEPUTY GOVERNOR / CECM COUNTY CLIMATE CHANGE
LAMU COUNTY.

Lamu CCCAP Task Force

Name	Designation
Mr. Raphael Munyua	Dep Governor/CECM Climate Change
Dr. Mbarak Bahajaj	CECM Environment
Mohamed Rashid Dirie	Chief Officer, Public Health, Sanitation and Environment
Andrew Waweru	Director Planning and Budget
Mohamed Abbass	Director - Finance
Abdalla Mohamed Simba	ICT/Information
Kahindi Yeri	NEMA
Simeon Mwadiga	KEFRI
Abduswamad Abdalla	Lamu Municipality
Zachery Misiani	Kenya RED CROSS
Hon. Omar Twalib Mzee	Amu Ranch

Lamu County Climate Change Unit

Mohamed Rashid Dirie	Fund Administrator
Mohammed A. Mohammed	County Director - Climate Change
Mohamed Abubakar	Environmental Safeguards Officer
Anthony Mbuthia	Monitoring & evaluation Officer
Ishaq Abubakar	Social Safeguards Officer
Dr. Felix Rachuonyo	Veterinary Officer
Amos Okello	Agricultural Officer
Kulthum Ahmed	Communications Officer
Fatma Bwana Heri	Citizen Participation
Evans Gathuri	Project Accountant

Facilitator/Expert

Odera George Joshua	Nature Kenya

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Acronyms

ADP	Annual Development Plan
AR6	Sixth Assessment Report
ASALs	Arid and Semiarid Lands
AU	African Union
BMU	Beach Management Unit
CCCAP	County Climate Change Action Plan
CCCF	County Climate Change Fund
CCO	County Chief Officer
CCU	County Climate Change Unit
CBOs	Community Based Organizations
CDM	Clean Development Mechanism
CECM	County Executive Committee Member
CFA	Community Forest Association
CGL	County Government of Lamu
CIDP	County Integrated Development Plan
COP	Conference of Parties
CSOs	Civil Society Organizations
^{0}C	De.g.ree Celsius
DP	Development Partners
DRM	Disaster Risk Management
DTF	Decentralized Treatment Facility
EA	Environmental Audit
EIA	Environmental Impact Assessment
EMCA	Environment Management and Coordination Act
FLLoCA	Financing Locally-Led Climate Action
FMD	Foot and Mouth Disease
FOLAREP	Forest and Landscape Restoration Action Plan
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GoK	Government of Kenya
HIV	Human Immunodeficiency Virus
IPCC	Intergovernmental Panel on Climate Change
ISWM	Integrated Solid Waste Management
KALRO	Kenya Agricultural and Livestock Research Organization
KCSA	Kenya Climate Smart Agriculture
KEFRI	Kenya Forestry Research Institute
KEPHIS	Kenya Plant Health Inspectorate Service
KFS	Kenya Forest Service
KWS	Kenya Wildlife Service

LCCCAP	Lamu County Climate Change Action Plan
M/E	Monitoring and Evaluation
MTP II	Second Medium Term Plan
NAP	National Adaptation Plan
NCCAP	National Climate Change Action Plan
NCCRS	National Climate Change Response Strategy
NDC	Nationally Determined Contribution
NDMA	National Drought Management Authority
NEMA	National Environment Management Authority
NGO	Non-Government Organization
NK	Nature Kenya
NMK	National Museums of Kenya
PCRA	Participatory Climate Risk Assessment
PPR	*Peste des Petits*Ruminants
PLWDs	People living with disabilities
PSM	Public Service Management
RVF	Rift Valley Fever
SEA	Strategic Environmental Assessment
SDGs	Sustainable Development Goals
SMS	Short Message Service
LAWASCO	Lamu Water and Sewerage Company
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate
Change USD	United States Dollar
VMGs	Vulnerable and marginalized Groups
WI	Wetlands International
WRA	Water Resources Authority
WRUA	Water Resources Users Association

Definition of Terms

*Adaptation***:** adjustment in the natural or human system in response to actual or expected climatic stimuli or their effects in order to moderate harm or exploit beneficial opportunities.

*Adaptive Capacity***:** The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.

*Afforestation***:** Planting of new forests on lands that historically have not contained forests.

Biodiversity: The variability among living organisms from terrestrial, marine and other ecosystems. Biodiversity includes variability at the genetic, species and ecosystem levels.

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

Carbon Market: a market created from the trading of units of greenhouse gas emissions

*Carbon Sequestration***:** The uptake of carbon containing substances, in particular carbon dioxide (CO_2), in terrestrial or marine reservoirs. Biological sequestration includes direct removal of CO_2 from the atmosphere through land-use change (LUC), afforestation, reforestation, revegetation, carbon storage in landfills and practices that enhance soil carbon in agriculture (cropland management, grazing land management).

*Climate Change Adaptation***:** The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects.

*Climate Change Mitigation***:** A human intervention to reduce the sources or enhance the sinks of greenhouse gasses (GHGs).

*Climate Change***:** A change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically three decades or longer.

*County***:** Lamu County

*County Assembly***:** County Assembly of Lamu

*County Government***:** County Government of Lamu

Constitution: Constitution of Kenya 2010

*Deforestation***:** Conversion of forest to non-forest use.

Disaster: Severe alterations in the normal functioning of a community or a society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic or environmental effects that require immediate emergency

response to satisfy critical human needs and that may require external support for recovery.

Drought: A period of abnormally dry weather long enough to cause a serious hydrological imbalance.

*Ecosystem Services***:** Ecological processes or functions having monetary or non-monetary value to individuals or society at large.

*Ecosystem***:** An ecosystem is a functional unit consisting of living organisms, their non-living environment and the interactions within, between and among them.

*Environment***:** has the meaning assigned to it in section 2 of the Environment Management and Coordination Act

*Forest and Landscape Restoration***:** An active long-term process to regain ecological integrity and enhance human wellbeing across deforested, degraded forests and landscapes

Forest: Land spanning more than 0.5 hectares with trees of at least 2 metres and a minimum canopy cover of 15%, and include natural and planted plantation forests on state, community and private land

*Forest Cover***:** Refers to a land area of more than 0.5ha with a canopy cover of at least 15%, a minimum tree height of 2 meters which is not primarily under agricultural or other specific non-forest land use

Global Warming: refers to observed or projected gradual increase in global surface temperature. It is one of the consequences of climate change

Greenhouse gasses (GHGs) are gases that absorb and emit radiant energy within the thermal infra- red range. The main GHGs include carbon dioxide, methane, nitrous oxide among others

*Land Use***:** The total of arrangements comprising human actions, activities and inputs undertaken in a certain land- cover type

*Landscape***:** A social-ecological system that consists of a mosaic of natural and/or human-modified ecosystems, often with a characteristic configuration of topography, vegetation, land use, and settlements that is influenced by the ecological, historical, economic and cultural processes and activities of the area

*Mitigation***:** preventing, reducing or slowing down the increase of atmospheric greenhouse gas concentrations by limiting current or future emissions and enhancing potential sinks for greenhouse gases.

*Rangelands***:** Vast undisturbed natural resources and landscapes in the form of grasslands, bushland, woodlands, wetlands and deserts. They grow primarily indigenous vegetation, rather than plants established by humans.

Reforestation: Planting of forests on lands that have previously contained forests but that have been converted to some other use.

*Rehabilitation***:** Restoration of the capacity of degraded landscape to deliver goods and services.

*Resilience***:** the ability of a social, economic or ecological system to absorb disturbances while retaining the same basic structure and ways functioning, the capacity for self-organization and the capacity to adapt to stress and change.

*Sustainability***:** A dynamic process that guarantees the persistence of natural and human systems in a trans-generational equitable manner

Tree Cover: covered by tree patches of less than 0.5 hectares outside recorded forest areas

*Vulnerability***:** the condition determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a system to the impact of hazards.

Executive Summary

Climate change is a global problem that requires countries to take action not only to adapt to the changing climate but also to reduce further temperature increase. Among all climate scenarios above 1.5°C, Africa is the continent most vulnerable to the impacts of climate change. Despite having the lowest emissions and the smallest contribution to global warming, Africa is facing extensive collateral damage, which poses significant risks to its economies, infrastructure investments, water and food systems, public health, agriculture, and livelihoods.

Kenya has witnessed rising temperatures, accompanied by an increased occurrence of extreme weather events, particularly droughts and floods. Consequently, rainfall patterns have become erratic, leading to a decline in livelihoods. Similar occurrences and impacts are also experienced in Lamu County.

Climate change poses significant challenges to the resilience and sustainability of Lamu County, affecting both its natural environment and the well-being of its communities. Through the County Participatory Climate Risk Assessment (PCRA), the local community were able to identify several major hazards, including drought, floods, pest and diseases, resource based conflicts, windy storm and rising sea level. The County Climate Change Action Plan (CCCAP) will provide a five-year road map for addressing climate change impacts within Lamu County. The CCCAP is aligned to the National and County policies, legislations and plans including the CIDP.

The Action plan is guided by eight (8) strategic objectives namely;

- *Food and nutrition security*
- *Water and the Blue Economy*
- *Ecosystem conservation for sustainable economic development*
- *Climate Proof Infrastructure, Green energy production and use*
- *Sanitation, Health and Human settlements*
- *Knowledge management and capacity building of community, stakeholders and county officials*
- *Sustainable financing for climate change action*
- *Governance and coordination of climate change adaptation and mitigation*

Priority actions have been identified and presented under each objective across sectors and subsectors. An implementation matrix is also provided in Chapter 4 that indicates the timelines and cost of the priority actions in the plan.

The CCCAP will be delivered through already established climate change structures as provided in the County policies and legislations. The climate change unit and climate change steering committee and planning committees will play critical roles in the implementation of the plan.

The plan will be implemented jointly by all players in the County including the County Government, National Government, development partners, local organizations and all other stakeholders.

1.0 Background and Context

1.1 Introduction and Background

Climate change is a global problem that requires countries to take action not only to adapt to the changing climate but also to reduce further temperature increase (GoK, 2018). The Paris Agreement, adopted during the 21st Conference of Parties (COP 21), represents a significant milestone in global efforts to address climate change, building upon the United Nations Framework Convention on Climate Change (UNFCCC). It unites almost all nations in a shared commitment to take ambitious measures to combat climate change, adapt to its impacts, and provide increased support to developing countries.

Although efforts to address mitigation and adaptation through policies and laws have been consistently expanding worldwide, projections indicate that greenhouse gas (GHG) emissions are likely to exceed 1.5°C during the 21st century making it more challenging to limit global warming below 2°C (IPCC AR6, 2021). There are gaps between the projected emissions resulting from implemented policies and those outlined in Nationally Determined Contributions (NDCs), as well as insufficient financial flows. The shortfall in financial resources makes it difficult to achieve the necessary levels of funding required to meet climate objectives across all sectors and re.g.ions.

Climate change actions in Kenya are guided by the Climate Change Act (Number 11 of 2016), which establishes a framework for inte.g.rating climate change considerations across various sectors (GoK, 2018). Kenya has witnessed rising temperatures, accompanied by an increased occurrence of extreme weather events, particularly droughts and floods. Consequently, rainfall patterns have become erratic, leading to a decline in livelihoods (Maitima *et al.,* 2009). Droughts exacerbate environmental degradation, fuel resource conflicts, and contribute to desertification (Ojwang *et al*., 2010). The heightened frequency and severity of droughts further intensify the aridity of drylands, ne.g.atively impacting the ecological balance and livelihoods in the affected areas (Allen *et al*., 2010).

Climate change poses significant challenges to the resilience and sustainability of Lamu County, affecting its natural environment, the livelihood assets and resources as well as the well-being of its communities. Lamu County facilitated and conducted a Participatory Climate Risk Assessment exercise across all its 10 wards (Fig 1 and 2). During the PCRA exercise, the local communities identified major hazards, including temperature rise, drought, floods, sea level rise, coastal erosion, changing rainfall patterns, and the critical issue of waste management. These hazards not only threaten the county's ecosystems, they cause ne.g.ative impacts to community resources and livelihood assets. The impacts are particularly worse for vulnerable groups and marginalized communities.

The Lamu CCCAP is intended to identify specific actions to address the 8 objectives in the short, medium and long term. The actions are classified as high priority, priority and low priority. These timeframes and classification are defined as follows

- High priority actions- to be implemented in the short term (1-3 years)

- Priority actions – to be implemented in the medium term (4-10 years)

- Low priority actions- to be implemented in the long term (10+ years)

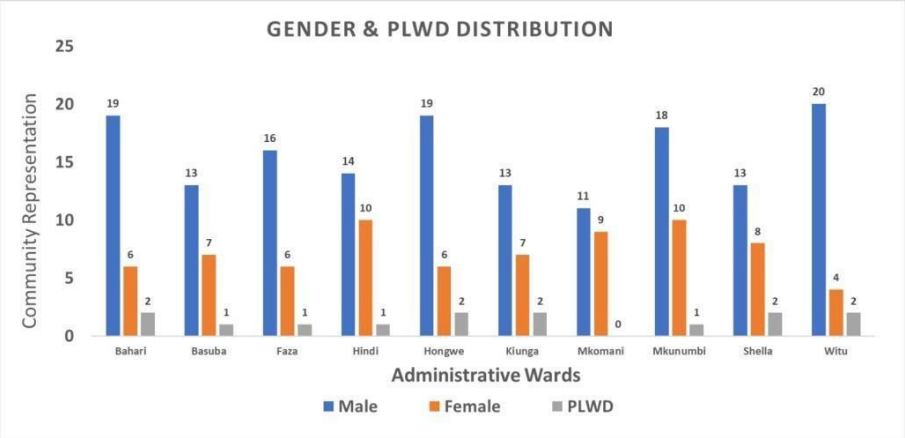

Figure 1: Gender Desegregation for the PCRA process in Lamu

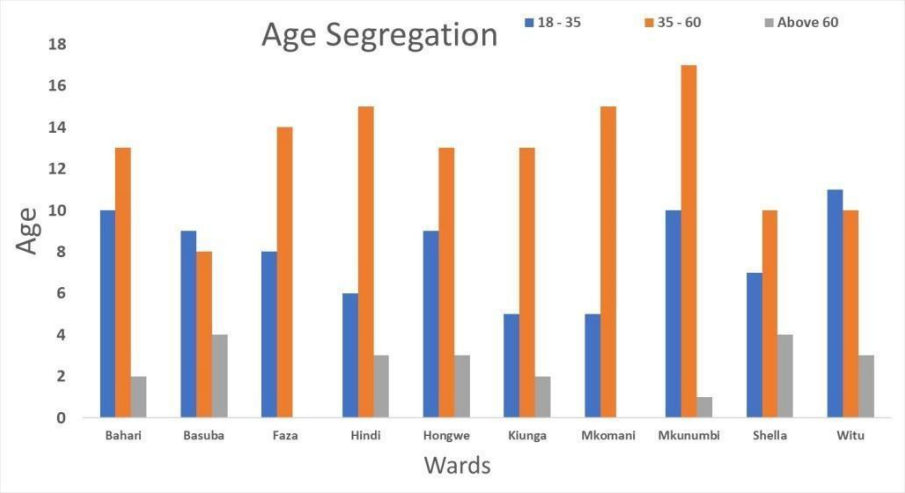

Figure 2: Age segregation of PCRA participants

1.2 Purpose and Process of LCCCAP

The purpose of the LCCCAP is to develop key strategies and projects to be implemented to improve the county's resilience to climate change. The CCAP was mostly informed by the Participatory Climate Risk Assessment Report that ensured inclusion of different population se.g.ments including the vulnerable and marginalized groups, such as women, the elderly, and youth. The plan provides for both the mitigation and adaptation measures against the climate change effects.The plan provides a five year road map for addressing climate change impacts at community level within Lamu County.

The LCCCAP was developed following a participatory process that involved county and national government officers, local communities across all the 10 wards of Lamu County, non-state actors among other stakeholders. Information on climate risks and hazards was collected from the

community through the PCRA process. In addition, various strategies and climate change actions were identified in response to climate change impacts. A multi-sectoral workshop was held to reflect on the prioritized county climate risks and hazards and developed key strategies to respond to existing and future climate change risks. The proposed actions took note of existing indigenous knowledge in addressing climate change impacts locally. The action plan was also aligned to the County Integrated Development Plan (2023-2027) and aims to accelerate efforts to increase adaptive capacities of the local communities, and pay special attention to vulnerable groups.

The draft plan was shared to the county stakeholders including non-state actors and community representatives for validation before it was submitted to the County Executive Committee abd County Assembly for approval and adoption.

1.3 Underlying Climate Resilience Context

1.3.1. General Information

The Lamu Archipelago is a small group of islands situated on Kenya's Northern Coastline, near Somali. It is made up of Lamu, Manda, Pate and Kiwayuu islands. The County has a land surface area of 6,474.7 Km^2 that includes the mainland and over 65 Islands that form the Lamu Archipelago. The total length of the coastline is 130 km while land water mass area stands at 308km.

The County has two Constituencies; Lamu East and Lamu West. The County has 10 County wards. The wards in Lamu include Shella, Mkomani, Hindi, Mkunumbi, Hongwe, Bahari, Witu, Faza, Basuba and Kiunga wards (Figure 2)

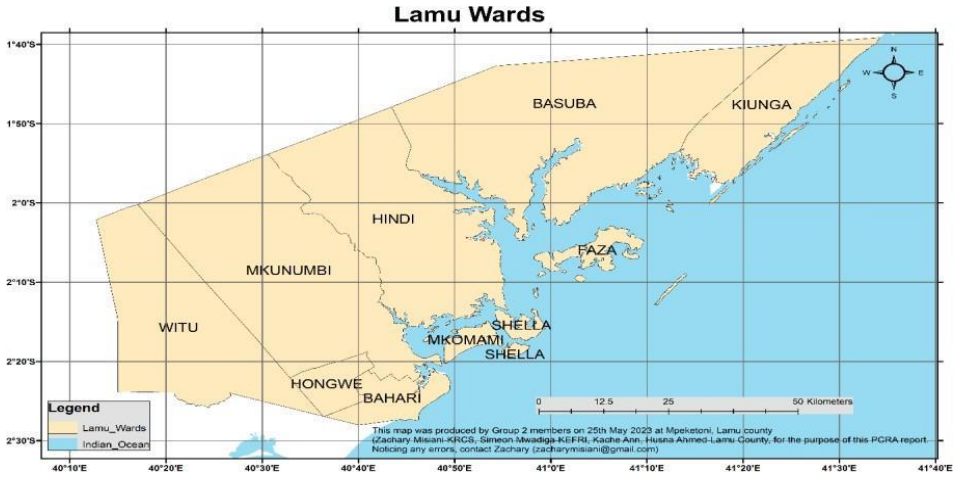

Figure 2: Wards in Lamu County

Topography

The County is generally flat. It lies between altitude zero and fifty meters above sea level. The low altitude exposes some parts of the County to flooding in rainy seasons. The flood prone areas are: areas around Lake Kenyatta in Mpeketoni, areas along Tana River delta such as Chalaluma in Witu division and areas on the coastal line that experience floods during the high tides. The main topographic features found in the County include: the coastal plains, island plains, Dodori River plain, the Indian Ocean and sand dunes.
There are four major catchment areas in the County, each with unique characteristics. They are: Dodori, coastal zone, Duldul, the Lamu bay drainage and Tana River catchments. The County has no permanent rivers but only few seasonal streams which flow from the west towards the south eastern part of the County, with none reaching the sea. The only permanent open water site in the County is Lake Kenyatta in Mpeketoni which also dried for the first time ever during the severe drought in 2017.

Climate

Lamu County experiences no marked variation in temperatures with annual temperatures ranging between 23°C and 32°C. The high temperatures are experienced from December to April while low temperatures occur from May to July. The annual mean temperature in the County is 27°C. There is a bimodal rainfall pattern with long rains occurring from mid-April to the end of June, with the highest rainfall recorded in the month of May. The long rains agricultural output accounts for 80% of the annual crop production. Short rains occur in the months of November and December but are generally unreliable. Kiunga receives 540 mm annually, Faza and Kizingitini Divisions 550 mm to 850 mm with Mpeketoni receiving 850 mm to 1110 mm annually.

1.3.2 Impacts of Climate Hazards in Lamu County.

Hazard refers to the potential occurrence of climate-related physical events or trends that may cause damage or loss. Lamu County faces various climate hazards that have profound impacts on its environment, economy, and communities. Each of these hazards brings specific consequences that affect different aspects of the county's sustainability and well-being according to the community perception. The hazards identified by communities during the PCRA exercise are listed in Table 1

Table 1: Climate Hazards and related impacts in Lamu County

Climate Hazards	Impacts
Temperature Rise	● Heat stress ● Higher evaporation rates ● Detrimental effects on agricultural productivity.
Drought	The county has a history of recurring droughts, causing ● water stress/limited water supply, ● Decreased agricultural production/ reduced crop yields/crop failures ● Livestock mortalities due to water/scarcity of livestock fodder, ● food insecurity, and ● Economic losses for farmers and pastoralists. ● Heightened vulnerability among local communities
Floods	Lamu County is prone to periodic flooding, particularly in low-lying areas and along riverbanks. ● Substantial damage to infrastructure, homes, and agricultural lands. ● Crop damage ● Loss of human lives ● Community displacements
Sea Level Rise	The coastal areas of Lamu County face a significant risk from rising sea levels. ● triggers coastal erosion, ● saltwater intrusion into freshwater sources like Lake Kenyatta, and coastal inundation, ● threatens infrastructure, livelihoods ● the displacement of coastal communities
Changing Rainfall Patterns	Lamu County has observed variations in rainfall patterns, including shifts in timing, intensity, and distribution. These alterations disrupt agriculture, water availability, and the overall ecological balance in the re.g.ion
Waste Management	Inadequate waste management exacerbates the impacts of climate change across some wards in Lamu County. Poor waste management practices contribute to environmental pollution, health risks, and further strain on the county's resilience to climate hazards.

Understanding the impacts of these climate hazards is crucial for formulating effective strategies and building climate resilience within Lamu County.

1.3.3 County Climate Hazard Map

Participatory hazard mapping is a critical participatory tool that experts use to have communities identify the location of their assets and exposure levels to climate hazards. The hazard map taps climate information and identifies potential risks across locations. The map depicts the type of hazards, its location, potential extent and resources exposed to it.

The participatory maps drawn by the local communities during the PCRA process were further processed using ArcGIS to produce accurate, geo-referenced maps as illustrated in Figure 3. The hazards illustrated are those reported by communities as part of the consolidation of community responses during the PCRA exercise.

The figure illustrates that drought is the major hazard affecting community resources/assets as it was reported in all the wards of the county. Pest and diseases was reported in 8 of the 10 wards making it a significant hazard that requires attention. Pests and diseases was reported to impact human health, Agricultural and Livestock production.

Communities reported Resource-based and human wildlife conflict as a major hazard. This was reported in five out of the ten wards of Lamu with more intensity in Bahari, Mkunumbi, and Basuba wards. Three wards reported floods as key hazards including Hongwe, Mkunumbi and Witu. This however, does not mean that flooding occurs in only these three wards, rather, it means that it was prioritized as a key hazard in only the three wards. Sea level rise is an isolated hazard reported in Kiunga ward whereas storms and strong winds were reported and prioritized in Faza, Shella and Mkomani wards.

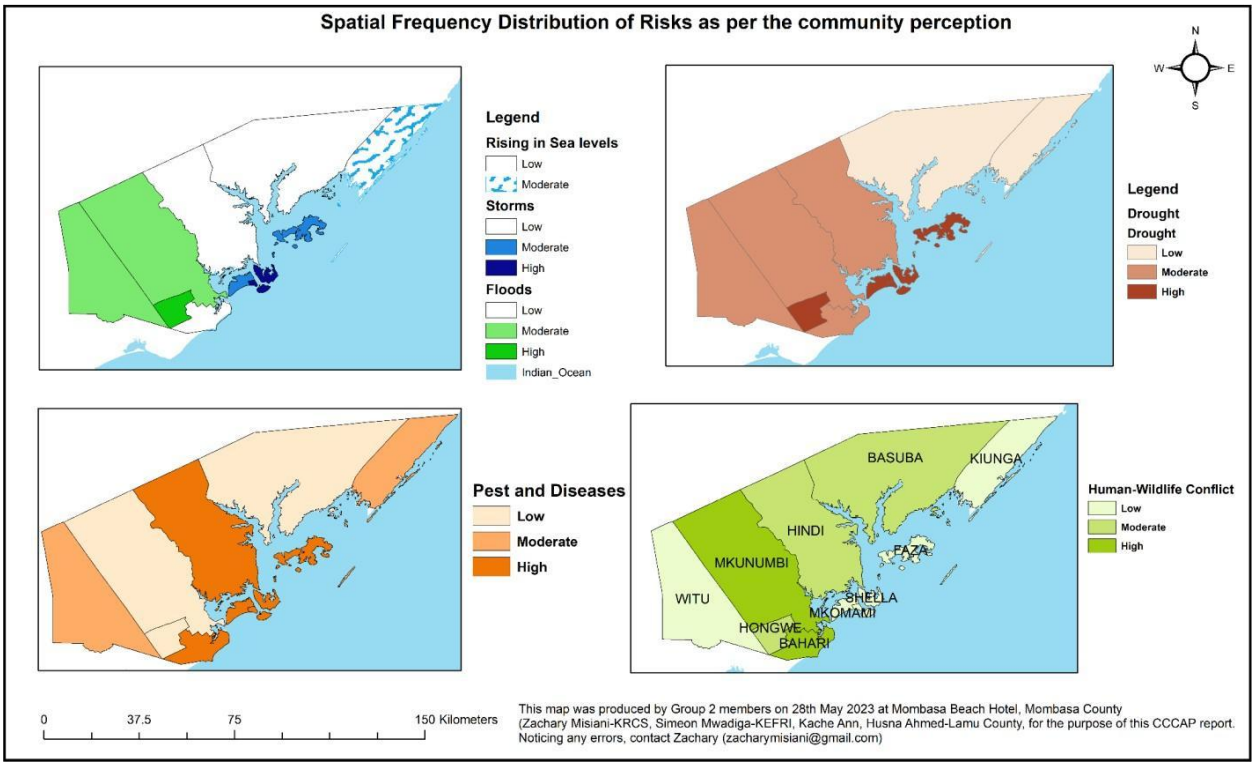

Figure 4: Lamu County Climate Hazard Maps

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

Climate change vulnerabilities contribute to the risk of occurrence of climate change impacts. These impacts manifest in various ways and affect different se.g.ments of the society differently. In Lamu County, the impacts on different sectors is outlined in Table 2 below

Table 2: Summary of differentiated climate exposure and Vulnerability of Key Groups

Key Group	Impacts
Women and girls	● Water scarcity resulting from long droughts caused women and girls to walk long distances to fetch water. The girls often miss schools during such times to support families fetch water ● The long time taken by women and girls limits their abilities to contribute to the economic well-being of their families/households ● Women and girls experience huge challenges especially during menstrual cycles and breast feeding resulting from reduced food availability and nutrition deficiencies in drought
People Living with Disabilities (PLWDs)	● Mobility of PLWDs especially during emergencies such as floods, storm winds are limited exposing them to further risks ● Increased temperatures have ne.g.ative impacts on people with albinism ● PLWDs are most vulnerable when they lose their livestock during droughts as they lack the means to diversify their income streams to cope with the changes
Elderly	● The elderly are mostly ne.g.atively affected by food and nutrition security resulting from crop failures due to either droughts and floods ● Floods and stormy winds in Lamu often limit movement and escape of the elderly

Children	● School going children are affected by infrastructure damage resulting from floods, storms, sea level rise ● Hazards such as floods, droughts etc caused displacement of families resulting in school dropouts ● Disasters put children at the risk of child labour in a bid to support their families ● Climate change impacts often reduce household incomes, resulting in large number of domestic violence. These often have ne.g.ative impact on children ● Since male children especially among pastoral communities are the major livestock herders, the drought resulting in loss of pasture affects male children as they walk long distances in search of grazing areas
Marginalized Groups	● Marginalized communities are often less educated hence lack the knowledge on adaptation strategies to deal with climate change impacts ● Their traditional lifestyles coupled with lower investments by the governments over time exposes these communities to greater risks as high poverty levels make them especially vulnerable hence least resilient to climate change impacts

1.4 Overview of Climate Change Actions in the County

1.4.1 Mainstreaming of NCCAP in County Actions

The National Climate Change Action Plan (NCCAP) 2018-2022 was developed in line with the provisions of the National Climate Change Act, 2016. The plan sets out Kenya's development goals by providing mechanisms and measures to achieve low carbon climate resilient development in a manner that prioritizes adaptation and recognizes the essence of enhancing the climate resilience of vulnerable groups including women, children, the elderly, PLWDs, marginalized and minority communities. The plan provides a framework for mainstreaming climate change into sector functions at the National and County levels. Section 3.2 of the NCCAP sets out actions most of which are to be implemented by County Governments.

In response to climate change effects and its attempt to mainstream NCCAP to the County actions, the county government of Lamu has;

- ❖ Established a directorate of Disaster Management and peace building that carries out disaster response interventions under the Disaster Risk Management Act, 2022.
- ❖ Given a provision for a Drought Contingency budgetary allocation under the department of

Devolution, Disaster Management and Resource Mobilization.

- ❖ Enacted various climate change policies and acts that ensure that the climate change responses are enhanced and mainstreamed in the county plans. Institutions have also been set up and strengthened to deal with climate related impacts.
- ❖ Established a county climate change fund constituting 2% of the total annual County Development Budget in addition to donor funding.
- ❖ Developed a Participatory Climate Risk Assessment (PCRA) and subsequent LCCCAP in compliance with FLLoCA grants requirements.
- ❖ Established governance structures in line with the NCCAP

1.4.2 Climate Change in CIDP

Lamu CIDP 2023-2027 cites climate change as one of the major challenges to implementation. The CIDP emphasizes the need for enhanced investments towards climate change mitigation and adaptation. The impacts of climate change are mentioned as the first among the emerging issues that affect the County planning, projects implementation and development. Increased weather variability leading to prevalence of pests and diseases, reduced productivity and other environmental, social and economic challenges, are cited as having made it necessary to develop the necessary policy, le.g.al and institutional frameworks to fast-track the county's climate change mitigation and adaptation action plans.

Various sectors have prioritized the mainstreaming of climate change in the CIDP. The agriculture sector has prioritized the mainstreaming of climate change issues in agriculture and rural development, which it intends to achieve through provision of extension services to improve the adoption of climate smart agricultural technologies and provision of grants to farmers' groups implementing climate smart technologies. In fisheries, the county intends to also mainstream climate change in the management of fisheries resources by capacity building farmers' groups on climate change preparedness, mitigation and crosscutting issues and sensitizing all its staff on climate change.

Climate change is also mentioned in the CIDP implementation framework as a risk that requires mitigation/adaptation measures to reduce the impacts. Lamu County CIDP recognizes SDG 13: **Take urgent action to combat climate change**.

1.4.3 Other Key Climate Actions/Strategies in the County

The key climate actions include

- Enhancement of institutional capacity in the county climate change adaptation and mitigation
- Disaster Risk Management strategies
- Food and nutrition security enhancement

- Livestock improvement and offtake programs
- Rehabilitation of degraded habitats
- Promotion of the adoption of clean energy
- Enhancement of waste management capacity and levels in the county

2. Policy Environment

2.1 National Policy Context

2.1.1 The National Perspective

Kenya, like the rest of the world has identified Climate Change as a key challenge and impediment to the national socio-economic development, delaying attainment of vision 2030. Over the years, the impacts on the community assets and resources and effectively on lives and livelihoods have become more pronounced both in frequency and intensity, necessitating urgent action, at all levels of government. The Kenyan Government has instituted a robust Climate Change le.g.al and policy framework to address these impacts and enhance the adaptive capacities of the Kenyan population.

The foundation of the institutional and le.g.al framework for climate change action is the Constitution of Kenya (2010). Article 10 sets out national values and principles of governance, such as sustainable development, devolution of government, and public participation. The constitution makes these mandatory considerations when making or implementing any law or public policy decisions, including those related to climate change. Article 42 provides for the right to a clean and healthy environment for every Kenyan, which includes the right to have the environment protected for the benefit of present and future generations through le.g.islative and other measures. The Constitution of Kenya (2010) further introduced the devolved system of Government which gave rise to the National and 47 Sub-National governments.

The Constitution of Kenya mandates the County Governments to implement all national government laws and policies within their jurisdiction thus the County Governments have a key delivery role in implementing the Climate Change Act, 2016. The role of the county governments in dealing with climate change adaptation is so critical as devolved sectors such as agriculture, soil and water conservation, forestry, water and sanitation, and health either contribute to or are impacted greatly by climate change hazards.

Kenya enacted Climate Change Act (No 11 of 2016) as the first climate dedicated legislation in Africa. It provides the regulatory framework for enhanced response to climate change, and mechanisms and measures to transition to low carbon climate resilient development. The first NCCAP covered the period 2013-2017. NCCAP 2018-2022 is the second action plan for Kenya. NCCAP 2018-2022 is a framework to deliver Kenya's National Determined Contributions (NDC) under the Paris agreement of the United Nations Framework Convention on Climate Change (UNFCCC). Climate change is a shared responsibility between the County and National government.

2.1.2 National Le.g.al and Policy Framework

The National le.g.al and policy framework consists of policies, laws, strategies and plans as illustrated below;

The Kenyan Constitution 2010

The Kenyan Constitution of 2010 provides a le.g.al framework for environmental conservation and sustainable development. It recognizes the right to a clean and healthy environment and emphasizes principles of sustainable development, including environmental responsibility. The Constitution assigns responsibilities to the government and individuals to protect and conserve the environment.

The National Climate Change Response Strategy (NCCRS) 2010

The NCCRS was the first document on climate change formulated in 2010. This strategy outlines the country's commitment to climate change mitigation and adaptation. They focus on reducing greenhouse gas emissions, promoting sustainable agriculture and forestry, and building climate resilience. It focuses on mainstreaming adaptation and mitigation plans in all government planning and development processes. The objective of the strategy is to is to respond to climate change by enhancing the understanding of the global climate change ne.g.otiation process, international agreements, policies and processes and most importantly, the positions Kenya needs to take to maximize beneficial effects; assessing the evidence and impacts of climate change in Kenya; recommending robust adaptation and mitigation measures needed to minimize the risks associated with climate change while maximizing opportunities; enhancing understanding of climate change impacts nationally and in local re.g.ions; recommending variability assessments, impacts monitoring and capacity building framework needs; recommending research and technological needs and avenues for transferring existing technologies; proving a conducive and enabling policy, le.g.al and institutional frameworks to combat climate change and providing concerted action plan, resource mobilization plan and robust monitoring and evaluation plan.

The NCCRS laid the foundation for the current climate change response policy and le.g.islative framework in Kenya including the National Climate Change Action Plan, the National adaptation plan, the National Climate change framework policy of 2016 and the National Climate Change Act.

The National Climate Change Framework Policy (2016)

The policy was ratified in 2016 to enable coordinated, coherent and effective response to the local, national and global challenges and opportunities presented by climate change. The policy aims to enhance the adaptive capacity and build resilience to climate variability and change. The policy identifies the adaptive capacity of individuals and communities as key to improving their socio- economic situations. The policy provides guidance on inte.g.rating climate change considerations into national planning, resource mobilization, and budgeting processes. They promote sustainable development, renewable energy, public participation, and climate finance management.

The Kenya National Climate Change Finance Framework Policy 2018

The Kenya National Climate Change Finance Framework Policy 2018 is a policy document that guides the allocation and management of financial resources for climate change initiatives in Kenya. It aims to mobilize domestic and international funding, strategically allocate resources, inte.g.rate climate change into development plans, establish institutional arrangements, monitor and evaluate climate finance activities, and build capacity. The policy promotes a balanced approach to address climate vulnerability, mitigation, and adaptation, while emphasizing transparency and accountability in managing climate funds. Its goal is to enhance Kenya's resilience to climate change and promote sustainable development. The Kenya National Climate Change Finance Framework Policy 2018 is a policy document that guides the allocation and management of financial resources for climate change initiatives in Kenya. It aims to mobilize domestic and international funding, strategically allocate resources, inte.g.rate climate change into development plans, establish institutional arrangements, monitor and evaluate climate finance activities, and build capacity. The policy promotes a balanced approach to address climate vulnerability, mitigation, and adaptation, while emphasizing transparency and accountability in managing climate funds. Its goal is to enhance Kenya's resilience to climate change and promote sustainable development.

The National Climate Change Act no 11 of 2016

The Kenyan National Climate Change Act, also known as Act No. 11 of 2016, is a significant piece of legislation in Kenya aimed at addressing climate change. The Act establishes the Climate Change Council, which coordinates climate change activities in the country. It mandates the development and implementation of a National Climate Change Action Plan and establishes a Climate Change Fund to finance climate change initiatives. The Act also establishes a Climate Change Directorate and promotes research and development efforts related to climate change. It requires the inte.g.ration of climate change considerations across sectors and levels of government, establishes monitoring and reporting mechanisms, and emphasizes public participation and awareness. Overall, the Act provides a le.g.al framework to guide Kenya's efforts in mitigating and adapting to climate change.

National Climate Finance Policy (2018

The National Climate Finance Policy, introduced in 2018, is a framework developed by the Government to guide the allocation of financial resources for climate change initiatives. Its objectives include mobilizing funds, prioritizing climate actions, promoting coherence among stakeholders, ensuring transparency and accountability, promoting innovation in financial mechanisms, and supporting capacity building. The policy aims to increase funds for climate action, allocate them to key sectors, coordinate stakeholders, and ensure effective and accountable use of funds. It varies between countries but generally aligns with national climate goals and international commitments.

National Determined Contributions (2016)

National Determined Contributions (NDCs) are pledges and commitments made by countries in relation to climate change under international agreements like the Paris Agreement. These NDCs outline targets, policies, and measures for mitigating greenhouse gas emissions and adapting to climate change impacts. Most countries submitted their initial NDCs in 2015 and 2016. NDCs cover aspects such as mitigation targets, policy measures, adaptation strategies, and financial and technological support requirements. NDCs can be revised and updated over time to reflect evolving circumstances and ambitions. The Paris Agreement encourages countries to regularly update and enhance their NDCs to strengthen global climate action. Specific details of NDCs vary by country, and it is important to refer to the latest official sources for specific commitments and updates.

The Kenyan National Climate Change Action Plan (NCCAP) 2018-2022

This strategy outlines the country's commitment to climate change mitigation and adaptation. They focus on reducing greenhouse gas emissions, promoting sustainable agriculture and forestry, and building climate resilience.

NCCAP 2018-2022 furthers the achievement of Kenya's development goals by providing mechanisms to realize low carbon climate resilient development. It emphasizes sustainability, while prioritizing adaptation and enhanced climate resilience for vulnerable groups. NCCAP 2018-2022 has identified seven priority areas, including: Disaster Risk Management; Food and Nutrition Security; Water and the Blue Economy; Forestry; Wildlife, and Tourism; Health, Sanitation, and Human Settlements; Manufacturing; and Energy and Transport. NCCAP aligns with the Government's Big Four Agenda, and the Sustainable Development Goals (SDGs).

The National Adaptation Plan 2015-2030

A National Adaptation Plan (NAP) is a strategic framework developed by countries to address the impacts of climate change and increase resilience. It typically covers a specific time period, such as 2015-2030, and aims to inte.g.rate climate change adaptation measures into national policies and programs. Key elements of a NAP include vulnerability assessments, prioritization of adaptation measures, institutional arrangements, financing and resource mobilization, monitoring and evaluation, and capacity building.

Kenya's Climate Smart Agriculture Strategy (2017-2026)

The strategy encourages sustainable agricultural practices, including climate-resilient farming techniques, efficient water management, and soil conservation. It aims to enhance food security while reducing the environmental impact of agriculture.

The Public Finance Management (Climate Change Fund Regulation 2018

Public Finance Management Regulations focuses on establishing frameworks for managing financial resources dedicated to addressing climate change. They govern the mobilization, allocation, and utilization of funds for climate change mitigation and adaptation. They also outline the governance structure of a climate change fund, criteria for project selection and

funding eligibility, and reporting and monitoring requirements.

The Environment Management and Coordination Act 2015

The Act establishes environmental standards, promotes sustainable development, and provides a le.g.al framework for environmental management and conservation.

The Agriculture Sector Development Strategy 2010-2020

The Agriculture Sector Development Strategy 2010-2020, in relation to climate change, would have aimed to address the challenges and opportunities posed by climate change in agriculture. It likely emphasized climate-smart agricultural practices to increase productivity, enhance resilience, and reduce emissions. The strategy may have included measures for adaptation, such as promoting climate-resilient crops and water management strategies. Mitigation efforts might have focused on sustainable land use, improved livestock management, and organic fertilizers. Research, innovation, policy support, and collaboration with various stakeholders would have been important components of the strategy.

The County Government Act 2012

The County Government Act 2012 in Kenya does not directly address climate change but provides a framework for county governments to address environmental issues. County governments have powers to develop policies, regulations, and strategies related to environmental conservation, including measures to mitigate and adapt to climate change. They can collaborate with other stakeholders, allocate resources, and promote public awareness on climate change. The specific actions taken by each county will vary depending on their priorities and resources.

Urban and Cities Act 2012

The Act addresses urban planning, infrastructure development, and governance. While they do not directly mention climate change, their provisions can be aligned with climate change considerations, such as sustainable urban development, disaster risk reduction, and environmental management

The National Drought Management Authority Act (No. 4 of 2016)

The Act in Kenya addresses the challenges of drought and climate change in the country. The Act establishes the National Drought Management Authority (NDMA) as a statutory body responsible for coordinating and overseeing drought management and resilience-building efforts. It recognizes drought as a significant impact of climate change and focuses on proactive and integrated approaches to drought management. Key provisions of the Act include drought risk management, drought monitoring and early warning systems, drought emergency response, drought resilience and adaptation, and collaboration among stakeholders. The Act aims to enhance Kenya's capacity to respond effectively to drought emergencies and promote long-term drought resilience, taking climate change into account.

The Forest Conservation and Management Act 2016

The Act makes provision for the conservation and management of public, community and private forests and areas of forest land that require special protection, defines the rights in forests and prescribes rules for the use of forest land. Section 6 (3) (a) (iii) highlights the need to develop "programmes for achievement and maintenance of tree cover of at least 10% of the land area of Kenya". Section 37 (1) requires every County Government to establish and maintain arboreta, green zones or recreational parks for use by persons residing within its area of jurisdiction. The act is therefore relevant and supports climate change adaptation and mitigation commitments of the Country

The Energy Act 2019

The Energy Act 2019 has a very broad scope, covering all forms of energy, from fossil fuels to renewables. The Energy Act mandates the government to promote the development and use of renewable energy, including biodiesel, bioethanol, biomass, solar, wind and hydropower. The Energy Act provides a useful supporting framework for the transition to a green economy with likely gains in environmental protection and climate change.

The Water Act (No 43 of 2016)

The water act provides for the regulation, management and development of water resources and water and sewerage services in line with the Constitution. Water Act establishes National Water Harvesting and Storage Authority

2.2 County Le.g.al and Policy Framework

Lamu County, in line with provisions of the National Climate Change Act, 2016, has put in place a robust Climate Change le.g.al and policy framework to guide its climate change response and lay a le.g.al basis for mainstreaming climate change and inte.g.rating climate actions into sector plans as outlined in the County Integrated Development Plan (CIDP) 2023-2027.

2.2.1 The Lamu County Spatial Plan 2016-2026

This is a framework for sustainable development in Lamu County, Kenya. It incorporates climate change considerations in the following ways:

1. Risk assessment and vulnerability mapping.
2. Land use zoning based on climate change impacts.
3. Climate-resilient infrastructure planning.
4. Emphasis on ecosystem conservation and restoration.
5. Inte.g.ration of renewable energy sources.
6. Community engagement and capacity building.

By incorporating climate change into the spatial plan, Lamu County aims to achieve resilient and sustainable development while reducing vulnerability to climate change impacts and enhancing Climate Change adaptation.

2.2.2 County Integrated Development Plan (CIDP) (2023 - 2027)

The County, through the CIDP, has mainstreamed climate change mitigation and adaptation measures into the various sector plans. Lamu County has suffered from the impacts of climate change. Increased weather variability has led to prevalence of pests and diseases, reduced productivity and other environmental, social and economic challenges. This has necessitated development of policy, le.g.al and institutional framework to fast-track county climate change mitigation and adaptation action plans. Increased environmental degradation related to human activities has necessitated the adoption of green growth technologies such as solar power, electric mobility amongst others which should further be promoted to enhance environmental sustainability. The effects of adverse climatic changes which have resulted in increased weather variability have been experienced during this period. This has affected food production, water supply, livestock production, infrastructural development and general livelihoods of the people. There is therefore need, therefore, for enhanced investments towards climate change mitigation and adaptation

2.2.3 Disaster Risk Management Act 2022.

The Act aims in building resilience to the communities prone to disasters, easy response, and prevent risks of disasters. The Act will also help stakeholders by ensuring they do risk assessment, promote sustainable development and vulnerability of the community. The Act will assist the county in clarifying roles and responsibilities of state and non-state actors and help in coordination mechanisms. It will also help in disaster risk management across all sectors by providing a le.g.al foundation for all aspects of disaster risk management.

2.2.4 Disaster Management Policy (2021)

The policy aims at ensuring competent human resource that is efficient and effective in disaster risk management projects and programmes for the people of Lamu in order to improve climate change adaptation.

2.2.5 Lamu County Climate Change Act (2022)

The act provides the le.g.al framework and mechanisms for mobilization and facilitation of the county government, communities and other stakeholders to respond effectively to climate change through appropriate adaptation and mitigation measures and action for connected purposes. The guiding values and principles of the Act include: community driven and bottom-up planning of response to climate change; commitment to informed participation of communities in planning and implementation of climate change response interventions; recognition, respect and inte.g.ration of indigenous knowledge of communities in climate change response; planning and implementation of climate change response to be anchored in and supportive of devolution; flexible learning approach to addressing challenges of climate change; investment in public goods to foster adaptation to climate change; inclusion of all major actors in planning and implementation of climate change response; protection of the climate system for the benefit of present and future generations; ensuring a just transition for all towards an environmentally sustainable economy and society in the light of county circumstances and developmental goals;

national values and principles of governance spelt out in Article 10 of the Constitution;

2.2.6 Lamu County Climate Change Finance Regulations (2022)

The regulation defines the procedures for management, operations and winding up the Fund, and for the planning of climate change response interventions to be funded by the Fund.

The regulations set out how the Fund shall be managed and disbursements made with due re.g.ard to the following principles: giving effect to priorities set by communities following a community-driven participatory planning process; strengthening the role of communities, community structures and indigenous knowledge systems in the planning of climate change response interventions; investing in public goods and structures to strengthen adaptation to climate change. The initial capital of the Fund shall be not less than one and a half percent (≥ 1.5%)of the annual development budget of the county appropriated by the County Assembly in the financial year commencing immediately after the date of commencement of these Regulations.

2.2.7 Lamu County Climate Change Policy (2022)

Provide policy framework for climate change response actions in the county for the community and other stakeholders. The policy aims at enhancing adaptive capacity and resilience to climate change and promotes low carbon development for the sustainable development of Lamu County. The policy desires to improve the adaptive capacity to improve the socio-economic characteristics of communities, households and industry as it includes adjustments in financial and human behavior; and technologies. The adaptive capacity is a necessary condition for the design and implementation of effective adaptation strategies so as to reduce the likelihood and magnitude of harmful outcomes resulting from climate change. The ability of Lamu County to enhance adaptive capacity is therefore imperative to enable sectors and institutions to take advantage of opportunities or benefits from climate change. An enhanced understanding of the adaptive capacity of the County has been derived from the climate risk and vulnerability assessments. Reducing the vulnerability to climate change of people, ecosystems and the economy is a positive approach to enhancing adaptive capacity, but further research is required to identify specific parameters and indicators of enhanced capacity.

2.2.8 Lamu County Draft Forest Policy 2023

The Lamu County Draft Forest Policy, 2023 provides a framework for improved forest governance, resource allocation, partnerships and collaboration with national and county governments and with non-state actors to enable the sector to sustainably contribute to Lamu County and Kenya development goals. Lamu County has a 32.13% forest cover, one of the highest in Kenya. The county's forests include lowland coastal forests, mangrove forests and

woodlands. These forests provide goods and services that form the basis for the county's socio-economic development including wood for timber, poles and fuelwood. The forests also provide honey, herbal medicines, livestock fodder and wild fruits. The forests' rich biodiversity and their scenic appeal is one of the tourist attractions to Lamu County and are important in climate, soil and water regulation. Forest conservation is one of the key strategies that can be used in mitigating against climate change and for helping local communities and their economies adapt to the impacts of climate change. Lamu County's forests are under pressure due to increasing human population, unsustainable exploitation of wood and non-wood products, agricultural expansion and infrastructural development. These challenges hinder the county's efforts to maintain and improve its impressive forest cover and are therefore a threat to Lamu County socio-economic development. This policy therefore provides the policy direction of forests management as a strategy in management of climate change.

3: Priority Climate Change Actions

Climate change remains a threat to the attainment of vision 2030 and other National development blueprints. This chapter outlines how Lamu County plans to strategically respond to climate change impacts in order to sustain the economic and social well-being of its citizens and ensure a healthy and ecologically functional environment. This strategy is based on the amplification of appropriate on-going climate change adaptation and mitigation actions, and the adoption of other potential actions that have worked to deal with the climate change impacts elsewhere. It is aligned to the National Climate Change Action Plan 2018-2022, Lamu County Integrated Development Plan (CIDP III) and Sustainable Development Goals (SDGs). It also clarifies the stakeholders who need to be engaged in these activities and the resources required and suggests the timelines that specific actions need to be carried out.

LCCCAP Vision

To be the County with the most climate resilient economy that sustains the livelihoods of its citizens, contributing to national development and the global aspirations of low carbon.

Goal and Strategic Objectives

The goal of this action plan is to "*mainstream climate change adaptation and mitigation strategies in the county's developmental agenda while encouraging local communities to adopt practices and technologies that will enhance their resilience to climate change hazards thereby improving their standards of living*"

The LCCCAP will achieve its goal by implementing actions around eight strategic objectives namely:

1. Food and nutrition security
2. Water access and the Blue Economy
3. Ecosystem conservation for sustainable economic development
4. Climate Proof Infrastructure, Green energy production and use
5. Sanitation, Health and Human settlements
6. Knowledge management and capacity building of community, stakeholders and county officials
7. Sustainable financing for climate change action
8. Governance and coordination of climate change adaptation and mitigation

3.1 Identification of strategic Climate Change priorities in the PCRA

During the PCRA process, the communities in Lamu County identified actions and strategies to respond to prioritized climate change hazards. This section however further develops priority actions to be implemented by all relevant sectors to enhance the community adaptation to the ne.g.ative impacts of climate change hazards. The analysis cate.g.orizes the actions as high priority, priority and low priority and sets them up for budgeting in the subsequent chapter. The prioritization was done considering the vulnerability, severity and intensity of impacts to the communities to the impacts of Climate Change and the intensity of the hazards affecting the

communities resilience capacity to adapt, through the vulnerability matrix assessment which was conducted in the ward level PCRA reports which informed the County PCRA. The community was asked to rank them based on certain criteria namely: how often they occur, once they occur how significant is the impact on the local community and how is the community able to cope.

3.2 Priority Climate Change actions

Objective 1: Food and Nutrition Security

Food and nutrition security is a key component in resilience building. Food production sector, (crop farming, livestock, or fisheries) is highly vulnerable to the impacts of climate change. Inadequate food and nutrition has serious health consequences, and affects social and economic sectors. In Lamu, prolonged droughts, pests and diseases, conflicts over resources, floods, stormy winds and rising sea level are the most important factors that limit county food production and thus limiting the ability of the county to be food secure.

The low food production is worsened by the use of local and uncertified seeds that more often are not resistant to drought. Over time, communities have changed and no longer plant traditional low value crops' ' that were known to be nutritive and resilient to drought and other climate hazards. This means that there is overreliance on hybrid seed varieties that are not resilient to climate shocks. Crop production is heavily dependent on the rains thus rendering the county vulnerable to climate hazards. To achieve food security, the county will mitigate the effects of climate change hazards by improving her infrastructure to climate proof standards, enhance early warning systems, and enhance adoption of climate smart technologies among others. Being an agricultural-dependent county, most of the economic activities are based on agriculture implying that reduced agricultural production leads to a reduction in employment opportunities and depressed overall economic well-being. As such, the impacts of climate change on food and nutrition security needs urgent attention.

From the assessment done during the PCRA exercise, the impacts of drought brought about by severe impacts of climate change was experienced all over the county but more pronounced in areas of Hindi, Mkunumbi and Faza and Kiunga wards. They experience erratic and unreliable rainfall more severely. Some areas in Faza, Hindi and Kiunga Wards are now prone to strong winds and rising sea levels where in some instances they have led to drowning of livestock tethered near the ocean tide zones in Kiunga. Strong winds have in certain instances led to destruction of maize fields through breakage of the stalks and rouging. Fishers are unable to access fishing grounds during strong winds hence compromising fishing activities and causing reduced incomes at the households during these periods.

Interventions that need to be implemented to make the crop, livestock, and fisheries production sector robust, vibrant and resilient to climate change are listed in (Table 3). Agriculture, livestock, and fishery production are devolved functions implying that the county government,

and in particular the responsible departments, have the overall mandate in this area. However, the county government has to work closely with other stakeholders to realize the food security for the county.

Table 3: Climate Change Action Plan for Food and Nutrition Security

Sub-sector	**Climate change Activity**	**Stakeholders**	**Indicators**	**Priority**	**Timeframe**
Livestock production and veterinary services	Procure and administer drugs and vaccines to vulnerable livestock	Department of Veterinary, community, Drug companies, KEVEVAPI, FAO, FCDC, NDMA, KEMFSED, ASDSP 11	Number of Livestock treated/vaccinated Number of doses procured	High priority	Continuous
	Undertake regular livestock pests and disease surveillance	Department of Veterinary, community, Drug companies, KEVEVAPI, FAO, FCDC, NDMA, KEMFSED, ASDSP 11ASDSP 11	Number of surveillance reports	High priority	Continuous
	Enhance cold storage capacity for vaccines and semen	Department of Veterinary, community, Drug companies, KEVEVAPI, FAO, FCDC, NDMA, KEMFSED, ASDSP 11	Number of fridges procured	High priority	Continuous
	Undertake pests and disease control measures (Quarantine, movement restriction, livestock relocation)	Department of Veterinary, community, Drug companies, KEVEVAPI, FAO, FCDC, NDMA, KEMFSED, ASDSP 11	Number of disease control reports	Priority	Continuous

	Enhance livestock structures including dips and crushes	Department of Livestock, Community, FAO, FCDC, NDMA, Red Cross, KENTTEC	Number of livestock structures constructed/ rehabilitated	Priority	Year 1
	Improve the livestock breeds [drought tolerant]	Department of Veterinary, KALRO, KAGRC, Community, FAO, FCDC, NDMA	Number of farmers keeping improved breeds	High priority	Continuous
	Undertake destocking during drought	Department of Livestock, KALRO, KAGRC, RED CROSS	No of Livestock sold	High priority	Year 1

		Community, FAO, FCDC, NDMA, KDF,KMC			
	Promote the uptake of Livestock insurance	Department of Livestock & Veterinary, DRIVE, Financial institutions, community	No of livestock keepers with insurance cover	High priority	Continuous
	Promote diversification of livestock in drought prone areas	Department of Livestock, KALRO, KAGRC, RED CROSS Community, FAO, FCDC, NDMA	Number of households that have diversified	Priority	Continuous
	Provision of emergency alternative livestock feeds such as hay and pellets	Department of Livestock, KALRO, KAGRC, RED CROSS Community, FAO, FCDC, NDMA	No of bags/bales supplied No of beneficiaries	Priority	Continuous
	Rangeland rehabilitation by reseeding	Department of Livestock, KALRO, seed companies, RED CROSS Community, FAO, FCDC, NDMA	Quantity of seeds planted Acreage of rangeland reseeded	High priority	Year 1

	Develop Internal Quarantine facilities targeting export	Department of Veterinary, National Government, livestock traders	Number of internal quarantine facilities developed.	Priority	Year 1
	Strengthen extension services	Department of Livestock & Veterinary, Extension officers , KALRO, KAGRC	Number of extension officers	High priority	Year 1
	Enhance capacity building of both extension staff and farmers	Department of Livestock & Veterinary, Extension officers, Livestock keepers	Number of extension officers trained	High priority	Year 1

			Number of livestock keepers trained		
	Strengthen artificial insemination	Department of Veterinary, KALRO, KAGRC, RED CROSS, Community, FAO, FCDC, NDMA	Number of inseminations done	Priority	Continuous
	Promote fodder production and conservation	Department of Livestock, KALRO, seed companies, RED CROSS Community, FAO, FCDC, NDMA	Acreage of land under fodder production Number of livestock keepers growing fodder	High priority	Year 1
	Establish Watering infrastructure for livestock	Department of Livestock & veterinary, KALRO, KAGRC, RED CROSS, Community, FAO, FCDC, NDMA	Number of Watering infrastructure established	Priority	Year 1
	Enhance early warning system	KMD, livestock keepers	Early warning system in place		

	Adopt improved livestock breeds	Department of veterinary, KALRO, KAGRC, RED CROSS, Community, FAO, FCDC, NDMA	Number of farmers keeping improved breeds	Priority	Continuous
	Linkage of local producers to external traders	Department of livestock, cooperative societies, traders	Number of livestock keepers linked to traders	Priority	Continuous
	Strengthen livestock marketing	Department of livestock, Department of cooperatives	Number of functional cooperatives	Priority	Continuous

	cooperative societies	cooperative societies, traders			
	Construct modern slaughter facilities	Department of Veterinary, Lamu Municipality , RED CROSS Community, FAO, FCDC, NDMA	Number of slaughter facilities constructed	Priority	Year 1
	Empower producer marketing organizations to be able to process and package goods for the market	Department of Livestock & Veterinary, cooperative societies, traders, KEBS	Level of value addition	Priority	Year 3
	Establish processing facilities for Livestock products	Department of livestock Veterinary, cooperative societies, traders, KEBS	Level of value addition	Priority	Year 3

	Survey and demarcation of grazing facilities and livestock corridors	Department of Livestock, Lands and physical planning, livestock keepers	Acreage allocated as grazing corridor	Priority	Continuous
	Formulate policies on range land management	Department of Livestock and Lands, livestock keepers	Policy in place	Priority	Continuous
	Land use planning and development of village grazing plans	Department of Livestock and Lands, livestock keepers	Number of plans developed	Priority	Continuous

	Initiate human and livestock resettlement program	Department of Livestock and Veterinary, NDMA, Department of disaster management, FAO, FCDC	Number of humans and livestock resettled	Priority	Continuous
Crop production	Promote and enhance Irrigated agriculture	Department of Agriculture & Irrigation, FCDC, MoA, KEMFSED, Department of Water, Community, CBOs	Number and type of irrigation structures put in place	High Priority	Continuous
	Promote mechanized farming services (tractor plough, planting, spraying, weeding and harvesting)	Department of Agriculture & Irrigation, FCDC, MoA, KEMFSED, Community, CBOs	Number of tractors purchased/operating Type of machinery purchased Number of beneficiaries accessing the machinery	Priority	Continuous

	Strengthen research-extension-farmer linkages	Department of Agriculture & Irrigation, MoA, KALRO, Farmers cooperatives, Community, CBOs	Number of technologies adopted Number of research areas identified	Priority	Continuous
	Enhance and strengthen extension services	Department of Agriculture & Irrigation, MoA, KALRO, Community, CBOs	Extension to farmer ration Number of officers per ward	High Priority	Continuous
	Empower farmer organizations to purchase inputs in bulk	Farmers cooperatives, Department of Agriculture & Irrigation, MoA, Community, CBOs	Number of farmer organizations purchasing in bulk	Priority	Continuous

			Number of cooperatives empowered		
	Procure and distribute inputs to vulnerable farmers	Department of Agriculture, KALRO, MoA, KEMFSED, WWF, RED CROSS, FAO, Community, CBOs	Type of inputs distributed Number of beneficiaries	High Priority	Continuous
	Carry out surveillance of inputs in the county	Department of Agriculture, MoA, Input stockists, KEPHIS, PCBP,	Number of surveillances per year	High Priority	Per quarter
	Improve farmer-credit linkages and introduce farmer friendly credit products	Financial institutions, farmers cooperatives, Department of Agriculture, AFC,	Number of credit products in place Number of beneficiaries	Priority	Continuous
	Empower the vulnerable and marginalized groups to participate in agriculture	Department of Agriculture & Irrigation, MoA, KALRO, Community, CBOs	Number of marginalized persons undertaking agriculture	High Priority	Continuous

	Enhance soil testing to improve crop production	Department of Agriculture & Irrigation, MoA, KALRO, Community, CBOs	Number of farmers requesting for soil testing	Priority	Continuous
	Promote seed exchange programs	Department of Agriculture & Irrigation, MoA, KALRO, Community, CBOs	Number of beneficiaries	High priority	Continuous
	Promote cultivation of ve.g.etables and fruits to improve nutrition	Department of Agriculture & Irrigation, MoA, KALRO, Community, CBOs	Number of beneficiaries	High priority	Continuous

	Promote kitchen gardens	Department of Agriculture & Irrigation, MoA, KALRO, Community, CBOs	Number of kitchen gardens established	High priority	Continuous
	Establish demonstration farms within the wards	Department of Agriculture & Irrigation, MoA, KALRO, Community, CBOs	Number of demonstration farms established	High Priority	Continuous
	Promote growing of indigenous/drought tolerant food crops	Department of Agriculture & Irrigation, MoA, KALRO, Community, CBOs, KRCS	Type of drought tolerant crops promoted Number of beneficiaries	High Priority	Continuous
	Enhance post-harvest management	Department of Agriculture & Irrigation, MoA, Farmers Cooperatives, Community, CBOs	Number of community storage facilities in place Number of groups trained on post-harvest management	High Priority	Continuous

	Construct storage facilities	Department of Agriculture & Irrigation, MoA, Farmers Cooperatives, Community, CBOs	Number of community storage facilities constructed Number of groups using the community storage facilities		Year 1
	Enhance use of technology in agricultural production & marketing	Department of Agriculture & Irrigation, MoA, KALRO, Community, CBOs	Extension to farmer ratio Number of officers per ward	High Priority	Continuous
	Construct collection centers	Department of Agriculture & Irrigation, MoA	Number of collection	Priority	Year 1

		Farmers Cooperatives, Community, CBOs cashew nuts processors, cotton ginners	centers constructed Number of groups using the collection centers		
	Invest in market infrastructure in the County	Department of Agriculture & Irrigation, Lamu Municipality, MoA, Farmers Cooperatives Community, CBOs	Type of market infrastructure in place	High Priority	Continuous
	Establish processing plants for fruits and ve.g.etables, Cotton and Cashew nuts	Department of Agriculture & Irrigation, Lamu Municipality, MoA, Farmers Cooperatives Community, CBOs	Type of processing plant constructed Volumes of produce processed	Priority	Year 1& Year 2

	Establish cottages industries	Department of Agriculture & Irrigation, Lamu Municipality, MoA, Farmers Cooperatives Community, CBOs, Ministry of industrialization	Type of crop processed Volumes of produce processed	Priority	Continuous
	Fabricate simple technologies for home based process	Department of Agriculture & Irrigation, Lamu Municipality, MoA, Farmers Cooperatives, Community, CBOs, Ministry of industrialization	Types of technologies fabricated	Priority	Continuous
	Capacity build CIGs and VMGs on value addition technologies	Department of Agriculture & Irrigation, Farmers	Number of CIGs/VMGs capacity built	High Priority	Continuous

		Cooperatives, Community, CBOs			
	Development of policies and legislations for agricultural development such as agricultural inputs distribution	Department of Agriculture & Irrigation, Farmers Cooperatives, Community, CBOs, county assembly	Number of policies/legislation drafted and enacted	Priority	Continuous

	Control Crop pest and disease	Department of Agriculture & Irrigation, Farmers Cooperatives, Community, CBOs, county assembly, input stockists, KALRO, Agrochemical companies	Number of pests and diseases managed	High Priority	Continuous
	Promote the adoption of pests and disease tolerant crops	Department of Agriculture & Irrigation, Farmers Cooperatives, Community, CBOs, county assembly, input stockists, KALRO, Agrochemical companies	Type of pests/disease resistant crop promoted	High Priority	Continuous
	Promote the adoption of crop insurance	Department of Agriculture & Irrigation, Farmers Cooperatives, Community, CBOs, Financial institutions, insurance companies	Types of crops insured Number of farmers covered	High Priority	Continuous

	Procure farm inputs and supplies	Department of Agriculture & Irrigation, Farmers Cooperatives, Community, CBOs	Types of inputs procured and distributed Number of beneficiaries	High priority	Continuous
	Enhance capacity building of both extension staff and farmers	Department of Agriculture & Irrigation, Farmers Cooperatives, Community, CBOs, KALRO	Number of farmers trained	High priority	Continuous

	Promote the use of integrated pest management	Department of Agriculture & Irrigation, Farmers Cooperatives, Community, CBOs, input stockists, KALRO, Agrochemical companies	Number of farmers practicing IPM	High priority	Continuous
	Institute early warning systems for notifiable pests and diseases	Department of Agriculture & Irrigation, Farmers Cooperatives, Community, CBOs, input stockists, KALRO, Agrochemical companies	Number of Early warning systems in place	High priority	Continuous
	Undertake regular surveillance of crop pests and diseases	Department of Agriculture & Irrigation, Farmers Cooperatives, Community, CBOs, input stockists, KALRO, Agrochemical companies	Number of reports Number of visits	High priority	Continuous

	Re.g.ulate the use of harmful pesticides	Department of Agriculture & Irrigation, Farmers Cooperatives, Community, CBOs, input stockists, KALRO, Agrochemical companies, County Assembly	Number of regulations enacted Number of harmful pesticides re.g.ulated	High priority	Continuous

	Sensitize farmers to cultivate on land safe from floods	KFS, Department of Agriculture, KEFRI, Department of Environment, NEMA	Number of farmers sensitized	High Priority	Continuous
	Provide emergency relief seeds and relief food	Department of Agriculture & Irrigation, Farmers Cooperatives, Community, CBOs, KALRO	Number of beneficiaries Types of relief seeds distributed	High Priority	Continuous
	Promote planting of crops less vulnerable to winds such as sweet potatoes and Water melons in strong wind prone areas	Department of Agriculture & Irrigation, Farmers Cooperatives, Community, CBOs, KALRO	Number of beneficiaries Types of relief seeds distributed	High Priority	Continuous
Fisheries production	Restock Lake Moa, Lake Kenyatta and Lake Witu with fingerlings	Department of Fisheries, BMUs, KMFRI, Conservation Groups	Number of fish fingerlings stocked	High priority	Continuous
	Promote adoption of mariculture and aquaculture	Department of Fisheries, BMUs, KMFRI, Conservation Groups	Tonnage of fish produced	High priority	Continuous

	Provide solar freezers for storage of fish	County Department of Fisheries, BMUs, KMFRI, Conservation Groups	% reduction in post-harvest loss of fish	High priority	Continuous
	Promote community led fish processing	County Department of Fisheries, BMUs, KMFRI, Conservation Groups	Number of CIGs supported to process fish	High priority	Continuous

	Establish fish processing plants	County Department of Fisheries, National Government, BMUs, KMFRI, Conservation Groups	Number of processing plants established	Priority	Continuous
	Promote development of solar powered ice plants	County Department of Fisheries, BMUs, KMFRI, Conservation Groups	Annual tonnage of ice produced	High priority	Continuous
	Train BMUs on co management of Fisheries resources	County Department of Fisheries, BMUs, KMFRI, Conservation Groups	Number of BMUs trained	Priority	Continuous
	Train fishermen and fish traders on best fish handling practices	County Department of Fisheries, BMUs, KMFRI, Conservation Groups	Number of fishermen and traders trained	Priority	Continuous
	Map out and Secure fish breeding grounds and fish landing sites	County Department of Fisheries, BMUs, KMFRI, Conservation Groups	Number of fish breeding grounds mapped and protected Number of titles issued to fish landing sites	High priority	Continuous
	Promote deep sea fishing targeting tuna and tuna like species	County Department of Fisheries, BMUs, KMFRI, Conservation Groups	Tonnage of tuna fish landed annually	High priority	Continuous
	Promote development of blue carbon initiatives in the County	County Department of Fisheries, BMUs, KMFRI, Conservation Groups	Number of people deriving income through blue carbon initiatives	High priority	Continuous

	Provision of modern fishing equipment and vessels	County Department of Fisheries, BMUs, KMFRI, Conservation Groups	Number of modern fishing gears distributed	High priority	Continuous
	Provision of solar lamps to fishermen	County Department of Fisheries, BMUs, KMFRI, Conservation Groups	Number of modern fishing gears distributed	High priority	Continuous
	Enforcement of marine pollution control measures and standards	Department of fisheries, KEMFSED, KMA, NEMA, KCGS, WRA, WRUAs	Water quality reports Number of arrests, warnings and stop orders	High priority	Continuous
	Engaging youth, women and other vulnerable groups in fish production	Department of fisheries, KEMFSED, KCGS, WRA, WRUAs	Number of women, youths and VMGs members of vulnerable groups engaged	High priority	Continuous

Objective 2: Enhanced Water and Blue Economy

Lamu has 130 km coastal strip that is rich in fisheries and marine resources. A number of freshwater resources and water supply infrastructure also exist. Climate change has impacted the fisheries and blue economy in several ways. Upwelling of the ocean sometimes has caused algal bloom that has temporarily affected fishing as fishers fear the fish may be toxic though death of fish has not been reported in Lamu. The strong winds have affected fishing operations as fishers have to wait out the strong winds because of the risk of capsizing of vessels. Most of the villages within the islands have challenges to access clean portable water which is normally supplied through reverse osmosis plants. The county however, still needs to do more to ensure greater benefits are derived from its fisheries sub sector and the fresh water resources within its boundaries as well as enhance Water supply capacity to its residents. This objective seeks to enhance the resilience of the Blue Economy and water sector by ensuring access to and efficient use of Water for agriculture, manufacturing, domestic, wildlife, and other uses.

Specifically, the county will seek to

a) Increase annual per capita water availability through increased investment and development of water supply infrastructure e.g. piping of water from River Tana, Water desalination and rain water harvesting
b) Enhance investment in climate proof water harvesting and water storage infrastructure e.g.

djabias, water storage tanks, improve flood control e.g. construction of me.g.a dams and dykes

c) Increase affordable water harvesting-based livelihood programmes
d) Promote water efficiency (monitor, reduce, re-use, and recycle)
e) Improve access to good quality water
f) Improve climate resilience of coastal communities
g) Climate proof coastal infrastructure

To take advantage and enhance the benefits of the resources found within the county, there is the need to take stock of all the available surface and groundwater. Interventions that can help harvest and store rainwater are particularly welcome. Interventions can be used to enhance Water security in the county (Table 4) in the face of climate change revolving around ecosystem conservation, policy and le.g.al frameworks and compliance, and exploring untapped water resources.

Table 4: Climate Change Action plan for Water Security in Lamu County

Sub- sector	**Climate change Activity**	**Stakeholders**	**Indicators**	**Priority**	**Timeframe**
	Piping of Water from River Tana	Ministry of Water , County Department of Water, Water Officers, WRA, Water User Associations, GIZ, UNEP, UNDP, DANIDA, JICA, ODA	No of households connected	High Priority	Year 1
	Installation and rehabilitation of Waterdesalination plants(sourced from wells and sea Water)	Department of Water, Water Officers, Water institutions, WRA, Water User Associations, LAWASCO, HIMWA, CSO's, Give Power, WWF, NK, Wetlands International, NK, Red Cross, NRT	Number of Water desalination plants installed and rehabilitated,	High Priority	Year 1

	Construction of ***Climate proof*** water infrastructure – Mega dams, Water pans, dams, Djabias, wells, boreholes	Ministry of Public Works, County Department of Water, County Department of Infrastructure, WRA, WWF, NRT, NK, Wetlands International, Red Cross	Number of climate-proof structures developed and in use	High Priority	Continuous
	Desilting of Water sources e.g. Lakes, Water pans, wells & swamps	Ministry of Public Works, County Department of Water, County Department of Infrastructure, WRA, WWF, NRT, NK, Wetlands International, Red Cross, GIZ, UNEP, UNDP, DANIDA, JICA, ODA	Number of Water sources desilted	High Priority	Continuous
	Enhance Water trucking services	County Department of Water, County Department of Disaster Management	Number of villages receiving Water	High Priority	Continuous
	Improve/extend Water piping [Water reticulation]	Department of Water, Water institutions, WRA, LAWASCO, HIMWA, CSO's, Give Power, WWF, NK, Wetlands International, NK, Red Cross, NRT	Number of homesteads connected	High Priority	Continuous
	Provision of Water harvesting and storage tanks	County Department of Water, County Department of Disaster Management, Water institutions, WRA, LAWASCO, CSO's, Give Power,	Number of Water harvesting and storage plants procured and in use	Priority	Continuous

		WWF, NK, Wetlands International, NK, Red Cross, NRT			
	Provision of solar panels/solar machines for Water pumping	County Department of Water, County Department of Disaster Management, Water Institutions, WRA, LAWASCO, CSO's, Give Power, WWF, NK, Wetlands International, NK, Red Cross, NRT	Number of Water stations solarized	High Priority	Continuous
	Best practices in waste Water management and wetland Conservation	County Department of Water, County Department of Disaster Management, Water institutions, WRA, LAWASCO, CSO's,	Number o f wetland conserved Waste wate r management systems in place	Priority	Continuous

Objective 3: Ecosystem Conservation and Sustainable Land Management

Sustainable and productive management of land and land resources are enshrined in Chapter 5 of the Constitution of Kenya, which among other things, stipulates that the state will work to achieve and maintain a tree cover of at least 10% of total land area. Lamu county Climate Change action plan will contribute to restore, preserve, and sustainably manage forests and other ecosystems that play an essential role in Kenya's economy and therefore contribute to National targets.

Deforestation and forest degradation are significant problems in Lamu and are driven mainly by human actions. The main drivers are human activities especially opening up of new land for farming within forested areas, deforestation due to the rapid infrastructural development within Lamu port and upgrading of Lamu- Minjila road where a lot of borrow pits were excavated and also due to indiscriminate tree cutting for charcoal burning. The results are rural poverty, rapid population growth, unsustainable utilization of forest products (including timber harvesting, charcoal production, and grazing in forests) and governance and institutional failures in the forest sector. Presently the ecosystem in Lamu is well-preserved but is at risk of severe degradation due to impacts of infrastructure development.

Lamu County through this climate change action plan prioritizes conservation and restoration actions especially within degraded landscapes. These actions are viewed as having potential in

building the resilience of communities to climate change impacts. The County also emphasizes on conservation of water catchments to control the speed and the intensity of floods and protect the downstream communities from the effects of floods. Deliberate conservation and restoration actions are prioritized to ensure healthy ecosystems that provide residents with products (fuel wood, timber, food) and alternative livelihood options even when primary economic activities are disrupted by climate change related hazards. The County also prioritizes landscape restoration efforts for degraded areas to ensure that ecosystem services such as crop pollination, pest and disease control, and climate regulation are sustained even in the face of climate change.

Multiple benefits of sustainable management of forests

Actions to increase forest cover and prevent deforestation and forest degradation have important benefits for improving the livelihoods of a majority of Kenyans while enhancing the climate resilience of the county. Forests provide ecosystem services that contribute to reducing the vulnerability of people and wildlife. Mangroves protect coastal areas against storms and waves, which are projected to become even more intense with climate change and climate-induced sea-level rise.

Forest products provide safety nets to local communities when climate variability causes crop failures. Women and forest resource users play a key role in managing forests and are crucial to inte.g.rating forest conservation activities in livelihood activities.

Forests also provide hydrological ecosystem services such as regulation of storm waters. Upper watersheds can increase infiltration of rainwater, reduce surface run-off, and control soil loss, thus decreasing the destructive impacts of floodwaters. By storing run-off, forests also act as natural water recharge areas by replenishing stream-flows. Any actions to combat deforestation and speed up restoration of degraded lands will contribute to economic growth, poverty reduction, and greater food security as well as help communities adapt to climate change.

The forestry sector is the second largest contributor to Kenya's GHG emissions after agriculture, accounting for 32% of emissions largely due to deforestation. However, the sector offers the greatest potential of all mitigation sectors to reduce GHG emissions

Most parts of Lamu County provide dry season refuge for both domestic and wild animals. The County will promote ecosystem conservation for its long-term climate change mitigation benefits and to also enable the County to exploit its tourism potential over the long term. Effectively, Lamu prioritizes ecosystem conservation as a strategy to help communities and the county's economy adapt to the impacts of climate change. Table 5 lists activities that promote ecosystem conservation for climate change adaptation and mitigation in Lamu County.

Table 5: Action Plan for Ecosystem Conservation and Sustainable Land Management

	Objective 3: Promote Ecosystem conservation and sustainable land Management through increasing forests/tree cover to 35% of total land area; rehabilitate degraded lands, including rangelands; increase resilience of wildlife				
	Issue/Problem: Ecosystem degradation due to climate change, pollution, deforestation, habitat fragmentation, encroachment of protected areas and riparian habitats, overexploitation habitat conversion, invasive species, overgrazing among others/ limited information on biodiversity, climate change and diseases/increased human wildlife Conflicts.				
	SDGs: Primarily Goal 13: Climate Action but also Goal 6: Clean Water and Sanitation; Goal 1: No Poverty; Goal 3: Good Health and Well-Being for People; Goal 5: Gender Equality; Goal 9: Industry, Innovation, and Infrastructure; Goal 11: Sustainable Cities and Communities; Goal 14: Life Below Water; Goal 15: Life on Land; and Goal 17: Partnerships for the Goals				
Sub Sector	**Climate Change Activity**	**Stakeholders**	**Indicators**	**Priority**	**Timeframe**
Forestry	Restore degraded landscapes and protect against encroachment of riparian habitats, wetlands and water catchment areas	Department of Environment, KWS, KFS, KEFRI, NEMA, KMFRI, CFAs, Wetlands International, WWF, IUCN, UNEP, TNC, WWF, Seacology, NRT	Acreage of area restored.	High Priority	Continuous
	Support afforestation, agroforestry and reforestation in the County	Department of Environment, KWS, KFS, KEFRI, NEMA, KMFRI, CFAs, Wetlands International, WWF, IUCN, UNEP, TNC, WWF, Seacology, NRT	Area reforested	Priority	Continuous

	Promote Partnerships to conduct forest resource assessments with a view to benefit from Carbon Credits for both County and Communities	Department of Environment, KWS, KFS, KEFRI, NEMA, KMFRI, CFAs, Wetlands International, WWF, IUCN, UNEP, TNC, WWF, Seacology, NRT	Number of assessments done and implemented	Priority	Year 1

	Deploy officers to support community rangers/scouts in forest conservation and management in line with TIPs	Department of Environment, KWS, KFS, KEFRI, NEMA, KMFRI, CFAs, Wetlands International, WWF, IUCN, UNEP, TNC, WWF, Seacology, NRT	Number of officers deployed	Priority	Continuous
	Capacity build and equip officers, CFAs and communities on protection and management of forests and natural resources	Department of Environment, KWS, KFS, KEFRI, NEMA, KMFRI, CFAs, Wetlands International, WWF, IUCN, UNEP, TNC, WWF, Seacology, NRT	Number of officers, CFAs and community members capacity built Number of beneficiaries	Priority	Year 1
	Mainstream environment audits, environmental impact assessments and strategic environmental assessments into Climate Change actions	Department of Environment, NEMA, CSOs and NGOs	Number of audits and assessments mainstreamed	Priority	Continuous

	Promote adoption of non-wood beneficial activities by forest adjacent communities (Nature based enterprises)	Department of Environment, KWS, KFS, KEFRI, NEMA, KMFRI, CFAs, Wetlands International, WWF, IUCN, UNEP, TNC, WWF, Seacology, NRT	Number of enterprises (NBEs) implemented	Priority	Continuo us
	Promote investment in eco-tourism	Department of Environment, KWS, KFS, KEFRI, NEMA,	Number of community based	Priority	Year 2

		KMFRI, CFAs, Wetlands International, WWF, IUCN, UNEP, TNC, WWF, Seacology, NRT	eco- tourism enterprises initiated		
	Undertake regular Environmental Insp ections and surveillance	Department of Environment, KWS, KFS, KEFRI, NEMA, KMFRI, CFAs, Wetlands International, WWF, IUCN, UNEP, TNC, WWF, Seacology, NRT	Number of environmental inspection s and surveillance undertaken	Priority	Continuous
	Develop & Adopt policies and legislations for Environmental & Forest Conservation an d Management	Department of Environment, KWS, KFS, KEFRI, NEMA, KMFRI, CFAs, Wetlands International, WWF, IUCN, UNEP, TNC, WWF, Seacology, NRT	Number of policies and legislation s developed and adopted	Priority	Continuous

	Recruit & train County Environment officers and Foresters	County Government of Lamu Department of Environment	Number of officers recruited and trained	Priority	Year 2
	Adopt Annual County Tree Planting Day	Department of Environment, KWS, KFS, KEFRI, NEMA, KMFRI, CFAs, Wetlands International, WWF, IUCN, UNEP, TNC, WWF, Seacology, NRT	No of seedlings planted	High Priority	Continuous

	Revive Green Schools Programme to ensure at least 10% of school land areas planted with trees	Department of Environment, KFS, KEFRI, NEMA, Wetlands International, IUCN, World Vision, Kenya RED CROSS, WWF, NRT, CFAs, TNC	Number of schools implementing the green school programme	High Priority	Continuous
	Promote establishment of tree nurseries	Department of Environment, KEFRI, KFS, NEMA, IUCN UNEP, TNC, Wetlands International, WWF, NRT, Seacology, CFAs	No of tree nurseries established	High Priority	Year 1
	Expand, protect and restore mangrove forest cover	Department of Environment, KFS, NEMA, KEFRI, IUCN UNEP, TNC, Wetlands International, WWF, NRT, Seacology, CFAs,	Acreage of land planted with Mangrove s	Priority	Continuous

	Fast-track implementation of Transition Implementation Plans (TIPs) of devolved forestry functions	Department of Environment KEFRI, KFS, KMFRI, NEMA	Number of functions taken up by the County	Priority	Continuous
	Fast track the preparation/ implementation of community/ participatory forestry management plans(PFMPs)	Department of Environment, KFS, NEMA, CFAs and NGOs	Number of PFMPs prepared and implemented	High priority	Year 1
	Adopt financial innovations including payments through ecosystem services and carbon markets	Department of Environment, KFS, NEMA, CFAs and NGOs	Amount in Kshs received by community	Priority	Year 3

			members as payments for carbon credit		
	Implement the County Forest Policy and forest restoration action plans approved by the County	Department of Environment, KFS, NEMA, CFAs, CSOs and NGOs	Number of programs implemented	High Priority	Continuous
	Monitor and control forest fires, including maintenance of fire breaks	KFS, KWS, CFAs, County Government, Red cross and Partners	Reports, number of Control measures and number of awareness meetings.	Priority	Continuous
	Promoting sustainable mining/quarrying techniques and restoration of closed mining sites.	NEMA, County Government, Industrialist KFS, CBOs, & NGOs	Reports Number of old mines restored.	Priority	Continuous

	Enforce application of EMCA regulations	NEMA, County Government – Department of Environment	Number of Stop orders. Water quality reports Audit reports.	Priority	Continuous
	Promote participation of youth, women, and indigenous communities in ecosystem conservation.	County Government, National Government Gender department, CSOs& NGOs	Number of women, youth and VMGs engaged	Priority	Continuous
	Gazette and protect the wetlands, forest resources and water catchments areas	County Government, KWS, KFS, Ministry of Tourism and Wildlife & NGOs	Acreage protected/ gazetted	Priority	Year 2
	Develop and implement standards and regulations, including social and environmental safeguards, for sustainable forestry management	Department of environment, KFS, NEMA, KEFRI, KMFRI, CSOs, CFAs& NGOs	No of regulation s/standard s developed	Priority	Year 1
	Develop guidelines and standards for establishment of green spaces as required by the 2016 Forest Act.	Department of environment, KFS, NEMA, KEFRI, CSOs CFAs and NGOs	No of guidelines and standards developed	Priority	Year 1
	Establish green spaces in urban areas	Department of environment, KFS, NEMA, KEFRI, CSOs CFAs, NGOs and Lamu Municipality	Acreage of green spaces established	Priority	Year 2

	Promote the adoption of existing land use plans and development of new ones to segregate and identify forest areas for conservation	Department of environment and Climate change, KWS, KFS, CSOs, CFAs, Ranchers, Community Conservancies, department of physical planning	No of land use plans adopted/ developed	Priority	Year 1
Wildlife and Tourism	Construct water pans in wildlife zones by partnering with KWS	County Government, KWS, private sector & NGOs	Number of water pans constructed	Priority	Year 1
	Secure migratory pathways for wildlife that have been identified in the National Wildlife Dispersal Corridor Report	County Government, KWS, Ministry of Tourism and Wildlife, private sector & NGOs	Acreages secured	Priority	Continuous
	Conserve wildlife habitats to support a broad range of wildlife	County Government, KWS, Ministry of Tourism and Wildlife, private sector & NGOs	Acreage of habitats conserved	Priority	Year 2 - 4 Continuous
	Develop standards for tourist facilities.	County Government, KWS, Ministry of Tourism and Wildlife, private sector & NGOs	Number of standards developed.	Priority	Year 3
	Develop Lamu brand as a tourist attraction	County Government, KWS, Ministry of Tourism and Wildlife, private sector and NGOs	Number of tourists visiting Lamu	High Priority	Year 1
	Engage vulnerable groups (including youth, women and indigenous communities) in habitat restoration.	CGL – Department of Environment, KWS, CWAs and NGOs	Number of vulnerable people engaged	Priority	Continuous
	Support water trucking to wildlife during drought	CGL – Department of Environment, KWS, CWAs and NGOs	Number of wildlife habitats supplied with water	Not Priority	Continuous

	Provide feed supplementation to wildlife during extreme stress	CGL – Department of Environment, KWS, CWAs and NGOs	Quantity of supplements provided	Not Priority	Continuous
	Support translocation of specific wildlife species during drought	CGL – Department of Environment, KWS, CWAs and NGOs	Number of wildlife translocate d	Not Priority	Continuous
	Identify and protect cultural sites.	NMK, County Government & other partners & NGOs	Number of cultural sites identified and protected	Priority	Year 3
	Support KWS in providing veterinary services to wildlife	CGL – Department of Environment, KWS, CWAs and NGOs	Number of veterinary outreaches carried out	Low priority	Continuous
	Partner with KWS & community to enhance wildlife surveillance	CGL – Department of Environment, KWS, CWAs and NGOs	Number of surveillance patrols done	Low priority	Continuous

	Provide and supply equipment and gears to CWAs and Community conservancies	CGL – Department of Environment, KWS, CWAs and NGOs	Number of CWAs supported	Priority	Continuous
	Partner with KWS and others to empower community rangers on protection and management of wildlife and natural resources	CGL – Department of Environment, KWS, CWAs and NGOs	Number of CWAs empowered	Low Priority	Year 3

	Develop, adopt and implement policies and legislations supporting community based Wildlife Conservation and Management	CGL – Department of Environment, KWS, CWAs and NGOs	Number of policies and legislations implemented	Priority	Year 2
	Support formation/operationalization of Community Wildlife Conservancies	Department of environment, KWS, KFS, NEMA, KEFRI, CSOs, CFAs & NGOs Ranchers, Community Conservancies	Number of conservancies operationalized	Priority	Year 2
	Develop sustainable tourism strategy for Lamu County	Department of Environment, Trade and Tourism, Ministry of Wildlife and NGOs	Number of strategies developed	Priority	Year 2
Sand dunes	Reclaim degraded sand dunes through increasing vegetation cover and protection against encroachment	Department of Environment, Water, and Lamu Municipality. EMA, WRA, KFS, KEFRI	Acreage reclaimed	High Priority	Year 1 & continuous
	Clear, demarcate and mark sand dunes	Department of Environment, Lands & Physical Planning, Water, NEMA, WRA	Acreage of sand dunes demarcated, cleared and marked	High Priority	Year 1 & 2
	Promote eco-tourism activities on the sand dunes	Department of Environment, Department of Tourism, NEMA, KFS	Number of visitors to the sand dunes	Priority	Year 1 Continuous

	Protect and conserve activities on the sand dunes	Department of Environment, Lands & Physical Planning, Water, and Lamu Municipality. EMA, WRA, WRUAs, WRMA	Acreage of sand dunes protected and conserved	High Priority	Year 1 Continuous
	Formulate & implement Sand harvesting regulations and adopt NEMA guidelines	Department of Environment, Water – Gov't and NGOs	Number of regulations implemented		Year 2 & 3
	Revoke title deeds on ecologically sensitive sand dune sites	Department of Environment, Lands & Physical Planning, Water, and Lamu Municipality. NEMA, WRA	Number of titles revoked	Priority	Year 1

Objective 4: Climate Proof Infrastructure, Green Energy Production and Use

Climate change, including temperature increase, sea level rise, and a greater number and severity of extreme weather events – such as occasional heavy rains resulting in floods – damages energy and transport infrastructure. In Lamu County, these climatic changes increase the risk of delays, disruptions, damage, and failure across land-based and marine transportation systems. The floods in early 2018 caused extensive damage to the road network. In Lamu County flood risk is experienced in Witu, Hongwe and parts of Mkunumbi ward due to the flood waters from River Tana. These cause serious damage especially to the road infrastructure as well as causing transport disruptions in Hongwe ward.

Climate change impacts have consequences for the design, construction, location, and operations of energy and transport infrastructure. Climate-proofing, or proactive adaptation, can be cost-effective for energy and transport infrastructure with a long lifespan. Climate-proofing is a key recommendation of Kenya's NAP as a means of addressing infrastructure related climate change impacts, and is necessary to maximize potential development benefits. Climate proofing of infrastructure requires factoring in an additional cost associated with the burden of climate change in the design, implementation, and maintenance of infrastructure. It will be important to ensure measures are taken to continually climate proof the Lamu - Minjila road especially around Pangani area while also creating all-weather access through parts of Hongwe ward prone to

flooding.

Kenya's energy sector contribution to GHG emissions is expected to increase sharply from 2015 to 2030. The energy sector (excluding transport and industry) accounted for 7.1% of total emissions in 2015 and is projected to rise to 29.7% of total emissions in 2030. The transport sector is a significant source of GHG emissions, directly accounting for about 13% of Kenya's total GHG emissions in 2015. Transport emissions are increasing at a faster rate than other sectors and are projected to rise to 17% of total national emissions in 2030

Opportunities for transforming the energy and transport sectors

The implementation of Lamu County Climate Change Action Plan will drive major transformations in the energy and transport systems and provide strong benefits for poverty reduction and sustainable development

Lamu County has a huge potential of renewable energy including solar, wind, biogas etc. This opportunity is however underutilized. Majority of the population in the county uses wood fuel for cooking; this has a major and direct impact on forests. In regard to energy demand, the transition to clean cooking is a priority action that presents an opportunity for technological leapfrogging with energy and GHG emissions savings, health and cost-saving benefits compared to the business-as-usual incremental improvements. Clean cooking is an opportunity for investment in innovation and technology development in the biomass energy sub-sector. A key action is to develop programmes that encourage product availability and affordability through a robust pipeline of businesses to manufacture products, sell products, and provide services at affordable prices

Women and children are disproportionately 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 have the potential to drive the achievement of the desired outcomes. Presently there exist green technologies which if exploited by the local community especially women and youth can help reduce the GHG emissions achievement of the NDCs.

Although transport infrastructure and other critical assets and services such as water pans, power distribution and buildings are prone to climate- related hazards particularly to the impacts of floods, the use of ecosystem-based approaches can contribute significantly to climate-proofing these infrastructure and assets. Other strategies to address climate change impacts on infrastructure need to be mainstreamed in infrastructure development. There is a need to ensure that all the applicable EMCA regulations including Environmental Impact Assessment (EIA), Strategic environmental assessment (SEA), and Environmental Audits are adhered to in infrastructure development. Additionally, the design of infrastructures like buildings can incorporate harnessing of solar power for lighting and water heating.

Table 4 summarizes the activities that can reduce the county's carbon footprint, and, therefore, increase the adaptive capacity of the county residents and their economy to the impacts of climate change. Addressing issues related to Climate proof infrastructure and Green Energy production will directly contribute to the realization of several SDGs including Goal 1 (Climate Action) Goal 3 (Good Health and Well-Being for People), Goal 1 (No Poverty), Goal 2 (Zero Hunger; Goal 7 (Affordable and Clean Energy); Goal 8 (Decent Work and Economic Growth); Goal 9 (Industry, Innovation, and Infrastructure); Goal 3 (Good Health and Well-Being for People); Goal 10 (Reducing Inequalities) and Goal 11 (Sustainable Cities and Communities).

Table 6: Action plan for Climate proof infrastructure, Green Energy Production and Use.

Climate Change activity	**Stakeholders**	**Indicators**	**Priority**	**Timing**
Promote construction of Climate proof permanent infrastructure	Lamu municipality, Department of lands and physical planning, NCA ,NEMA , Public health, Lamu museum	Number of climate proof infrastructure constructed	priority	Continuous
Enhance complimentary livelihood projects for communities living in stormy wind prone areas	Department of disaster management, RED CROSS, Relevant NGOs, Sharjah charity international, Al-Khair foundation, world vision	Number of households supported to undertake complimentary livelihood projects	priority	Continuous
Establish rescue centres	Department of disaster management, RED CROSS, KEMFSED, Local Divers	Number of rescue centres established	High priority	Year 1
Promote surveillance of the sea for safety	Department of disaster management, RED CROSS, KEMFSED, Local Divers	Number of sea surveillance conducted	High priority	Year 1
Support the development & implementation of the marine spatial plan	Department of disaster management, Department of fisheries RED CROSS, KEMFSED, Local Divers	Marine spatial plan in place	High priority	Year 1
Establish Maritime training centres	Department of disaster management, Department of fisheries RED CROSS, KEMFSED, Local Divers	Number of maritime training centres established	Priority	Year 3
Introduce incentives for clean energy adoption such as solar	Department of Environment and Climate Change, National Treasury	Number of households and institutions using clean energy	Priority	Year 2

systems				
Invest in off grid solar systems for hard to reach villages and village clusters	County Department of Environment and Climate Change, CSOs, private sector	Number of households and institutions using renewable energy	High Priority	Continuous
Train jua kali artisans to produce improved cook stoves, working with CSOs	Department of Environment and Climate Change, CSOs, private sector	Reports. No of youth and artisans trained	Priority	Year 2
Training and public awareness programmes on climate change adaptation and mitigation mechanisms	Department of Environment and Climate Change, CSOs, private sector	No of awareness meetings held No of people reached	Urgent	Continuous
Scale up biogas technology to increase access to clean energy	Department of Environment and Climate Change, CSOs, private sector	No of digesters and biogas systems constructed	Urgent	Year 2 through to year 5
Increase production of non-forest biomass fuel briquettes	Department of Environment and Climate Change, CSOs, private sector	Quantity of Non-forest biomass fuel produced	Urgent	Year 2 through to year 5

Objective 5: Health, Sanitation and Human Settlements

The health Sector is one of the critical areas affected by climate change. In the recent decades, climate related ailments have increased exponentially due to human exposure to polluted environment, poor air quality, gradual increase in global temperatures etc. Poor sanitation especially in informal urban areas have also exacerbated effects of climate change by causing health problems to poverty stricken households. In Lamu County floods displace residents while destroying property, community livelihoods such as farms and local infrastructures. To address this, the action plan recommends full implementation of cluster villages program which guarantees better housing and good sanitation infrastructures in its vision of improving the health standards of its residents

Relevant activities necessary to realize this objective, their priority, and their implementers are outlined in table 5. The objective has a direct bearing on various SDG goals including Goal 13 (Climate Action) Goal 3 (Good Health and Well-Being for People), Goal 1 (No Poverty), Goal 2 (Zero Hunger) and 11 (Infrastructure; Sustainable Cities and Communities).

Table 7: Action Plan for Health, Sanitation and Human Settlements

Sub-sector	Climate change Activity	Stakeholders	Indicators	Priority	Time frame
Health and sanitation	Promote proper handling of solid waste by adopting integrated solid waste management techniques	Department of Environment and Climate Change, NEMA, CSOs	Number of techniques adopted	High Priority	Year 2
	Designate and gazette dumping sites for major towns	Department of Environment and Climate Change, NEMA	Number of dumping sites Gazetted	High Priority	Year 1
	Rehabilitate dump sites	Department of Environment and Climate Change, NEMA, Lamu Municipality	Number of dumping sites Gazetted	High Priority	Continuous
	Promote segregation and recycling of solid waste	Department of Environment and Climate Change, NEMA, Lamu Municipality	Number of community members practicing segregation and recycling of solid waste	High Priority	Year 1
	Sensitize communities on proper waste management	Department of Environment and Climate Change, Public Health, NEMA, Lamu Municipality	Number of communities practicing proper waste management	High Priority	Year 1
	Monitor, analyze water quality and provide water treatment services	Department of Environment and Climate Change, Public Health, Medical services, NEMA, Lamu Municipality	Number of tests conducted	High Priority	Year 1

	Adopt one health concept	Department of Environment and Climate Change, Public Health, Medical services, NEMA, Lamu Municipality	Level of adoption of one health concept	High Priority	Year 1
Human settlement	Purchase and maintain garbage collection trucks	Department of Environment and Climate Change, Lamu Municipality	Number of garbage collection trucks purchased	High Priority	Year 1
	Construct public sanitation facilities (PSF) in urban areas	Municipality, Department of Water, CSOs, Department of Environment	Number of PSF constructed	High Priority	Continuous

		and Climate Change			
	Construct decentralized treatment facilities (DTF) in urban areas	Department of Water, CSOs, Department of Health, Department of Environment and Climate Change,	Number of DTFs constructed	High Priority	Year 1
	Capacity build CBOs on waste management services	Department of Water, CSOs, Department of Health, Department of Environment and Climate Change, Lamu Municipality	Number of sewerage systems established	High Priority	Year 2

	Construct climate-proofed sewerage system infrastructure in all major towns in the county	Department of Water, CSOs, Department of Health, Department of Environment and Climate Change, Lamu Municipality	Number of sewerage systems established	High Priority	Year 2
	Strengthen disease surveillance and response	Department of Water, CSOs, Department of Health, Department of Environment and Climate Change, Lamu Municipality	Number of surveillance undertaken	High Priority	Year 1
	Implement integrated vector and vermin management	Department of Water, CSOs, Department of Health, Department of Environment and Climate Change, Lamu Municipality	Types of vectors and vermins managed	High Priority	Year 1
	Capacity build health workers	MoH, Department of Health, Safaricom Foundation, KEMSA	Number of health workers trained	Priority	YR 2
	Health education and promotion	MoH, Department of Health, Safaricom Foundation, KEMSA	Number of people trained	Priority	Year 1

	Enforcement of public health laws	MoH, Department of Health, Safaricom Foundation, KEMSA	Number of public health laws enforced	Priority	YR 2
	Reduce the carbon footprint of health facilities through improved disposal of medical waste and investment in clean energy	MoH, Department of Health, Safaricom Foundation, KEMSA	Number of measures put in place for managing medical waste	Priority	YR 2
	Monitor and improve on nutrition services	MoH, Department of Health, Safaricom Foundation, KEMSA	Number of cases of malnutrition documented	Priority	YR 2
	Strengthen school health program	MoH, Department of Health, Safaricom Foundation, KEMSA	Number of schools implementing the health programs	Priority	YR 2
	Strengthen health research and innovation	MoH, Department of Health, Safaricom Foundation, KEMSA, KEMRI	Number of issues under research	Priority	YR 2
	Strengthen Emergency health services	MoH, Department of Health,	Number of emergency health cases handled	Priority	Year 2
	Strengthen community health services	MoH, Department of Health,	Number of CHWs capacitated	High Priority	Year 1

	Provide waste collection points	Department of Environment and Sanitation, Lamu Municipality, CSO's, LEF, NK, WWF, Wetlands International,	Number of waste collection points established	High Priority	Year 2
	Establish animal carcass burial sites	Department of Health, Sanitation and Environment, Department of Livestock Production, AMREF, Red Cross, USAID CSO's,	Number of functional burial sites	High Priority	Year 1
	Improving policy and regulatory framework on waste management, water quality and pollution control	Department of Sanitation and Environment, WWF, NRT, NK, Red Cross, Usaid Kuza, IUCN, CSO's	Number of waste management legislations (policy, Act and regulations) developed	High Priority	Continuous
Human Settlement	Promotion of tree planting exercise in the homestead to make it more habitable and liveable	Ward climate change planning committee, Department of Environment and Climate Change, CSOs, NEMA, KFS, Community	Percentage of tree cover in the villages Number of trees planted	High Priority	Continuous

	Awareness creation on the need to live in proper environment	Department of Environment and Climate Change, CSOs, NEMA, Department of PSM and Citizen participation	Number of participants attending the awareness meetings Number of public awareness meetings	High Priority	Continuous
	Carryout frequent air quality test in areas suspected to be polluted	Department of Environment and Climate Change, NEMA	Number of tests done	High Priority	Continuous

Objective 6: Capacity Building, Knowledge Management and Information Sharing

Awareness creation, knowledge management, and capacity building on climate change science and practice among the key stakeholders will be critical for successful implementation of this action plan. The stakeholders concerned include the local community members, policy makers, civil society, and private sector players.

Capacity Building

It is the local community members including farmers, pastoralists, fishermen, and others who rely on nature for sustenance and are the first to be impacted on by climate change. There is the need to raise their awareness on the ways to cope with the effects of climate change. More important is for them to have the capacity to implement appropriate climate adaptation and mitigation tactics at the local level. At the same time, it is crucial for practitioners on climate change particularly agricultural and forestry sectors, both in the government and non-government sectors to have appropriate knowledge on climate change if they are to pass the same knowledge to the local people.

Policymakers, especially the Members of the County Assembly are mandated to make laws and policies at the county level. They need to have the capacity to make appropriate contributions towards this end. Private sector practitioners need to understand the impacts of their actions on climate change. They also need to learn about the business opportunities that exist due to the need for climate change adaptation and mitigation. This includes the provision of goods (e.g. solar panels, heaters, lighting, energy stoves) and services (e.g. insurance for crops, livestock, and property). In addition, they can understand their entry points for participation in Payment for Ecosystem Services and also in ways to focus their Corporate Social Responsibilities (CSR) towards conservation, as a way of helping communities cope with the impacts of climate change.

Knowledge Management

Various institutions and individuals have generated knowledge of climate change in Lamu

County over the years. These include government research and academic institutions, civil society organizations, and private sector companies. However, this information is scattered and needs to be compiled into a comprehensive database for it to inform a coordinated approach to enabling stakeholders to adapt to climate change. Methods of passing timely information to users also need to be designed. Institutions involved in climate change information generation including research institutions and the Meteorological department need to be well-resourced to provide timely information. Stakeholders on climate change will need to invest in various ways of communicating climate change information including the use of

- Print and electronic media.
- Social media.
- *Barazas.*
- Drama, songs, and dance.
- Demonstrations.
- Short Message Service (SMS).
- Mobile phones application
- Workshop

Table 8: Action Plan for Knowledge Management and Capacity building

Climate Change Activity	**Stakeholders**	**Indicators**	**Priority**	**Timing**
Develop a Comprehensive county strategy For public Education and	Department of Environment and Climate Change ,	Launch of a county strategy on public education and	High priority	Year 1

awareness creation on climate change	Research institutions, CSOs	awareness creation on climate change		
Assess the capacity of stakeholders in climate change.	Department of Environment and Climate Change, Research institutions, CSOs	Number of capacity assessment exercise done	High priority	Year 1
Carryout climate change sensitization programs at ward level	Department of Environment and Climate Change , Research institutions, CSOs	Number of sensitization meetings held Number of people reached in during sensitization meeting	Priority	Continuous
Provide capacity support to address identified gaps among stakeholders	County Government, Research institutions, CSOs	No. of stakeholders trained	Priority	Year 1 Year 2
Develop and maintain an electronic and print climate change database	Department of Environment and Climate Change, Research institutions, CSOs	Working database in place	Priority	Continuous
Develop a county climate change resource centre	Department of Environment and Climate Change, Research institutions, CSOs	Resource Centre established and equipped	Low priority	Year 3
Develop and implement a robust public awareness programme on climate change.	Department of Environment and Climate Change, Research institutions, CSOs	No of climate change awareness campaigns conducted	Priority	Continuous
Mainstream climate change education at all education levels.	National Government, Department of Environment and Climate Change, CSOs	Number of school, colle.g.es, universities with climate change in curriculum	Priority	Year 3

Establish County Climate Change Information Service (CCIS)	MET Department, Department of Environment and Climate Change	Climate Change Information Service established	Priority	Year 2	

Objective 7: Sustainable Financing for Climate Change Actions

The priority climate finance and resource mobilization actions set out in Table 7 will help implement the County climate change action plan, 2023-2027. The action plan emphasizes designing and launching the Climate Change Fund, developing climate finance and resource mobilization strategy, improving access modalities and efficiency of climate finance and ensuring that climate finance is available to communities to deal with relevant impacts that are prioritized.

The actions help the county governments effectively mobilize, manage, and track climate finance actions. A priority is the operationalization of the Climate Change Fund that will be overseen by the County Steering Climate Change Committee and will 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 Fund.

Climate finance includes all finance that targets low-carbon or climate-resilient development; and includes domestic budget allocations, grants and loans from bilateral and multilateral agencies, and private sector investment. Important sources of international climate finance for Kenya include the GCF and the Global Environment Facility (GEF), which are the entities entrusted with the operation of the Financial Mechanism of the UNFCCC. Other mechanisms under the UNFCCC include the Special Climate Change Fund, Adaptation Fund, and REDD+ mechanism.

Tracking of and reporting on climate finance will include an alignment of climate finance (tracked by National Treasury and Planning) and adaptation and mitigation results (tracked by CCD). This will improve analysis, including identifying actions that provide value for money, determining how much climate finance reaches those most in need (such as women, youth and the marginalized and minority communities), and the climate impact of that finance.

The department of Finance and Economic Planning will adopt the climate finance resource mobilization strategy developed by the National treasury. The capacity of the private sector to access climate finance will be built, recognizing the critical role of private sector investment in implementing the priority climate actions. This includes developing bankable projects and accessing funding through Green Bonds.

Lamu County will position itself to show its potential to the emerging carbon markets and benefit from such opportunities. Lamu County will thus ensure that it takes advantage of every

opportunity for resource mobilization to finance its ambitious climate actions. The county will also mainstream climate change actions into the county budgeting and other planning processes. Efforts will be made to encourage other relevant stakeholders including the national government agencies, non- governmental organizations, community-based organizations, and private sector players to familiarize themselves with responsibilities that are relevant to them and mainstream them in their individual budgeting and fundraising activities.

The county will encourage private sector and business owners to take advantage of the many business opportunities in the field of climate change adaptation and mitigation. For example, insurance companies can insure assets and infrastructure including crops, livestock, equipment, and buildings against climate change hazards like drought, floods, and related hazards. Banks can invest in providing financing to businesses and individuals as they implement climate change adaptation and mitigation actions. Stakeholders can also explore innovative financing mechanisms including Payment for Ecosystem Services (PES) to fund some of the actions. Sustainable financing addresses the SDG goals 16 and 17 (Table 7). The activities, relevant stakeholders, prioritization and the M&E indicators are illustrated in Table 7

Table 9: Action Plan for Sustainable Financing

Objective 7: Sustainable financing for climate change actions				
Issue/Problem: Limited funding for climate change activities				
SDGs: Goal 16: Peace, Justice and Strong Institutions and Goal 17: Partnerships for the Goals				
Climate Change Activity	**Stakeholders**	**Indicators**	**Priority**	**Timing**
Establish County Climate Change Fund.	County Government,	Amount of funds budgeted	High priority	Year 1
Establish Disaster Risk Management Fund	County Government, National Government, CSOs	Amount of funds budgeted	High priority	Year 1
Mainstreaming climate change adaptation and mitigation actions in budgetary and other planning processes.	County Government, all stakeholders	No. of government departments and policies that mainstream climate change	Priority	Year 1
Establishing partnerships with private sector players.	County Government, Private sector players, CSOs	No of partnerships established	Priority	Continuous
Design and implement Payment for Ecosystem Services schemes.	County Government, private sector, CSOs e.g. CSO –WWF.	Number of working PES schemes	Priority	Continuous

Build the capacity of private sector and civil society to develop bankable projects and build the in-house capacity of financial institutions to assess climate risk and develop climate-related schemes	County Department of Environment and Climate Change, Department of finance, Department of Trade, CSO, private sector etc	NO of bankable projects developed No of Training sessions held No of projects financed	Priority	Continuous

Objective 8: Governance and Coordination of Climate Change Actions

This is addressed last as it is cross-cutting and seeks to create an enabling environment. Implementing this action plan will involve many stakeholders but will be led and coordinated by the County Government of Lamu. Political will by the highest level at both the Executive and the Le.g.islative Arms of the County government is necessary. It is, therefore, recommended that the Governor's office take leadership in climate change affairs in the county since a county climate change secretariat has already been established in the ministry responsible for Environmental affairs. This secretariat will implement climate change actions as advised by the County Executive Committee Member (CECM). The secretariat will work with relevant stakeholders to draw annual work plans that conform to the county budgetary process and timing. To actualize these processes and establish the recommended institutional framework, the county government through the county assembly has already enacted the necessary legislative instruments. To realize this objective, there is an urgent need for the establishment of an enabling institutional framework for climate change actions and the enactment of enabling policy and le.g.al instruments (Table 8). There is also a need to ensure the participation of vulnerable groups including women, youths and indigenous groups in climate change actions. The county climate change desk should be in the Directorate.

Table 8: Action Plan for Enhancing Governance and Coordination of Climate Change Actions

Issue/Problem: Climate change impacts cut across all sectors/diverse actors/Need for political will and coordination of action implementation at the highest county office,				
SDG: Goal 16 (Peace, Justice and Strong Institutions) and Goal 17 (Partnerships for the Goals**)**				
Activity	**Stakeholders**	**Indicators**	**Priority**	**Timeframe**
Strengthening of the Climate Change unit by seconding	CECM climate change , CECM	Number of staff seconded/recruited	High priority	Year 1

more staff and recruiting new ones already done	Environment	in the climate change unit	and achieved	
All climate change committees in the Lamu	County Governor, CECM Environment	Number of climate change	High priority	Year 1
County Climate Change Act 2021 established	and Climate Change, CCO Environment and Climate Change	committees established		
Enact appropriate county laws for climate change actions	County Assembly	Number of county climate change laws approved and adopted	High Priority	Year 1
Prepare annual work plans	Departments of Environment and Climate Change, all stakeholders	Number of Departmental work plans with climate change actions	High priority	Continuous
Prepare annual report on implementation and present it to the County assembly.	CECM – responsible for climate change	Number of annual reports presented to the county assembly	Priority	Every year

4. Delivery Mechanisms for CCAP

4.1 Enabling factors

4.1.1 Enabling Policy and Regulation

Policy and le.g.al frameworks play a crucial role in facilitating the delivery and implementation of County Climate Change Action Plans (CCAPs). Lamu County has a comprehensive policy and regulatory framework for climate change, as outlined in chapter 2. This framework actively supports the implementation of effective strategies and measures to address climate change challenges at the local level. It provides guidelines for various stakeholders, ensuring coordinated efforts and actions to mitigate and adapt to climate change impacts. The framework also promotes awareness and understanding of climate change issues among residents, encouraging their active participation in sustainable practices and resilience-building activities.

The County will need to develop a County Climate Change Finance Policy, to provide a framework for capacity enhancement and facilitate the allocation of funds from diverse sources towards community-led initiatives addressing climate change. The development and utilization of the county climate change fund will be guided by this essential policy framework.

4.1.2 Mainstreaming in the CIDP

The County Integrated Development Plan (CIDP) is a medium-term development framework for County Governments as enshrined in the Constitution of Kenya 2010 and in the devolved legislation. This is a five-year plan that runs in tandem with the elections cycle in Kenya. Lamu County has developed its CIDP III covering the period 2023 - 2027.

Lamu County CIDP recognizes the threats posed by climate change and identifies critical actions across various sectors to address these impacts.

Climate change considerations have been mainstreamed across the 8 sectors of the Lamu CIDP including: Agriculture, Rural and Urban Development; Lands, Physical Planning and Urban Development; Infrastructure, Energy & ICT; General Economic and Commercial Affairs; Health Sector; Education; Social Protection, Culture and Recreation and Sanitation, Environmental Protection, Water and Natural Resources

The actions outlined in the CIDP and consequently brought forward in this LCCCAP have sustainable development benefits to improve the lives of vulnerable groups in the society including women, children, the elderly, PLWDs and minority communities.

4.1.3 Multi-stakeholder participation processes

Lamu County recognizes the complexity of climate related actions and as such, has made deliberate steps to involve diverse stakeholders from the planning, development and will continue to involve them into the implementation stages of this County Climate change action plan. The development of the PCRA and the subsequent LCCCAP was participatory. A technical working Group (TWG) was formed that conducted the identification, mapping and analysis of all stakeholders in the county. The engagement process included community level meetings, workshops and training. Throughout this process a number of stakeholders drawn from local communities, government departments and non-government organizations were involved. Some of these partners included Communities in each of the 10 wards in Lamu, officers from the County Government, Nature Kenya, USAID KUZA, Red Cross, Wetlands International, NDMA, KFS, KEFRI, Lamu Environmental Foundation, Lamu Youth Alliance, National Treasury, IUCN, KMFRI, Seacology among other critical partners

4.1.4 Finance – Lamu County Climate Change Fund

Climate finance refers to international, national, and local financing by either public, private or even any other sources of financing that seek to support actions needed to combat climate change. Lamu County drafted and enacted a county climate change fund (CCCF) that identifies, prioritizes and finances investments to reduce climate risks and attain adaptation priorities. Identification of key actions is done through a community consultative process where communities identify adaptation needs, guided by transparent decision making criteria. The Lamu CCCF works through the government's established planning and budgetary systems and is linked to the climate change fund established under the Lamu County Climate Change Act, 2016. The CCCF is structured to blend resources from development partners, private sector, National government and county government budget. In the 2023/2024 FY, Lamu County allocated Ksh 23 Million

4.1.5 Implementation and Coordination Mechanism

The Climate Change Unit will have the overall responsibility for coordinating implementation of this Action Plan, including catalyzing and supporting implementation of specific activities by lead stakeholders identified

Monitoring, evaluation, reporting and review will be an integral part of the implementation of the Action Plan. The Climate Change unit, in collaboration with all stakeholders will conduct annual reviews to assess progress made and provide updates as needed. The Action plan will regularly be updated to reflect targets and indicators developed.

4.1.6 Governance – Lamu County Government Structures

Lamu County, like all county governments in Kenya, has legislative and executive arms. The executive arm will be responsible for the implementation of the action plan while the legislature will legislate relevant policies and laws. The overall responsibility of the implementation will be on the Governor, who is the head of the County. The implementation of the LCCCAP will be under the Climate change unit, led by a CECM. The County director of climate change will be responsible for day to day implementation of activities listed in the action plan in consultation with other stakeholders. The priority actions will be implemented across various departments and sectors within the county. The composition of the climate change Unit is illustrated in Figure 4 below.

Figure 5: County governance structure of Climate change

4.1.7 Governance- County Climate Change Steering Committee

Lamu Climate Change Act 2022 provides for the establishment of a steering committee that is chaired by the Deputy Governor. The Steering Committee coordinates and oversees climate change response in the county. it draws its membership from the County Executive Committee and other members representing various interest groups and other government agencies i.e.

NEMA and NDMA.

4.1.8 Governance- County Climate Change Planning Committee

County climate change planning committee is also provided in the Lamu County climate change Act 2022. It is composed of technical officers mostly Directors of relevant departments. The committee is chaired by the Chief Officer responsible for Climate change. The Fund Administrator is an ex-officio member of the committee. The committee coordinates planning, and implementation of projects and activities for climate change response in the County. The committee is also mandated to coordinate the implementation of the County Climate Change Action Plan in the county and support Ward Planning Committees in development and implementation of climate response projects.

4.1.9 Governance- Ward Climate Change Planning Committee

A ward planning committee is established in each ward. The ward Administrator is the secretary to the committee. The members of the committee represent the diverse interests in the community. Key role of the committee is to coordinate and mobilize communities and other stakeholders in the ward to design and implement climate change response activities.

4.1.10 County Disaster Management Unit

The unit is established under the Department of Devolution, Disaster Management and Resource Mobilization in the County Government of Lamu. The unit's main function is to ensure Preparedness Planning: Developing and updating disaster preparedness plans to ensure that the county is equipped to respond effectively to various types of disasters.

4.1.11 County Environment Committee (CEC)

The formation of this committee is provided in the Environmental Management and Coordination Act (EMCA) Cap. 387. The committee is responsible for the proper management of the environment within the county for which it is appointed. They are also entitled to develop a county strategic environmental action plan every five years and perform such additional functions as are prescribed by the Act or as may, from time to time, be assigned by the Governor by a notice in the Gazette.

4.1.12 County Climate Information Services & Climate Data Access

Kenya Meteorological Department (KMD) has the overall mandate in providing climate information services including collating, analyzing, packaging and dissemination of information on variables such as temperature, rainfall, wind, solar etc. KMD has the Climate Data Management Services (CDMS) Division that manages all climate data owned by KMD. The CDMs have created Map Rooms where county and ward specific data and their relevant climate information can be obtained as required

4.1.13 Resilience Planning Tools

Lamu County will adopt some of the commonly used resilience planning tools indicated below during the implementation of the LCCCAP

- *Risk and vulnerability assessment*- these enable stakeholders to assess the risks and vulnerabilities faced by a system or community in the face of various hazards. They help identify critical assets and understand vulnerabilities
- *Scenario planning*- scenario planning tools facilitate the exploration of alternative future scenarios and their potential implications. Stakeholders can assess how different stressors or shocks might impact their systems or communities and develop strategies that can adapt to different conditions
- *Participatory Mapping and GIS*- Geographic Information System (GIS) and participatory mapping tools enable stakeholders to visualize and analyze spatial data related to hazards, vulnerabilities, and existing resources. The tool helps identify areas of high risk, hotspots or areas that need special attention in the planning process
- *Resilience indicators and measurement frameworks*- These tools provide metrics and indicators to assess the resilience of a system or community. They help stakeholders track progress, evaluate the effectiveness of interventions and make data-driven decisions to enhance resilience.

- *Collaborative platforms and communication tools*- These tools facilitate collaboration, information sharing and stakeholder engagement. Online platforms, communication apps and knowledge-sharing platforms enable stakeholders to exchange information, coordinate actions and engage in participatory processes.

4.1.14 Measurement, Reporting and Verification

All actions taken to respond to climate change will be measured, reported and verified. The Lamu county executive will report and submit annual reports to the County Assembly for adoption. These reports will include information on mitigation and adaptation actions, needs and support received. These reports are important to demonstrate that adaptation efforts are on the right track and/or that additional efforts/ resources are necessary to improve the gains.

4.1.15 Institutional Roles and Responsibilities

The County Government of Lamu works with other institutions and stakeholders in the planning, coordination and implementation of the climate change program and activities. The climate change docket is headed by the CECM for climate change and a chair of the steering committee that acts as an oversight institution for the climate change program.

A number of institutions are involved in the climate change agenda as indicated in the table xxx below.
County Climate Change Action plan (CCCAP), followed a structured process as listed below

Institution	Duties/Roles
The CECM responsible for Climate Change matters	● Coordinate climate change matters and reporting on implementation progress of climate change interventions annually ● Monitor, investigate and report on whether public and private entities are in compliance with the assigned climate change duties and laws
The Climate Change Unit	● Led by the CECM, the unit will oversee the implementation of the climate change action plan and other climate actions stipulated in the CIDP ● Coordinate the implementation of LCCCAP including measurement, monitoring and reporting implementation progress ● Provide technical support on climate
Steering Committee	● On recommendation of the CECM in charge of climate change in consultation with relevant CECMs, the committee may impose duties relating to climate change on public entity operating within the county ● Reporting on the performance of climate change duties by private entities including monitoring and evaluation of compliance. ● Gives strategic direction on policies and programs to be implemented including approvals of community led projects for implementation
National Environment Management Authority	● Responsible for monitoring and enforcing compliance of climate change interventions (climate change act, section 17) ● Integrating climate risk and vulnerability assessment into all forms of assessments (Climate Change Act, section 20)
Private Entities	● Support the implementation of the functions/duties that support adaptation and mitigation to climate change

4.2 Implementation and Coordination Mechanisms

4.2.1 County Climate Change Unit

The unit plays a pivotal role as the secretariat and supports the relevant committees in the day-to-day activities during the implementation

4.2.2 County Climate change planning Committee

The planning committee is responsible for planning and monitoring implementation at the ward level, all projects agreed and approved for implementation. The committee has the overall responsibility of ensuring effective implementation of the action plan in line with the County climate change finance regulations

4.3 Lamu County Climate Change Action Plan Implementation Matrix

Project	Climate change activity	Output	Key performance Indicator	Target group	Time frame	Indicative Budget (Ksh Million					
						Total	23/24	24/25	25/26	26/27	27/28
Strategic objective 1: Enhanced food and nutrition security											
Livestock production and veterinary services	Procure and administer drugs and vaccines to vulnerable livestock	Improved livestock immunity/reduced mortalities	Number of Livestock treated/vaccinated ; No of doses procured	Pastoral communities	July 2023 –June 2027	10	2	2	2	2	2
	Undertake regular livestock pests and disease surveillance	Reduced pest and disease incidences	Number of surveillance reports	Pastoral communities	July 2023 -June 2027	2.5	0.5	0.5	0.5	0.5	0.5
	Enhance cold storage capacity for vaccines and semen	Improved storage of vaccines for enhanced shelf life	Number of fridges procured	Pastoral communities	July 2023- June 2024	1	1	0	0	0	0
	Undertake pests and disease control measures (Quarantine, movement restriction,	spread of pests and diseases contained	Number of disease control reports	Pastoral communities	July 2023 -June 2027	0.5	0.1	0.1	0.1	0.1	0.1
	Enhance livestock structures including dips and crushes	Improved livestock immunity/reduced mortalities	Number of livestock structures constructed/ rehabilitated	Pastoral communities	July 2023 -June 2027	2	1	1	0	0	0
	Improve the livestock breeds [drought tolerant]	Improved livestock production	Number of farmers keeping improved	Pastoral communities	July 2023 -June 2027	5	1	1	1	1	1

	breeds									
Undertake destocking during drought	Reduced losses	No of Livestock sold	Pastoral communities	July 2023 -June 2027	10	2	2	2	2	2

	Promote the uptake of Livestock insurance	Increased awareness on livestock insurance	No of livestock keepers with insurance cover	Pastoral communities	July 2023 -June 2027	1	0.2	0.2	0.2	0.2	0.2
	Promote diversification of livestock in drought prone areas	Diversification of livelihoods/ awareness on other livelihood options	Number of households that have diversified	Pastoral communities	July 2023 -June 2027	1	0.2	0.2	0.2	0.2	0.2
	Provision of emergency alternative livestock feeds such as hay and pellets	Reduced livestock mortalities	No of bags/bales supplied, No of beneficiaries	Pastoral communities	July 2023 -June 2027	10	2	2	2	2	2
	Rangeland rehabilitation by reseeding	Improved range conditions	Quantity of seeds planted, Acreage of rangeland reseeded	Pastoral communities	July 2023 -June 2027	5	1	1	1	1	1
	Develop Internal Quarantine facilities targeting export	Disease free/improved body conditions	Number of internal quarantine facilities developed.	Pastoral communities	July 2025 -June 2026	10	0	0	10	0	0
	Strengthen extension services	Improved access to extension services	Number of extension officers	Pastoral communities	July 2023 -June 2027	2	0.4	0.4	0.4	0.4	0.4
	Enhance capacity building of both extension staff and farmers	Improved capacities	Number of extension officers trained, Number of livestock keepers trained	Pastoral communities	July 2023 -June 2027	5	1	1	1	1	1
	Strengthen artificial insemination	Improved livestock breeds	Number of inseminations done	Pastoral communities	July 2023 -June 2027	2.5	0.5	0.5	0.5	0.5	0.5
	Promote fodder production and conservation	Improved nutrition and livestock body condition	Acreage of land under fodder production, Number of livestock keepers growing fodder	Pastoral communities	July 2023 -June 2027	10	2	2	2	2	2

	Establish Watering infrastructure for livestock	Improved nutrition and livestock body condition	Number of Watering infrastructure established	Pastoral communities	July 2024-June 2026	10	0	5	5	0	0
	Enhance early warning system	Improved awareness	Early warning system in place	Pastoral communities	July 2023 -June 2027	0.5	0.1	0.1	0.1	0.1	0.1

	Linkage of local producers to external traders	Improved livestock prices and incomes to pastoralists	Number of livestock keepers linked to traders	Pastoral communities	July 2024-June 2026	2	0	1	1	0	0
	Strengthen livestock marketing cooperative societies	Strengthened cooperatives for improved marketing	Number of functional cooperatives	Pastoral communities	July 2023 -June 2027	2.5	0.5	0.5	0.5	0.5	0.5
	Construct modern slaughter facilities	Improved hygiene/value addition	Number of slaughter facilities constructed	Pastoral communities	July 2024-June 2025	15	0	15	0	0	0
	Empower producer marketing organizations to be able to process and package goods for the market	Improved value addition	Level of value addition	Pastoral communities	July 2023 -June 2027	2	0.4	0.4	0.4	0.4	0.4
	Establish processing facilities for Livestock products	Improved value addition	Level of value addition	Pastoral communities	July 2024-June 2025	5	0	0	5	0	0
	Survey and demarcation of grazing facilities and livestock corridors	Reduced conflicts	Acreage allocated as grazing corridor	Pastoral communities	July 2024-June 2026	2	0	1	1	0	0
	Formulate policies on range land management	Reduced conflicts	Policy in place	Pastoral communities	July 2024-June 2025	1	0	1	0	0	0
	Land use planning and development of village grazing plans	Reduced conflicts	Number of plans developed	Pastoral communities	July 2025-June 2027	3	0	1	1	1	0
	Initiate human and livestock resettlement program	Reduced losses from floods and drought	Number of humans and livestock resettled	Pastoral communities	July 2023 -June 2027	5	1	1	1	1	1
Crop production	Promote and enhance Irrigated agriculture	Enhanced crop production and productivity	Number and type of irrigation structures put in place	Agricultural communities	July 2023 -June 2027	10	2	2	2	2	2

	Promote mechanized farming services (tractor plough, planting, spraying, weeding and harvesting)	Enhanced awareness and establish a fund for cooperatives	Number of tractors purchased/operating , Type of machinery purchased, Number of beneficiaries accessing the machinery	Agricultural communities	July 2023 -June 2027	7.5	1	1	1.5	2	2
	Strengthen research-extension-farmer linkages	Enhanced capacities and improved data based extension services	Number of technologies adopted, Number of research areas identified	Agricultural communities	July 2023 -June 2027	2.5	0.5	0.5	0.5	0.5	0.5
	Enhance and strengthen extension services	Enhanced adoption of technologies	Extension to farmer ration, Number of officers per ward	Agricultural communities	July 2023 -June 2027	2.5	0.5	0.5	0.5	0.5	0.5
	Empower farmer organizations to purchase inputs in bulk	Strengthened cooperatives for improved production and marketing	Number of farmer organizations purchasing in bulk, Number of cooperatives empowered	Agricultural communities	July 2023 -June 2027	7.5	1	1	1.5	2	2
	Procure and distribute inputs to vulnerable farmers (including farmer-credit linkages and farmer friendly credit products)	Improved crop production and food security; establish loan facility for farmers	Type of inputs distributed, Number of beneficiaries	Agricultural communities	July 2023-June 2024	10	10	0	0	0	0
	Carry out surveillance of inputs in the county	Ensure quality inputs sold to farmers	Number of surveillances per year	Agricultural communities	July 2023 -June 2027	0.5	0.1	0.1	0.1	0.1	0.1
	Empower the vulnerable and marginalized groups to participate in agriculture	Improved social inclusion in farming activities	Number of marginalized persons undertaking agriculture	Agricultural communities	July 2023 -June 2027	1	0.2	0.2	0.2	0.2	0.2
	Enhance soil testing to improve crop production	Improved productivity through soil quality tests	Number of farmers requesting for soil	Agricultural communities	July 2023 -June 2027	0.5	0.1	0.1	0.1	0.1	0.1

			testing								

	Promote seed exchange programs	Improved production and seed quality	Number of beneficiaries	Agricultural communities	July 2023 -June 2027	0.5	0.1	0.1	0.1	0.1	0.1
	Promote cultivation of vegetables and fruits to improve nutrition through adoption of kitchen gardens	Improved nutrition	Number of beneficiaries	Agricultural communities	July 2023 -June 2027	3	0.6	0.6	0.6	0.6	0.6
	Promote growing of indigenous/drought tolerant food crops	Improve resilience and enhance production	Type of drought tolerant crops promoted, Number of beneficiaries	Agricultural communities	July 2023 -June 2027	1	0.2	0.2	0.2	0.2	0.2
	Enhance post- harvest management	reduce post-harvest losses	Number of community storage facilities in place, Number of groups trained	Agricultural communities	July 2023 -June 2027	3	0.6	0.6	0.6	0.6	0.6
	Construct storage facilities	reduce post-harvest losses	Number of community storage facilities constructed, Number of groups using the	Agricultural communities	July 2024-June 2026	10	0	5	5	0	0
	Construct collection centers and other market infrastructures	Improved marketing	Number of collection centers constructed, Number of groups using the collection centers	Agricultural communities	July 2024-June 2026	5	0	2.5	2.5	0	0
	Fabricate simple technologies for home based process and capacity build CIGs and VMGs on value addition technologies	Improve value addition by local communities	Types of technologies fabricated	Agricultural communities	July 2023 -June 2027	5	1	1	1	1	1
	Development of policies and legislations for agricultural development such as	Improve regulatory framework and governance	Number of policies/legislation drafted and	Agricultural communities	July 2026-June 2027	2	0	0	0	1	1

	agricultural inputs distribution		enacted								

	Control Crop pest and disease and Promote the adoption of pests and disease tolerant crops	Improved crop production	Number of pests and diseases managed	Agricultural communities	July 2023 -June 2027	2.5	0.5	0.5	0.5	0.5	0.5
	Promote the adoption of crop insurance	Improved crop production security	Types of crops insured, Number of farmers covered	Agricultural communities	July 2023 -June 2027	0.5	0.1	0.1	0.1	0.1	0.1
	Enhance capacity building of both extension staff and farmers	Enhanced capacities of farmers and extension officers for adoption of technologies	Number of farmers trained	Agricultural communities	July 2023-June 2025	4	2	2	0	0	0
	Provide emergency relief seeds and relief food	Emergency relief services enhanced	Number of beneficiaries, Types of relief seeds distributed	Agricultural communities	July 2023-June 2024	4	4	0	0	0	0
Fisheries production	Restock Lake Moa, Lake Kenyatta and Lake Witu with fingerlings	Increased fish production	Number of fish fingerlings stocked	Fishing communities	July 2023 - June 2024	3	3	0	0	0	0
	Provide solar freezers for storage of fish	Improved fish cold storage	Tonnage of fish produced	Fishing communities	July 2024 - June 2025	5	0	5	0	0	0
	Promote community led fish processing	Improved fish value addition	Number of CIGs supported to process fish	Fishing communities	July 2023 - June 2027	5	1	1	1	1	1
	Promote development of solar powered ice plants	improved fish cold storage	Annual tonnage of ice produced	Fishing communities	July 2024-June 2025	5	0	5	0	0	0
	Train BMUs on co management of Fisheries resources	improved management of fisheries resources	Number of BMUs trained	Fishing communities	July 2023-June 2024	0.5	0.5	0	0	0	0
	Train fishermen and fish traders on best fish handling practices	improved fish shelf life	Number of fishermen and traders trained	Fishing communities	July 2023-July 2024	0.5	0.5	0	0	0	0
	Map out and Secure fish	secured fishing grounds	Number of fish	Fishing	July 2024-June	1	0	1	0	0	0

	breeding grounds and fish landing sites		breeding grounds mapped and protected	communities	2024						

	Promote deep sea fishing targeting tuna and tuna like species	improved deep sea fishing	Tonnage of tuna fish landed annually	Fishing communities	July 2023-June 2027	3	0.6	0.6	0.6	0.6	0.6
	Promote development of blue carbon initiatives in the County	enhanced blue carbon initiatives	Number of people deriving income through blue carbon initiatives	Fishing communities	July 2023-June 2027	2.5	0.5	0.5	0.5	0.5	0.5
	Provision of solar lamps to fishermen	improved fish catch	Number of modern fishing gears distributed	Fishing communities	July 2023 - June 2027	2.5	0.5	0.5	0.5	0.5	0.5
	Enforcement of marine pollution control measures and standards	reduced marine pollution	Water quality reports, Number of arrests, warnings and stop orders	Fishing communities	July 2023 - June 2027	1	0.2	0.2	0.2	0.2	0.2
	promote inclusion of youth, women and other vulnerable groups in fish production	more women, youth and vulnerable groups engaged in fish production	Number of women, youths and VMGs members of vulnerable groups engaged	Fishing communities	July 2023 - June 2027	1	0.2	0.2	0.2	0.2	0.2
					Sub-total 1	238	48.4	71.9	57.9	30.4	29.4
Strategic Objective 2: Enhanced Water and Blue Economy											
Water supply	Conduct feasibility study for piping of water from river Tana	Improved water supply	No of households connected	All communities	July 2023 -June 2024	10	10	0	0	0	0
	Installation and rehabilitation of Water desalination plants(sourced from wells and sea Water)	Improved water supply	Number of Water desalination plants installed and rehabilitated		July 2023 -June 2025	20	10	10	0	0	0
	Construction of Climate proof Water infrastructure - Mega dams, Water pans, dams, djabias, wells, boreholes	Improved water supply	Number of climate- proof structures developed and in use		July 2023 -June 2025	50	10	10	10	10	10

	Desilting of Water sources e.g. Lakes, Water pans, wells & swamps	Improved water supply	Number of Water sources desilted		July 2023 -June 2024	10	2	2	2	2	2
	Enhance Water trucking services	Improved water supply	Number of villages receiving Water		July 2023 -June 2024	2.5	0.5	0.5	0.5	0.5	0.5
	Improve/extend Water piping [Water reticulation]	Improved water supply	Number of homesteads connected		July 2023 -June 2026	40	10	10	10	10	0
	Provision of Water harvesting and storage tanks	Improved water supply	Number of Water harvesting and storage plants procured and in use		July 2023 -June 2027	20	4	4	4	4	4
	Provision of solar panels/solar machines for Water pumping	Improved water supply	Number of Water stations solarized		July 2023 -June 2025	20	4	4	4	4	4
	Best practices in waste Water management and wetland conservation	Improved water management and wasteland conservation	Number of wetland conserved, Water management systems in place		July 2023 -June 2027	1	0.2	0.2	0.2	0.2	0.2
Blue Economy	Promote development of blue carbon initiatives in the County	Improved carbon sequestration by marine ecosystems	Number of people deriving income through blue carbon initiatives		July 2023 -June 2027	5	1	1	1	1	1
	Provision of modern fishing equipment and vessels	Improved fish production	Number of modern fishing gears distributed		July 2023 -June 2026	25	5	5	5	5	5
	Promotion of maritime trade	Improved maritime trade	tonnage of cargo traded through maritime		July 2023 -June 2029	5	1	1	1	1	1
					Sub Total 2	208.5	57.7	47.7	37.7	37.7	27.7
Strategic Objective 3: Ecosystem Conservation for Sustainable Economic Development											
Forest conservation	Restore degraded	enhance landscape ecosystem services	Acreage of area restored		July 2023-June	6	1.5	1.5	1.5	1.5	0

	areas/ecosystems										
	Support afforestation and reafforestation	Increased tree cover	Area reforested		JULY 2023-JUNE	6	1.5	1.5	1.5	1.5	0

on and management	Promote Partnerships in climate financing	Carbon credit valued determined	Number of assessments done and implemented		JULY 2023-June	6	2	2	2	0	0
	Deploy officers to undertake forestry functions	Enhanced forest protection and Improved	Number of officers deployed		July 2024-June	2	0	2	0	0	0
	Capacity build CFAs and communities on forest management	Enhanced capacity for CFAs and other Community organizations	Number of officers, CFAs and community trained		July 2023-June	3	1	1	1	0	0
	Mainstream EIA and EA in County projects	Improved awareness	Number of audits and assessments mainstreamed		July 2023-June	5	1	1	1	1	1
	Promote adoption of alternative livelihood	Promote alternative livelihood options	Number of enterprises(NBEs) implemented		July 2023-June	10	2	2	2	2	2
	Promote investment in eco-tourism	Promote ecotourism as investment opportunity for income generation	Number of community based ecotourism enterprises initiated		July 2024-June 2027	8	0	2	2	2	2
	Undertake regular Inspections	Enhance compliance	Number of environmental inspections and		July 2023-June	5	1	1	1	1	1
	Develop & Adopt County environmental legal frameworks	Enhance regulatory frameworks and improve public	Number of policies and legislations developed and adopted		July 2024-June	2	0	1	1	0	0
	Recruit & train County Environment officers and Foresters	Enhanced environmental management	Number of officers recruited and trained		July 2023-June 2025	3	1	1	1	0	0
	Adopt annual County Tree Planting Day	Improve tree cover	No of seedlings planted		July 2023-June 2027	5	1	1	1	1	1
	Revive Green Schools program	Improve tree cover	Number of schools implementing the green schoo		July 2023-June	5	1	1	1	1	1
	Promote establishment of tree nurseries	Improve adoption of restoration actions	No of tree nurseries established		July 2023-June	2.5	0.5	0.5	0.5	0.5	0.5
	Expand, protect and restore mangrove forest cover	Promote restoration actions around mangrove areas for enhanced ecosystem services	Acreage of land planted with Mangroves		July 2023-June 2027	10	2	2	2	2	2
	Fast track the implementation of TIPs	Enhanced community forest Management	Number of functions taken up by the County		July 2023-June	5	1	1	1	1	1
	Adopt financial frameworks for forest/ecosystem restoration actions	enhanced finance flows for restoration actions	Amount in Kshs received by communities as		July 2023-June	2.5	0.5	0.5	0.5	0.5	0.5
	Implement the County action plans	Promote restoration actions	Number of programs Implemented		July 2023-June	10	2	2	2	2	2

	Monitor and control	Minimized fire incidences	Reports, number of control measures and number		July 2023-June	1	0.2	0.2	0.2	0.2	0.2

	Promoting sustainable land use	Responsible landscape management practices adopted	Reports, Number of old mines restored.		July 2023-June	1	0.2	0.2	0.2	0.2	0.2
	Enforce application of EMCA regulations	Enhanced compliance	Number of Stop orders, Water quality reports, Audit reports.		July 2023-June 2027	2	0.4	0.4	0.4	0.4	0.4
	Promote participation women, youth and VMGs in restoration programs	enhanced inclusivity	Number of women, youth and VMGs Engaged		July 2023-June	4	0.8	0.8	0.8	0.8	0.8
	Gazette and protect the sand dunes in the County	critical ecosystems protected	Acreage protected/ Gazette		July 2024-June	2	0	2	0	0	0
	Develop and implement environmental standards and regulations	enhanced compliance	No of regulations/standards developed		July 2023-June	5	1	1	1	1	1
	Develop guidelines and standards for town beautification	beautification of towns and urban areas	No of guidelines and standards developed		July 2023-June	5	1	1	1	1	1
	Establish green spaces in urban areas	Good environment enhanced	Acreage of green spaces established		July 2023-June 2027	5	1	1	1	1	1
	Promote the adoption of land use plan	promote sustainaple land management	No of land use plans adopted/ developed		July 2023-June	4	2	2	0	0	0
Wildlife conservation and Tourism	Construct water pans in wildlife zones by partnering with KWS	reduced HWC	Number of water pans constructed		July 2023-June 2025	5	0	2.5	2.5	0	0
	Secure migratory pathways for wildlife that have been identified in the National Wildlife Dispersal Corridor Report	reduced HWC	Acreages secured		July 2023-June 2024	2	1	1	0	0	0
	Conserve wildlife habitats to support a broad range of wildlife	enhance wildlife conservation, reduce HWC	Acreage of habitats conserved		July 2023-June 2027	2.5	0.5	0.5	0.5	0.5	0.5
	Develop standards for tourist facilities.	Enhance compliance	Number of standards developed.		July 2023-June 2024	2	1	1	0	0	0
	Develop Lamu brand as a tourist attraction	enhanced publicity	Number of tourists visiting Lamu		July 2023-June 2024	2	0	2	0	0	0

	Engage vulnerable groups (including youth, women and indigenous communities) in habitat restoration.	enhanced inclusivity	Number of vulnerable people engaged		July 2023-June 2027	5	1	1	1	1	1

	Support water trucking to wildlife during drought	reduced HWC	Number of wildlife habitats supplied with water		July 2023-June 2027	2.5	0.5	0.5	0.5	0.5	0.5
	Provide feed supplementation to wildlife during extreme stress	reduced HWC	Quantity of supplements provided		July 2023-June 2027	5	1	1	1	1	1
	Identify and protect cultural sites.	promoting tourism	Number of cultural sites identified and protected		July 2023-June 2024	2.5	2.5	0	0	0	
	Support KWS in providing veterinary services to wildlife	reduced wildlife mortality	Number of veterinary outreaches carried out		July 2023-June 2027	1	0.2	0.2	0.2	0.2	0.2
	Partner with KWS & community to enhance wildlife surveillance	wildlife community surveillance enhanced	Number of surveillance patrols done		July 2023-June 2027	1	0.2	0.2	0.2	0.2	0.2
	Provide and supply equipment and gears to CWAs and Community conservancies	Capacities of CWAs enhanced	Number of CWAs supported		July 2023-June 2026	6	2	2	2	0	0
	Partner with KWS and others to empower community rangers on protection and management of wildlife and natural resources	Capacities enhanced	Number of CWAs empowered		July 2023-June 2025	5	2.5	2.5	0	0	0
	Develop, adopt and implement policies and legislations supporting community based Wildlife Conservation and Management	enhanced compliance	Number of policies and legislations implemented		July 2023-June 2025	1	0.5	0.5	0	0	0
	Support formation/operationalization of Community Wildlife Conservancies	Improved wildlife and habitat management	Number of conservancies operationalized		July 2023-June 2025	4	2	2	0	0	0
	Develop sustainable tourism strategy for Lamu County	Enhance compliance	Number of strategies developed		July 2023-June 2025	1	0.5	0.5	0	0	0

Sand dunes conservation	Reclaim degraded sand dunes through increasing vegetation cover and protection against encroachment	Sand dunes reclaimed	Acreage reclaimed		July 2023-June 2026	6	2	2	2	0	0

on and management	Clear, demarcate and mark sand dunes	Sand dunes protected	Acreage of sand dunes demarcated, cleared and marked		July 2023-June 2026	4.5	1.5	1.5	1.5	0	0
	Formulate & implement Sand harvesting regulations and adopt NEMA guidelines	Enhance compliance	Number of regulations implemented		July2023-June 2025	2	1	1	0	0	0
	Revoke title deeds on ecologically sensitive sand dune sites	Enhanced protection of the sand dunes	Number of titles revoke d		July 2024-June 2027	4	0	1	1	1	1
					Sub Total 3	189	45.5	55.5	39	26	23
Strategic Objective 4: Promote Adoption of Climate Proof Infrastructure, Green Energy Production and Use.											
Climate proof infrastructure development, capacity development	Promote construction of Climate proof permanent infrastructure	Enhanced Infrastructure Resilience	Number of climate proof infrastructure constructed		July 2024-June 2025	20	10	10	0	0	0
	Enhance complimentary livelihood projects for communities living in stormy wind prone areas	Diversified Livelihood Opportunities	Number of households supported to undertake complimentary livelihood projects		July 2023 - June 2027	5	1	1	1	1	1
	Establish rescue centers	Prompt Emergency Response	Number of rescue centres established		July 2023 - June 2026	3	2	0	0	1	0
	Promote surveillance of the sea for safety	Early Detection of Hazards	Number of sea surveillance conducted		July 2023 - June 2027	2	0.4	0.4	0.4	0.4	0.4
	Support the development & implementation of the marine spatial plan	sustainable and efficient management of marine resources and ecosystems	Marine spatial plan in place		July 2023-June 2024	0.5	0.5	0	0	0	0
	Support youths in maritime training	Improved maritime safety and competence	Number of maritime training centres established		July 2024 - June 2026	5	1	1	1	1	1
	Promote green energy adoption such as solar systems and energy saving jikos	Improved clean energy generation	Number of households and institutions using clean energy		July 2023 - June 2025	2	0.4	0.4	0.4	0.4	0.4

	Invest in off grid solar systems for hard to reach villages and village clusters	Improved Quality of Life	Number of households and institutions using renewable energy		July 2023 - June 2025	10	2	2	2	2	2
	Train Jua kali artisans to produce improved cook stoves, working with CSOs	sustainable and efficient cooking practices	Reports. No of youth and artisans trained		July 2023-June 2025	4	2	1	1	0	0
	Training and public awareness programmes on climate change adaptation and mitigation mechanisms	increased knowledge and understanding	No of awareness meetings held, No of people reached		July 2023-June 2024	1	0.5	0.5	0	0	0
Green energy promotion	Scale up biogas technology to increase access to clean energy	sustainable and renewable energy sources	No of digesters and biogas systems constructed		July 2023-June 2025	2	0.5	0.5	0.5	0.5	0
	Increase production of non- forest biomass fuel briquettes	Reduced Dependence on Fossil Fuels	Quantity of Non-forest biomass fuel produced		July 2023-June 2026	1	0.5	0.5	0	0	0
					Sub Total 4	55.5	20.8	17.3	6.3	6.3	4.8
Strategic Objective 5: Health, Sanitation and Human Settlements											
Health and sanitation	Promote proper handling of solid waste by adopting integrated solid waste management techniques	Reduced solid waste	Number of techniques adopted		July 2023 - June 2027	4	0.8	0.8	0.8	0.8	0.8
	Designate and gazette dumping sites for major towns	A clean environment	Number of dumping sites Gazetted		July 2023 - June 2027	3	1	1	1	0	0
	Rehabilitate dump sites	A hygienic environment	Number of dumping sites Gazetted		July 2023 - June 2027	5	1	1	1	1	1
	Promote segregation and recycling of solid waste	Reduced environmental pollution	Number of community members practicing segregation and recycling of solid waste		July 2023 - June 2027	4	0.8	0.8	0.8	0.8	0.8

	Sensitize communities on proper waste management	Pristine natural surroundings	Number of communities practicing proper waste management		July 2023 - June 2027	3	0.6	0.6	0.6	0.6	0.6
	Monitor, analyze water quality and provide water treatment services	Clean and safe water	Number of tests conducted		July 2023 - June 2027	4	0.8	0.8	0.8	0.8	0.8
	Adopt one health concept	Improved health	Level of adoption of one health concept		July 2023 - June 2027	4	0.8	0.8	0.8	0.8	0.8
Human settlements	Purchase and maintain garbage collection trucks	Waste free surrounding	Number of garbage collection trucks purchased		July 2023 - June 2025	10	5	5	0	0	0
	Construct public sanitation facilities (PSF) in urban areas	Reduced open defecation	Number of PSF constructed		July 2023 - June 2025	8	4	4	0	0	0
	Construct decentralized treatment facilities (DTF) in urban areas	Improved waste management	Number of DTFs constructed		July 2023 - June 2027	5	1	1	1	1	1
	Capacity build CBOs on waste management services	Sensitized CBOs implementing waste management	Number of sewerage systems established		July 2023 - June 2027	2	0.4	0.4	0.4	0.4	0.4
	Construct climate- proofed sewerage system/storm water infrastructure in all major towns in the county	Enhanced resilience and mitigation of climate change impacts	Number of sewerage systems established		July 2023 - June 2025	6	3	3	0	0	0
	Strengthen disease surveillance and response	Reduced and controlled disease outbreaks	Number of surveillance undertaken		July 2023 - June 2027	10	2	2	2	2	2

Implement integrated vector and vermin management	reduced prevalence of vector-borne diseases and vermin-related issues	Types of vectors and vermins managed		July 2023 - June 2027	5	1	1	1	1	1

Capacity build health workers	improved quality and effectiveness of healthcare services provided to the community	Number of health workers trained		July 2023 - June 2026	2	0	1	0	1	0
Health education and promotion	informed decisions about health and adopting healthy behaviors	Number of people trained		July 2023 - June 2027	2	0.4	0.4	0.4	0.4	0.4
Enforcement of public health laws	Compliance with Public Health regulations	Number of public health laws enforced		July 2023 - June 2025	2	1	0	1	0	0
Reduce the carbon footprint of health facilities through improved disposal of medical waste and investment in clean energy	Improved environmental and sustainable healthcare systems.	Number of measures put in place for managing medical waste		July 2023 - June 2025	5	2.5	0	2.5	0	0
Monitor and improve on nutrition services	Reduced Malnutrition Rates	Number of cases of malnutrition documented		July 2023 - June 2027	2	0.4	0.4	0.4	0.4	0.4
Strengthen school health program	Enhanced Health Education	Number of schools implementing the health programs		July 2023 - June 2027	2	0.4	0.4	0.4	0.4	0.4
Strengthen health research and innovation	Improved health outcomes	Number of issues under research		July 2023 - June 2024	1	0.5	0.5	0	0	0
Strengthen Emergency health services during floods, drought and El Nino	improved response to medical emergencies	Number of emergency health cases handled		July 2023 - June 2027	10	2	2	2	2	2
Strengthen community health services	Improved access to healthcare	Number of CHWs capacitated		July 2023 - June 2027	10	2	2	2	2	2
Provide waste collection points	Proper waste disposal	Number of waste collection points established		July 2023 - June 2027	1	0.5	0	0	0.5	0

Establish animal carcass burial sites	Proper disposal of carcass	Number of functional burial sites		July 2023 - June 2027	1	0.5	0	0	0.5	0
Improving policy and regulatory framework on waste management, water quality and pollution control	Improved compliance on waste management, water quality and pollution control	Number of waste management legislations (policy, Act and regulations) developed		July 2023 - June 2027	0.5	0.5	0	0	0	0
Promotion of tree planting exercise in the homestead to make it more habitable and liveable	Improved biodiversity and soil conservation	Percentage of tree cover in the villages, Number of trees planted		July 2023 - June 2027	4	0.8	0.8	0.8	0.8	0.8
Awareness creation on the need to live in proper environment	Increased Environmental Consciousness	Number of participants attending the awareness meetings, Number of public awareness meetings		July 2023 - June 2027	2	0.4	0.4	0.4	0.4	0.4
Carryout frequent air quality test in areas suspected to be polluted	Improved detection of air pollution	Number of tests done		July 2023 - June 2027	5	1	1	1	1	1
				Sub Total 5	122.3	34.9	31.1	21.1	18.6	16.6
Strategic Objective 6: **Capacity Building, Knowledge Management and Information Sharing**										
Develop a comprehensive county strategy for public education and awareness creation on climate change	Improved awareness on climate change	No of materials developed	All residents	July 2023 - June 2024	0.5	0.5	0	0	0	0
Assess the capacity of stakeholders in climate Change.	Improved awareness on climate change		All residents	July 2023 - June 2024	0.2	0	0	0	0	0
Carry out climate change sensitization programs at ward level	Improved awareness on climate change		All residents	July 2023 - June 2027	2	0.4	0.4	0.4	0.4	0.4

Provide capacity support to address identified gaps among stakeholders	Improved awareness on climate change		All residents	July 2023 - June 2025	0.8	0.4	0.4	0	0	0

Develop and maintain an electronic and print climate change database	Improved knowledge base on climate change		All residents	July 2023 - June 2027	2	0.4	0.4	0.4	0.4	0.4
Develop a county climate change resource centre	Improved knowledge base on climate change			July 2023 - June 2027	25	15	10	0	0	0
Develop and implement a robust public awareness programme on climate change.	Improved awareness on climate change			July 2023 - June 2027	2	0.4	0.4	0.4	0.4	0.4
Mainstream climate change education at all education levels.	Improved awareness on climate change			July 2023 - June 2027	2	0.4	0.4	0.4	0.4	0.4
Establish County Climate Change Information Service (CCIS)	Improved knowledge base on climate change			July 2023 - June 2027	2	1	1	0	0	0
				Sub Total 6	36.5	18.5	13	1.6	1.6	1.6
Strategic Objective 7: Sustainable Financing For Climate Change Action										
Establish County Climate Change Fund	Fund established			July 2023 - June 2027	115	23	23	23	23	23
Establish partnerships with private sector players	Formal partnerships established			July 2023 - June 2027	5	1	1	1	1	1
Design and implement Payment for Ecosystem Services schemes.	PES schemes established			July 2023 - June 2025	3	1.5	1.5	0	0	0
Build the capacity of private sector and civil society to develop bankable projects and build the in-house capacity of financial institutions to assess climate risk and develop climate-related schemes	Bankable projects developed			July 2023 - June 2025	3	1	1	1	0	0
				Sub Total 7	126	26.5	26.5	25	24	24
Strategic objective 8: Enhancing Governance and Coordination of Climate Change Actions										
Strengthen the Climate Change unit by seconding more staff and recruiting new ones	Enhanced capacity of climate change unit			July 2023-June2024	1	1	0	0	0	0
Ensure all climate change committees in the Lamu County Climate Change Act 2021 are established	Enhanced institutional and governance structures			July 2023-June2024	5	5	0	0	0	0

Enact appropriate county laws for climate change actions	policy and regulatory framework strengthened			July 2023-June2024	0.5	0.5	0	0	0	0
Prepare annual work plans	strengthened governance			July 2023-June2027	1	0.2	0.2	0.2	0.2	0.2
Prepare annual report on implementation and present it to County Assembly.	strengthened governance	No of reports prepared	MCAs	July 2023-June2027	1	0.2	0.2	0.2	0.2	0.2
				Sub Total 8	8.5	6.9	0.4	0.4	0.4	0.4
				GRAND TOTAL	984.3	259.2	263.4	189	145	127.5

ANNEX 1: ACTION PLANNING WORKSHOP AT MOMBASA BEACH HOTEL


Disaster- Janga
Hazard- Hatari, tukio
Impact-
Risk -
Adaptation


This goal will be achieved through eight
1. Food and nutrition security
2. Water access and the Blue E
3. Ecosystem conservation for
4. Climate Proof Infrastructure,
5. Sanitation, Health and Huma
6. Knowledge management a
officials
7. Sustainable financing for cli
8. Governance and coordinatio
3.1 Identification of strategic clim
Briefly explain the process
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