



**REPUBLIC OF KENYA**



**COUNTY GOVERNMENT OF TANA RIVER**

**TANA RIVER COUNTY CLIMATE CHANGE POLICY 2024**

**DEPARTMENT OF ENVIRONMENT AND CLIMATE CHANGE**

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## **FOREWORD**

The Tana River County Climate Change Policy 2024 provides a framework for addressing climate change issues within the County. The policy recognizes that climate change is a global phenomenon and a threat to human socio-economic development. As a County, we recognize that the 1°C of global warming has been surpassed, and hundreds of millions of people, especially the poor and vulnerable in the Global South, are confronted with severe consequences.

Decisive and deliberate actions aimed at bringing climate change to a halt have become critical to protect poor people who are the most vulnerable in the society, future generations, and if extreme human suffering is to be avoided. Combating Climate change is prerequisite in achieving the Sustainable Development Goals (SDGs). Actions geared towards mitigating greenhouse gas emissions, strengthening climate resilience through effective disaster risk reduction and adaptation to the changing climate are essential if the success envisaged is to be realized. Without immediate and deep emission reductions, the aspirational 1.5°C temperature goal will soon be out of reach, and the 2°C limit would likely be surpassed soon after.

Climate change has increased the frequency and magnitude of extreme weather events in Tana River with extreme long dry spells and occasional flush floods that often causes loss of lives, diminished livelihoods, reduced crop and livestock production, and damaged infrastructure, conflicts among other adverse impacts. Climate change is likely to negatively impact Tana River’s future development goals especially lowering the tempo. Besides, Climate change poses a threat and will likely affect Kenya’s development agenda as captured in Vision 2030.

Kenya has shown its commitment to addressing climate change by the enactment of the Climate Change Act (No. 11 of 2016). This is the first climate change-dedicated legislation in Africa and provides a regulatory framework for an enhanced response to climate change. It provides mechanisms and measures to transition to a low carbon climate resilient development. This pathway emphasizes sustainable development and prioritises adaptation, recognising the importance of increasing the climate resilience of vulnerable groups including women, youth, people with disabilities, and marginalised and minority communities.

Part III, section 19 of the Act provides for mainstreaming climate change actions into County Government functions. Further, the National Climate Change Action Plan (NCCAP) 2023-2027 states that in delivering the Action Plan, County Governments are responsible for integrating and mainstreaming climate change actions into their 2023-2027 County Integrated Development Plans. Based on the aforementioned provisions, this Policy has been developed to mainstream climate change actions into Tana River County Government functions.

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## **ACKNOWLEDGEMENT**

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On behalf of the department of Environment and Climate Change, I want to sincerely recognise and thank all the stakeholders who participated and provided valuable input at various stages of the policymaking process. The list includes the local communities that provided critical information that informed the Policy, the civil society and other development partners implementing climate change-related projects in the County, County Executive members, technical officers and above all the County Assembly Committees.

Special acknowledgement is extended to H.E the Governor Dr. Maj (Rtd). Dhadho Gadae Godhana, the speaker of the County Assembly of Tana River, Hon. Osman Galole, Hon. Mathew Babwoya the County Executive Committee Member for Environment and Climate Change, Mr. Kuso Hussein the Director Climate Change, all technical committee members represented by KWS, KFS, NEMA and the County departments of Environment, Water, Agriculture, Physical planning, livestock production and Fisheries for their leadership, support, and cooperation throughout the policy development process. The full list of the critical contributors appears at the end of this Policy. To all those who contributed their time and knowledge, to the people of Tana River County, we express our deepest gratitude and appreciation.

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**County Chief Officer, Climate Change**

**County Government of Tana River**

## **ABBREVIATIONS**

AF	Adaptation Fund
ASAL	Arid and semi-arid lands
BCM	Billion cubic metres
CADP	County Annual Development Plan
CBDR&RC	Common but Differentiated Responsibilities and Respective Capabilities
CCO	County Chief Officer
CECM	County Executive Committee Member
CFA	Community Forest Association
CIDP	County Integrated Development Plan
CIS	Climate Information Services
CoG	Council of Governors
COP	Conference of parties
CSA	Climate-smart agriculture
EbA	Ecosystem-based adaptation
FCPF	Forest Carbon Partnership Facility
FLR	Forest Restoration Action Plan
GBV	Gender-based violence
GCF	Green Climate Fund
GEF	Global Environmental Facility
GHG	greenhouse gas
ICCA	Indigenous Community Conserved Area
ICT	Information Communication Technology
IDRC	International Development Research Centre
IPCC	Intergovernmental Panel on Climate Change
KALRO	Kenya Agricultural and Livestock Research Organizations
KBM	Knowledge Base Management
KCSAS	Kenya Climate-Smart Agriculture Strategy 2017-2026
KEFRI	Kenya Forestry Research Institute
KENGEN	Kenya Electricity Generation Company
KMD	Kenya Meteorology Department
LULUCF	Land Use, Land-Use Change and Forestry
LUP	Land Use Plan
MCM	Million cubic metres
M&E	Monitoring and Evaluation
NDC	Nationally Determined Contribution
NDMA	National Drought Management Authority
NEMA	National Environment Management Authority
NGOs	Non-Governmental Organisations
NK	Nature Kenya
NTFP	Non-timber Forest Products
PBS	Poverty Benefit Scheme
PCCB	Paris Committee on Capacity Building

PSP	Participatory Scenario Planning
SACCOs	Savings and Credit Co-Operatives
SDGs	Sustainable Development Goals
UNCCD	United Nations Convention to Combat Desertification
VNRLUCs	Village Natural Resource and Land Use Committees
WHO	World Health Organization
WRUA	Water Resource Users Association

# 1. INTRODUCTION

## 1.1 Background

1.1.1 Climate change has become one of the greatest threats to our planet and modern civilisation. So far, 1°C of global warming has been surpassed, and hundreds of millions of people, especially the poor and vulnerable in the Global South, are confronted with severe consequences.

1.1.2 The World Bank estimates that climate-related extreme weather events are pushing more than twenty million people back into poverty every year<sup>1</sup>. Furthermore, extreme weather events such as hurricanes, floods and droughts are causing annual economic losses of more than USD 300 billion, not counting the indirect losses like drops in consumption, which have been estimated to another USD 220 billion.

1.1.3 Bringing climate change to a halt has become a prerequisite to protect poor people, future generations, and an action necessary especially if human suffering of the most vulnerable communities is to be alleviated. It has also become a prerequisite to achieving the Sustainable Development Goals (SDGs). Decisive and deliberate actions geared towards mitigating greenhouse gas emissions, strengthening climate resilience through effective disaster risk reduction and adaptation to the changing climate are essential for success. Without immediate and deep emission reductions, the aspirational 1.5°C temperature goal will soon be out of reach, and the 2°C limit would likely be surpassed soon after.

1.1.4 The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) presents strong evidence that surface temperatures across Africa have increased by 0.5-2°C over the past 100 years, and from 1950 onwards climate change has changed the magnitude and frequency of extreme weather events.

1.1.5 Africa is one of the most vulnerable continents to the impacts of climate change. From the local level to the global, climate change has, therefore, become an economic, political, social, and environmental challenge, and Africa is especially vulnerable to its adverse effects. This is because most of the continent's economies depend on climate-sensitive natural resources and have very low levels of adaptive capacity and extreme levels of poverty. The health, livelihoods and food security of people in Africa have been affected by climate change.

1.1.6 Kenya's climate is already changing. Average annual temperatures increased by 1°C between 1960 and 2003, with most warming taking place in the 'long rains' season of March, April and May, which is also the primary planting season. The effects of climate change and related disasters have the potential to adversely impact Kenyans given that about 75% of the population depends directly on land and natural resources for their livelihoods.

1.1.7 In Kenya, climate change has increased the frequency and magnitude of extreme weather events that have led to loss of lives, diminished livelihoods, reduced crop and livestock

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<sup>1</sup> World Bank (2017): Sovereign Climate and Disaster Risk Pooling. World Bank Technical Contributions to G20. Washington

production, conflicts and damaged infrastructure, among other adverse impacts. Climate change is likely to negatively impact Kenya's future development and achievement of the goals of Kenya Vision 2030 – the long-term development blueprint – and the Government's fourth Medium Term Plan 2023 – 2027, which focuses on bringing down the cost of living, eradicating hunger, creating jobs, expanding the tax base, improving foreign exchange balances and inclusive growth.

1.1.8 Among the most vulnerable regions in Kenya are the arid and semi-arid lands (ASALs) or simply referred to as the drylands. Inhabitants of drylands have learnt, over millennia, to cope with permanent water scarcity, variable inter- and intra-seasonal rainfall and the recurrent risks of weather-related shocks. However, as a result of high poverty rates, changing socioeconomic and political circumstances and demographic growth, traditional coping strategies are increasingly becoming insufficient. Further, the increased frequency of extreme events is not allowing them time to recuperate after such shocks. For example, extreme drought and floods events in Tana River are increasingly frequent, and have impacted negatively on both agricultural and pastoral livelihoods.

1.1.9 Unsustainable land management practices, including over-grazing, illegal and excessive fuel-wood collection, charcoal production, illegal mining, poor solid waste management, weak enforcement of relevant County sectoral policies and legislations and poor resource governance, among others, have become prevalent, often due to institutional or tenurial barriers. As a result, increasing the already fragile dryland ecosystems have been further degraded.

## **1.2 Tana River County**

### **1.2.1 Location**

Tana River County is one of the six Counties in the Coast region. It borders Kitui County to the West, Garissa County to the North East, Isiolo County to the North, Lamu County to the South East and Kilifi County to the South. The county lies between latitudes 0 053 and 20 041 South and longitudes 38<sup>0</sup> 25.43' and 40<sup>0</sup> 15' East. The county has a total area of 38,862.2 Km<sup>2</sup> with a population of 315,943(KNBS, 2019) and covers about 76 kms of the coastal strip. The County is composed of six administrative sub-counties namely; Bangale, Tana North, Galedyertu, Tana River, Tarasaa and Tana Delta, three constituencies namely; Galole, Bura and Garsen and 15 electoral wards.

### **1.2.2 Demographics**

Tana River County is home to 315,943 people (according to the 2019 National Census), which is less than 10% of the National population. The County has 68,242 households with an average household size being 4.6. Rapid population growth has resulted in Tana River County having an extremely youthful population. The current census (2019) shows that more than half the County's population is below the age of 19. This youth dominated population profile indicates the need for urgent investments in education, nutrition, water and health. Further, as a result of its geographic location, the population of Tana River County is affected by the periodic influx of people from the neighbouring counties of Kilifi, Garissa, Isiolo, Mandera and Wajir most

especially during dry season when grazers flock to the Delta and also in light of the LAPSSSET infrastructural development and the anticipated opportunities that come with it. Population growth, the expansion of the youth population and the impact of recurrent droughts upon farming and pastoralist communities, have resulted in rapid levels of urbanisation in Tana River.

### **1.2.3 Climatic Conditions**

Tana River County is an arid and semi-arid county characterised by warm and hot climate. The average temperatures are 30<sup>0</sup>C with temperatures ranging between 20°C and 41°C while the rainfall pattern and distribution is erratic and unreliable. There are two rainfall seasons. The long rains usually occur between March and May and the short rains between October and December and ranges between 280 mm and 900 mm annually. The driest periods are January, February and September. The precipitations are brief and occasionally accompanied by violent storms resulting in flash floods. The surface runoff and potential evaporation rates are incredibly high.

### **1.2.4 Topography**

The major physical feature in **Tana River County** is an undulating plain that is interrupted in a few places by highest point at Kaniki, Kuriti and Bilbil. The land in **Tana River** generally slopes south eastwards with an altitude that ranges between 20m to 200m above sea level at the top of the Bilbil hills.

### **1.2.5 Water Resources**

The primary source of water in Tana River County is River Tana which stretches over 1000km from Aberdares and Mt Kenya flowing through several counties to Tana River. In rural parts of Tana River County, main water sources are water pans, shallow wells, streams, lakes and boreholes. More than half of rural households in the County use unimproved water sources with the majority relying on unprotected earth dams and streams or simply drawing water directly from the main river Tana. Full water resources potential for the County is not yet established as no proper monitoring installations exist in permanent rivers. Access to water significantly affects food security due to its impact on the key sectors such as livestock production, crop production, sanitation, health and nutrition, and therefore hampering human productivity.

### **1.2.6 Ecological Conditions**

The county is divided into four agro-ecological zones namely: CL3 Coconut – Cassava zone (non ASAL) and CL4 Cashew nuts- Cassava zones where the main economic activity is peasantry mixed farming; CL5 Lowland Livestock zone and CL6 Lowland Ranching zones where the locals are involved in pastoral activities. The soils range from sandy, dark clay and sandy loam to alluvial deposits. The soils are deep around the riverine environments but highly susceptible to erosion by water and wind. Soils in the hinterlands are shallow and have undergone seasons of trampling by livestock, thus are easily eroded during rainy seasons.

The vegetation ranges from scrubland to thorny thickets within the riverine area. Shrubs and annual grasses dominate most parts of the region. However, there are enclaves of trees and perennial grasses dominating wetter parts. The invasive tree species called *Prosopis Juliflora*,

commonly known in the area as ‘Mathenge’ (named after the person who introduced it) has spread rapidly in the area to cover about 114,239 Ha in 2019. It was introduced to curb desertification among other reasons but the tree is threatening to replace most of the indigenous vegetation. It grows fast and chokes other vegetation, watering points and the canals, and is colonizing most of the areas that are not cropped, including the riparian environments.

### **1.3 Rationale of the Policy**

One of the outstanding achievements within the National Climate Change Action Plan 2013-2017 period was the enactment of the Kenya Climate Change Act in May 2016. This law provides a regulatory framework for an enhanced response to climate change, and promotes a mainstreaming approach to enhance action toward a low carbon climate resilient development pathway.

Section 19 of the Act provides for mainstreaming climate change actions into County Government functions and states as follows:

1.3.1 A county government shall, in performance of its functions, integrate and mainstream climate change actions, interventions and duties set out in this Act, and the National Climate Change Action Plan into various sectors;

1.3.2 A county government shall, in the developing, updating and approval of the County Integrated Development Plan, and the County Sectoral Plans mainstream the implementation of the National Climate Change Action Plan, taking into account national and County priorities;

1.3.3 The Governor of a county shall designate a County Executive Committee Member to coordinate climate change affairs;

1.3.4 Subject to the Act and the Constitution, a county government may enact legislation that further defines the implementation of its obligations under this Act, or other climate change functions relevant to the County or such other related purposes; and,

1.3.5 A county government shall at the end of every financial year, through the designated County Executive Committee Member, submit a report on the progress of implementation of climate change actions to the County Assembly for review and debate, and a copy of this report shall be forwarded to the Climate Change Directorate for information purposes.

1.3.6 Further, the National Climate Change Action Plan (NCCAP) 2023-2027 states that in delivering the Action Plan, County Governments are responsible for integrating and mainstreaming climate change actions into their County Integrated Development Plans. Besides, they must designate a County Executive Committee member to coordinate climate change affairs, and report annually to their County Assemblies on the implementation of climate change. County governments are expected to establish climate change units that will oversee the implementation of climate actions.

1.3.7 Based on the aforementioned provisions, this Policy has been developed to mainstream climate change actions into the Tana River County Government functions

## **2. SITUATION ANALYSIS**

### **2.1 Evidence of Climate Change in Tana River County**

2.1.1 In Kenya, the arid or semi-arid lands (ASALs) occupy 89% of the country and are home to about 14 million people and approximately 70% of the national livestock herd and 90% of the country's wildlife population. Twenty-three of Kenya's 47 Counties are considered as ASALs.

2.1.2 Tana River County is frequently affected by weather-related disasters, particularly droughts and floods, which have a profound impact on Tana River County economy and people's well-being. Over the past several decades, Kenyan government data show a clear trend in increasing average temperatures in Tana River County.

2.1.3 Since 1960, Kenya has experienced a general warming trend, reported as being about 1°C, or 0.21°C per decade. This temperature increase has been observed across all seasons, but mainly from March to May.

2.1.4 While global mean temperatures are estimated to have increased by 0.8°C (1.5°F) in the past century, in Tana River County Since 1967 air temperatures have increased by 2-3°C while rainfall has declined and become variable. Climate change in Tana River has been manifested by increased climate-related hazards. The main risks, which cause disasters in the County, are the following:

- **Drought:** The occurrence of drought is more frequent in the arid (lower rainfall) areas than in the semi-arid zones. Tana River County is particularly vulnerable to droughts, mainly because of its geographical location and climate. According to recent reports, the region experiences drought episodes in every 3-5 years with received rainfall ranging between 200 - 500 mm annually. The worst-hit areas in the region include Mbalambala, Madogo, Bura and the larger part of Galole. Parts of the Delta including Assa-Kone, Hurara and neighbouring areas are also worst hit during prolonged drought.
- **Flood:** Extreme rainfall and massive flooding, often amplified by climate change, causes devastation among communities in Tana River County. There are two types of floods in Tana River County that can be characterised in relation to meteorological processes: river floods and flash floods. Frequent river floods are experienced when the Seven Folks dams overflow. This happens during the long and short rains seasons when the dams fill to capacity. Flash floods are experienced during heavy rains within the county and adjacent counties that flows through the *laggas* towards the lower parts. Flooding affects residents from Mbalambala to Tana Delta as the land in the County is relatively flat.

### **2.2 Impacts of Climate Change in Tana River County**

2.2.1 Tana River County is part of the ASALs of Kenya and has fragile ecosystems which makes it vulnerable to climate change, e.g., wetlands, forest reserve, riverine and the mangrove ecosystems.

2.2.2 The impacts of climate change cut across diverse aspects of the society, economy, and environment. The adverse impacts of climate change experienced in the County include:

a) **Environment, Water and Forestry:** Natural ecosystems have been adversely affected by climate change, such as variations of temperature and precipitation. The decline in environmental quality brings social and economic hardship to the people who depend on these ecosystems, and increases contestation and the likelihood of conflict over diminishing natural resources. It also creates an environment that enables invasive species as well as new pests and diseases to thrive.

Tana River County is continuously experiencing threat from land degradation and desertification caused by climatic variations and human impacts such as overgrazing of livestock, smallholder farming on poor soils, unsustainable mining practices, deforestation and rapid urbanization. Impacts include loss of biodiversity and ecological imbalance threats to animals and plants species, change in vegetation composition and structure, decrease in forest coverage, rapid deterioration of land cover, and depletion of water quality and quantity through the destruction of catchments and underground aquifers. There is increased scarcity of water resources which is becoming a core concern, making resource management more difficult and increasing the likelihood of conflict. Water scarcity will affect livestock production and agricultural systems.

b) **Agriculture, Livestock and Fisheries:** Agriculture, livestock and fisheries are key economic sectors in the County. Climate change has significant impacts on agriculture, livestock, and fisheries. Rising temperatures and changing precipitation patterns reduce crop yields, affect livestock health and fish population and distribution by impacting their primary food source. Droughts and floods lead to crop failure, food shortages, and higher prices. Pests and diseases thrive in warmer conditions, damaging crops and livestock. Water scarcity and declining quality disrupt irrigation, livestock watering, and fishing. Sea water intrusion almost 30 Km inwards and coastal erosion threaten coastal farming and fishing communities.

c) **Physical Infrastructure:** An improved and expanded physical infrastructure is an important and necessary enabler of socio-economic development. Climate associated disasters; particularly flash floods cause destruction of roads, buildings, energy supply, and communication networks. Such disasters are becoming more frequent in the County.

d) **Health:** Climate change and its associated risks, such as droughts and floods, can have significant impacts on the health of communities in Tana River County. Waterborne diseases, such as cholera and typhoid, are common during floods, while droughts can lead to malnutrition and other health problems.

e) **Food security:** Food production sector, (crop farming, livestock, or fisheries) is highly vulnerable to the impacts of climate change. Inadequate food and nutrition have serious health consequences, and affects social and economic sectors. In Tana River, prolonged droughts, invasive species invasion (*Prosopis juliflora*), pest and diseases, floods and sea water intrusion are perhaps some of the most important factors that limit county food production and thus limiting the ability of the county to be food secure.

With nearly half of the County's population chronically food insecure, disasters threaten food security through disruption of cropping, livestock production and marketing activities.

f) **Conflicts and migration:** Climate change and its associated risks, such as water scarcity and loss of livelihoods, can lead to conflict and migration in Tana River County. Competition for resources, such as water, pasture and land, can lead to conflicts between communities, while loss of livelihoods can force people and wildlife to migrate in search of better opportunities.

### **2.3 Status of Climate Change Governance in Tana River County**

Appropriately designed legislative, policy and institutional frameworks provide a regulatory architecture comprising the vital components of climate change governance. This architecture is crucial to achieving effective policy and action plan implementation. Clear and well-defined structures will help to overcome significant obstacles in translating climate change responses from concept to reality.

The governance framework for climate change at the national level is well stipulated in the Climate Change Act, 2016. At the County level, climate change governance framework is elaborated in the Tana River County Climate Change Act, 2021. The law also provides the mechanisms coordination and oversight of climate change. Climate change function in Tana is specifically domiciled in a department and is coordinated by the Climate Change Unit. Climate change committees are established at both the County and Ward levels, being the County Climate Change Steering Committee, County Climate Change Planning Committee and Ward Climate Change Planning Committee, respectively.

### **2.4 Progress of Climate Change Adaptation in Tana River County**

The County has made significant progress towards Climate change adaptation and mitigation measures. The interventions has been done through a multi-sectorial approach in the following main areas:- Food and Nutrition Security; Water Security and the Blue Economy; Ecosystem Conservation and Sustainable Land Management; 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.

### **3. POLICY AND LEGAL FRAMEWORK**

Climate change is a global problem that demands a comprehensive solution, and Kenya is an active player in international efforts. The international response to climate change is founded upon the United Nations Framework Convention on Climate Change (UNFCCC). The Paris Agreement under the UNFCCC aims to strengthen the global response to the threat of climate change by keeping global temperature rise this century well below 2°C above pre-industrial levels. The Paris Agreement entered into force for Kenya on January 27, 2017, and as set out in Article 2(6) of the Constitution of Kenya (2010), now forms part of the law of Kenya.

At the domestic level, a robust regulatory framework comprising laws, policies, plans and institutions are being progressively established at the National and County levels to address climate change. The foundation of the institutional and legal 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, that are mandatory when making or implementing any law or public policy decisions, including 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.

The Climate Change Act, 2016 is the main legislation guiding Kenya's climate change response through mainstreaming climate change into sector functions, and it is the legal foundation of the NCCAP. Besides, Kenya has developed the National Climate Change Response Strategy (2010), first NCCAP (2013-2017), National Adaptation Plan (NAP 2015- 2030), Kenya Climate-Smart Agriculture Strategy (2017-2026), Climate Risk Management Framework (2017), National Climate Change Policy (2018) and National Climate Finance Policy (2018), among other sector plans and policies that address aspects of climate change.

NCCAP 2023-2027 aims to further Kenya's development goals by providing mechanisms and measures to achieve low carbon climate-resilient development in a manner that prioritises adaptation. This plan builds on the previous two Action Plans and provides a framework for Kenya to deliver on its Nationally Determined Contribution (NDC) under the Paris Agreement of the United Nations Framework Convention on Climate Change (UNFCCC). NCCAP 2023-2027 guides the climate actions of the National and County Governments, the private sector, civil society and other actors as Kenya transitions to a low carbon climate-resilient development pathway.

It is worth noting that Tana River still lacks policies in critical sectors. However, several policies play an essential role in supporting climate change adaptation and mitigation actions. These include Tana River County Forest Policy, 2023 ; Tana River Livestock grazing control Act, 2017; Tana River Water and sanitation services Act, 2017; Tana River County Forest and Landscape Restoration Action Plan (2023-2030); Sand Harvesting Act, 2016; Tana River County Disaster Risk Management Act, 2020 ; Tana River County Integrated Development Plan (CIDP) III, 2023-2027, Sector Plans and County Coordination Development Policy; Tana River County Investment and Development Cooperation Act, 2016; and Tana River County Agriculture Development Act, 2016.

## **4. STRATEGIC GOALS AND OBJECTIVES OF CLIMATE CHANGE POLICY**

### **4.1 Policy Goal**

The goal of this policy is to enhance resilience of communities and natural systems to steer Tana River County towards a low carbon pathway for sustainable development. This builds upon the County Government's commitment to ensure effective and accountable leadership, promote a just, democratic, and secure environment and establish strong governance institutions to empower citizens, for the achievement of socio-economic and political development.

### **4.2 Policy Objectives**

The objectives of this policy are to:

- i) Provide an enabling environment for efficient implementation of climate change actions in Tana River County;
- ii) Strengthen the climate resilience of communities in Tana River through enhancing their adaptive capacity and ensure sustainable livelihoods;
- iii) Catalyse Tana River County's transition towards a low carbon development pathway;
- iv) Facilitate effective mobilisation and utilisation of financial resources in implementing climate change mitigation and adaptation strategies; and,
- v) Enhance the awareness, skills, and institutional capacity of relevant stakeholders in implementing climate change adaptation and mitigation measures.

### **4.3 Guiding Principles**

The following values and principles shall guide the application and interpretation of this policy and the making or implementation by the county government of any policy on climate change:

- i) Community driven and bottom-up planning of response to climate change;
- ii) Commitment to informed participation of communities in the planning and implementation of climate change response interventions;
- iii) Recognition, respect and integration of knowledge, perspectives and experiences of communities in climate change response;
- iv) Planning and implementation of climate change response to be anchored in and supportive of devolution;
- v) Flexible learning approach to addressing challenges of climate change;
- vi) Investments focused on achieving equitable benefits;
- vii) Inclusion of all actors in the planning and implementation of climate change response;
- viii) Protection of the climate system for the benefit of present and future generations;
- ix) Ensuring a just transition for all towards an environmentally sustainable economy and society in the light of county circumstances and developmental goals;
- x) National values and principles of governance spelt out in Article 10 of the Constitution;
- xi) Values and principles of public service spelt out in Article 232 of the Constitution;
- xii) Promotion and protection of the right to a clean and healthy environment in accordance with Article 42 of the Constitution

- xiii) Commitment to the fulfilment of the state obligations in respect of the environment as stipulated under Article 69 of the Constitution.
- xiv) Promotion of Biodiversity Conservation
- xv) Promotion and support of responsible economic practises including Conservation Agriculture
- xvi) Promotion of Nature Based solutions aimed at climate change adaptation
- xvii) Land use planning towards climate change mitigation and adaptation

## **5. THE OPTIONS: STRATEGIC INTERVENTION AREAS**

### **5.1 Enabling Environment for Efficient Implementation of Climate Change Actions**

Lack of the necessary foundations for development in arid lands, particularly infrastructure, human capital, and security, is deterring investment, undermining productive potential, draining resources into prolonged emergency response, and frustrating local-level initiatives.

#### **5.1.1 Policy framework**

Weak policies, legislation, enforcement, and overlap of mandates among institutions involved in climate change adaptation implementation coupled with poor coordination and collaboration among institutions and stakeholders in climate change have contributed to the County's inability to address vulnerability and GHG emissions effectively. Further, cross-cutting issues such as inadequate financing of climate change activities; limited capacity of Women, Youth, and Vulnerable Groups (WY&VG) to participate in such activities; unsustainable natural resource management (NRM) and utilisation; and, limited human resource capacity to undertake climate change actions have also led to poor implementation of climate change activities.

#### **Policy statements**

To improve the enabling environment for efficient implementation of climate change actions, the Tana River County Government will:

- i) Develop overarching policy and legal instruments for effective implementation and coordination of climate change actions in the County. The instruments shall be guided by science and meet the constitutional requirement of full public participation and inclusivity while ensuring buy-in by stakeholders at all levels;*
- ii) Establish the institutional framework and build capacity to coordinate and enhance mainstreaming at the sector level; and,*
- iii) Strengthen institutional capacity at all levels, particularly within county-level planning and coordination structures to address the significant capacity challenges likely to face a multi-sectorial approach in addressing climate change.*

#### **5.1.2 Infrastructure**

Infrastructure specifically designed to reduce vulnerability to climate variability (e.g., flood control structures and decentralised energy systems), transport and general public health infrastructure (e.g., sanitation facilities, wastewater treatment systems, laboratory buildings) enhance adaptive capacity. However, infrastructure (mainly if immovable) can be adversely affected by climate, especially extreme events such as floods.

Transport infrastructure and operations are severely affected by climate impacts. For example, broken bridges and overtopped roads in Tana River County often result in total closure of roads during the rainy seasons, thus cutting access to markets, schools and health facilities. Poor transportation and communication infrastructure in Tana River restrict trade and income

generation opportunities. Transport is, therefore, a critical factor in enhancing adaptive capacity.

### **Policy statements**

To strengthen infrastructure to meet the needs of the County economy and population, the County Government will:

- i) *Adopt better standards in road construction that consider expected and unexpected climate hazards;*
- ii) *Invest in flood risk management and riverbank protection measures;*
- iii) *Invest in road network for building the County's resilience;*
- iv) *Strengthen the resilience of the energy sector and harness renewable energy;*
- v) *Climate proof water reticulation system to protect against climate hazards;*
- vi) *Invest in health infrastructure to enhance resilience; and,*
- vii) *Improve access to technology and the use of ICT.*
- viii) *Invest in development of dykes and megadams.*

### **5.1.3 Security and the rule of law**

Conflicts involving pastoralist groups and farmers are widely experienced in the County. Frequent spells of drought force the pastoralists to migrate regularly in search of water and pasture across the region, sometimes even across the county borders, thus often leading to conflicts over the scarce resources. Though most of the conflicts are local in nature, inter-ethnic conflicts arising from persistent droughts, food scarcity and changes in lifestyles are evident amongst the different pastoral and farming groups.

Such conflicts seriously undermine the adaptive capacity of the communities since they result in loss of community assets and even life. Further conflicts affect the communities disproportionately with children, women and older people being the most vulnerable.

### **Policy statements**

To enhance security and the rule of law in the County, the County Government will:

- i) *Put in place comprehensive measures to end inter-communal violence, including incentives for individuals, communities or institutions, which deliver positive results for peace;*
- ii) *Put in place a holistic strategy involving short- and long-term goals in partnership with other stakeholders. A peace ambassador and a County Policing Authority may assist in a more tailored approach to security management;*
- iii) *Strengthen traditional systems of governance and alternative dispute resolution mechanisms;*
- iv) *Ensure that all interventions in the region are planned and conducted in a manner that is sensitive to local values and priorities*
- v) *Develop a mechanism with neighbouring counties, which ensures effective management of peace and security; and,*

- vi) *Peace-building on the cross-border areas shall continue, with support for the organisation of meetings to break down suspicion. At the local level, local leadership shall be brought together to find lasting solutions to such conflicts*

#### **5.1.4 Human capital**

The vast disparity in human capital between the ASAL counties and the rest of Kenya is so acute that significant investment will be necessary if the County is to compete on an equal basis with the rest of the Country.

#### **Policy statements**

To improve human capital, the County government will:

- i) *Develop and enhance appropriate infrastructure for education, training and health care at all levels, including tertiary and higher education;*
- ii) *Introduce flexible and high-quality healthcare systems, which are responsive to the needs of a particular area;*
- iii) *Increase the number of appropriately trained education, health and nutrition professionals and develop mechanisms to attract and retain high-calibre officers;*
- iv) *Address issues that disproportionately affect the education, health and nutritional status of girls and women; and,*
- v) *Invest in education infrastructure that is more suited to the pastoral system and the natural environment.*

### **5.2 Strengthen the climate resilience of communities in Tana River through enhancing their adaptive capacity and sustainable livelihoods**

Communities already have a long record of adaptation to climate variability. However, the impacts of climatic and other human-made stresses have been growing continuously at a rate that often exceeds human and ecosystem tolerance levels. Consequently, many traditional adaptive knowledge and livelihood strategies practised in drylands for centuries are no longer sufficient or are inefficient. Efforts to reduce the vulnerability of drylands population, therefore, must reinforce their risk management and coping capacities by augmenting existing adaptation mechanisms and supplementing them with new options that are tailored to the unique local contexts.

#### **5.2.1 Promote diversification of livelihood options**

Livelihoods in Tana River are primarily based on extensive livestock production, subsistence agriculture and trade in extractible natural resources. Thus, most cash earnings come from sales of livestock or livestock products or sale of small-scale agriculture surplus. Traditionally, Pastoralists in Tana River as is the case in other counties were nomadic. However, the impact of drought, increasing insecurity, and famine has led to a growing emergence of sedentary pastoralism and experimentation with alternative livelihoods.

#### **Policy statements**

To promote diversification of livelihood options, the Tana River County Government shall:

- i) *Promote development of selected drylands product value chains such as honey production, handicrafts, adoption of climate smart agriculture, indigenous fruits, forage trees, ecotourism, indigenous poultry production, livestock, and livestock products;*
- ii) *Promote the adoption of appropriate technology and acquisition of equipment to facilitate the production of improved quality of products;*
- iii) *Provide an environment for women to be productively engaged in income generating activities;*
- iv) *Support development of business skills for entrepreneurship, marketing and enterprise management;*
- v) *Develop a market system for local products and promote "buy Tana River-build Tana River" marketing strategy;*
- vi) *Support access to micro-credit funding by SMEs, local entrepreneurs and startups; and,*
- vii) *Build capacities of communities for entrepreneurship and economic activities.*

### **5.2.2 Socioeconomic resilience and inclusivity**

For vulnerable and low-resilience populations, it is critical to provide the tools and support they need to manage and recover from the natural shocks that cannot be avoided.

#### **Policy statements**

To build socioeconomic resilience to cater for the vulnerable and keep economic growth inclusive, the Tana River County Government shall:

- i) *Improve and integrate Indigenous Traditional Knowledge (ITK) in early warning effectiveness and preparedness to save lives and protect assets;*
- ii) *Invest in social protection such as a poverty benefit schemes and insurance-based solutions to make the population better able to cope with shocks;*
- iii) *Improve the county health care system; and,*
- iv) *Ensure equity and provide targeted gender interventions and specific measures to protect vulnerable populations in all sectors.*

### **5.2.3 Mainstream gender and support vulnerable groups and youth**

Climate change is likely to affect poor and underprivileged regions, communities and people disproportionately as they are more vulnerable and have the least resources to adapt. In Tana River County, the marginalised groups like women, people with disabilities (PWDs), children, youth and the aged who are likely to be strongly affected by climate. Climate change is expected to increase the workload of women engaged in agriculture production and other subsistence activities such as collecting fuel-wood and water. Further, marginalised groups are found to be more vulnerable during extreme climate events and disasters. It is indispensable to ensure the participation of male and female gender in all policies, initiatives and decisions relating to climate change.

## **Policy Statements**

To address the gender aspects of vulnerability to climate change, the County Government shall:

- i) *Enhance access to the youth and women enterprise funds;*
- ii) *Design special poverty programmes targeting the vulnerable segments of the communities such as children, women, youth and people living with disabilities;*
- iii) *Facilitate access to social protection and insurance mechanisms against main climate hazards;*
- iv) *Establish affordable and accessible credit lines for the urban and rural poor, youth and other vulnerable groups;*
- v) *Reduce the vulnerability of women to climate change impacts, particularly in relation to their critical roles in rural areas in provisioning of water, food and energy;*
- vi) *Develop and implement climate change vulnerability-reduction measures that focus women's needs mainly;*
- vii) *Incorporate women's appropriate role in the decision-making process on climate change mitigation and adaptation initiatives;*
- viii) *Ensure that women are well represented in land and natural resource governance and decision making; and,*
- ix) *Develop climate change adaptation measures on local and indigenous knowledge, mainly held by women.*

### **5.2.4 Climate-smart agriculture and agro-ecology to drive food security**

If farmers are enabled to adapt to weather threats, and climate extremes in the short and medium-term, future generations will be better placed to adapt to climate change, whatever specific form it takes. Measures that improve productivity while also building resilience to future climate change, i.e. “no-regret” measures—will be promoted.

The Kenya Climate-Smart Agriculture Implementation Framework 2018-2027 (KCSAIF) has been developed to provide a guide to various innovative and transformative initiatives and best practices that will strive to address challenges brought about by climate change. It is envisioned to ensure increased agricultural productivity and sustainably build resilience of the national agricultural systems. It also aims at providing various options for implementation of the Kenya Climate-Smart Agriculture Strategy 2017-2026 (KCSAS).

## **Policy statements**

To promote climate smart agriculture, the Tana River County Government shall:

- i) *Promote adoption of climate-resilient crop varieties by supporting research and investment;*
- ii) *Implement an agriculture risk management framework including agricultural insurance to manage the financial cost of disasters to the farmers and the government for sustainability in agriculture;*
- iii) *Invest in modern irrigation technologies supported by the use of renewable energy;*
- iv) *Build the capacity of farmers to promote sustainable soil management;*

- v) *Invest in integrated pest management;*
- vi) *Promote water harvesting to ensure better utilisation of rainwater for increased crop productivity;*
- vii) *Promote best practice in agroforestry;*
- viii) *Facilitate tenure security to support investment in agriculture;*
- ix) *Strengthen research and extension systems relevant to rain-fed crop production; including soil and water conservation, organic farming and agroforestry;*
- x) *Promote improved practices in postharvest storage and management;*
- xi) *Strengthen market linkages for farm produce to improve income for the farmers;*
- xii) *Establish mechanisms to extend affordable finance to smallholder farmers, particularly women; and,*
- xiii) *Implement Kenya Climate-Smart Agriculture Strategy 2017-2026 (KCSAS).*

### **5.2.5 Livestock and fisheries development**

Livestock production is the backbone of economic activity in Tana River County. Impact of climate change such as drought and flood are increasingly undermining the traditional pastoralism system. Livestock health continues to be one of the significant challenges of the system. There is also limited value addition in the livestock sector, and significant infrastructural and financial constraints facing livestock traders. In general, the livestock sector lacks the kind of institutional support in research, development and marketing that other productive sectors enjoy.

#### **Policy statement**

- i) *Develop the fish value chain by taking the following measures:*
  - Support acquisition of modern fishing boats;
  - Support the purchase of modern fish cooling and preservation equipment including solar driers;
  - Establishment of fishponds to supplement and reduce the stress on the internal lake's resources;
  - Support value addition in fish and fish products;
  - Support establishment of fish marketing cooperatives to bargain for best prices in the market;
  - Develop and support linkages to external markets; and,
  - Create awareness among the local population to adopt fish eating.
  - Promote and conserve fish breeding grounds.
- ii) *Promote adoption of climate-resilient animal breeds by supporting research and investment;*
- iii) *Promote diversification of herd composition;*
- iv) *Develop a framework for robust community-based animal health systems;*
- v) *Strengthen disease control and surveillance;*
- vi) *Strengthening pastoral institutions and resource rights necessary to enhance livestock mobility to facilitate resilience building within the pastoral system of Tana River County;*

- vii) *Implement agriculture risk management framework including index-based insurance to manage the financial cost of disasters to pastoralists and the government for sustainability in livestock production;*
- viii) *Implement the Community Land Act, 2016;*
- ix) *Rehabilitate livestock marketing infrastructure through partnerships with the private sector and community associations. This will include the building of slaughterhouses, improvement of road connections, organisation of marketing and trading cooperatives and installation of cold stores and refrigerated vehicles;*
- x) *Develop a programme for livestock feed supplements especially during droughts;*
- xi) *Promote feedlot production system which will produce good quality animals, promote disease management and enhance proper feed utilization.*
- xii) *Promote pasture production through irrigation.*
- xiii) *Rehabilitate degraded rangelands to improve the infiltration and storage of rainwater and enhance biomass production;*
- xiv) *Develop jointly with neighbouring counties policies which facilitate and recognise the contribution of cross-border trade and facilitate the cross-border movement of livestock for food security;*
- xv) *Establish mechanisms to extend affordable finance to livestock producers and traders, particularly women, youth and people living with disabilities; and,*
- xvi) *Strengthen research and extension systems, which are relevant to the livelihoods of ASAL livestock-keepers.*

### **5.2.6 Water resources**

Tana River County also faces both physical and economic water scarcity interchangeably during and between seasons. Except for River Tana, naturally-occurring surface water bodies are negligible due to the high evaporation rates. The river runs through the County. However, water in River Tana has high turbidity, thus not suitable for consumption by humans but consumed by its animals. However, it is used both domestically and for livestock during the dry season.

The County has in recent years experienced increased construction of water harvesting structures such as dams, water pans, subsurface dams, etc. It is, however, critical to note that County is still facing high water crisis.

### **Policy statements**

To harness and conserve water resources in the County, the Tana River County Government shall:

- i) *Control water abstraction especially for large projects demanding high volumes of water.*
- ii) *Enact rainwater harvesting regulation for water harvesting at household and institutional levels;*
- iii) *Support research to map water resources in the County, including the aquifers.*

- iv) *Protect River Tana from human-induced pollution. Protection measures could include, but are not limited to:*
  - Protect river buffer zones and well fields;
  - Regulate upstream irrigation and catchment conservation;
  - Develop town land-use planning, so that town expansion, industries, high density settlements and waste disposal zones are located away from the defined aquifer areas; and,
  - Carefully install a proper sewerage network and re-evaluate the existing on-site sanitation in the aquifer zone; and,
- v) **Develop and Implement Tana River County Water, Sanitation Services Sector Strategic Plan**

### **5.2.7 Resilient settlement**

The increase in population in at-risk areas and the projection of urbanisation growth in the next decades suggest that guiding land use and strengthening housing are priorities to reduce the County's vulnerability to natural disasters and climate change. Current settlement trends in the County lead to unplanned development.

#### **Policy statements**

To ensure resilient and safe settlement within the County, the Tana River County Government shall:

- i) *Carry out land-use planning for more reliable urban development and future development;*
- ii) *Support land tenure security, participatory land-use planning, zonation and development control;*
- iii) *Interlink conservation with settlement development, e.g. green zones in residential areas;*
- iv) *Develop and implement a county spatial plan;*
- v) *Promote sustainable and climate-appropriate architecture and construction materials;*
- vi) *Adopt resilient building code against natural disasters in urban, peri-urban and rural areas; and,*
- vii) *Establish an informal settlement upgrading programme, considering current and future climate-related risks.*
- viii) *Establish Green Economic Zones to ensure that all investments are in line with the recommendations of the land use plan*
- ix) *Implement the cluster program*

### **5.2.8 Health and education services**

According to the IPCC, communities with more "human capital" or knowledge have higher adaptive capacity.

#### **Policy statements**

To improve health and education services, the County Government will:

- i) *Introduce flexible health systems of high quality, which are responsive to the needs of the area;*
- ii) *Embrace health systems innovation such as the use of appropriate ICTs and other technologies in service delivery;*
- iii) *Adapt community-based health systems for remote and mobile populations, and integrate these with animal health systems where applicable;*
- iv) *Introduce a health insurance scheme tailored to the needs of pastoralists and farmers by enhancing the universal healthcare;*
- v) *Promote innovative systems to provide context-based education to the pastoral communities;*
- vi) *Develop resilient education infrastructure that include mobile library and use of e-Learning technology; and,*
- vii) *Provide incentives for education of girl child.*
- viii) *Promote proper waste management in health facilities.*

### **5.2.9 Resilient ecosystems**

The importance of ecosystems and their services cannot be overemphasized. The need for resilient ecosystems that respond to livelihood risks such as land and soil degradation, the erosion of biodiversity and water shortages or floods through approaches centring on ecosystem protection is a strong strand in the grey and academic adaptation literature.

### **Policy statements**

To ensure resilient ecosystems in the County, the Tana River County Government shall:

- i) *Reinforce the authority of traditional natural resource management systems that promote sound environmental practices;*
- ii) *Protect and advance indigenous knowledge and practices such as establishment of ICCAs, promote formal and informal environmental education and awareness, and intensify environmental conservation efforts;*
- iii) *Protect and increase forest cover, riverine vegetation and critical water catchment areas, including unique ecosystems such as Mangrove forests and the core Delta;*
- iv) *Develop and/or implement payment for ecosystem services as an incentive for conservation;*
- v) *Collaborate with research institutions such as Kenya Forestry Research Institute (KEFRI), Kenya Agricultural and Livestock Research Organizations (KALRO) and academic institutions such as Pwani University to adopt best practices in the management of invasive species such as *Prosopis juliflora**
- vi) *Promote ecosystem-based adaptation (EbA) for biodiversity and ecosystem services as part of an overall adaptation strategy to help people and communities adapt to the adverse effects of climate change at local and County levels;*
- vii) *Promote the establishment of conservancies after detailed thinking and consultations to avoid inflaming conflicts, and issues of land access, which impacts on livelihood. Full participation of community members and consideration of pastoral movements shall be essential; and,*

### **5.2.10 Natural disasters**

Tana River County experiences multiple complex disasters which are related to droughts, flooding, resource-based conflicts, human and livestock diseases outbreak and epidemics, crop infestations among others that negatively impacts human populations. Disaster profiles in Tana River County indicate the occurrence of many incidents, which have increased in frequency, intensity and severity over the past few decades. In most cases, entire populations of Tana River are affected by disasters that disrupt lives, livelihoods and draw gains achieved in human development.

#### **Policy statement**

To improve local responses to natural disasters and climate change, the Tana River County Government shall:

- i) Implement Ministry of Health guidelines on epidemics;*
- ii) Mainstream disaster risk analysis into development planning processes; and,*
- iii) Operationalize and implement the County Disaster Risk Management Act, 2020.*

### **5.2.11 Climate information services (CIS)**

Provision of easily accessible, timely and decision-relevant climate information can help society to cope with current climate variability and change; and in turn limit the economic and social damage caused by climate-related disasters. Climate Information Services (CIS) can also support society to build resilience to future climate change and take advantage of opportunities provided by favourable climate conditions. An effective CIS requires adequate technical capacities and appropriate communication strategy that enables good exchange within information producers, translators, and user communities.

#### **Policy statements**

To establish climate information services in the County, the Tana River County Government shall:

- i) Create a framework for the provision of climate services;*
- ii) Establish infrastructure for data collection, monitoring and early warning systems;*
- iii) Support development and use of indigenous knowledge to compliment the conventional system in weather and climate information gathering and use;*
- iv) Develop ICT infrastructure to support efficient communication in the County*
- v) Promote the use of GIS and remote sensing in identifying hotspots for early mitigation and adaptation strategies;*
- vi) Package and communicate climate information using appropriate channels for different audience; and,*
- vii) Provide gender-sensitive early warning and alerts of extreme weather and climate events; such as droughts and floods, for the safety of life and optimisation of weather and climate dependent natural resources.*

### **5.3 Transition towards a low carbon development pathway**

Kenya seeks to undertake an ambitious mitigation contribution towards the 2015 Paris Agreement to achieve a low carbon, climate-resilient development pathway. Kenya, therefore, seeks to abate its GHG emissions by 30% by 2030 relative to the Business-As-Usual (BAU) scenario of 143 MtCO<sub>2</sub>eq; and in line with its sustainable development agenda. Tana River County will make its contribution to reducing the Country's greenhouse gas emissions by following the low carbon development pathway. To achieve this, Tana River County shall:

#### **5.3.1 Manage drylands for carbon sequestration**

Addressing land degradation in dryland ecosystems presents two complementary ways of mitigating climate change. First, by slowing or halting degradation, associated emissions can be similarly reduced. Second, and arguably of more considerable significance, changes in land management practices can lead to higher carbon sequestration, that is, to removing carbon from the atmosphere.

#### **Policy statement**

To manage drylands for carbon sequestration, the Tana River County Government shall:

- i) Increase tree cover through an aggressive afforestation Programme with clear targets to be achieved annually;*
- ii) Establish a soil and water conservation programme for erosion control and soil fertility management;*
- iii) Promote woodland regeneration through community-managed natural regeneration approach; using community structures such as CFAs, WRUAs and VNRLUCs*
- iv) Promote indigenous tree management systems as those promoted by VNRLUCs*
- v) Promote water conservation and harvesting;*
- vi) Promote evidence-based land-use change from degraded areas to grass/trees;*
- vii) Promote agroforestry and use of legumes; and,*
- viii) Increase carbon stocks in the soil by promoting actions to increase soil fertility, workability and water holding capacity.*

#### **5.3.2 Urban planning and waste management**

Climate change presents a range of socioeconomic implications for town planning on two counts: First, town planning is a process by which vulnerability to climate change impacts can be mitigated. Second, town planning influences the level of emissions produced by human settlements by changing fuel and energy consumption patterns. To adapt to the impacts and to achieve the objectives of climate change mitigation, there is a need to introduce changes to town planning and building systems.

#### **Policy statement**

In waste management, the Tana River County Government shall:

- i) Develop and implement a waste and sanitation master plan;*
- ii) Ensure appropriate siting of waste disposal sites;*
- iii) Make provision for the management of sensitive waste, e.g. medical waste;*

- iv) *Community participation in waste management;*
- v) *Promote Reduce, Reuse, Recycle (3Rs) in waste management.*
- vi) *Develop sewer systems in viable areas not served currently;*
- vii) *Make installations of wastewater treatment plants an integral part of industrial waste disposal;*
- viii) *Ensure separate collection, disposal and recycling of recyclable, composite and biodegradable waste preferably at source; and,*
- ix) *Sensitise of the public on the importance of waste management.*

In urban planning, the County Government, in this regard, shall take the following measures:

- i) *Ensure proper land use planning and where possible encourage vertical instead of horizontal expansion of urban housing projects;*
- ii) *Undertake hazard mapping and zoning of areas before construction;*
- iii) *Ensure that rural housing particularly especially in flood-prone areas are climate resilient hence promote the green village concept*
- iv) *Implement the Energy (Solar Water Heating) Regulations, 2012 in all new and old buildings;*
- v) *Update town planning design principles for lower carbon footprints;*
- vi) *Promotion of waste septation at household level;*
- vii) *Promotion of 3Rs at household level;*
- viii) *Promotion of conversion of waste to energy or manure at household level;*
- ix) *Provision/ support the provision of reliable collection of domestic waste; and*
- x) *Promote provision, use and protection of open spaces within towns.*

### **5.3.3 Transport**

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 by 2030.

#### **Policy statement**

To reduce emission from the transport sector, Tana River County Government shall on land transport:

- i) *Promote the adoption of fuel-efficient vehicles that produce fewer emissions;*
- ii) *Develop infrastructure for motorised and non-motorised transport systems;*
- iii) *Promote the adoption of cleaner fuels to reduce GHG emissions per kilometre travelled, e.g. use of biofuel for local transport;*
- iv) *Support the private transport sector by providing incentives for reducing emissions and adopting environmentally friendly transport services, e.g. electric/ hybrid vehicle for urban use;*
- v) *Secure financing for technology innovations for urban planning and the transportation sector, specifically to address the mitigation issues; and,*
- vi) *Reductions in driving through reducing both the distances travelled per trip and the number of trips.*

On water transport, the County Government will:

- i) *Develop and promote in-land waterways transportation;*
- ii) *Develop a maritime safety system through innovation in ICT driven monitoring and warning systems to reduce weather-related accidents;*
- iii) *Design and implement water transport safety by-laws;*
- iv) *Increase water transport surveillance to enforce safety measures; and,*
- v) *Promote the use of fuel-efficient vessels and boats.*

#### **5.3.4 Clean energy**

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. Transition to clean cooking is a priority action that presents an opportunity for technological leapfrogging with energy and GHG emissions savings, and health and cost-saving benefits compared to the business-as-usual incremental improvements.

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.

#### **Policy statements**

To develop clean energy technologies in the County, the Tana River County Government shall:

- i) *Promote the development of renewable energy resources and technologies such as solar, wind, geothermal and biofuel energy;*
- ii) *Promote the use of clean lighting technologies and set targets for the phasing out of kerosene for lighting;*
- iii) *Promote efficient lighting and energy efficiency in buildings to improve energy efficiency and energy conservation in the County;*
- iv) *Conserve and rehabilitate water catchment areas;*
- v) *Promote low carbon technologies in agricultural systems such as solar-powered irrigation;*
- vi) *Promote the transition to clean cooking with alternative fuels, such as LPG, ethanol and other clean fuels in urban areas;*
- vii) *Promote the uptake of clean biomass (charcoal and wood) cook-stoves and alternatives in rural areas;*
- viii) *Ensure gradual introduction of low carbon technologies in all sectors of the economy to achieve the carbon emission reduction objectives; and,*
- ix) *Conduct training and public awareness programmes on the importance of clean energy.*

### **5.3.5 Extractive industry**

Tana River County is endowed with mineral resources. These Natural Resources have the potential to constitute a significant positive exogenous shock to a nation's wealth and hence its economic growth. On the other hand, these resources have the potential of exacerbating conflicts, fuelling corruption, threatening biodiversity, clean water and air, and infringing on the rights of Indigenous Peoples and vulnerable communities. A just transition ensures environmental sustainability as well as decent work, social inclusion and poverty eradication.

#### **Policy statements**

To green the extractive industry and make the industry work for the communities and the environment, the Tana River County Government shall:

- i) Ensure that natural resources extraction in the County generates earnings and create jobs in the local economy;*
- ii) Shield the local economy from the economic shocks that accompany commodity booms and bursts;*
- iii) Develop a clear coordination framework that includes all the actors to reduce tension and suspicion. Information shall be produced and disseminated to all stakeholders;*
- iv) Ensure that revenues benefit the marginalised people of Tana River;*
- v) Train local people to make them employable (including advanced driving skills, hospitality and mining industry specialist jobs, construction, mechanics etc.) to enhance local procurement;*
- vi) Support pastoralism to buffer the communities against land-use changes in the County and avoid destitution by reserving sufficient land for pastoralism including migratory routes and traditional grazing grounds;*
- vii) Support a just transition to clean energy systems; and,*
- viii) Ensure that the extractive industry activities meet the National Environment Management Authority (NEMA) threshold, and all the mitigation measures are adhered to.*

### **5.4 Climate Financing Mechanisms**

Climate finance plays a critical role in building resilience to impacts of climate change and variability. Transition to a low carbon and climate-resilient development pathways requires significant financial investment in interventions that will reduce Green House Gas (GHG) emissions from key emitting sectors, climate-proof sectors driving the economy and promote human well-being and ecological integrity. It is therefore imperative that the County establishes adequate and predictable financial resources from domestic, national and international sources.

#### **Policy statements**

To sustain climate change interventions, the Tana River County Government shall:

- i) Establish the Tana River Climate Change Fund for financing climate change actions in which it shall invest at least 2% of its annual development budget*

- ii) *Develop the Tana River County Climate Change Fund Regulations to guide the coordination of the Fund;*
- iii) *Encourage stronger harmonisation and alignment of finance from development partners against the objectives of this policy;*
- iv) *Create an environment for public-private partnerships (PPP);*
- v) *Develop Public-Private-Civil Society partnerships for financing and implementation of climate change adaptation and mitigation projects; and,*
- vi) *Create a domestic carbon tax in the spirit of polluter pays to mobilise resources for climate change activities.*

## **5.5 Awareness and Capacity Building**

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

### **Policy statements**

To develop capacity and create awareness for climate change action, the Tana River County Government shall:

- i) *Undertake institutional training assessments to identify the specific climate change training needs in the County;*
- ii) *Establish partnerships with institutions of higher learning to package and support short and long-term training courses on climate change-related issues;*
- iii) *Ensure institutional strengthening of the existing climate change unit, committees, working groups and relevant institutions dealing with climate change matters;*
- iv) *Build capacity of the County staff to monitor and report to the County Assembly and national climate change directorate as per the provisions of the Climate Change Act 2016;*
- v) *Develop Knowledge Base Management (KBM) and networking with strategic climate change research establishments to ensure benefits from international scientific advancements;*
- vi) *Provide training and support, at village, ward, sub-county and County levels to further their knowledge and capacities on climate change issues;*
- vii) *Explore and provide training opportunities to enhance capacity for preparing projects and implementation of programs in the climate change area;*
- viii) *Develop capacity for making reliable projections of climate change scenarios, seasonal forecasts and inter-annual forecasts for different parts of the County in collaboration with Kenya Meteorology Department (KMD);*
- ix) *Develop capacity of key staff to participate in national and international processes actively;*

- x) *Establish a county resource centre for climate information sharing and networking of regularly updated climate change-related data. This could be linked to the National Climate Change Resource Centre and Maarifa centre at Council of Governors (CoG);*
- xi) *Develop a County climate change awareness program involving communities, various ministries and departments, civil society and the private sector; and,*
- xii) *Ensure advocacy and mass awareness regarding the importance of water and energy conservation impacts of climate change on various sectors including the forest ecosystem, biodiversity etc. learning/exchange visits, mass media, publicprivate partnership, civil society, learning institutions and community mobilisation.*

## **5.6 Research, Innovation and Partnerships**

Climate change is one of the most challenging and complex threats the world faces and needs innovative technological solutions to solve both mitigation and adaptation challenges. Further, data is critical in understanding the underlying risks and vulnerabilities.

### **Policy statements**

The Tana River County Government understands the need for research and innovation and shall take the following measures:

- i) Promote the development and use of local technologies in combination with innovation and technological advancement in the field of climate change as an effective way to implement the adaptation and mitigation measures;
- ii) Establish infrastructure necessary for promoting innovation at the grassroots level, learning institutions including vocational training institutions, polytechnics, universities and research institutions;
- iii) Establish partnerships for technology transfer and development with industries, higher institutions of learning, international research organisations and village polytechnics;
- iv) Promote technology transfer for designing and manufacturing of emission monitoring equipment for installation near urban and industrial areas in Tana River County;
- v) Establish a system for climate monitoring, modelling and early warning systems connected to all the farmers in the County;
- vi) Promote the development and adoption of new breeds of crops and livestock which are early maturing and less vulnerable to the changing climate;
- vii) Research proper land-use systems and safe carbon emission including strengthening collaboration in indigenous technologies in flood management and water harvesting, crop management and other agrarian best practices;
- viii) Establish a research and innovation fund to support research and innovation activities;
- ix) Develop county GHG emissions inventory and strengthen institutional capacities to ensure regular updates; and,
- x) Develop an institutionalised system to regularly measure and monitor GHG emissions from various sectors, including trans-boundary pollution and maintain a database.

## **5.7 Implementation Strategies, Mechanisms and Institutional Frameworks**

Governments with weak institutional arrangements have less adaptive capacity than countries with well-established institutions. For example, institutional and managerial deficiencies could contribute significantly in managing climate-related disasters, thus increasing vulnerability to climate change. Collaboration between public and private sectors can enhance adaptive capacities.

### **Policy statements**

On the institutional framework, the Tana River County Government shall:

- i) Establish the County Climate Change Steering Committee
- ii) Establish Climate Change Unit to act as the secretariat for inter-ministerial and inter-departmental decision-making and coordination on climate change issues at the County level;
- iii) Publish a Bill to define the roles of the various entities clearly;
- iv) Establish a climate change desk in all departments at the county, sub-county and ward levels;
- v) Mainstream climate change response into county planning processes, including economic planning, county development policies and plans, performance contracting, and the short to medium-term budget-making process;
- vi) Establish the County and Ward Climate Change Planning Committees for coordinating all climate change activities and deal with adaptation and mitigation projects at all levels.
- vii) Strengthen the county institutional framework for undertaking tasks related to the implementation of national and international obligations; and

## **6. MONITORING AND EVALUATION**

The Tana River County recognizes the importance of Monitoring and Evaluation (M&E) as a tool to track the implementation of this climate change policy. This tool can signal potential weaknesses in design, identify implementation challenges and facilitate policy adjustments. In this context, it is crucial to prioritize rigorous and continuous Monitoring and Evaluation (M&E) of this Policy.

The County will develop an implementation strategy for the policy. The Strategy will include a comprehensive monitoring and evaluation (M&E) Framework with critical milestones over the next five years planning period in line with the CIDP and the County Climate Change Action Plan as well as the annual implementation plan

The M&E Framework is linked to the planned outcomes and outputs of the Strategy and is instrumental in ensuring the full implementation of the policy by the various stakeholders involved. The M&E Framework shall specify performance indicators and targets for each policy priority and strategic action, and propose accountability mechanisms for the actors that are tasked to implement them.

Each County department, for which specific responsibilities are identified, has to ensure enforcement of the relevant policy priorities and measures, using means and mechanisms at its disposal as identified in the costed implementation.

## **7. POLICY REVIEW**

The implementation of the policy will undergo an independent external evaluation in 10 years. The recommendations resulting from that evaluation will feed into the revision process for the policy. This revision is to be carried out based on a thorough public consultation process and review of the results at that point in time.