COUNCIL OF GOVERNORS

COMPENDIUM OF COUNTY INNOVATIONS AND BEST PRACTICES ON CLIMATE CHANGE

7TH EDITION

JANUARY - JUNE 2024

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Maarifa Centre
Sharing Kenya's Devolution Solutions

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Maarifa Centre

Maarifa Centre is the premier subnational knowledge hub established to serve as Kenya's knowledge sharing and learning platform to support effective governance and service delivery at the County level. The vision of the Centre is "To be Kenya's Premier Knowledge Sharing and Learning Platform for Effective Governance and Service Delivery for Sustainable Development".

CoG Vision

Prosperous Counties that are drivers of socio-economic growth and development and quality service delivery.

CoG Mission

To deepen devolution through coordination, consultation, information sharing, capacity building, performance management and dispute resolution.

CoG Values

Collaboration and Partnership; Integrity; Diversity, Equity, and Inclusion; Innovation; Professionalism.

CoG Motto

48 Governments, 1 Nation

Maarifa Centre Motto

Sharing Kenya's Devolution Solutions

Publisher: The Council of Governors ©2024
Design & Layout:
ISBN: 9789914970753

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CONTENTS

ACRONYMS

CCCF	County Climate Change Fund
CBO	Community-Based Organization
CCU	Climate Change Unit
CIDP	County Integrated Development Plan
EOC	Emergency Operation Centre
FLLoCA	Financing Locally Led Climate Action
GHG	Green House Gases
GIS	Geospatial Information System
GMME	Greater Maasai Mara Ecosystem
KIWAN	Kisumu Waste Actors Network
PCRA	Participatory Climate Risk Assessment
SDG	Sustainable Development Goals
SftFA	Soil for Future Africa
WCCPC	Ward Climate Change Planning Committee

FOREWORD FROM THE CHAIR

> County Governments are at the forefront of mainstreaming climate smart solutions in their respective development agendas.

With great pleasure, I introduce the Seventh Edition of the Compendium of County Innovations and Best Practices on Climate Change. This unique publication is the result of a collaborative effort between the Council of Governors and the World Bank through the Financing Locally Led Climate Action project.

Our changing climate has become a global concern due to the wide-ranging and severe impacts on both natural and human systems. Now more than ever, many parts of the world are experiencing extreme weather conditions such as heavy flooding and landslides, frequent storms, ravaging droughts and intense heat waves and wildfires. Consequently, climate change impacts are disrupting economies, damaging physical infrastructure, displacing populations and interfering with livelihoods.

County Governments are at the forefront of mainstreaming climate smart solutions in their respective development agendas. The changing climate, with its socio-economic burdens, has compelled Counties to re-think and reengineer their plans, projects and programs. This discourse is a priority at the County level, evidenced by the fact that in 2021, the Devolution Conference focused solely on how the subnational level can unlock its potential in climate action. Through the FLLoCA program, forty-five (46) Counties have enacted climate change laws, and (45) have gone further to operationalize their climate change funds. Additionally, the performance contracting guidelines currently being applied in Counties have incorporated climate change as a measurable perimeter in performance management.

Flowing from the above, this edition of Maarifa Centre's bi-annual Compendium is a collection of innovative local solutions and adaptive measures being applied by Counties in combating climate change impacts amongst communities. The initiatives documented can be adopted by interested Counties with necessary modifications to suit respective geographical and social contexts. May the best practices and innovations articulated in this edition trigger a robust inter-County exchange of ideas and lessons and inspire Counties facing similar challenges that local solutions are available to shield vulnerable populations from the impacts of climate change.

To my fellow Governors, and all who serve in Counties, get yourselves a copy of this compendium and use it to harvest and apply knowledge on matters climate change. By comprehending the unique and interconnected challenges we face at the local, continental and global levels, we can begin to recalibrate our policies and programs and incorporate sustainable, effective and efficient measures that protect our communities from the adverse impacts of the changing climate. This understanding will also foster opportunities for collective efforts and informed decisions aimed at addressing and mitigating the impacts of impending challenges on a broader scale.

To all our valued partners and stakeholders, we extend our heartfelt appreciation for your unwavering support throughout the past decade of implementing devolved governance. Moving forward, I am optimistic that together we can transform service delivery at the County level and provide all Kenyans quality, accessible and available public goods. I firmly believe that despite any challenges we encounter, collaborative efforts to develop sustainable local solutions will enable us to surmount them and make tangible impacts in our communities.

You can download this edition of the compendium and the past editions @ https://maarifa.cog.go.ke/ . Physical copies of the book can always be obtained from our CoG offices.

H.E. Anne Waiguru, EGH

Chair, Council of Governors

ACKNOWLEDGEMENT FROM THE CEO

> My sincere gratitude goes to all the County officers who devotedly sat down for interviews and set aside time to accompany the CoG-Maarifa team for site visits and graciously provided further information and data upon request. You are true champions of devolution!

I would like to extend my gratitude to the World Bank for their support through the Financing Locally Led Climate Action (FLLoCA) Project. As the representative body of the Counties, the CoG acknowledges that climate change impacts have been evident throughout Kenya.

The FLLoCA Project has empowered Counties to devise local solutions that enable communities adapt to the changing climate through water conservation, waste management, land restoration and emergency preparedness. The project underscores the significance of collaborative endeavors in addressing climate-related at the grassroots level, with the goal of promoting sustainable development and enhancing resilience within communities across Kenya.

To the e County Knowledge Management Champions who worked with the Maarifa Centre team to compile this edition, kudos! Your efforts are well recognized and appreciated. I commend all the nine (9) Counties who were willing to be part of this Compendium. My sincere gratitude goes to all the County officers who devotedly sat down for interviews and set aside time to accompany the CoG-Maarifa team for site visits and graciously provided further information and data upon request. You are true champions of devolution!

I would like to acknowledge the efforts of the Maarifa Centre team in drafting, compiling and guiding the design of this special climate change edition of the compendium. Good job! To all CoG technical officers who supported the Maarifa Centre in this venture- I thank you.

CoG- Maarifa Centre boasts as a one-stop-shop on matters devolution knowledge sharing. The Centre hosts over 1000 knowledge assets across all sectors and over 300 best practices.

As you read this edition today, I urge you to visit the Maarifa Centre website @ https://maarifa.cog.go.ke/ to familiarize yourself with different County innovations and devolution knowledge products from all other sectors.

For sharing County best practices and any other publications, reach out to the Maarifa Centre team @ maarifacentre@cog.go.ke and follow us on X @maarifa_Centre.

Mary Mwiti
Chief Executive Officer
Council of Governors

INTRODUCTION

This Compendium is the seventh edition of a bi-annual publication pioneered in 2021 by the Council of Governors' knowledge hub, the Maarifa Centre. The inaugural edition was a collection of County success stories in the fight against COVID-19. The second edition featured service delivery good practices and innovations in 7 sectors from 13 Counties. The third edition focused on service delivery in 5 sectors and featured 9 Counties, with some contributing more than one best practice/ innovation. The fourth edition focused on only 2 themes – Facilities Improvement Financing (FIF) and Community Health Services (CHS).

The fifth edition features good practices and innovations from 7 Counties in 4 sectors, including Health (5 stories); Agriculture, Livestock & Cooperatives (3 stories); Land, Housing & Urban Development (3 story); and Gender, Youth, Sports, Culture and Social Services (2 stories). The Sixth edition featured a total of 12 success stories from 8 Counties on Agriculture (2 stories), Health (2 stories), Education (1 story), Transport, Infrastructure and Energy (1 story), Gender, Youth, Sports, Culture and Social Services (6 stories).

This seventh edition features success stories from nine (9) Counties, namely; Kisumu, Vihiga, Lamu, Narok, Siaya, Bungoma, Homa Bay, Kitui and Kajiado. All on climate change.

The Maarifa Centre welcomes contributions from all Counties and actively encourages those not yet featured to reach out with their success stories for documentation.

This compendium, available both on the Maarifa portal and in hard copy, is designed to facilitate and promote inter-County learning and through knowledge sharing and the timely adoption of best practices and innovations derived from diverse experiences. Additionally, various stakeholders in devolution, including the National Government, development partners, civil society, community-based organizations, the private sector, researchers, university students, and citizens themselves, will find valuable insights within its pages.

Should you wish to connect with the County resource persons highlighted in this compendium, Maarifa staff can facilitate the process.

Restoring Degraded Lands and Utilizing Renewable Energy for Sustainable Water Management in Vihiga County.

Introduction

Land degradation refers to the deterioration of land quality caused by various factors, leading to a decline in its productivity and ecosystem services. This can also be caused by deforestation, overgrazing, unsustainable farming practices and urbanization. The impact of land degradation includes loss of soil fertility, reduced agricultural productivity, loss of biodiversity and increased vulnerability to climate change. The 2010 Constitution aims to achieve a tree coverage of at least 10% of the land area of Kenya. This target was achieved by 27th May 2022 as announced by former president Uhuru Kenyatta during the launch of the tree-growing fund and campaign in Nairobi. The Former president proceeded to set an ambitious 50% target by 2050. Counties were urged to take on the challenge and strive to reach the new target.

Vihiga County located in western Kenya occupies a land size of 563.8 kilometers square and has a population of 625,765 people. The County has a 37% forest cover due to the different works and partnerships with the Kenya Forest Service. However, just like all other Counties in Kenya, Vihiga faces different challenges related to climate change including floods, landslides and drought.

President Uhuru Kenyatta, UNDP's Resident Representative Mr. Walid Badawi (C) and UN's Resident Coordinator Dr. Stephen Jackson (L) during the unveiling of Kenya's Tree Growing Fund Campaign

Floods in Emuhaya Constituency

To support residents, the County has implemented various measures designed to enhance their resilience to climate change and implemented projects targeting the following four key thematic areas.

1. Strengthening of the legislative framework to guide climate action.
2. Education and awareness creation for the local community on climate change to help them identify related issues and encourage them to suggest potential solutions.
3. Developing plans and initiatives at the local level to promote climate resilience and protect the environment.
4. Establishing an accountable and dependable monitoring and evaluation system. Integrating Geospatial Information System (GIS) technology with County climate and environmental management to enable real-time monitoring of natural resources and conservation efforts.

In addition to having a County Climate Change Fund (CCCF), collaboration with development partners has allowed the County to expand its resources and implement more comprehensive climate change initiatives. The World Bank's Financing Locally Led Climate Action (FLLoCA) program has consistently supported Counties in enhancing their ability to respond to climate change and implement sustainable local climate action plans.

The table below presents an overview of climate financing data for Vihiga County. It provides detailed information on the sources, amounts, and allocations of funds dedicated to addressing climate change and supporting environmental sustainability within the County.

	Month	Amount	Source	Purpose
1	April 2023	11,000,000	The FLLoCA Program(CCIS 1)	Climate Institutional Capacity Building
2	April 2023	10,000,000	The CCCF Budgetary Disbursement	Co-Fund the CCIS Funds; obligatory as the VCCF Act, 2019 (Fuel, Capacity Building, Awareness)
3	June 2023	10,000,000	The CCCF Budgetary Disbursement	Climate Resilience Investments

Through these funds, the County has successfully carried out various initiatives, including the installation of solar-powered water projects in the Mwimbona, Kimogoi, Evojo, Kaptech, Ebukhaya and Ipali communities. These projects have greatly benefitted more than 1000 households by not only providing them with reliable access to water but also promoting sustainable energy use and contributing to the County's broader goals of environmental conservation and climate resilience. The solar-powered water projects have provided local schools with consistent water access, allowing students to concentrate on their education instead of returning home to fetch water. Further, the ample water supply has improved sanitation and hygiene standards, which has in turn decreased the prevalence of waterborne diseases among students.

Solar Water projects in Vihiga County

Household water supply in Vihiga County

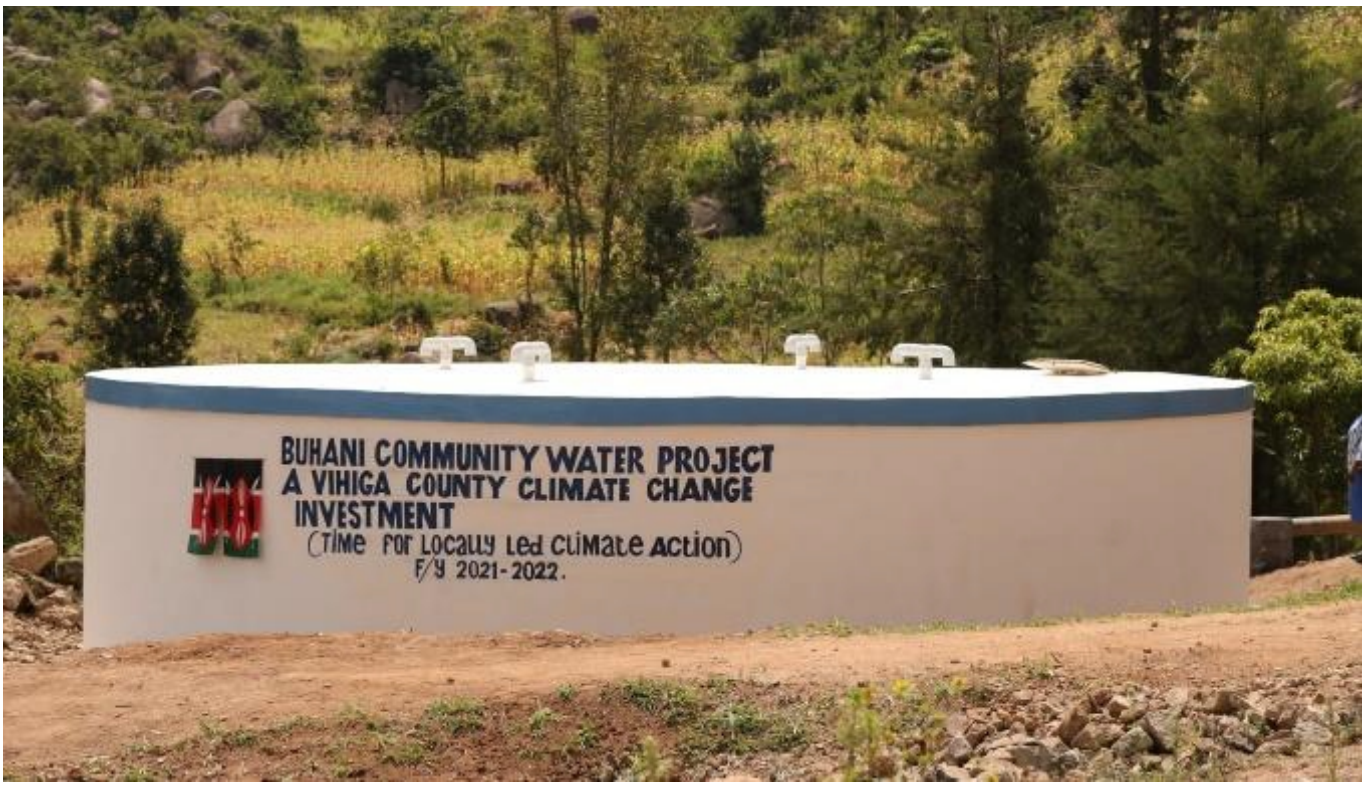
Students washing dishes in Evojo Primary School

Solar Water projects in Vihiga County

The County's solar-powered Kaimosi Water Scheme supplies water to Kaimosi, Maseno University, and Yala, saving KSh 250,000 each month compared to the previous cost of KSh 500,000 paid to KPLC for water pumping electricity bills. The scheme provides 2.5 million liters of clean, safe, and affordable water daily for drinking and irrigation, covering 80% of the area's needs. The remaining 20% is sourced from boreholes, rivers, and springs.

To achieve 100% complete water coverage, the County leverages its hilly terrain by utilizing gravity to guide water from the hills to a central collection point in Buhani. This collected water is then efficiently distributed to other areas for various uses, including irrigation. The strategy to use the gravity method has not only maximized the natural landscape for water transport, reduced the need for additional energy input, but also ensured a consistent supply of water to the neighboring communities.

Through the climate change resilience investment projects and limiting human interference in Maragoli Hills, the County has successfully restored 75 hectares of the degraded land. The County aims to restore 300 hectares over the next five years, which will expand the forested area significantly. In partnership with the Community Forest Association and the Department of Climate Change, the County has allocated a portion of the forest for apiculture. This investment is intended to generate additional income for the local community through honey production and related products.



Solar Water projects in Vihiga County

Gravity water scheme at Buhani

A picture of the Maragoli Hills

Implementation of the practice

- In December 2018, the County Government of Vihiga initiated an awareness campaign on climate change, specifically highlighting the critical role of tree planting in environmental conservation.
- In March 2019, the County collaborated with Anglican Development Services, Christian Aid, and UK AID to establish the Vihiga County Climate Change Fund Act 2019. This legislative effort was aimed at creating a dedicated fund to address climate-related challenges within the County.
- Recognizing the evolving needs and lessons learned from initial implementations, the act underwent amendments in 2021 to enhance its effectiveness and broaden its scope, ensuring more robust support for local climate action initiatives.
- In March 2021, the County established the Directorate of Climate Change, officially initiating the implementation of the Vihiga County Climate Change Fund Act.
- The County carried out a Participatory Climate Risk Assessment (PCRA), which produced a detailed report highlighting key climate risks, sources of vulnerability and essential adaptation measures.
- This comprehensive assessment followed a series of important stages including gathering input from various stakeholders, analyzing climate data and identifying vulnerable sectors within the community.

- The County proceeded to develop a climate change policy and enact climate regulations. The policy was designed to provide a strategic direction and priorities for climate action, while the regulations provide specific guidelines and requirements that support the implementation of the policy, ensuring that all development initiatives are aligned with environmental sustainability goals.

- In 2023, the County unveiled its Climate Change Action Plan for 2023-2027, detailing a comprehensive strategy to tackle climate-related issues over the next five years. This plan emphasizes targeted initiatives aimed at reducing carbon emissions, promoting sustainable practices and enhancing resilience to climate impacts, serving as a roadmap for integrating climate considerations into all aspects of the County's developmental policies and operations.

- At the County level, there are established structures including committees such as the Vihiga County Climate Change Steering Committee, the Vihiga County Climate Change Planning Committee and the Department of Climate Change while at the ward level, Ward Climate Change Planning Committees is the main structure.

- The County-level structure provides strategic policy direction and technical coordination for climate change initiatives while the ward-level one facilitates the connection between County government and local communities during the planning and implementation of climate change adaptation projects.

- The ward-level structure is made up of elected members representing various segments of the community, including women, youth, Persons with Disabilities (PWDs), Faith-Based Organizations (FBOs), elders and Community-Based Organizations (CBOs). This diverse representation ensures that all voices and perspectives within the wards are considered during decision-making processes, creating a more inclusive and effective approach to planning and executing climate change adaptation initiatives at the local level.

- The County regularly hosts interview sessions on local radio stations and organizes cultural events to disseminate information to the public about climate resilience initiatives. These sessions focus on encouraging tree planting, educating residents on climate hazards, and promoting sustainable practices.

Community sensitization on climate change through art

A photo of Vihiga County Director of Climate Change conducting a radio interview

Results of the practice

- **Increased Awareness:** The regular radio sessions have heightened public awareness of climate change issues and the importance of resilience measures such as tree planting.
- **Improved Water Access:** The implementation of solar-powered water projects and the strategic use of the hilly terrain for water distribution have improved access to clean, safe water for drinking, recreation and irrigation.
- **Cost Savings:** The use of renewable energy sources such as solar and hydropower has resulted in significant cost savings for the county by reducing reliance on traditional power sources.
- **Enhanced Forest Restoration:** Efforts to restore Maragoli Hills and protect existing forests have contributed to increased tree cover and the rehabilitation of degraded land.
- **Economic Opportunities:** The investment in apiculture within the community forest provides new sources of income through honey and benefits the local economy.
- **Community Engagement:** The initiative has fostered a sense of involvement among local residents, encouraging them to take part in climate-related activities and become more proactive in sustainable practices

Lessons learnt:

1. Utilizing renewable energy sources such as solar has proven to be both cost-effective and environmentally friendly, emphasizing the value of sustainable practices.

2. Leveraging the County's hilly terrain for gravity-led water distribution has shown to be an efficient method for providing water to various areas without excessive energy consumption.

3. Collaborating with local residents, community forest associations and other stakeholders has been essential for the success of projects, fostering community ownership and support.

4. Setting ambitious but achievable long-term targets, such as increasing forested areas and achieving 100% water coverage has provided clear goals and direction for ongoing efforts.

5. Investing in apiculture as part of forest management has demonstrated the potential for diversifying income sources and providing economic benefits to the local community.

6. Tailoring initiatives to the unique geographical features and needs of the area, such as using the hilly landscape for water distribution, leads to more successful outcomes.

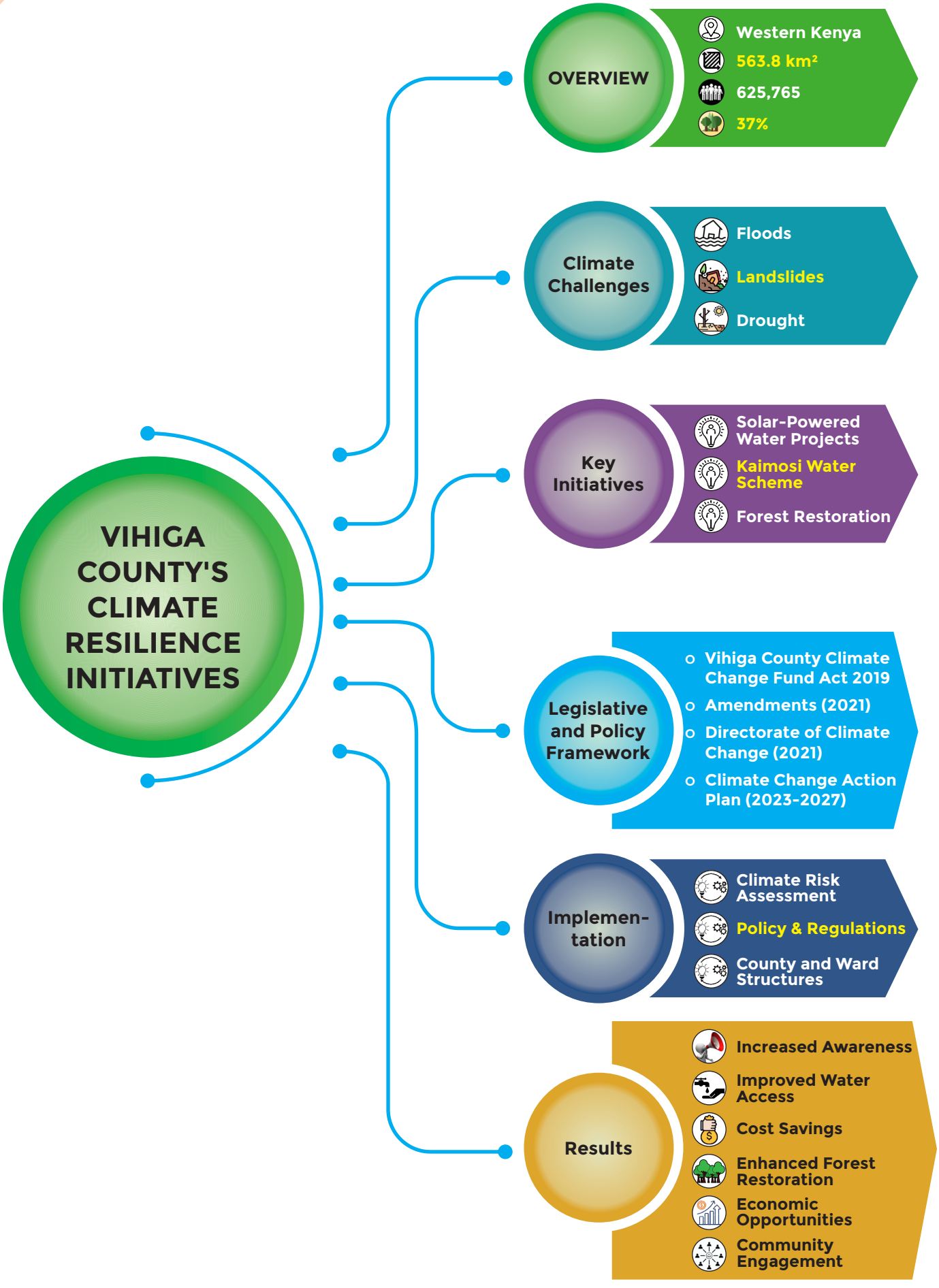
7. Striking the right balance between environmental conservation and community development ensures that projects support both the well-being of residents and the health of the ecosystem.

Conclusion

Through innovative practices such as solar-powered water projects and gravity-led water distribution, the County has successfully improved access to clean water while reducing costs. The restoration of Maragoli Hills and the expansion of forested areas showcase the County's dedication to rehabilitating and preserving its natural resources. These efforts have set the stage for further progress towards achieving the County's long-term goals of 100% water coverage and increased forested areas.

Solarized water projects

Solarized water projects


VIHIGA COUNTY'S CLIMATE RESILIENCE INITIATIVES
OVERVIEW
Western Kenya
563.8 km²
625,765
37%
Climate Challenges
Floods
Landslides
Drought
Key Initiatives
Solar-Powered Water Projects
Kaimosi Water Scheme
Forest Restoration
Legislative and Policy Framework
Vihiga County Climate Change Fund Act 2019
Amendments (2021)
Directorate of Climate Change (2021)
Climate Change Action Plan (2023-2027)
Implemen-tation
Climate Risk Assessment
Policy & Regulations
County and Ward Structures
Results
Increased Awareness
Improved Water Access
Cost Savings
Enhanced Forest Restoration
Economic Opportunities
Community Engagement

A Journey to Achieving Sustainable Climate Change Mitigation and Adaptation in Homa Bay County

Introduction

The rising water levels of Lake Victoria, a phenomenon last observed in the 1960s, made a dramatic return in 2021 and repeated in 2023 just two years later, marking a significant and concerning environmental shift. This resurgence has deeply affected the communities surrounding Africa's largest lake, subjecting them to a series of relentless challenges linked to climate change.

As the water levels rise, they flood shoreline communities, leaving many homes submerged and families displaced. The local communities find themselves in an ongoing battle against the encroaching lake. Fields where crops once grew sink underwater, disrupting local agriculture and food supply chains. This flooding not only destroys immediate harvests but also alters the landscape making future farming uncertain. The persistent damp conditions become a fertile breeding ground for pests and crop diseases, compounding the struggle for food security with each passing season.

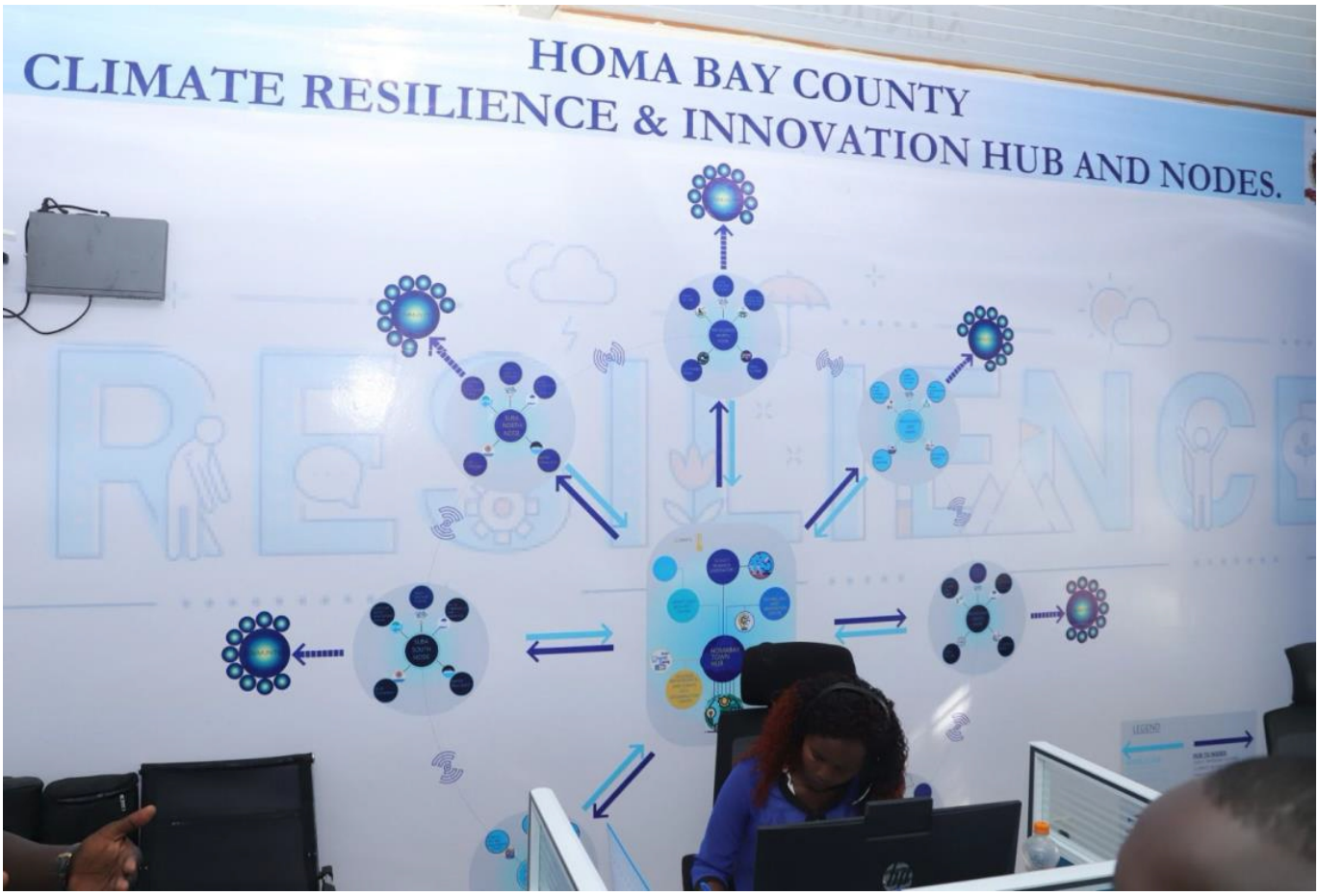
The rise in lake levels has also exacerbated the spread of waterborne diseases among the population. Stagnant pools of floodwater become breeding grounds for bacteria and viruses, leading to outbreaks of diseases like cholera and typhoid. These health crises strain the already limited local healthcare facilities and resources, complicating the efforts to provide necessary medical care and prevent further spread.

Economically, the community faces dire consequences. The destruction of infrastructure where roads are washed away and bridges are damaged prevents both daily travel and the critical flow of goods for commerce. Local markets find it difficult to operate normally and the economic ripple effects are felt widely, deepening the financial strain on a population already struggling with loss and displacement.

Ecologically, the high waters disrupt the delicate balance of Lake Victoria's ecosystem. Changes in water levels shift fish populations, which are essential not only to the diet of the local communities but also to their economies.

Homa Bay County, situated along the southeastern shore of Lake Victoria in Kenya, is home to approximately 1,131,950 people spread across an area of 3,154.7 kilometers squared. The County's location next to the lake plays a central role in shaping the lives and livelihoods of its residents, many of whom rely heavily on the lake for their daily sustenance.

Lake Victoria's abundant and diverse fish species make fishing a vital source of income and nourishment for the people of Homa Bay County. Fishermen are active on the lake every day, catching fish to supply local markets and trade with other parts of Kenya. The lake also serves as a vital transportation route for the County, linking the mainland with several major islands such as Mfangano, Rusinga and Takawiri. Boats transport people and goods back and forth, promoting trade and communication throughout the region. This transportation network is crucial for the economic prosperity of Homa Bay County, enabling the movement of agricultural produce, fish and other goods to markets and beyond.



Homa Bay County Climate Resilience and Innovation Hub

Farming plays a crucial role in the lives of Homa Bay residents who grow crops like maize, beans and sweet potatoes. The region faces challenges due to its dependence on agriculture reliant on rainfall which has become unpredictable due to changing climate patterns. This uncertainty, combined with fluctuating water levels in the lake and frequent flooding, often makes it difficult for farmers to sustain consistent crop yields.

To tackle the challenges of climate change, Homa Bay County Government has implemented a legislative strategy to manage environmental issues. This approach includes passing a County Climate Change Act and adopting relevant policies, as well as establishing committees at both County and ward levels to address climate change at a local level. These committees collaborate with communities to pinpoint specific needs and create customized solutions.

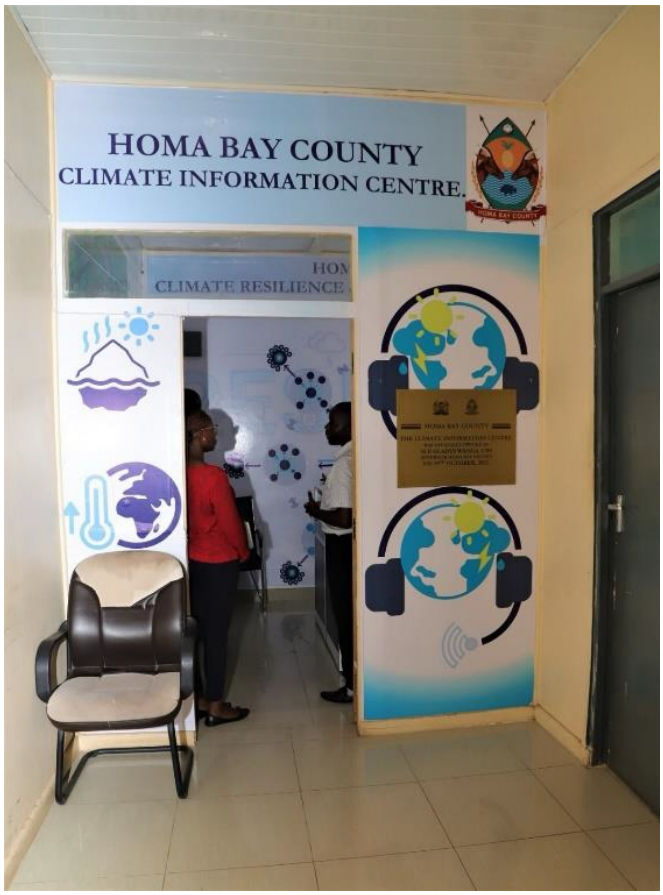
The establishment of a Homa Bay Climate Change Unit at the County level has been a central aspect of Homa Bay County's efforts to address climate change. Within this unit is the Homa Bay Climate Resilience & Innovation Hub which oversees and coordinates climate-related activities throughout the region. One of the hub's key initiatives is the management of a call center designed to provide real-time support to residents facing climate change emergencies

This call center, established with funding from the World Bank's Financing Locally Led Climate Action (FLLoCA) project, connects various County departments to respond effectively to different types of disasters. For instance, if there is a locust invasion, the Department of Agriculture is notified to take necessary action. In the event of a fire, residents can call **0800000870**, a toll-free number to trigger immediate emergency response. This streamlined approach ensures

a swift and organized response to crises, offering residents timely assistance and mitigating the impact of disasters.

By providing a direct line of communication, the call center has significantly reduced panic among County residents. People report emerging issues, such as rising lake levels or impending floods to the County, which then activates relocation strategies to protect residents and their property. This proactive communication model fosters a sense of security and resilience among the population, as they know help is just a phone call away.

The County has recruited and trained specialized officers tasked with connecting emergency situations to the appropriate departments through the call center. These officers act as liaisons, ensuring a seamless flow of information and coordination between residents in need and the relevant county services.



Homa Bay Climate Information Centre.

focuses on educating locals about the impacts of climate change and strategies for resilience. By organizing awareness campaigns and workshops, County officials aim to equip residents with knowledge on sustainable practices and preparedness measures. This outreach helps strengthen the community's ability to adapt and respond effectively to climate challenges.

Implementation of the practice

- Acknowledging the potential negative impact of inadequate climate change measures on the industrial, agricultural, tourism and transport sectors, all vital to Homa Bay County's economy, the County collaborated with GIZ to develop a Climate Change Policy in April 2021.
- With an objective to mainstream climate change adaptation and mitigation in all the County government policies, plans and programs for sustainable development, the policy paved the way for the Climate Change Act.
- In 2022, Homa Bay passed the Climate Change Act.
- The Act supported the establishment of a County Climate change steering committee which comprises of;

    1. Governor as chairperson
    2. County Executive Committee Member designated in charge of climate change as Secretary
    3. County Executive Committee Member in charge of the County Finance
    4. County Executive Committee Member in charge of agriculture
    5. Three (3) community representatives nominated by Executive Committee Member designated in charge of climate change and appointed by the Governor, one being a woman, a youth and a person with disability

6. One representative from development partners working within the County.
7. One representative from a recognized professional body dealing with climate change in the County.
8. Chairperson of Climate Change Fund.
9. A representative from a faith-based organization

- Some of the responsibilities that the committee performs include.
  1. Ensuring mainstreaming of climate change into County planning, decision-making, implementation and development processes
  2. Coordination formulation and monitoring implementation of the County Climate Change Action Plan, County Climate Finance Framework and any other County climate change policies, plans and strategies
  3. Mobilize funds into the County Climate Change Fund and ensure a coordinated approach to climate change response programming and action within the County government, between the County government and national government, and among the different stakeholders in the County among other requirements.
- The Act also established a climate change technical committee to coordinate planning and execution of projects and activities for climate change response, while also overseeing the implementation of the County Climate Change Action Plan and the County Climate Finance Framework among other responsibilities.
- At the Ward level, the Act established the Ward Climate Change Committee. This was to coordinate and engage communities and other stakeholders in the ward to design and carry out climate change response activities, while also supporting research and knowledge management.
- The ward Climate change committee comprises of nine members including,
  1. Ward Administrators who is the chair
  2. Ward officer for the department in charge of Water, Irrigation, Sanitation, Environment, Energy, Forestry and Climate change is the Secretary
  3. Ward Agricultural Officer
  4. Ward forest officer
  5. One representative of the youth
  6. One representative of the People with Disabilities
  7. Two community representatives from each ward with strict observance of gender rule
  8. One person representing Community-Based Organizations in the Ward and actively engaged in climate change response activities;
- In 2022, the County government established a climate change fund to support initiatives aimed at mitigating and adapting to the impacts of climate change, while also promoting sustainable development within the region.
- In collaboration with Transparency International, technical-level committees received training and capacity-building support on climate change, focusing on mitigation and adaptation strategies.
- In May 2023, a Participatory Climate Risk Assessment (PCRA) was conducted to gather feedback from residents and make necessary updates and corrections in the sector.
- Financing Locally-Led Climate Action (FLLoCA) project contributed Ksh22 million while the County supplemented with an additional Ksh5 million, bringing the total funding for the climate change sector to Ksh27 million.

County seedbed

- This collaboration pushed the Department of Climate Change to be more innovative, prompting the furnishing and equipping of a Climate Resilient Hub which enables a real-time reporting of emergencies and climate hazards in the County while facilitating collaboration across different departments. The Centre receives an average of 30 calls a day.
- The Department of Climate Change trained members of the County Assembly on climate change to equip them with the knowledge and skills needed to create informed policies and legislation addressing climate change challenges.
- In addition to capacity-building initiatives and community sensitization on climate mitigation, the County regularly donates seedlings to schools and churches to help achieve the legally mandated 10% forest coverage.

Results of the practice

1. **Enhanced Emergency Response**: The call center has successfully facilitated immediate responses to climate-related emergencies.
2. **Cross-Departmental Coordination**: The Climate Change Unit's role in connecting various County departments has proven beneficial in tackling different types of disasters. Departments such as agriculture and public safety are notified promptly about emerging threats, allowing them to take timely action.
3. **Improved Awareness and Education**: With the Act and policy in place, there has been a concerted effort to raise awareness about climate change and educate the public on resilience strategies.
4. **Reduced Panic and Increased Trust**: The availability of real-time support and assistance has helped alleviate panic among residents. They now feel more secure knowing that they can seek help quickly in case of

emergencies, which has also fostered greater trust in County authorities.

5. **Structured Framework**: The Climate Change Act outlines clear guidelines and protocols for addressing environmental concerns and emergencies, creating a cohesive framework for action.

Lessons learnt:

1. Involving communities through County and ward-level committees has been vital for creating tailored and effective solutions as local knowledge and engagement ensure that strategies directly address the unique challenges faced by residents.

2. Streamlined coordination between various County departments leads to more efficient and timely responses to emergencies and fosters collaboration and maximization of resources.

3. Raising awareness about climate change and resilience strategies empowers residents to take proactive measures to protect themselves and their property.

4. The establishment of a call centre dedicated to climate change emergencies provides real-time support to residents.

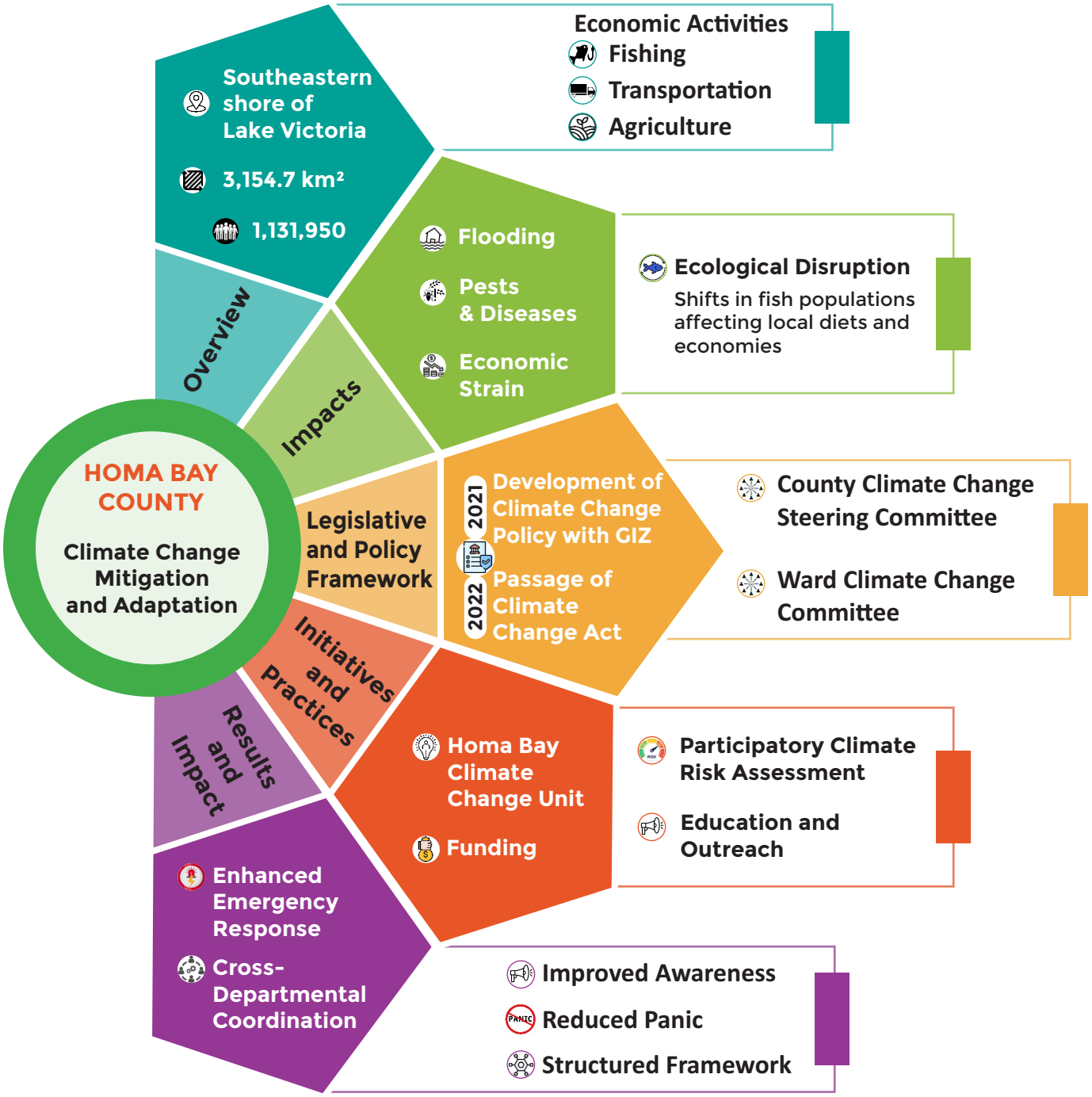
5. Climate change is a dynamic issue that requires adaptable policies and legislation. Continuous monitoring and evaluation of existing measures allow for adjustments and improvements as circumstances change.

6. Promoting sustainable practices in agriculture, fishing and other industries can help mitigate the long-term impacts of climate change. This focus on sustainability supports the region's economic and environmental well-being.

7. A partnership approach in the implementation of programs at all levels and sharing resources is more effective in delivering impacts than working in isolation

Conclusion

In conclusion, Homa Bay County's proactive approach to addressing climate change through legislative measures, community engagement and the establishment of a Climate Change Unit has yielded notable progress in building resilience and safeguarding the well-being of its residents. By leveraging local knowledge and fostering collaboration across County departments, the region has developed effective solutions to mitigate the impacts of climate change. The establishment of a call centre for climate emergencies has provided real-time support to residents and facilitated timely responses to various crises. While significant strides have been made, continuous improvement and adaptability remain essential to address the evolving challenges of climate change.


HOMA BAY COUNTY
Climate Change Mitigation and Adaptation
Overview
Southeastern shore of Lake Victoria
3,154.7 km²
1,131,950
Economic Activities
Fishing
Transportation
Agriculture
Impacts
Flooding
Pests & Diseases
Economic Strain
Ecological Disruption
Shifts in fish populations affecting local diets and economies
Legislative and Policy Framework
2021
Development of Climate Change Policy with GIZ
2022
Passage of Climate Change Act
County Climate Change Steering Committee
Ward Climate Change Committee
Initiatives and Practices
Homa Bay Climate Change Unit
Funding
Participatory Climate Risk Assessment
Education and Outreach
Results and Impact
Enhanced Emergency Response
Cross-Departmental Coordination
Improved Awareness
Reduced Panic
Structured Framework

Sustainable rangeland restoration through community-led rotational grazing in Kajiado

Introduction

Kajiado County's main population comprises pastoralist communities whose main economic activity is livestock keeping; the cattle require water and pasture. Most livestock farmers had organised into ranches prior to the Community Land Act, 2016, which converted the group ranches into community land.

In Magadi, there are four group ranches with a total membership of 11,400 Shompole has 3,500 members, Olkiramatian 1,700, Ol Keri 4,400 and Ol Donyo Nyoike 1800, Each ranch is responsible for common property management in the ranch areas surrounding the Lake Magadi.

Ranch groups in Amboseli include Olgulului with 11,000 members, Eselengei 6,000, and Mailwa with 4,000 members. In Narok, Mosiro Group Ranch which borders the Masai Mara has 4,000 members.

Kajiado County is an arid and semi-arid area in Kenya, with the dry season running from August to October, followed by short rains from November to December. What follows is the warmest season from December to February. This means that the County experiences long spells of drought, which leads to the drying up of pastures and water sources, causing loss of livestock. With the farmers keeping large herds of cattle, they often overgraze to keep their animals alive, leading to soil degradation. The loss of livestock negatively impacts the farmers economically, as they lack the financial resources to look for alternative water sources and fodder.

The short rains are usually accompanied by flash floods, which further compounds the situation, as some areas are usually cut off from the rest. Floods from the Ewaso Nyiro River usually cover the Shombole Centre, Olkiramatian (Oltaraja), Kona Maziwa and Pakase areas in Magadi, and residents of Pakase cannot cross the hippo- and crocodile-infested river, affecting livelihoods. Another seasonal river in Olekeriei makes crossing it impossible during the rains. The County Government of Kajiado had constructed a bridge there, but it was swept away.

The Ewaso Nyiro River floods affect communities in Magadi, Amboseli and Narok since its waters drain into Lake Natron in Tanzania before reaching Magadi.

- **Impact of the problem on the population**

  Drought, soil degradation, and floods all lead to the loss of animals, which are a major source of livelihood. Soil degradation occurs as a result of prolonged dry spells or overgrazing, so that, even if it rains, the grass doesn't grow. The pastoralists would most often fight for the limited resources, resulting in displacement (especially during El Nino) and uncertainty, thus hampered development. The drought period also affects education, especially in Magadi, as children drop out of school to trek long distances in search of pasture and water. Some girls are forced into early marriages.

Implementation of the practice

Realising the ripple effects of climatic challenges facing them, ranch owners welcomed help from some development partners whose well-meaning intervention proved unsustainable. The local farmers then went back to their local knowledge of weather patterns and settled on rotational grazing. In early 2023, they partnered with Soil for the Future Africa (SftFA) which seeks to advance rangeland carbon projects and

create a sustainable financing mechanism that will support decades of rangeland restoration efforts in Kajiado.

The practice of rapid rotational grazing in Kajiado involves dividing large pastures into small paddocks and the pastoralists religiously move their animals every 14 days from one paddock to another. This helps improve the soil fertility and quality of grass.

- **Key implementers and collaborators and their roles**

  The key implementers are the ranch owners in collaboration with SftFA. Each ranching group is coordinated by grazing coordinators who are the community face of carbon projects. They are the conduit by which community members learn about project specifics and developments, and they help share the overall vision and long-term goals. The coordinators have extensive knowledge of grazing practices and boundaries and can work directly with different community members, build trust and relationships, and generate excitement for a project requiring extensive community participation.

  In August 2023, the project received no-objection letters from both the National Government and the County Government of Kajiado thus endorsing its implementation.

- **Resource implications**

  The main implementers are the communities with financial support from SftFA. The communities play their part in committing their lands to be used in the project as paddocks or blocks and to abide by the set rules of rotational grazing, while SftFA makes community contribution payments for activities such as wages for grazing coordinators who are fully employed and tokens for volunteers, bursaries, construction of ranch offices and debt payments for the ranches.

- **How the County plans to sustain the best practice**

  The project is currently community-led, something the County Government recognizes and applauds as it has created employment while helping pastoralist communities restore their rangelands. To support the project, the County has already put in place legislation to support climate action, including using local knowledge.

1. The County will further support the project through the 5-year programme on Financing Locally-Led Climate Action (FLLoCA), jointly supported by the Government of Kenya, the World Bank and other donors. FLLoCA aims to deliver locally-led climate resilience actions and strengthen county and national govern-ment's capacity to manage climate risk. One of its objectives is to support community-led local initiatives for enhanced community resilience and enhance sustainable development. The County has a Rangeland Management Programme under FLLoCA.

2. With FLLoCA support, the County is working towards achieving the Governor's vision of A transformed and Sustainable Kajiado through its CIDP 2023-2027. The 'Big Vision' has three themes, all related to climate change, namely Modulated Pastoralism, Creation of Livable Towns and a Climate-proofed Environment. The County commits to prioritise programmes and projects to facilitate sustainable livestock management and practices and the provision of requisite social amenities and services to the community in the rural and urban areas. Environmental management concerns such as waste management and pollution control will be priorities while integrating climate change adaptation and mitigation measures (Kajiado CIDP 2023-2027).

3. So far, under FLLoCA, the County Government has undertaken a Participatory Climate Risk Assessment (PCRA) 2023-2027 and developed the Kajiado County Climate Change Action Plan (CCCAP) 2023-2027 which emphasizes modulated

pastoralism as an important sustainable land use practice and a way to preserve traditional livelihoods for harmonious coexistence between the needs of the local communities and the conservation of natural resources. Plans include promoting responsible grazing management, supporting the establishment of grazing reserves, and implementing strategies that safeguard rangelands for sustainable pastoralism.

Results of the practice

Communities are living peacefully while adhering to rotational grazing rules to manage soil degradation and enable grass to grow for their own benefit.

Use of local knowledge and the use of community-led coordination of the livestock farmers. SftFA's financial support motivates the communities to embrace the project and its many benefits.

Community discussion on range land management

Lessons learnt

The following factors have led to the success of the project so far:

- Not letting local politics affect project implementation.
- Formation of grazing committees which plays a vital role in governing pastures.
- Implementation of rapid rotational grazing in the project area.
- Compliance with national and County Government laws.
- Involving the community in every stage and allowing the community to own the project.

Recommendations

For the success of the project, counties facing similar challenges should:

- invite community consensus and stewardship of the project;
- enter partnerships that bring tangible benefits to the target communities;
- embrace the use of local knowledge which is more sustainable; and
- avoid politics at all costs.

Impact of Community-led Climate Smart Initiatives in Siaya County

Introduction

The challenge of bridging the intergenerational divide in addressing climate change in Africa is multifaceted, reflecting deep-seated differences in perspectives experiences and access to information across age groups. This divide not only complicates the communication and understanding between generations but also affects the implementation of effective climate change solutions.

Older generations often possess a wealth of indigenous knowledge and experience regarding local environmental management and sustainable practices. However, they may be less familiar with the latest scientific research on climate change or the newest technologies available for adaptation and mitigation. On the other hand, the younger generations are more attuned to global perspectives on climate change and are equipped with modern education and technological skills. Still, they could lack a deep contextual understanding of their local environments and traditions.

This intergenerational gap has led to a disconnect in how climate change is perceived and how local solutions are devised and implemented. Further, the challenge has been exacerbated by the often-limited platforms for intergenerational dialogue, which are crucial for sharing knowledge, values and strategies for climate action.

Siaya County, located in western Kenya, is actively addressing the intergenerational gap by utilizing a local knowledge hub named Dala Rieko. Derived from the Luo language, meaning "home of knowledge," this initiative serves as a platform where individuals from

Council of Governor's staff interviewing County officials inside the Dala Rieko hub

diverse backgrounds and age groups can convene to discuss societal challenges and propose solutions. Through this inclusive approach, Dala Rieko facilitates the development of locally tailored solutions to various issues including those related to climate change.

Established in 2008 as a Community-Based Organization (CBO), this facility initially began as a platform dedicated to fostering knowledge exchange on various societal challenges. With a primary objective of promoting food security, the hub has evolved over the years to become a vital resource in its community. By embracing an inclusive approach, it seeks to address the multi-faceted issues surrounding food security and smart agriculture.

Through a series of meetings conducted at the Centre, the local community delves deeply into exploring suitable fertilizer options and encourages members to utilize water hyacinths by decomposing them to produce organic manure.

Manure from water hyacinth.

Through its efforts to promote the utilization of decomposed water hyacinth and provide training to locals on its application, the Centre has made significant strides in addressing the numerous challenges posed by this invasive plant. The extensive presence of water hyacinths in Lake Victoria has had severe repercussions on aquatic ecosystems, transportation networks, and fishing operations, causing significant economic hardships for communities living in the lake region.

By specifically training local fishermen and farmers on how to effectively utilize this invasive plant, the Centre has empowered these individuals to not only clear the weed voluntarily but also to capitalize on its potential benefits as manure. This proactive approach

has led to a noticeable improvement in the cleanliness of the lake while simultaneously fostering the growth of more organic foods.

In addition to providing a platform for discussions and training sessions on smart agriculture, the Centre has empowered farmers through solar hatchery technology, enabling them to produce over 1000 chicks per month. Farmers bring their eggs to Dala Rieko, where they are incubated at an affordable price before the fully grown chickens are sold to outsiders for Ksh500 each. Further, the Centre offers education on indigenous knowledge, teaching locals how to monitor various bird sounds, notably the Rabala Kwasi, which signals the onset of rain and the Ober Rayudhi flower, which blooms as a precursor to the rainy season.

Solar incubator at Dala Rieko

The Siaya County Government has supported the Weceso Pambazoko Community-Based Organization (CBO), comprising 120 members, in various endeavors encompassing agricultural ventures, waste management initiatives, livestock husbandry and pisciculture. Initially established by women advocating for their rights, with a primary focus on promoting family planning to mitigate poverty, the group has evolved to address broader community development needs.

Recognizing the pivotal role of environmental conservation, the County provided the women's group with diverse tree species and training sessions highlighting the significance of preserving natural habitats. Following the success of these educational programs, which saw women actively transmitting their newfound knowledge to their children, further training was conducted. This advanced training equipped the women with strategies to optimize their flat, waterlogged land during rainy seasons. Techniques such as tree planting and integrating trenches into their farming methods were introduced, fostering sustainable land use practices and enhancing agricultural productivity within the community.

Implementation of the practice

- In July 2022 the County Government of Siaya established a climate change unit comprising of the following members.

    1. Director of Monitoring and Evaluation
    2. Head of Budget and Finance
    3. Social risk Management Officer
    4. Director of Communication
    5. Director of meteorology and weather
    6. Grievance/conflict resolution officer

The primary goal of this unit is to integrate climate change matters into every facet of County operations and decision-making processes, making awareness and adaptation measures a standard part of planning, implementation and evaluation in all departments.

This involves the following multifaceted approach:

1. **Policy Integration:** Updating existing policies and creating new ones to reflect the need for climate resilience, ensuring that every department's policies consider climate change impacts and adaptation strategies.

2. **Capacity Building:** Providing training and resources to County employees, equipping them with the knowledge and tools to incorporate climate considerations into their work.

3. **Planning and Development:** Embedding climate change adaptation and mitigation measures into all stages of planning and development of County projects including considering climate risk in the location, design and construction of infrastructure and ensuring that community development initiatives promote environmental sustainability.

Siaya County Climate Change Unit

4. **Cross-department Collaboration:** Facilitating collaboration across departments to ensure a unified approach to tackling climate change.

5. **Community Engagement and Awareness:** Working with communities to raise awareness about climate change, its impacts and various ways to adapt.

6. **Monitoring and Evaluation:** Establishing mechanisms to track the effectiveness of climate change integration efforts across departments, adjusting strategies as needed to enhance resilience and sustainability.

- In 2023, the Climate Change Unit was tasked with overseeing the implementation of the World Bank's Financing Locally Led Climate Action (FLLoCA) project. Concurrently, the County Govern-ment launched a series of capacity-building workshops aimed at equipping members of the climate change unit with the requisite knowledge and skills necessary for fulfilling their roles and responsibilities effectively. The training also aimed at designing projects and campaigns leading to bridging the inter-generational knowledge gap.

- Further, the same year, County, with the collaborative efforts of experts from various departments including Agriculture, Finance, Monitoring and Evaluation (M&E), Health, and Environment, undertook a comprehensive Participatory Climate Risk Assessment (PCRA) across all 30 wards.

- This inclusive approach involved engaging community members, stakeholders, and local authorities in assessing and understanding the various climate risks and vulnerabilities faced by each ward.

- From this assessment the County identified the following key issues and solutions to the proposed issues from all wards

Risk	Proposed Solution
• Formation of Gulleys along major roads e.g., Sidindi-Sikalame Road	• Construction of Check Dams on the Roadsides for control of Run-Off • Construction of On-farm Small-Holder pans to support mini-irrigation • Construction of Gabions • Public Awareness on erosion control
• Strong winds causing destruction of public and private assets	• Boundary planting of trees in homesteads, Public Buildings, etc.
• High temperatures leading to heat stress	• Establishment of Green Spaces in Public Facilities through woodlots • Greening roads through planting of trees • Promote on-farm forestry
• Crop failure and livestock losses due to drought	• Promotion of Climate Smart Agricultural Technologies e.g., Drought Tolerant Crops. • Promote public education on access to down-scaled weather information • Promote rainwater harvesting &storage through water pans and installation of water tanks. • Establishment of forage reserves • Construction of Water Conservation Structures e.g. Dams

• Air Pollution through emissions from vehicles, traditional cookstoves, factories, etc.	• Promote use of improved cook stoves • Enact legislation to control vehicular emissions. • Public Education on air pollution
• Biodiversity loss e.g., Weaver birds, Butterflies, Hippos, Guinea Fowls, Porcupines, Gazelles, Grasshoppers and other tree species	• Establish Land Use Plans • Establishment of Conservation areas by demarcation • Enhance public awareness on biodiversity conservation
• Floods	• Demarcation of riparian lands & wetlands • Development of Riparian Management Plans • Mapping of Riparian zones and Wetlands • Enhance Community awareness on riparian protection • Promotion of Nature-Based Solutions for Riparian Management
• Drying up of streams	• Water Catchment Protection through demarcation & planting of recommended tree species • Promote Community Awareness on Water Resources Management • Development of Sub-Catchment Management Plans • Development of Solar-Powered Boreholes • Construction of water pans and dams • Construction of Rainwater Harvesting in Public Facilities
• Land Degradation through brick-making in Ratado, Humwend & Nyaolo in West Ugenya Ward, Aluny, Anduro, etc.in Siaya Township Ward	• Landscape Restoration through tree-planting • Enactment of bylaws to control brick-making • Promote environment friendly brick-making technologies e.g. interlocking blocks machines, etc.
• Lake Water Rises	• Public Education on Riparian Distancing

- In May 2023, the unit developed the County Climate Change Action Plan. The document outlines the necessary adaptations across various sectors, identifying key partners for implementation and estimating associated costs.
- In the same period, the County forged a collaborative effort with local communities, Ministry of Environment, the East African Community and the Lake Basin Commission, leading to the drafting of various proposals.
- This joint initiative was instrumental in securing donations of trees, various drought-resistant crops and bee hives for different Community-Based Organizations (CBOs), thereby improving environmental sustainability and agricultural resilience within the community.

- Through 'Dala Rieko' there has been various discussions centered around strategies for climate adaptation. This platform has become instrumental in rallying the community for climate change adaptation campaigns, serving as a hub for sharing knowledge, experiences and best practices in confronting climate-related challenges.

- To enhance food security, the County has also taken significant steps by providing specialized training to 23 individuals in the fields of agroecology, land management, and waste management. This educational initiative aims to equip participants with advanced skills and knowledge in sustainable agriculture and environmental stewardship, ensuring that they can contribute effectively to the county's food security while minimizing environmental impacts.

- The long-term viability of all climate change initiatives in Siaya County is outlined in the County Integrated Development Plan (CIDP) and the County Climate Change Action Plan.

Results of the practice

1. **Enhancement of proposal writing skills:** The training initiative has effectively equipped the residents with crucial skills in proposal writing, enabling them to secure funding and support for community projects.

2. **Promotion of community dialogue through Dala Rieko:** Through 'Dala Rieko' there has been transformed community engagement in Siaya, fostering a platform where residents can collectively address societal issues. This approach has democratized discourse, allowing every participant to voice their opinions and contribute to developing actionable solutions.

3. **Adoption of organic manure and water hyacinth utilization:** The shift from fertilizers to organic manure represents a significant stride in sustainable agriculture, markedly reducing the financial burden of purchasing chemical fertilizers. Additionally, the innovative use of water hyacinth not only contributes to the cleanliness of Lake Victoria, but also improves fishing and transportation.

4. **Empowerment of the Weceso group:** The support extended to the Weceso group has been transformative, enabling women and youth to engage in income-generating activities such as crop farming, beekeeping, and soy cultivation.

5. **Innovative water conservation techniques for agriculture:** Recognizing the challenges of farming in flat, water-retentive lands, the County's educational programs have introduced innovative water conservation techniques. By teaching farmers to construct water catchment trenches, the initiative ensures the availability of water for agriculture, enhancing food security and resilience against drought.

6. **Environmental conservation through reforestation:** The County's commitment to planting bamboo and other water-retentive tree species has made significant strides in environmental conservation. This initiative not only aids in water conservation but also enhances oxygen levels, contributing to the overall health and sustainability of the ecosystem.

Lessons learnt:

1. Central to the success of conservation projects is the active involvement of the community. This engagement ensures that the community takes ownership of these initiatives, fostering a deeper commitment and sustained effort toward conservation goals.

2. Cultivating drought-resistant crops such as green grams and soybeans offers multiple advantages. These crops are versatile,

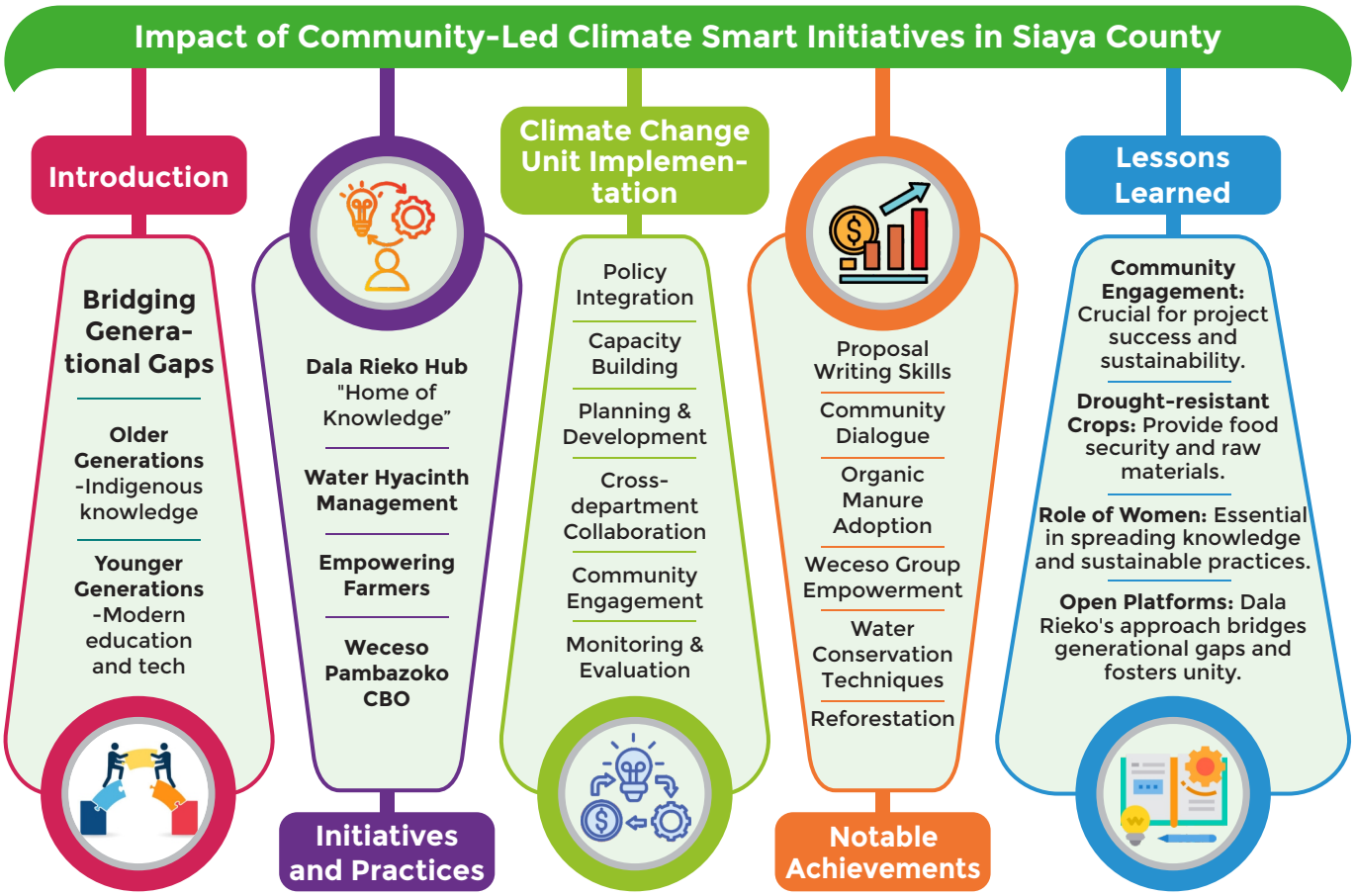
serving not only as food sources but also as raw materials for products like poultry feed, milk and cooking oil.

3. Engaging women in climate conservation efforts is crucial. Women play a pivotal role in educating their children and peers about sustainable agricultural practices, ensuring that knowledge and skills are passed down and spread within communities.

4. The creation and promotion of platforms for open conversation, such as the 'Dala Rieko' initiated, is instrumental in bridging the gap between generations. These forums encourage people from diverse age groups to share their experiences and ideas, leading to innovative solutions for existing challenges and fostering a sense of unity and purpose across the community.

Conclusion

The initiatives in Siaya County vividly demonstrate the effectiveness of community involvement, environmental care, and inclusive growth strategies. Through focused proposal writing training, embracing sustainable farming and creative resource utilization, the community has made significant progress in resilience, self-sufficiency and eco-sustainability. Adopting drought-resistant crops illustrates a proactive measure on agricultural sustainability and climate change. Platforms like 'Dala Rieko' have been key in enhancing community unity, bridging intergenerational gaps and collaborative problem-solving paving the way for a sustainable and inclusive future. These successes underscore the impact of community-led efforts in driving meaningful climate change interventions.

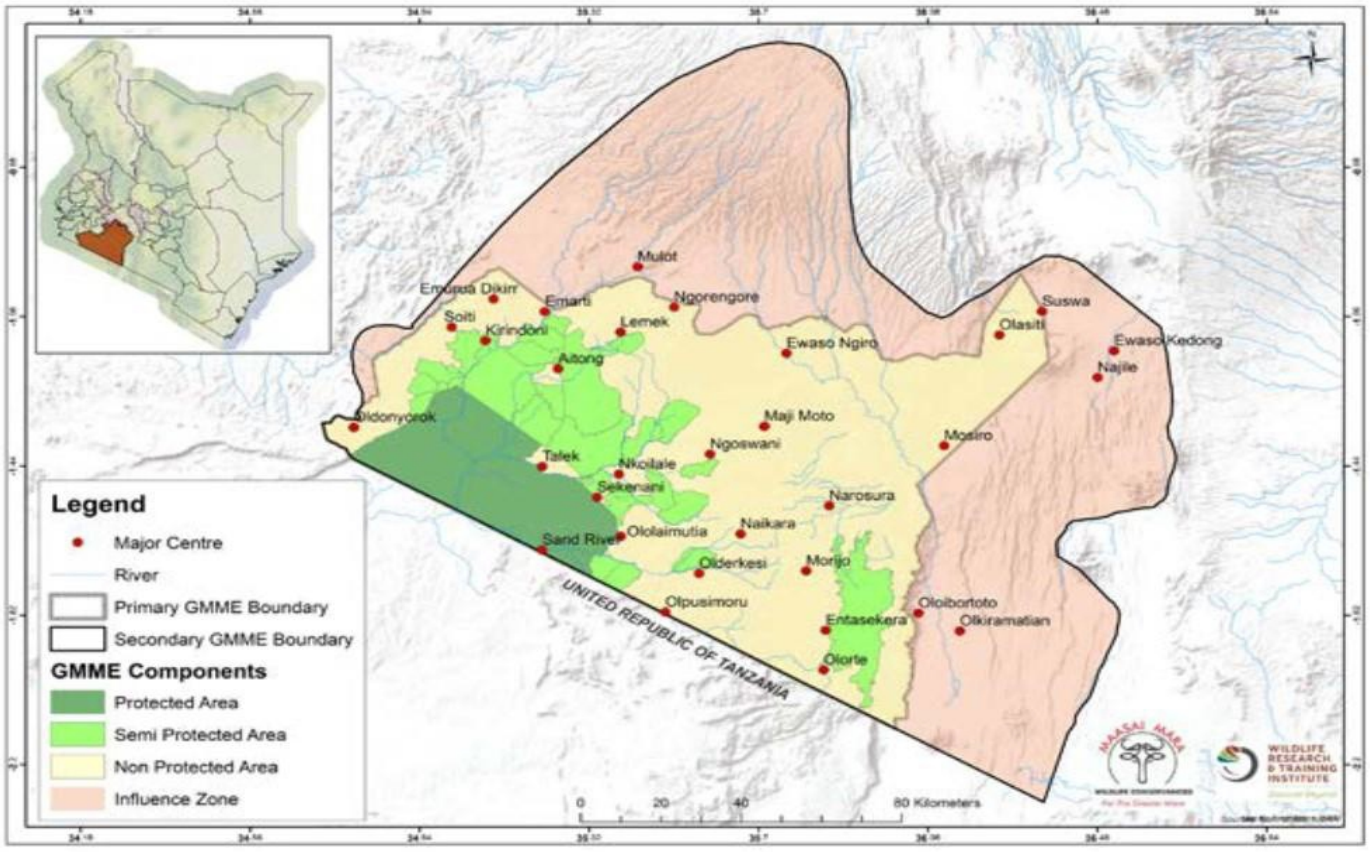


Conservation in the Face of Climate Change and Poaching: Leveraging Technology for Sustainability.

Introduction

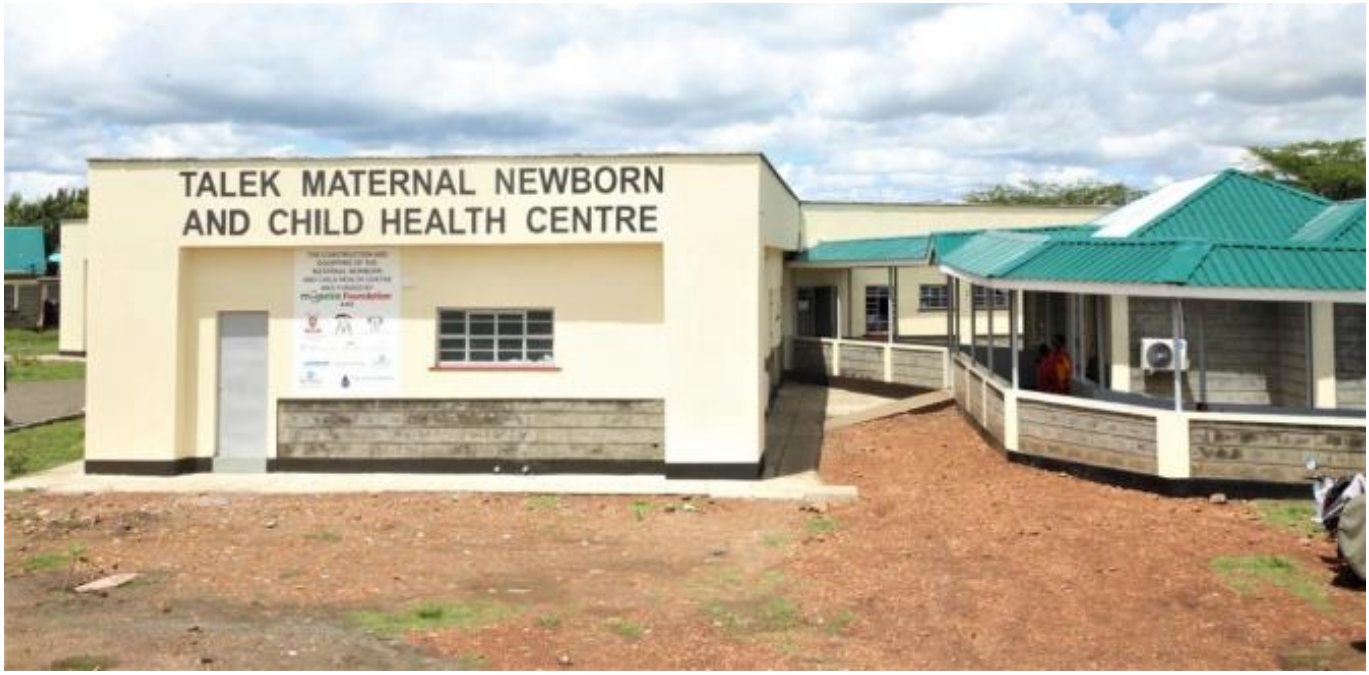
According to the 2019 census, Narok County, in southwestern Kenya spanning 17,921 square kilometers, has a population of 1,157,873 and is predominantly inhabited by the Maasai community. Home to the renowned Maasai Mara National Reserve, Narok County relies heavily on tourism as a vital pillar of its economy. The reserve attracts thousands of visitors each year, contributing significantly to the County's economic development and providing 70% of employment opportunities for residents.

The Greater Maasai Mara Ecosystem (GMME) is a part of the extensive Serengeti-Maasai Mara Ecosystem, which spans approximately 25,000 square kilometers and is globally famous for the spectacular annual migration of over one million wildebeest. The GMME can be categorized into three main geographical components based on land use and tenure. These include the protected lands of the Maasai Mara National Reserve, semi-protected areas comprising Mara conservancies and the Loita forest and non-protected regions alongside an influence zone While the County government of Narok manages the national reserve, semi-protected areas are overseen by group wildlife conservancies, balancing wildlife protection with regulated livestock grazing. Non-protected lands encompass a blend of rangeland, crop agriculture and individual settlements.



GMME Geographic map

The GMME encompasses 22 conservancies. According to GMME Management Plan 2023-2032, the County Government of Narok allocates 19% of the revenue generated from the Maasai Mara National Reserve to invest in community development and social projects within GMME. These projects include the construction of schools and health facilities, designed to enhance the infrastructure of the area. Residents of Talek have experienced significant enhancements in their community infrastructure through the establishment of essential facilities, including the Talek Maternal Newborn & Child Health Centre and the Talek Boys Secondary School.



Takek maternal newborn and child health center

Talek boys secondary school

Despite the benefits the National Reserve provides to the country and neighboring communities, it has faced numerous challenges over the years. Poaching remains a significant issue, particularly in the southern side of Mara, where poachers from Tanzania primarily hunt for bushmeat. Additionally, there is a concerning decline in wildlife species due to natural causes, including climate change and evolutionary factors. The reserve has also encountered significant challenges with vehicle congestion, especially during the peak period of the wildebeest migration.

To mitigate these issues, the National Reserve has implemented a zoning strategy, designating and marking areas as high-use and low-use zones. This approach aims to distribute tourist activity more evenly throughout the reserve, encouraging visitors to explore less crowded, low-use areas and thereby reducing the pressure on high-use zones.

High use Zone sign

Climate change has had a distinct impact on biodiversity, contributing to prolonged droughts, bushfires, floods all contributing to the death of wildlife. These environmental stresses have also driven humans to encroach on wildlife habitats in search of better grazing lands and refuge from degraded areas. Consequently, there has been an increase in wildlife hunting and poaching for meat.

Although Kenya Wildlife Services is in the process of developing a wildlife climate change strategy, the Maasai Mara has already taken proactive measures by not only identifying and marking high-use zones but also integrating advanced technology. In collaboration with the Footprint Foundation, the Mara has constructed a state-of-the-art technology command center to house various technological tools, including EarthRanger,

Black rhino in Maasai Mara

Maasai Mara Technology Command Centre

which is currently utilized for multiple purposes, such as tracking endangered animals.

One notable success story involves the rhino population, which has grown from 18 in 1983 to 80 in 2024. While this increase can be attributed to various factors, the use of EarthRanger to monitor rhinos has played a crucial role. This technology allows for the precise tracking of each animal, enabling the identification of injured rhinos that require rescue and treatment.

Further, the technology command center will significantly improve the reserve's capability to address and alleviate other pressing challenges, including poaching and human-wildlife conflicts that have intensified due to climate change. By deploying advanced surveillance and monitoring systems, the centre aims to enhance incident response times and improve the overall management of the reserve.

One of the critical functions of the command centre is the ability to monitor and control high-speed vehicles within the park, reducing the risk of accidents and ensuring the safety of both wildlife and visitors. Additionally, the center tracks instances of animal harassment caused by overcrowded tourist vehicles, helping to regulate traffic and minimize disturbances to wildlife. Noise pollution, a growing concern for animal stress and habitat disruption, is also closely monitored and controlled through these technological tools. To enhance park accessibility and alleviate overuse of the high-use zones, the county has developed and improved 273 kilometers of roads. The county has also operationalized seven solar-powered boreholes.

Implementation of the practice

- The Maasai Mara National Reserve was first established in 1948 when the Mara Triangle, a 520-square-kilometer area between the Siria Escarpment, the Tanzanian border and the Mara River was declared a National Game Reserve.
- In 1961, control of the reserve was transferred to the County Council of Narok and the core area was extended eastward to encompass 1,831 square kilometers.
- In 1984, sections of the reserve were excised providing watering points for livestock and reducing the reserve to its current size of 1,530 square kilometers.
- In 1995, following the creation of the Trans Mara District, management of the reserve was split between the Councils of Narok and Trans Mara, with the Council of Narok managing the area east of the Mara River and that of Trans Mara managing the Mara Triangle to the west.
- In 2001, day-to-day management of the Mara Triangle was contracted to an independent non-profit protected area management company, the Mara Conservancy, under an initial five-year agreement, which has since been extended.
- In 2013, as part of Kenya's devolved system of governance arising from the new constitution, the two County councils formed part of Narok County, which is now responsible for managing the entire reserve.
- In 2022, the County Government of Narok hosted an investors meeting at Sarova Mara, bringing together the community, various wildlife stakeholders including KWS, State Agencies, and community members.
- During this stakeholders meeting, participants expedited the development and publication of the Maasai Mara National Reserve Management Plan 2023-2032.

Before and After pictures of roads in Maasai Mara

- In 2023, the County developed the Greater Maasai Mara Ecosystem Management Plan, 2023-2032. The One Brand Mara marketing strategy 2023-2027 was developed the same year.
- From November 2023 to January 2024, the County, in partnership with the Footprint Foundation, conducted a series of training sessions on incorporating EarthRanger technology to monitor endangered animal populations.
- Although the areas around the Mara Triangle previously used the SMART app, the addition of EarthRanger complements and enhances these efforts by providing more comprehensive monitoring capabilities.
- The construction of the command center, intended to centralize all technological aspects, commenced in February 2024 within the Maasai Mara National Reserve.
- Embracing both SMART App and EarthRanger has reduced poaching activities in Maasai mara as indicated by the table below.

	2018		2019		2020		2021		2022		2023		TOTALS	
MONTH	ARREST	SNARES	ARREST	SNARES	ARREST	SNARES	ARREST	SNARES	ARREST	SNARES	ARREST	SNARES	ARREST	SNARES
JAN	6	0	18	0	10	0	1	0	19	476	9	6	314	1232
FEB	17	0	15	0	7	14	0	0	11	14	22	85	280	694
MAR	7	15	17	0	1	0	22	13	7	0	8	111	283	759
APR	19	4	4	0	5	0	7	0	6	4	9	0	258	692
MAY	8	0	14	13	5	0	0	14	13	0	0	0	217	297
JUN	30	71	9	7	12	19	2	92	1	0	21	0	318	1608
JUL	17	45	23	51	30	278	19	850	24	37	26	98	533	9376
AUG	41	114	14	1199	24	1241	39	708	13	721	49	907	634	22445
SEP	65	599	67	550	12	991	24	762	31	169	22	660	565	14513
OCT	45	640	8	283	12	557	6	274	59	174	14	65	1007	11418
NOV	28	744	8	175	10	90	16	475	38	236	16	53	424	4603
DEC	34	355	2	0	6	0	8	417	24	171	9	0	250	740
G/TOTALS	317	2587	199	2278	134	3190	144	3605	246	2002	205	1985	5083	68377

Results of the practice

- By effectively restricting and clearly marking high-use zones, the County has successfully mitigated land degradation. This strategic approach not only preserves the natural environment but also promotes sustainable land use practices, ensuring that the area's ecological integrity is maintained for future usage.
- With 70% of job opportunities in the Maasai Mara sourced locally from Narok County, local employment has been facilitated, significantly enhancing livelihoods within the community.
- The allocation of a percentage of revenue collected from the Maasai Mara towards community development has led to substantial improvements in local infrastructure and facilities, benefitting the residents.
- The implementation of advanced monitoring systems has significantly enhanced the tracking and protection of endangered animal populations.

Lessons learnt:

- Hiring 70% of locals in the GMME fosters a sense of community ownership and appreciation for the reserve and its conservancies.
- Engaging local communities in conservation efforts through employment and development projects fosters a sense of ownership and responsibility towards preserving natural resources and wildlife.
- By restricting access to high-use zones and clearly marking them for tourist guidance, the County ensures the prevention of land degradation and minimization of animal stress. This approach helps preserve the natural environment while providing a framework for sustainable tourism activities.
- The integration of technologies like EarthRanger demonstrates the profound impact that innovative tools and technology can have on conservation practices, from tracking endangered species to managing human-wildlife conflicts.
- Investing in local infrastructure and community projects not only supports conservation goals but also promotes sustainable development, benefitting both the environment and local populations

Conclusion

- In conclusion, the integration of technology in conservation efforts offers a powerful tool in the fight against climate change and the preservation of biodiversity. By enabling precise tracking of endangered species and effective management of human-wildlife conflicts, technology has enhanced the ability of Maasai Mara to protect wildlife and respond to environmental challenges. This, combined with community-centric approaches such as hiring residents and investing in social projects creates a comprehensive strategy for sustainable development.

CONSERVATION IN THE FACE OF CLIMATE CHANGE AND POACHING IN NAROK COUNTY

Narok County, Kenya

- **17,921 km²**
- **1,157,873**
- Predominantly Maasai
- Tourism and Maasai Mara National Reserve
- **25,000 km²** Greater Maasai Mara Ecosystem

Components:

- **Protected Lands:** Maasai Mara National Reserve
- **Semi-Protected Areas:** Mara Conservancies, Loita Forest
- **Non-Protected Areas:** Rangeland, Crop Agriculture, Settlements

Challenges:

- **Poaching:** Major issue in southern Mara
- **Climate Change:** Causes droughts, floods, bushfires
- **Wildlife Decline:** Environmental stresses and poaching
- **Tourist Congestion:** Especially during migration

Strategies for Mitigation:

1. **Zoning Strategy:**
   - High-Use Zones
   - Low-Use Zones
2. **Technological Integration:**
   - Technology Command Center
   - EarthRanger
   - Surveillance Systems

Technological Successes

- **Rhino Population:** From 18 in 1983 to 80 in 2024
- **EarthRanger Role:** Tracking, monitoring and rescue
- **Road Improvements:** 273 km of roads developed
- **Solar-Powered Boreholes:** Seven operationalized

Impact and Benefits

- **Local Employment:** 70% of jobs sourced locally
- **Community Development:** Schools & health facilities
- **Wildlife Protection:** Advanced monitoring systems
- **Land Degradation Prevention:** Effective zoning reduces environmental impact

The Role of the Lamu Emergency Operations Centre in Building Resilience and Managing Disaster.

Introduction

Located in the northern coastal region, Lamu County covers an expansive area of 6,273 square kilometers and is home to a population of around 143,920 inhabitants. This region is highly susceptible to a wide array of natural and human-induced disasters.

These include terrorism, marine accidents, drought, flooding, famine, desert locust invasions, cyclones, violent conflicts, road transport accidents, fire outbreaks, marine pollution, environmental degradation, livestock and wildlife disease epidemics, crop pest infestation and other calamities.

Throughout its history, the coastal County has confronted notable difficulties when disaster strikes, resulting in tragic loss of life, forced relocation and widespread disruption to livelihoods and infrastructure.

- **2009**: A devastating fire broke out in Faza town, resulting in the displacement of 2,500 individuals and the destruction of 430 houses, marking one of the most disastrous events in Kenya's history.
- **2014**: The County fell victim to an attack by Al-Shabaab terrorists, resulting in the tragic loss of at least 87 lives.
- **2016**: A maritime incident led to the loss of over 12 lives, predominantly women and children, as a boat capsized, claiming the lives of occupants and rescuers.
- **2019**: Hazardous floods displaced over 5,000 households, destroying over 2,000 houses, and washing away 9,800 livestock. This calamity also led to outbreaks of waterborne diseases, necessitating indefinite school closures.
- **2020**: Lamu was invaded by Desert Locusts, which destroyed 70% of farms, leaving many without food.
- **2021**: The County faced an acute drought, displacing over 10,000 households, prompting school closures due to hunger, with wild animals encroaching settlement areas in search of water.

Many of the above-mentioned challenges could have been mitigated if the County had established an Emergency Operations Centre (EOC), equipped to efficiently manage early warning system information, coordinate timely responses and facilitate collaboration among multiple agencies.

An Emergency Operations Centre is critical during crises, providing a dedicated space for gathering, analyzing, and disseminating information. By consolidating data and streamlining communication channels, an EOC enables authorities to make informed decisions and implement effective response strategies promptly.

In efforts to mitigate and assist Lamu County residents, the County has instituted a fully operational Emergency Operations Centre (EOC). This initiative has significantly expedited disaster responses and provided educational resources to the community regarding disaster preparedness.

Implementation of the practice

- In 2020, Lamu County organized a public participation session at the town hall to assess the necessity for establishing an Emergency Operations Centre (EOC). The proposal garnered public acceptance and approval, prompting its submission to the assembly for further consideration.

The Lamu county Emergency Operational Centre

- In 2021, the Department of Disaster Risk Management initiated the drafting of a proposal aimed at securing donor support for the construction of an Emergency Operations Centre (EOC).
- The same year, 2021, Worldwide Fund for Nature organization (WWF) extended financial support to facilitate the establishment of the Center at the County Headquarters in Mokowe, situated at the Command Centre Ground.
- Subsequently, an MOU between WWF, Kenya Red Cross and the County of Lamu was signed outlining the agreed responsibilities for each partner.
- The County provided the land for construction, furnished and equipped the centre while the Red Cross supervised and oversaw its construction.
- To furnish and equip the Emergency Operations Centre, the County allocated Ksh 1.5 million.
- In 2022, Lamu County collaborated with USAID Kuza to initiate a second round of public participation, which encompassed visits to all wards within the County. This extensive engagement process aimed to solicit feedback and insights from residents, ultimately contributing to the formulation of the Lamu County Disaster Risk Management Policy.
- Subsequently, the development of Standard Operating Procedures (SOPs) for the operation of the centre followed. These SOPs drew inspiration from various countries such as Fiji, South Africa, Tanzania, the USA and India. The rationale behind this approach was to ensure the establishment of an internationally recognized centre that would

not only cater to the needs of Lamu County and Kenya but also serve as a global reference point.

- The centre was officially launched on December 21, 2023.

In 2024, the center was selected as one of the top five nominees for the Averted Disaster Award in Japan.

Results of the practice

- Through the coordinated efforts of the Emergency Operations Centre (EOC), a cohesive multiagency team has been formed, where members convene, strategize, respond and recover collectively. This approach has fostered synergy, collaboration and the pooling of resources, resulting in efficient operations and effective outcomes.
- The early warning system has been improved significantly. Now, as soon as the Kenya Meteorological Department issues an alert or advisory about an impending disaster the Emergency Operations Centre (EOC) processes this information, repackages it and shares it to the community in clear and accessible language.
- **Reduction in Terrorism Attacks:** This improvement is credited to the community exchanging information with Emergency Operations Centre (EOC) personnel, who then forward this information to the police for necessary action. Initially, there was a significant hesitation within the community to directly share information with the police. However, with the establishment of the EOC, there has been increased engagement and trust-building between community members and security agents. This has led to a decrease in incidents such as ambushes and landmine attacks carried out by Al-Shabaab.
- **Public Awareness Improved:** Thanks to regular interactions with the community, the Emergency Operations Centre (EOC) has effectively raised awareness among the public. This well-informed community now adheres to alerts and advisories, significantly reducing or even preventing numerous potential disasters in both marine and land environments The public is also well-versed in the procedures for reporting incidents and how to issue a distress call, whether for themselves or to report an event.
- **Efficient Resource Management:** The Emergency Operations Centre (EOC) has become crucial in managing resources during its operations. This efficiency is achieved by coordinating responses that are specific to the needs of each incident, involving the most relevant multi-agency response units. For instance, in the event of a fire in a particular village, only the fire response teams will be mobilized to address the situation within that specific village. This approach means that the EOC avoids deploying unnecessary responders and does not incur extra logistics costs by managing the response remotely and using technology to direct the closest ground responders.

Lessons learnt:

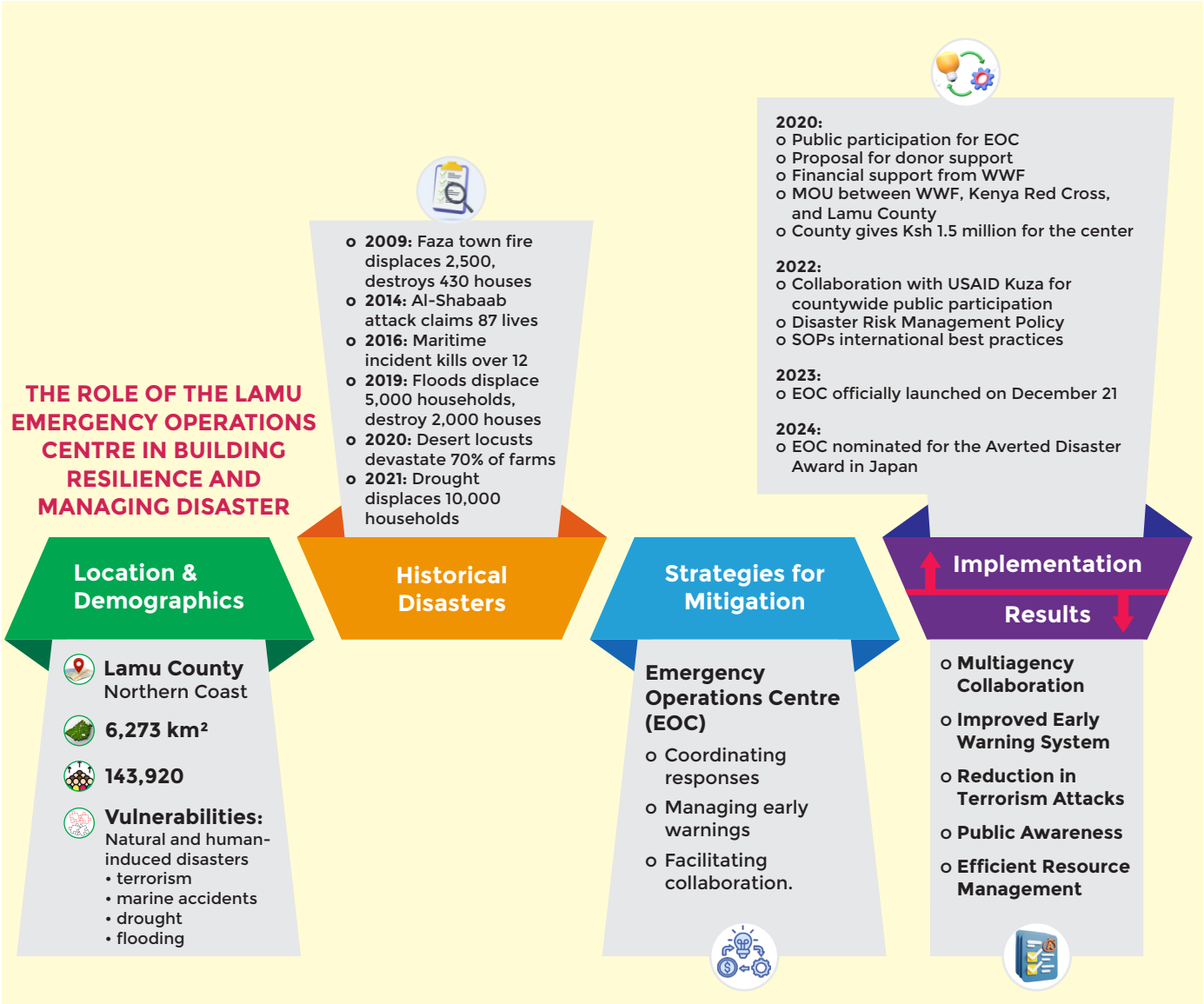
- **Efficient Resource Management:** By centralizing resources and coordinating their distribution based on the needs identified through the EOC, the Counties can optimize its response capabilities and ensure that resources are allocated where they are most needed.
- **Timely Information Sharing:** Through the EOC, relevant information regarding ongoing emergencies can be quickly disseminated to relevant stakeholders, enabling them to make informed decisions and take appropriate actions in a timely manner.
- **Enhanced Collaboration:** By bringing together representatives from different sectors within the EOC, the Counties can

leverage the expertise and resources of each entity to mount a more effective and coordinated response to emergencies.

- **Community Engagement:** Involving the community in the planning and implementation of emergency response initiatives, Counties can build trust, enhance resilience and foster a sense of shared responsibility for addressing emergencies within the community.
- **Centralized Coordination:** There is need for all Counties to have an EOC since it serves as a focal point where various agencies and stakeholders can come together to streamline communication, decision-making and resource allocation during emergencies.

Conclusion

In conclusion, Lamu County's success highlights the indispensable role of an Emergency Operations Centre (EOC) in orchestrating effective emergency response efforts. Through centralized coordination, efficient resource management, timely information sharing, enhanced collaboration, and community engagement, the EOC has proven instrumental in safeguarding lives and property during crises.



Avifauna conservation in Mutito and Muumoni Hill Forests boosts ecotourism in Kitui County

Introduction

Lack of conservation of Mutito and Muumoni Hills forests led to the degradation of ecosystem services, including lack of water downstream to the communities, and low income within the community, among others. These challenges prompted conservation efforts to increase ecosystem services and improve the livelihoods of the surrounding community.

The project which targeted communities in Kitui East and Mwingi North sub-counties with a population of 55,289 and 29,344 respectively, aimed to resurvey avifauna and establish its conservation status in the Mutito and Muumoni Hills forests of Kitui County (a previous survey had been done in 2006). Consequently, these dryland forests would be tabled as proposed Important Bird Areas (IBAs) to Birdlife International (the body that gives IBA status) with a focus on fostering conservation actions and also promoting viable ecotourism activities together with the County Government of Kitui. Mutitu and Muumoni Hill forests are gazetted dryland indigenous forests with some small pockets of exotic plantations.

Degradation of biodiversity in these areas has been recorded following human interference such as illegal harvesting of timber and charcoal production, among others. These hills have a rich diversity and abundance of birds as well as other diverse taxonomic groups, though the bird species in Muumoni Hills had reduced from more than 200 species of birds recorded in 2006 (Malonza, et. al., 2006) to 152 species in the 2017 survey (Barasa et al., 2017) which also recorded 9 species of reptiles and amphibians. Mutitu Hills have 215 bird species (Barasa et al., 2017).

Implementation of the practice

The project which started in 2016 in Kitui East, Mwingi North Sub-counties and Headquarters included the following activities:

1. Development of activity plans and schedules with time frames on how to develop Mutito and Muumoni as bird-watching sites.
2. Bird surveys to document existing birds in Kitui County and identify bird hotspots.
3. Setting up of site support groups in Muumoni and Mutito.
4. Capacity building of local groups through workshops and training (leadership and governance, environmental education, policy and advocacy).
5. Initiation of bird monitoring activities, e.g. monitoring protocols.
6. Development of nature-based income-generating activities for the site support groups.
7. Development of a comprehensive checklist of birds of Kitui County.
8. Profiling of Mutito and Muumoni Hill Forest Reserves as Important Bird Areas.

- Key implementers and collaborators and their roles

  The County Government of Kitui was the client, Nature Kenya was the consulting firm, and the National Museums of Kenya did technical backstopping.

- Resource implications

  A total sum of KSh 3M was spent on the project.

- Sustainability measures

  As part of the deliverables for this project, community conservation groups were formed, and income-generating activities for the community were proposed. The project is running smoothly.

Results of the practice

The outputs were:

1. Profile of existing birds in Kitui County with bird hotspots were identified.
2. Site support groups in Muumoni and Mutito were set up.
3. Capacity building of local groups through workshops and training (leadership and governance, environmental education, policy and advocacy).
4. Bird monitoring activities, e.g. monitoring protocols were initiated.
5. Nature-based income-generating activities for the site support groups were proposed.
6. A comprehensive checklist of birds of Kitui County was developed.
7. Mutito and Muumoni hill forest reserves are now defined as Important Bird Areas.

As a result of the above, the surrounding local community has benefitted through employment opportunities, i.e. tour guiding, camping facilities and initiation of nature-based enterprises like honey production; it has also catalyzed revenue for the County Government, which is used for other development projects.

- Key activities undertaken ultimately led to positive results

  All the activities undertaken for this project led to positive results.

Lessons learnt:

The set budget was way too low. While the objectives were achieved, the project only proposed viable income-generating activities for the site support groups. Ideally, the project ought to have set up the IGAs for the community groups.

The project design was excellent; however, it should have been implemented in the entire county.

Conclusion

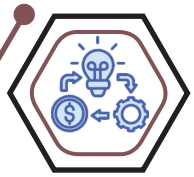
Conservation efforts in the drylands need collaborative efforts bringing together a wide scope of expertise and knowledge. Entities seeking to undertake conservation activities ought to have set aside reasonable resources (KSh 10 million and above). It is important to also consider current trends in climate change and incorporate mitigation and adaptive measures into conservation efforts. Reliance on single-source funding should be avoided as it limits the scope of activities to be achieved.

AVIFAUNA CONSERVATION IN MUTITO AND MUUMONI HILL FORESTS BOOSTS ECOTOURISM IN KITUI COUNTY

Introduction

- **Challenge:** Degradation of Mutito and Muumoni Hills forests led to loss of ecosystem services and community income.
- **Goal:** To resurvey avifauna, establish conservation status, propose the areas as Important Bird Areas (IBAs), and boost ecotourism.
- **Target Areas:** Kitui East and Mwingi North sub-counties.
- **Population Impacted:** 55,289 (Kitui East) and 29,344 (Mwingi North).
- **Biodiversity:** Decline in bird species from over 200 in 2006 to 152 in 2017 in Muumoni Hills; Mutitu Hills host 215 bird species.

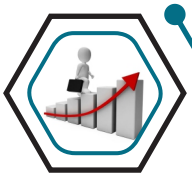
Implementation of the Practice



- **Timeframe:** Project started in 2016.
- **Key Activities:**

1. Development of activity plans for bird-watching site creation.
2. Bird surveys to document species and identify hotspots.
3. Formation of site support groups in Muumoni and Mutito.
4. Capacity building through workshops and training.
5. Initiation of bird monitoring protocols.
6. Development of nature-based income-generating activities.
7. Creation of a comprehensive bird checklist for Kitui County.
8. Profiling of the forests as Important Bird Areas (IBAs).

Results



- **Outputs:**

1. Identification of bird species and hotspots.
2. Establishment of site support groups.
3. Successful capacity building of local groups.
4. Initiation of bird monitoring activities.
5. Proposals for nature-based income-generating activities.
6. Comprehensive bird checklist for Kitui County.
7. Recognition of Mutito and Muumoni hill forests as IBAs.

- **Outcomes:**

- Employment opportunities in ecotourism
- Revenue generation for the County Government.
- Nature-based enterprises

Lessons Learned

- **Budget Shortfall:**
  The project budget was insufficient to fully implement income-generating activities (IGAs).
- **Project Design:**
  Effective but should have covered the entire county.
- **Resource Allocation:**
  Future projects should consider larger budgets and broader implementation.

The Role of Sustainable Farming Practices in Mitigating Climate Change Effects in Bungoma County

Introduction

Located in the Western part of Kenya, near the border with Uganda, Bungoma County is a region where agriculture is the backbone of the local economy. A proportion of approximately 70% of households are directly engaged in farming, making agriculture a critical pillar of the County's economy. This sector not only ensures food security but also serves as a source of raw materials for agro-industries.

The agricultural landscape of Bungoma County is diverse, with families cultivating a variety of crops. Staple crops such as maize, beans, sweet potatoes, and various vegetables form the core of the County's agricultural output. These crops, primarily grown for household's consumption, often yield a surplus that is sold to meet other family expenses. Besides these staple crops, the County is also recognized for its production of cash crops such as sugarcane, cotton, coffee, sunflower, and tobacco, which significantly contribute to its economy and serve as a source of income for many families.

However, the agricultural sector in Bungoma County is grappling with significant challenges, primarily stemming from the impacts of climate change. These include erratic rainfall patterns and temperature fluctuations, which have resulted in an increase in pest and disease incidences and resistance to pesticides. Furthermore, these climatic hazards, along with moisture stress and variations in planting seasons, have contributed to a decline in crop yields and an increase in post-harvest losses. Moreover, the County has experienced leadership changes within the Department of Environment, leading to interruptions in the consistent execution of planned activities on climate change. Delays in disbursing funds from the FLLoCA Program have also led to the postponement of the planned climate change activities. The increasing population and land fragmentation have led to a decrease in the average size of landholdings, rendering them uneconomical.

Unsustainable farming practices, soil erosion, pollution, and climate change have resulted in land degradation. Coupled with the high costs of farm inputs, poor market infrastructure, inadequate storage facilities, and poor governance in cooperative societies, these factors have led to low agricultural productivity

Despite these challenges, the resilience of the farming community in Bungoma County is evident. Farmers have adopted various adaptation strategies for both crop and livestock production in response to the changing climate.

Implementation of the practice

The County Government has enacted various frameworks, including the County Climate Change Policy and the Climate Change Fund Act. These provide the necessary legal backing and financial resources to support climate change adaptation strategies. In addition, the County Government has developed a comprehensive County Grievance Plan and a Climate Change Information Plan to address grievances related to climate change impacts and disseminate vital information to

the communities. In addition, the County Government has established a Climate Change Unit (CCU) which is a requirement for all County Governments for eligibility for climate financing. This unit coordinates the implementation of climate change strategies in the County, facilitates the provision of civic education to commu-nities, and ensures their needs are consi-dered in decision-making on matters climate change. The CCU plays a crucial role in the County's efforts to combat climate change.

To operationalize climate change policies and legislation at the grassroots level, the County Government facilitated the formation of the Ward Climate Change Committees as per the mandate of the Climate Change Act. The formation of these committees was done through a vetting process with the ward administrators giving proposals for members as nominated by the communities through public participation fora. These committees collaborate closely with local communities within their respective wards, aiming to implement climate change initiatives and address specific concerns related to climate resilience. Each committee comprises 11 members, with the ward administrator serving as an ex-officio member. These Committees have been able to bridge the gap between policy formulation and on-the-ground action through establi-

Figure 1: A photo showing Syntropic Farming

shing linkages with the Department of Environment and Climate Change at the Ward level.

Through participatory processes, the Ward Committee members engage with members of the communities to identify urgent climate-related projects and tailor solutions to address specific challenges faced by residents through proposals to the County. Some of the projects prioritized include sustainable agriculture practices, water resource management, afforestation, and disaster preparedness. By ensuring equitable representation of local contexts and needs, they foster grassroots participation and comm-unity ownership of climate change projects. Ward committees are instrumental in identi-fying priorities, mobilizing resources, and supervising the implementation of sustain-able farming practices within their respective wards.

Recognizing the valuable contributions of committee members, the County provides stipends and allowances. These financial provisions cover transport and meals, reinforcing their commitment to climate action. Furthermore, the County allocated Ksh. 5 million towards training community members on effective adaptation strategies, including agroforestry, climate-smart agriculture, indigenous tree identification, and proper seedling selection for tree planting.

In response to the challenges posed by climate change, the Kibingei Ward Committee in Kimilili Sub-County has proactively adopted an integrated approach to land management and soil conservation. Their commitment lies in empowering community members through well-structured training programs. These programs feature County officials from the Department of Environment who impart knowledge on climate change initiatives. Due to resource constraints addressed by the County Government, the community mobilizes its own resources though monthly contributions of Ksh. 50 to cover meals during these training sessions while the County provides transport reimbursement, each community member receiving Ksh. 500. The contributions also support providing transportation services to community members. These services enable visits to observe and learn from high-performing individuals who are effectively combating climate change. The training sessions follow a dual approach: first, County-led training, and then peer learning facilitated by community members who have successfully implemented various climate change methods and practices. Among the methods emphasized by committee members are Sustainable Agriculture Practices, water resource management, afforestation and disaster prepared-ness.

The following practices have gained widespread acceptance among community members;

- **Syntropic Farming**: This kind of farming draws inspiration from natural ecosystems, particularly forests. Its core objective is to create resilient and productive landscapes by strategically mimicking the growth and succession patterns observed in forests.
- When land is disturbed or depleted, a process called succession unfolds. **Pioneer species,** often hardy plants like weeds, rush in first to stabilize the soil, improve its structure, and pave the way for subsequent stages. Over time, **intermediate species** replace pioneers, and eventually, **mature trees** dominate the landscape. This method involves keeping the soil covered with organic materials such as leaves, compost, and plant trimmings to protect the soil from erosion and evaporation, thereby conserving water and enriching the soil.
- **Soil Conservation Techniques**: The community has adopted techniques such as building terraces to slow down water runoff and planting vegetation with strong root systems, like sugarcane and Napier grass, to prevent soil erosion.
- **Land Restoration and Soil Nutrient Management**: The committee undertook the restoration of degraded lands and implemented soil nutrient management practices. These practices include composting and the use of organic manure to improve soil fertility.

These practices, which aim to address the challenges posed by climate change and ensure sustainable agriculture in the region, have not only enhanced soil health but also fostered a sense of collective responsibility among community members.

Results of the practice

Through collaborative efforts with the Ward Committee, the County Government has facilitated training programs aimed at empowering community members in

Kibingei Ward. These programs, tailored to land management and climate change adaptation and focusing on sustainable farming techniques, have provided knowledge and skills to an estimated 2,390 households. At least half of the households trained have embraced soil conservation techniques and land restoration and soil nutrient management sustainable farming practices. This has seen community members begin to shift their focus on livestock nutrition and management, pasture and fodder production, and commodity value addition (milk, bananas and tomatoes) as opposed to the traditional way of planting sugarcane to enhance food security and value addition.

The community members are actively engaged in decision-making processes, advocating for their needs and interests in government policies and programs related to agriculture and climate change through the Ward Committee.

Lessons learnt:

Despite the obstacles posed due to budgetary constraints and delayed fund allocation on proposed projects from the County Government, the Ward Committee has demonstrated resilience and initiative by taking proactive measures to find solutions for climate change adaptation within the Ward. This has been accomplished through undertaking various training programmes and raising contributions towards the same, as well as fostering peer learning. Consequently, the community has been able to enhance its skills and knowledge, with the Committee aiming to ensure food security for all community members.

Recommendations

1. When transitioning leadership roles within the Department of Environment, establishing clear guidelines is crucial. These guidelines should outline responsibilities, knowledge transfer, and seamless handover procedures. Additionally, appointing interim officers during leadership transitions ensures continuity and momentum in climate change initiatives.

2. Addressing climate change adaptation is paramount. The communities should receive comprehensive training and be provided with simple, yet affordable, adaptation strategies. It is essential that every community member speaks the same language in terms of understanding and addressing climate change, and participates in idea generation and decision-making processes.

3. Seeking partnerships can help drive the agenda and address resource-related challenges.

4. Establish forums where farmers can learn from each other. Some farmers are already excelling and their success can serve as tangible evidence to others that the practices work.

5. Consider Innovative Bottle Gardens: Transforming waste bottles into compact gardens offers a sustainable solution. These gardens, suitable for both indoor and outdoor spaces, use less water due to reduced evaporation. They enable those with limited land resources to cultivate a variety of plants in a small area.

The Role of Sustainable Farming Practices in Mitigating Climate Change Effects in Bungoma County

Bungoma County,
Western Kenya,
near the Uganda border.

Agriculture:
- **Staple Crops:** Maize, beans, sweet potatoes, vegetables.
- **Cash Crops:** Sugarcane, cotton, coffee, sunflower, tobacco.

Challenges:
- Climate Change
- Land Degradation
- Leadership and Funding
- Land Fragmentation

Solution Path - Policy Frameworks:
- Policies and Fund Act.
- Climate Change Unit
- Ward Committees

Solution Path - Key Activities:
- County Grievance Plan
- Information Plan
- Training programs
- Financial support

Community Involvement:
- Kibingei Ward Committee - Land management and soil conservation.
- Community-led initiatives
- Dual training approach - County-led & peer learning

Results
- **Training Impact** - 2,390 households - Value addition
- **Community Empowerment**

Lessons Learned
- **Budget Constraints -** proactive training
- **Community Skills -** Enhanced knowledge and skills

The Journey towards Electric Transportation in Kisumu County

Introduction

Kisumu County, nestled along the shores of Lake Victoria, is distinguished by its rich cultural tapestry and the dynamic urban landscape of Kisumu City. As the "Lakeside City," it is uniquely characterized by its proximity to Africa's largest freshwater lake, which shapes its identity and growth. Yet, this burgeoning urban center is not immune to the complex challenges that intertwine transportation, environmental sustainability, and public health.

At the heart of these challenges lies the transport sector, a vital channel for economic verve and societal mobility. However, it is also a significant source of environmental concern. The Baseline Emission Inventory of Kisumu, 2021, reveals a critical insight: an overwhelming 84.62% of the County's total emissions stem from transportation. This surge is driven by an increase in car registrations and the proliferation of motorbikes and "tuk tuks" (three-wheeled vehicles).

The dependency on fossil fuels for transportation casts long shadows over Kisumu's environmental and public health landscape. The resultant emissions—carbon dioxide, nitrogen oxides, and particulate matter—taint the air quality, posing dire threats to the ecological balance and the health of its inhabitants. The repercussions are far-reaching, affecting every resident of Kisumu County, from the bustling city to the most secluded villages.

Daily mobility for commuting to work, school, or markets heavily depends on matatus (minibuses), motorcycles and tuk-tuks. The urgent need to address this challenge is evident, as the health and well-being of Kisumu's residents are at stake.

E-Safiri Charging Station at Dunga Hill Camp

Recognizing the gravity of this situation, Kisumu County has strategically aligned its efforts with key policy documents, including the Kisumu County Integrated Climate Change Action Plan 2022 – 2027, which outlines specific actions in climate change adaptation.

To facilitate the transition from fossil fuels, the County facilitated the establishment of a charging infrastructure for electric vehicles (EVs) in collaboration with E-Safiri. This is an operational charging station located at Dunga Hill Camp. E-safiri is driving the transition into sustainable mobility by developing solar-powered and grid-connected charging stations for two- and three-wheelers. This project aims to increase the adoption of e-mobility for commercial use, thereby transforming lives by reducing carbon emissions in the transport sector.

Implementation of the practice

Kisumu County has undertaken a transformative initiative to revolutionize its transportation infrastructure through the adoption of electric mobility through its collaboration with E-Safiri. This strategic move is designed to foster a cleaner, more sustainable transit system that aligns with global environmental standards.

E-Safiri is a Kenyan-based enterprise dedicated to advancing Africa's transition to sustainable energy. It specializes in the expansion of electric vehicle (EV) charging stations and battery swapping points nationwide, optimizing efficiency through the use of both renewable and grid energy. The company's innovative public charging system includes automated Battery As A Service (BAAS), offering seamless battery exchanges at a cost of Ksh 200 per swap. Additionally, direct EV charging is available for Ksh 100 per session, all facilitated by a user-friendly payment interface that supports smooth Mpesa transactions.

This collaboration catalyzed the establishment of a key charging station at Dunga Hill Camp. This site was strategically chosen for its high population density and now serves as a primary location for recharging electric motorbikes and tuk-tuks. The County supported the company in allocating a parcel of land for the charging station and also facilitated the acquisition of necessary licenses, marking the project's inception in early 2023.

In pursuit of a comprehensive electric mobility ecosystem, Kisumu County is actively seeking partnerships with entities such as Smart Energy Solution Africa, which supports the Advancing Commercial Electric Mobility project, GiZ, which provides technical expertise and aids in proposal development, and Siemens Stiftung Foundation, which collaborates on the Accelerating Uptake of E-Mobility project. These collaborations aim to establish a minimum of two charging stations per ward, building upon the positive community impact observed from E-Safiri's implementation.

To ensure the sustainability of this charging infrastructure, the County is exploring revenue generation through user fees and potential private sector partnerships. Policy initiatives are also underway to incentivize EV adoption, including tax breaks and subsidies for EV purchases and operations.

Kisumu County also launched awareness campaigns, such as introducing electric bikes to combat pollution, and educational/ training programs like the Kisumu Sustainable Mobility Plan, which highlights the advantages of non-motorized transport. The training program, which cost the County a total of Ksh 2 million, targeted at least 550 individuals across the 11 wards, with an average of 50 people per ward. Future plans aim to reach at least 3,000 households, further expanding the program's impact.

Results of the practice

The County's shift towards electric mobility is poised to make a substantial impact on reducing greenhouse gas (GHG) emissions. The gradual adoption of electric two-wheelers (2Ws) and three-wheelers (3Ws) by households is expected to significantly lower the overall carbon footprint, offering a sustainable alternative to fossil fuel-powered vehicles. By quantifying this emission reduction, the County can track its progress against established baselines, thereby contributing meaningfully to global climate change mitigation efforts.

At the operational level, the charging stations have become a nexus for job creation, with two individuals currently employed at the station. These employees are responsible for a range of services, including charging assistance, customer support, marketing initiatives, and infrastructure maintenance. This concerted effort not only fosters local employment but also enhances the skill set of the workforce.

As Kisumu County envisions the installation of at least two charging stations in every ward, the potential for job growth is significant. This expansion will necessitate skilled workers, thereby bolstering the local economy. Moreover, artisans skilled in retrofitting conventional motorbikes to electric models are making a considerable contribution to the community's welfare, further underlining the multifaceted benefits of this green initiative.

Lessons learnt:

- Establishing a robust charging infrastructure necessitates significant capital investment. The challenge of securing ongoing funding for maintenance and expansion is compounded by limited financial resources. It is imperative to explore sustainable funding models to ensure the infrastructure's long-term viability.
- Although policies to incentivize EV adoption, such as tax breaks and subsidies, have been planned, their successful implementation is yet to be realized. Streamlining the policy and legal framework and establishing mechanisms for the enforcement of the same is crucial to achieving the intended outcomes.
- Collaboration with private companies, investors, and local entrepreneurs is vital for fostering innovation and sustainability in future projects. Such partnerships can provide essential resources and expertise to propel the electric mobility initiative forward.

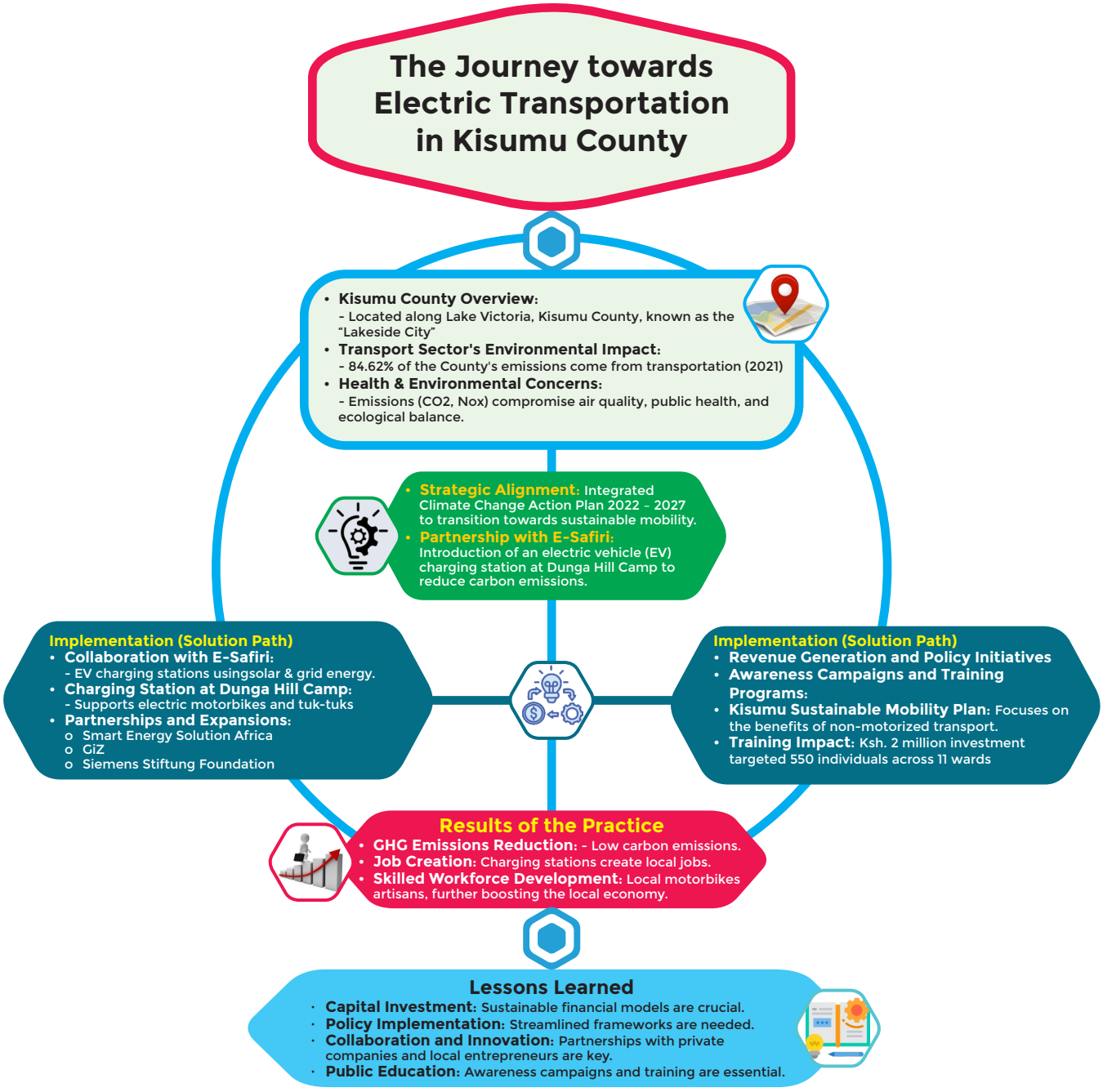
There is an urgent need to educate and train residents about the benefits of electric mobility. Awareness campaigns are instrumental in this endeavor, as they are key to driving behavior change and securing widespread acceptance of electric vehicles.

Conclusion

- With approximately 10.3% of Kisumu County households owning motorbikes, transitioning to electric motorbikes and tuk-tuks presents numerous advantages. These include reduced operating costs, zero tailpipe emissions, and quieter operation, all contributing to cleaner air and improved urban health.
- The impact of community awareness campaigns on adoption rates is significant. Sustained educational efforts and collaboration with local associations, such as the Boda Boda Riders Association, are recommended to enhance reach and encourage adoption.
- Addressing the challenge of funding requires the exploration of diverse sources, including user fees, public-private partnerships, grants, and innovative financing mechanisms like carbon credits or green bonds.

- Regular evaluation of GHG emissions reduction, economic impact, and health benefits is essential. Robust monitoring mechanisms will provide valuable data to guide decision-making and validate the project's success.

PPPs are crucial for the growth and longevity of e-mobility projects. Encouraging cooperation with private entities and adapting solutions to local conditions are key strategies for sustained success. Early stakeholder engagement is fundamental to ensuring project ownership and satisfaction.



Kisumu County establishes Maendeleo Waste Recovery Center to enhance Waste Recovery Practices

Introduction

Kisumu City County is situated on the shores of Lake Victoria and as the third largest city in Kenya, covers a total of 417 km^2. Of this, 297 km^2 is dry land and the remaining 120 km^2 is under water. These areas are densely populated with limited access to basic services such as electricity, sanitation, piped water and solid waste management services. The waste generation rate in the City is estimated to be between 200 and 450 tons of waste daily (Agong and Otom 2015; Gutberlet et al. 2017; Magezi 2015; NEMA 2015). Only a meager 20% of the generated waste was collected and transported to an overflowing open dumpsite located at Kachok, a mere 2 km from the central business district. This site had a troubling history, with dumping activities dating back to 1975. Over time, the dumpsite reached its capacity, resulting in hazardous overflows. According to Agong' and Otom, (2015), over two thirds of the waste at this site is organic and therefore biodegradable. However, plastics, polythene bags, broken glass, and metallic cans constitute a substantial portion of the remaining waste. The management of waste volume primarily relies on open burning and irregular compaction practices. The remaining 80% accumulates in skips, on vacant land and along passageways as evidenced by the numerous garbage heaps scattered around the City Some waste remains unmanaged, posing environmental threats and health hazards due to open dumping and burning, which emit green-house gases into the atmosphere.

A photo of the Maendeleo Waste Recovery Center

Waste collection services by the City are mostly concentrated within the CBD and the main market areas around Kisumu City. According to Agong and Otom (2015), Kisumu's waste consists of organic material (63%), paper (12.2%), plastic (10.2%), glass (3.2%), scrap metal (1.3%) and other (9.5%). The quantities of solid waste generation in Kisumu are likely to increase further due to improved income levels, increasing population, changing lifestyles and consumption patterns.

Sustainable solid waste management in Kisumu faces significant challenges. These include inadequate funding, a shortage of skilled personnel, and poor public attitudes toward waste management. Rapid urbanization, population growth, changing lifestyles, and consumption patterns contribute to increasing waste generation. The city grapples with overflowing dumpsites and pollution from uncontrolled waste disposal. Despite efforts, sustainable waste management remains elusive due to insufficient resources and improper disposal practices. Public awareness and participation are also lacking.

In response to these challenges, the County took proactive steps by establishing the Maendeleo Waste Recovery Center. This center, constructed by the County Government, focuses on recycling waste, selling plastic waste to Apex traders, and facilitating the city's waste reduction efforts. This initiative represents a significant stride towards addressing the pressing issue of waste management in Kisumu City County.

Implementation of the practice

The Department of Environment in Kisumu City is responsible for providing solid waste management services. However, due to a lack of technical capacity and financial resources, the department struggles to effectively manage the waste generated within the city. To address these challenges and expand waste management services, the County collaborated strategically with UN-Habitat, the Civil Society Urban Development Forum, and the Kisumu Waste Actors Network (KIWAN) Sacco (referred to as "the Association"). Their collective goal was to revolutionize waste management practices within the city and overcome the resource scarcity hindering effective waste collection and disposal.

The County further expanded its waste management services by contracting private collectors and initiating Private-Public Partnerships. These collectors were issued permits, allowing them to provide door-to-door waste collection services to their clients. One of the key local stakeholders in this initiative is the Kisumu Waste Actors Network (KIWAN) Sacco. Established in April 2017 and registered in 2019, KIWAN has a membership of 675 members, including waste recyclers, transporters, pickers, and collectors. The Sacco has managed to standardize fees for waste collection and buying/selling of recycled materials.

The Maendeleo Material Recovery Center was constructed between 2019 and 2020 to serve as a hub for waste recovery, sorting, and sale.

The cost for its construction incurred by the County are estimated to be 5M with Kisumu Waste Actors Network (KIWAN) Sacco contributing Ksh. 800, 000 on upgrade from 2 phase to 3 phase specific to the electricity supply. Despite facing delays due to the COVID-19 pandemic, the center was launched in 2021 and operates from 7 am to 6 pm. The staff at the center conduct door-to-door waste collection services, collect from the Kachok dumpsite, city garbage collection bins, and sell to the Maendeleo Center, which has created its network of customers from individuals to institutions looking for recycling materials.

Various types of waste are received from different sources, including households, businesses, and institutions. For homesteads,

the monthly collection fees range from 100 to 500 Kenyan shillings (Ksh) per month depending on whether the residence is in a low-, middle- or high-income area. For institutions, service charges can be as high as Ksh 7000 per month depending on waste volumes. In addition, any individual that brings materials for recycling to the Maendeleo Center is paid according to the type and quality of the materials, and also how much they weigh - a fixed rate of buying at 22 shillings and selling at 35 shillings a kilo.

These wastes undergo a sorting process, facilitated by trained staff which involves separating recyclable materials such as plastics, glass, metals, and paper from non-recyclable waste. Once sorted, the recyclable materials are further processed to prepare them for sale and reuse. Plastics are cleaned, sorted by type, and shredded into manageable pieces. Glass and metals are similarly cleaned and sorted to ensure purity and quality. Paper is baled and prepared for recycling.

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Plastic waste sorting zone: Plastics awaiting cleaning, sorting by type, and shredding

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A photo of Ondiek Ten Top Youth Group Waste Sorting Bay

Paper waste sorting area

them for sale and reuse. Plastics are cleaned, sorted by type, and shredded into manageable pieces. Glass and metals are similarly cleaned and sorted to ensure purity and quality. Paper is baled and prepared for recycling.

To ensure the effective functioning of the Center and foster community involvement, the County embarked on comprehensive training programs supported by the UN-Habitat and the Civil Society Urban Development Forum - "Turning Waste into Jobs", national policy stakeholder workshop on plastic (UN Environment) and the best practices on waste disposal through segregation, re-use, recycling and composting. 430 waste management Champions among them, waste collectors, recyclable goods collectors, waste pickers and community members underwent a Training of Trainers Program on waste segregation, collection techniques, and sustainable waste management practices. Community members, equipped with knowledge and skills from the training programs, have begun implementing waste segregation practices at the household level, leading to tangible improvements in cleanliness and waste reduction within their compounds.

To ensure the continued success of the Center and similar initiatives, the County plans to foster ongoing collaboration with key stakeholders, implement monitoring and evaluation mechanisms, explore innovative financing mechanisms, and continuously engage and empower community members through education and awareness campaigns.

Results of the practice

The establishment of the Maendeleo Waste Recovery Center has had a significant impact on waste management practices in the city, with both positive and negative outcomes.

The Center was established in partnership with the Kisumu Waste Actors Network (KIWAN), leading to the creation of numerous job opportunities. The Sacco, comprising 675 members including waste recyclers, transporters, pickers, and collectors, pays individuals based on the type, quality, and weight of the materials they bring for recycling. The Association has managed to maintain a fixed rate of buying at 22 shillings and selling at 35 shillings per kilo. The members have formed a welfare system where monthly contributions are made, and individuals earn annual dividends and benefit from shares.

The Maendeleo Waste Recovery Center has employed six permanent employees and casual employees who are contracted on need basis. They receive their remuneration through the proceeds from the sale of recyclable materials. Notably, the Ondiek Estate, a low-income estate with a population of 1,500 people, has benefited from the establishment of a waste collection and sorting bay called Ondiek Ten Top Youth Group Waste Sorting Bay. This bay has created jobs for 20 youths (9 females and 11 males) contributing to local employment and economic empowerment through waste collection from the estate. They are involved in sorting of waste with plastics being sold to Maendeleo Center. The organic waste collected is used to produce organic manure for farming. Previously, plastics were transported to Nairobi for sale, which incurred high costs for independent operators. However, with the establishment of Maendeleo Center, plastics are now sold directly reducing transportation costs and increasing profitability for waste collectors and recyclers.

Despite efforts to encourage waste segregation at the source, the culture of waste

A training program supported by the UN-Habitat and the Civil Society Urban Development Forum known as "Turning Waste into Jobs"

Waste segregation bins at Maendeleo Center

separation is not deeply ingrained in the public. This leads to mixed wastes found during inspections of waste bins. Additionally, challenges persist in waste collection services, including the mixing of segregated waste during collection. This undermines the effectiveness of waste segregation efforts and poses obstacles to sustainable waste management practices.

Lessons learnt:

- The collaboration with the Kisumu Waste Actors Network (KIWAN) Sacco proved to be highly effective in creating job opportunities for over 600 individuals, promoting waste segregation, and enhancing recycling efforts. This partnership facilitated access to expertise, resources, and community networks, fostering a holistic approach to waste management.
- Training programs on "Turning Waste into Jobs", national policy on plastic (UN Environment) and the best practices on waste disposal through segregation, re-use, recycling and composting aimed at waste collectors, recyclable goods collectors, waste pickers, and community members played a crucial role in improving waste management practices. These equipped individuals with knowledge and skills, empowering them to contribute effectively to waste reduction and recycling efforts.
- Establishing the Maendeleo Center as a platform for local plastic recycling significantly reduced transportation costs and enhanced profitability for waste collectors and recyclers. Selling plastics directly from the center streamlined the recycling process and contributed to the local economy.

Despite efforts to promote waste segregation at the source, challenges persist in ingraining this practice within the community. Mixed waste in bins and during collection undermines the effectiveness of segregation efforts and poses challenges to sustainable waste management.

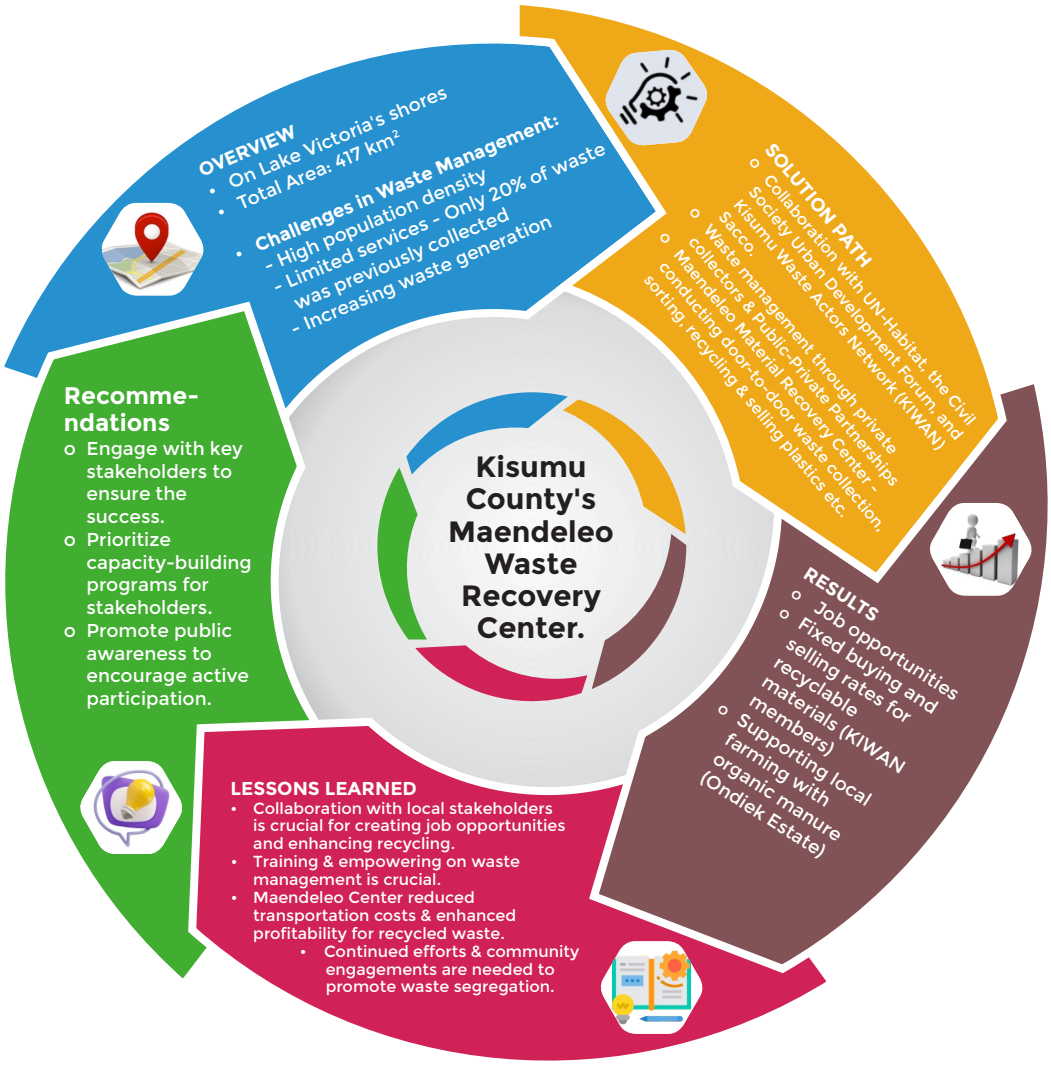
There needs prioritization of the community engagement and behavior change communication through campaign awareness and capacity building to foster a culture of waste segregation and responsible waste management practices needs.

Recommendations

- Collaboration with key/local stakeholders is essential for the success of waste management initiatives. Engaging with existing networks, such as the Kisumu Waste Actors Network (KIWAN), can provide access to expertise, resources, and community support.
- Prioritizing capacity building programs for waste collectors, recyclers, and community members is crucial for fostering sustainable waste management practices. Training initiatives should focus on waste segregation, recycling techniques, and sustainable waste management strategies to empower individuals to actively participate in waste reduction efforts.

Public awareness campaigns, education programs, and community outreach efforts should be prioritized to promote active participation and ownership of waste management practices

A Photo of the Maendeleo Waste Recovery Center



Localizing Climate Resilience in Marsabit

Introduction

The global discourse on climate change encompasses a wide array of stakeholders, ranging from international organizations, both levels of government and local communities. These diverse entities are collectively mobilizing efforts to adopt and implement localized solutions to mitigate the impacts of climate change.

In 2016, the Government of Kenya enacted the Climate Change Act. Subsequently, in 2018, the National Climate Finance Policy was adopted. Then followed the establishment of the Public Finance Management (Climate Change Fund) Regulations (2016) under the Public Finance Management Act (2012).

This prompted devolved governments to enact the County Climate Change Act and institute County Climate Change Funds which can be funded through County development budgets, national climate funds or support from in-country bilateral and multilateral development partners.

A key collaborator in this endeavor is the World Bank, through the Financing Locally Led Climate Action (FLLoCA), a five-year project dedicated to implementing climate resilience measures guided by local initiatives and enhancing the capacities of County Governments to handle climate-related risks. The FLLoCA project focuses on empowering local stakeholders, including the Ward Climate Change Planning Committees (WCCPCs) at the ward level to expedite climate action.

The project operates through two grants. The Climate Change Institutional Support Grant (CCIS) encourages Counties to establish legal, institutional and organizational frameworks to effectively budget, plan and implement Climate Change Adaptation initiatives while the Climate Change Resilience Investment Grant (CCRI) is a performance-based funding where allocation of resources to a County for Climate Change Action (CCA) investments is contingent on its performance relative to other Counties (the higher the performance, the greater the resources allocated).

To access the grant, Counties are required to have a minimum access condition including establishing a Climate Change Act, developing a governor-approved work plan and budget for climate change activities, opening a special purpose account (domiciled in The Central Bank of Kenya) and signing the program deed agreement.

The County Governments have tailor-made different local solutions to mitigate the impacts of climate change.

Marsabit County, located in Northern Kenya is the second largest County with an area mass of 66,923.1 KM2. According to the 2019 census, the County is home to 459,785 residents with 95% of them being agro-pastoral and pastoral communities. The County is divided into four sub-counties namely Saku, North Horr, Moyale and Laisamis. These four administrative zones serve as political units comprising 4 constituencies, 20 wards and 100 villages.

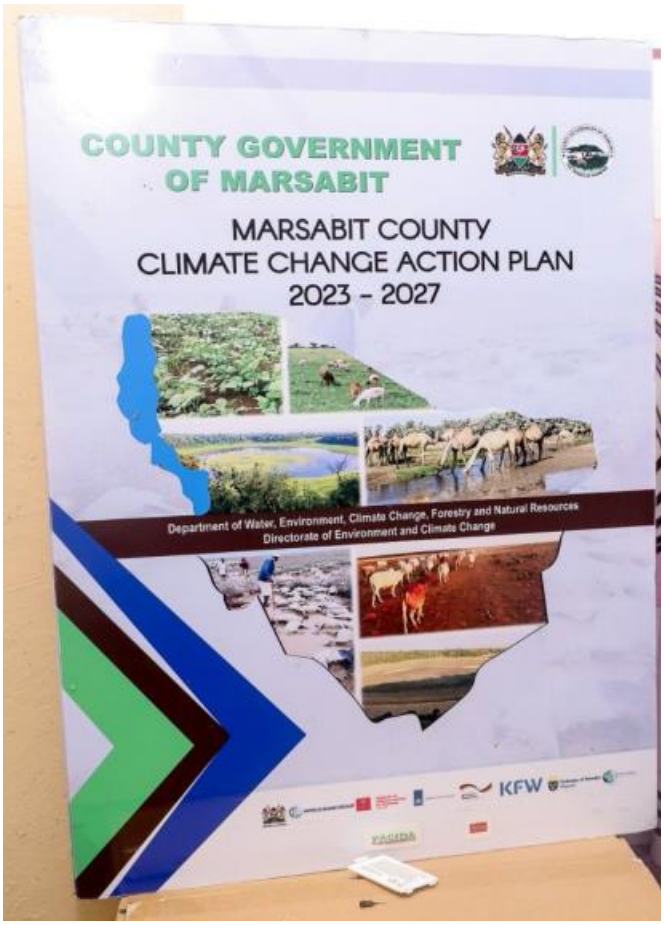
The County experiences arid climatic conditions, causing many residents to forsake agricultural pursuits due to unpredictable rainfall and limited access to irrigation water, opting for cattle keeping.

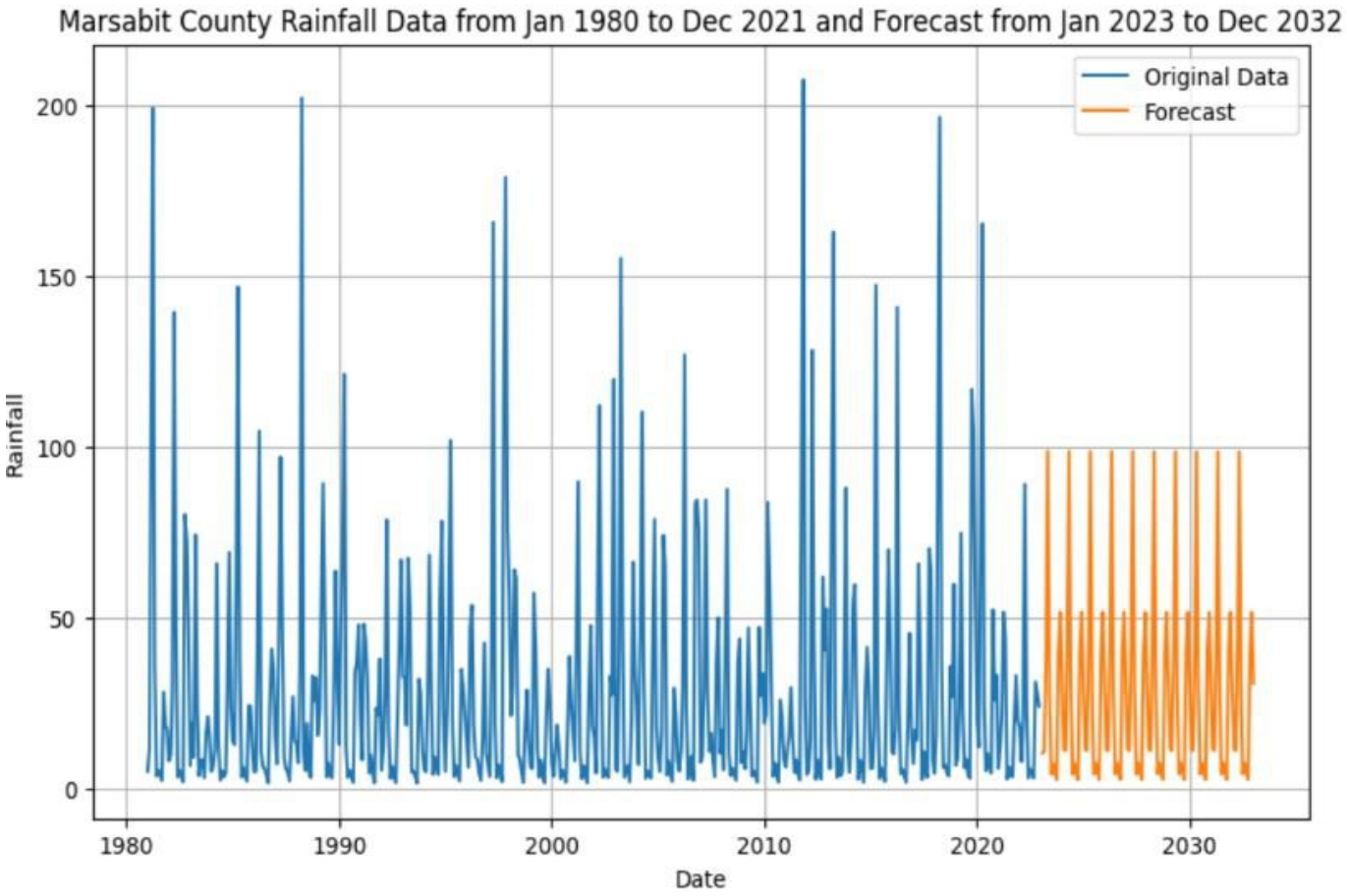
Climate change has manifested in the region through severe droughts, resulting to loss of lives among both residents and animals. According to the Marsabit County climate

change mainstreaming guidelines, only about 15% of the land in Marsabit County is under vegetation cover and the rural indigenous forests woodlands have been destroyed at a rate of 5% annually posing a threat to catchment areas and land resources.

Further, the guidelines indicate that waste is managed by County authorities only at sub-County headquarters through heap burning which accounts for about 20% of the waste generated in urban centres, with majority of households resorting to backyard waste burning. In the County, only 20% of the households have access to pit latrines with the majority 78% practicing open defecation which causes diseases like cholera especially when it floods.

Rainfall ranges between 200 mm and 1,000 mm per annum and its duration, amount and reliability increases as altitude rises. The lowest part of the County like North Horr (550 m asl) has a mean annual rainfall of 150 mm.





The County has experienced the following climate hazards over the years.

Year	Climate Hazard	Impact
1990-1992	Drought	Livestock deaths, human starvation, conflicts and migrations
1993-1994	Conflict, movement and displacement due to climate change.	Displacements, loss of life and property
1997-1998	El –Nino	An outbreak of livestock diseases, destruction of infrastructure, shortage of food supplies, interrupted communication channels and loss of livestock.
1999-2000	Human diseases (Cholera outbreak)	Loss of human lives, closure of schools and business medicine stock-out at major health facilities
2001- 2004/5	Drought	Conflicts, outbreak of diseases livestock diseases and shortage of food.
2005-2006	Conflict (clan feuds due to shortage of resources e.g access to pasture)	Loss of lives and displacement
2008-2020	Severe Draught	Loss of animals and outbreak of diseases
2019-2022	Desert locusts, Fall armyworms	Destruction of crops and vegetation cover
2022	Severe drought	Massive livestock deaths, estimated at over 50% of the total herd. Led to the development of national steering committee on drought response bringing together the public and private sectors at the national level
2023	Floods	Destruction of farmland /crops/rangeland. Human and livestock deaths

Implementation of the practice

To cushion key sectors against the impact of climate change the County in partnership with different stakeholders has developed the Marsabit County Climate Change Action Plan (2023-2027). The Plan outlines sectoral adaptation needs, specific sectoral action plans, key implementing partners and indicative costs.

The following are the proposed action plans;

1. Upscaling production and promotion of drought tolerant, pest resistant and early maturing/drought escaping crops varieties

2. Promotion of climate-smart agriculture, flood-based irrigation and promotion of agro-forestry, livelihood diversifications and public education on climate change.

3. Supporting the development of water infrastructure through improved water harvesting techniques and rehabilitation of existing ones; water catchment protection and strengthening community capacity to manage water schemes.

4. Improving access to clean water and sanitation facilities to limit outbreaks of water-borne diseases.

5. Reducing effects of drought and climate change on vulnerable communities for resilience building through strengthening strategies used by communities to adapt to climate variability for reduction and management of risks.

6. Reforestation of degraded forests; restoration of forests and woodlands and promotion of suitable tree species as well as in-situ conservation.

On 26th November 2020, the County Assembly of Marsabit passed an act to establish the County Climate Change Fund Bill to facilitate and coordinate financing of climate change adaptation and mitigation activities. The fund is financed through resources appropriated by the County Assembly, constituting up to 2% of the County revenue account in a financial year.

In 2023, under the FLLoCA initiative, the County organized awareness and training workshops, educating communities on the planning processes for climate change mitigation and adaptation measures. From this partnership, the County has developed a climate change training manual that dictates different subjects including the identification of climate hazards and adaptability measures.

The same year, the County established the Marsabit County Steering Committee comprising of the following members,

1. County Executive Member- Chair of the committee

2. Chief Officer, Environment – Secretary

3. The Fund Administrator

4. County Executive Member in charge of Treasury

5. County Executive Member in charge of Livestock and Fisheries

6. County Executive Member in charge of Health

7. A business community representative

8. Youth representative

9. Representative of PWDs

10. A representative of Public Benefit Organizations

The steering committee is responsible for approving climate change projects and overseeing the implementation of climate change finance framework in the County.

To monitor projects at the ward level and consult with the communities on relevant climate finance activities as well as receive project proposals, the County has established a Ward Planning Committee comprising of a chairperson who is not a public officer but a resident of the specific ward, a representative of the ward-based public benefit organi-

zations, three ex-officials members including ward administrator a representative of each of the key economic activities in the ward and four people representing interest groups including the youth, women, PWDs and representative of the elders.

The Ward Planning Climate Change Committee encourages the local community to explore indigenous techniques for preserving food, such as the drying of meat and vegetables, to prevent starvation during drought periods.

In 2022, the County, through its Ward Planning Committee, initiated community conversation groups at the village level, focusing on critical discussions around the impacts of climate change in the area, early warning indicators and local solutions to the challenges identified. A significant issue was the death of cattle due to insufficient pasture, particularly during the dry seasons.

To address this, various wards have developed a strategy aimed at educating herders and pastoralists in adjacent wards on the benefits of adopting rotational grazing on rangelands. This approach entails temporarily closing off sections of the rangeland for three to four months, allowing grass to regenerate and grow. These areas are then reopened for grazing when other parts become arid, ensuring a continuous feed supply for the cattle. This strategy not only mitigates the problem of pasture scarcity during droughts but also promotes sustainable grazing practices that can enhance the resilience of local communities to climate change.

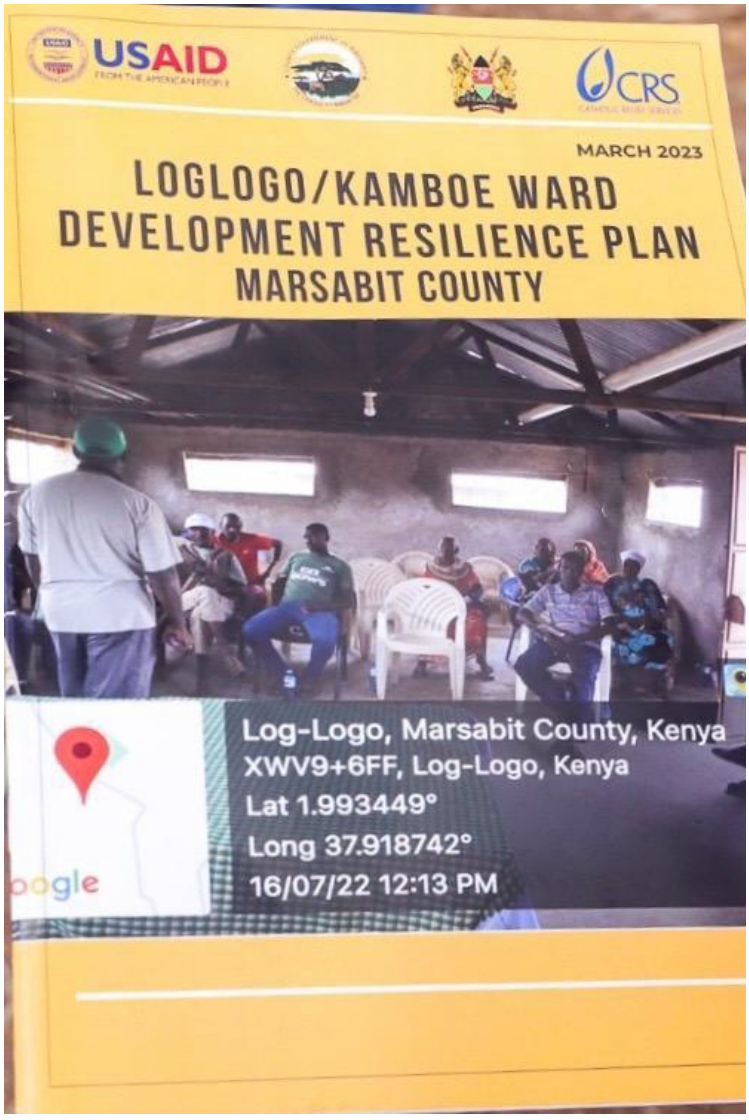
Rangeland Management

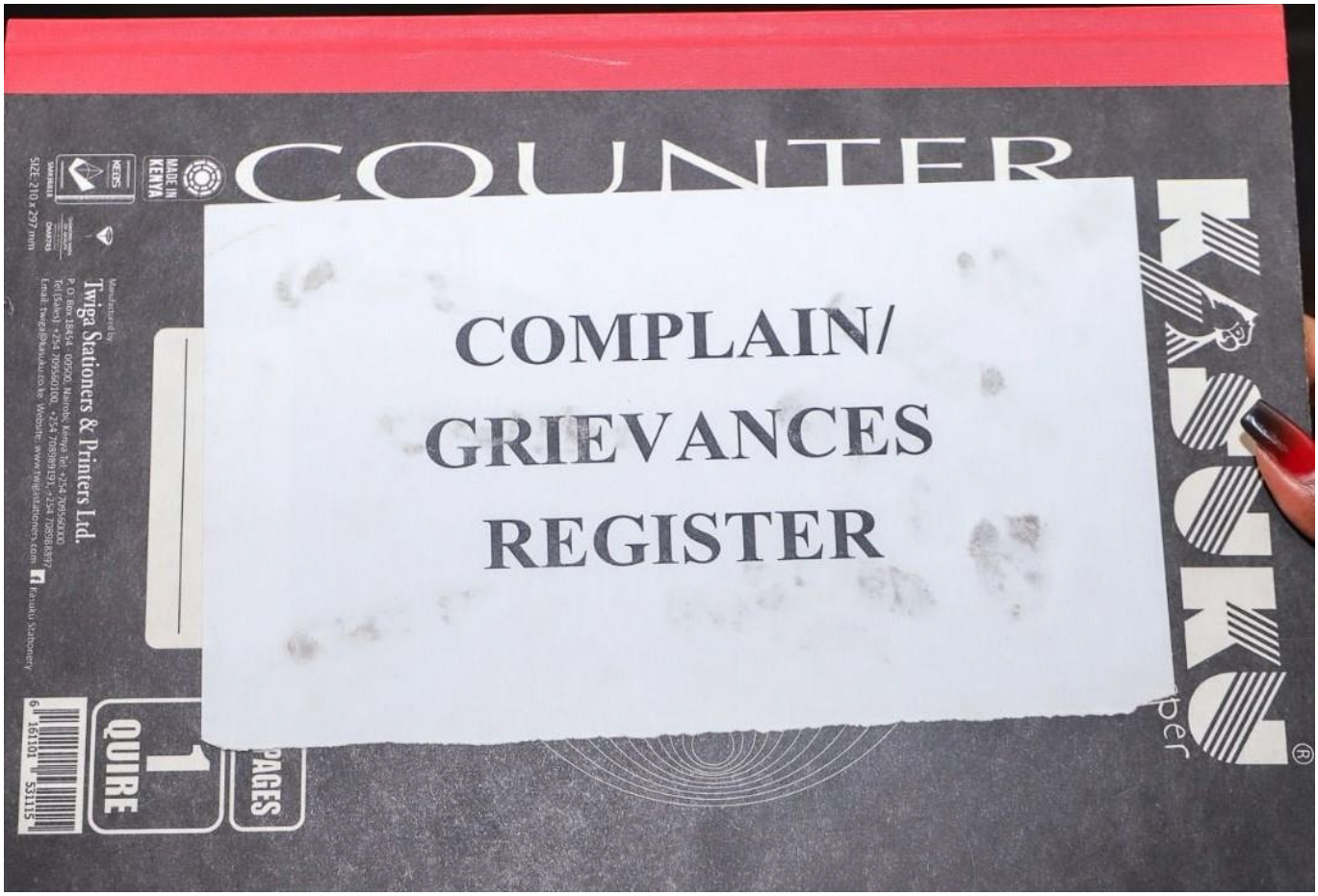
A photo of an ongoing village conversation group meeting.

Rangeland Management

In addition to offering solutions to local climate change challenges, the County, through the village conversation groups, has empowered residents to formulate their own ward-based resilient development plans. Specifically, in Loglogo Ward, these discussion forums have not only allowed the community to pinpoint challenges but also to draft proposals addressed to various partners.

A noteworthy success story emerged from a Loglogo Ward conversation group, where the pastoral community recognized the need to educate neighboring wards about the significance of rotational grazing for their strategy to be effective. Consequently, the group crafted a proposal seeking support from partners to fund a three-day initiative. This initiative involved traveling to neighboring Counties, meeting with chiefs and elders and enlightening them about the risks associated with grazing in areas designated for the dry season. Through these discussions, the two villages established a system that imposed fines for anyone found grazing in restricted lands.





Additionally, the ward has impleme-nted various water projects with the support of diverse partners, a result of the training provided by the County through the FLLoCA project on the skill of proposal writing.

To disseminate information such as impending droughts, floods or pest invasions to all 100 villages, the County issues a monthly bulletin. This bulletin is distributed to all represen-tatives from different Ward Planning Commi-ttees, ensuring it reaches the village conver-sation groups.

Subsequently, these groups convene meetings to formulate solutions and coping mechanisms in response to the information provided.

As a mandatory component of the FLLoCA program, the County maintains a grievance register, providing residents with a platform to report climate hazards and bring them to the attention of the County authorities.

The sustainability of this distinctive pheno-menon in Marsabit, encompassing Village Conversation Groups and the responsibilities of the Ward Planning Climate Change Commi-ttee, is anchored in various legal documents, including the Marsabit County Climate Change Act and Policy. Further, the County has established Gender Mainstrea-ming Guidelines outlining specific roles and considerations for women in ensuring the effectiveness and inclusivity of these initia-tives.

Results of the practice

- The village conversation groups have led to the creation of local solutions for various challenges, such as raising awareness among neighboring wards about the benefits of rotational grazing.

Women fetching water at a solarized borehole

- Climate change resilience and adaptation strategies have been integrated at the ward level, where wards have formulated their own resilience development plans after identifying their critical issues.
- The proposal writing skills provided by the County in collaboration with FLLoCA has empowered the Ward Planning Climate Change Committee to effectively advocate for and secure support from various partners for numerous water projects.

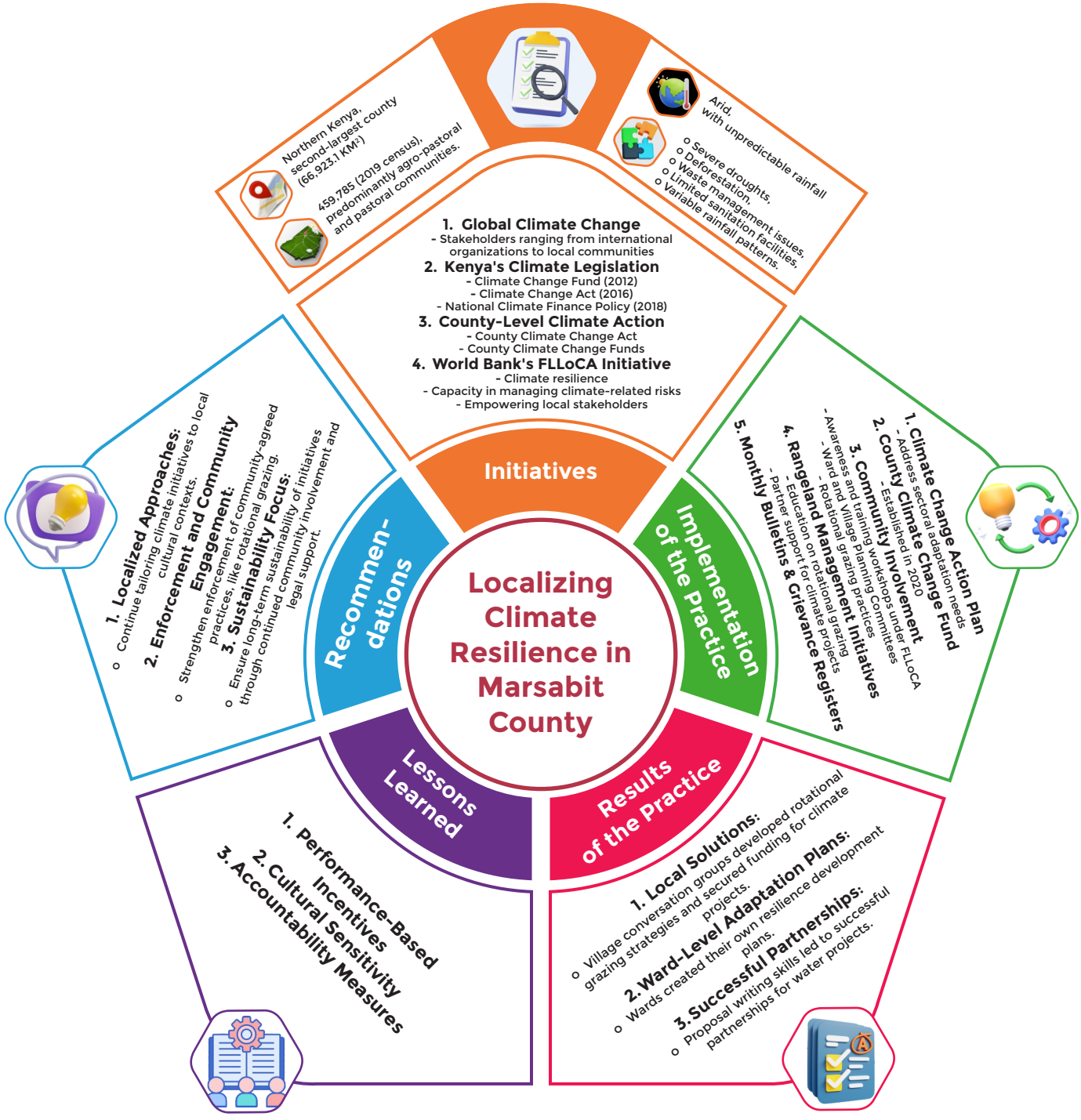
Lessons learnt:

- The use of performance-based grants (CCRI) to incentivize Counties based on their relative performance is an effective strategy to encourage and reward effective climate action and investment in resilience.
- Customizing the Ward Climate Change Planning Committees to align with the unique cultural aspects of Marsabit and diverse communities has proven instrumental in effectively disseminating messages about disaster preparedness. This approach has facilitated the development of local solutions to address the challenges posed by climate change.

Establishing fines for individuals caught grazing at the secluded areas has fostered accountability, compelling everyone to adhere to rotational grazing practices and embrace locally defined regulations, thereby promoting climate adaptation.

Recommendations

The Marsabit County initiative to provide solutions to climate change through the village conversation groups underscore the effectiveness of localized culturally sensitive approaches in addressing climate change challenges. By tailoring the Ward Climate Change Planning Committees to align with the specific needs and traditions of communities, there has been a significant increase in community engagement and the successful implementation of adaptation strategies. The introduction of fines for non-compliance with community-agreed practices, such as rotational grazing, illustrates a commitment to enforcing and adhering to these strategies, ensuring that local solutions are not only proposed but actively practiced.



APPENDIXES

APPENDIX 1:
COUNTY LOGOS

 ***Marsabit***	 ***Vihiga***	 Homa Bay
 ***Kajiado***	 ***Siaya***	 ***Narok***
 ***Lamu***	 **Kitui**	 ***Bungoma***
 ***Kisumu***		

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ISBN 978 9914 9707 5 3