



2023

# TABASAMU YA WAMAMA INITIATIVE PROJECT BASELINE SURVEY REPORT

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Mombasa - Kenya, September 2023

## **THIS BASELINE STUDY WAS CONDUCTED BY**

Lwanenergy Infiniti Consulting

With the invaluable support from CWID.

# Table of Contents

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<b>1.1</b>	<b>ACKNOWLEDGEMENT .....</b>	5
<b>1.2</b>	<b>LIST OF ACRONYMS AND ABBREVIATIONS .....</b>	6
<b>1.3</b>	<b>FOREWORD .....</b>	7
<b>2.1</b>	<b>INTRODUCTION .....</b>	11
	COLLABORATION OF WOMEN IN DEVELOPMENT (CWID) .....	11
	TABASAMU YA WAMAMA.....	11
	Baseline Objectives and Anticipated Deliverables .....	12
<b>2.0</b>	<b>LITERATURE REVIEW .....</b>	13
	Outcome 1: Improving Understanding of Risks and Vulnerabilities .....	13
	Outcome 2: Enhancing Adaptive Capacity of Communities .....	14
	Outcome 3: Building Stronger Partnerships and Collaborations .....	15
	Integrated Approaches to Community Resilience .....	15
<b>3.0</b>	<b>APPROACH AND METHODOLOGY .....</b>	16
	Evaluation Research Design .....	16
	Sampling Design & Sample Size Determination .....	16
	Data Collection Methods and Tools .....	16
	Household Survey .....	17
	Key Informant Interviews .....	17
	Desk Review of Secondary Literature .....	18
	Data Quality Assurance Consideration .....	19
	Research Ethics Consideration .....	19
<b>4.0</b>	<b>FINDINGS: .....</b>	19
	SOCIO-DEMOGRAPHIC CHARACTERISTIC .....	19
	GENDER DISTRIBUTION .....	20
	HOUSEHOLD HEADS .....	21
	EDUCATION .....	21
	LIVELIHOOD .....	21
<b>2.2</b>	<b>OUTCOME ONE: IMPROVED UNDERSTANDING OF RISKS AND VULNERABILITIES FACED BY COMMUNITIES IN RELATION TO CLIMATE CHANGE AND OTHER SHOCKS .....</b>	22
	Evolution in Weather Pattern .....	22
	Nature of Risks and Vulnerability .....	23
<b>2.3</b>	<b>OUTCOME TWO: ENHANCED ADAPTIVE CAPACITIES OF COMMUNITIES INCLUDING IMPROVED ACCESS TO RESOURCES AND SKILLS .....</b>	26
	Impacts of Environmental and Climate Change Challenges to Households .....	26
	Disaster Risk Coping Strategies .....	28
	Perception of Preparedness towards Disaster Risk Impacts .....	31
	Government & Local CSOs Support towards Adaptive Mechanisms in the County .....	33
	Livelihood Strengthening and Kitchen Gardening .....	34
	Sanitation and Waste Management .....	36
	Excreta Waste Management Practices .....	37
	Household Waste Disposal Practices & general Hygiene .....	38
	Partnerships and Collaborations .....	39
	Menstrual Hygiene .....	40
<b>2.4</b>	<b>OUTCOME THREE: BUILDING STRONGER PARTNERSHIPS AND COLLABORATIONS .....</b>	40
<b>2.5</b>	<b>CONCLUSION .....</b>	54
<b>2.6</b>	<b>RECOMMENDATIONS: .....</b>	55

# List of Tables and Figures

---

- Table 1:** Survey Household Sample Size by Sex and Sub-County
- Table 2:** KII Sample Size
- Table 3:** Respondents' Socio-Demographic Characteristics
- Table 4:** Types of Disaster Risks and their Frequency of Occurrence
- Table 5:** Top Three Environmental & Climatic Challenges with Greatest Risk to HH
- Table 6:** Description of Impacts of Environmental and Climate Change Challenges
- Table 7:** Copying Strategies against Disaster Risks Employed
- Table 8:** HH Member Bearing Greatest Responsibility for Copying Strategies
- Table 9:** Perception of Preparedness Towards Flood
- Table 10:** Perception of Preparedness towards Drought
- Table 11:** Perception of Preparedness Towards Water Pollution
- Table 12:** Kitchen Garden Establishment Coverage
- Table 13:** Types of crops grown in kitchen garden
- Table 14:** Purpose of Kitchen Garden Crops & Revenue
- Table 15:** Characterization of Respondents' Sanitation Status by Sub-County
- Table 16:** Management of Filled Excreta Pit
- Table 17:** Household Waste Management Practices
- Table 18:** Partners Availability & Effectiveness in Community Hygiene
- Table 19:** Menstrual Hygiene Products Used
- Figure 1:** Results Based Management Operational Framework
- Figure 2:** Respondents Reporting Climatic and Weather Change in their Locality
- Figure 3:** Respondents' Description of Current Change in Weather Pattern
- Figure 4:** Type of Sanitation Facilities Used by Sub-County
- Figure 5:** Waste Disposal Methods Used
- Figure 6:** Type of Menstruation Material Used

## 1.1 ACKNOWLEDGEMENT

We would like to extend our heartfelt gratitude to all individuals and organizations that contributed to the successful completion of the Improving Understanding of the Risks and Vulnerability of the community to cope with the effects of Climate Change in Mombasa County Baseline survey commissioned by CWID.

Our deepest gratitude and acknowledgement goes to ForumCiv team for their financial support for the Tabasamu Ya Wamama Initiative Project.

We would like to thank the communities who generously shared their experiences and insights, helping us gain a thorough grasp of the specific risks and vulnerabilities they face as a result of climate change and other shocks.

On the same vein, we express our appreciation to government agencies, private companies, civil society organizations and community leaders who provided us with insights on the effects of climate change and working tirelessly to reduce vulnerability to extreme weather shocks and provide essential support to affected communities. Your dedication is an inspiration to us all.

Special thanks go to the research assistants and field enumerators who diligently carried out the data collection process despite the challenging circumstances. We also acknowledge the technical support provided by the research team, particularly Mr. Lwanda Keya- Lead consultant, Hawi Rapudo, Reagan Onyango, and Paul Ayalo, who contributed significantly to the success of the study.

Last but not least, the National and County Governments, with special thanks to the office of County Commissioner and County Government of Mombasa Department of Blue Economy, Agriculture and Livestock, Department of Water, Natural Resources and Climate Change Resilience, Department of Environment and Solid Waste Management, and Department of Public Service Administration, Gender, Youth, Social services and Sports.

Finally, we extend much appreciation to Collaboration of Women in Development (CWID) team under the stewardship of Executive Director Betty Sharon for commissioning this study and the editorial comprising of Livingstone Odero- Resource Mobilization Manager, Doris Ojiambo- Head of Programs, Stephen Omondi- Communication Officer, Winnie Mueni- MEAL Officer, Edward Munyoki- Finance Admin, Mercylorna Kendi- Project Manager (Women Gaining Ground), Salome Achieng- Office Support Staff and Edah Mdzomba- Intern. Without their generous support, this study would not have been possible.

It is our firm conviction that CWID will use the findings from this survey responsibly and effectively, working hand in hand with the communities and stakeholders to implement strategies that enhance resilience, improve livelihoods, and create a more sustainable future.

## 1.2 List of Acronyms and Abbreviations

<b>ASAL</b>	Arid and Semi-Arid Land
<b>ASTGS</b>	Agricultural Sector Transformation and Growth Strategy
<b>CCCF</b>	County Climate Change Fund
<b>CIDP</b>	County Integrated Development Plan
<b>CSA</b>	Climate Smart Agriculture
<b>CWID</b>	Collaboration of Women in Development
<b>FGDs</b>	Focus Group Discussions
<b>GEF</b>	Global Environment Facility
<b>GOK</b>	Government of Kenya
<b>IPCC</b>	Intergovernmental Panel for Climate Change
<b>KIIs</b>	Key Informant Interviews
<b>MEAL</b>	Monitoring Evaluation, Accountability and Learning
<b>NAP</b>	National Adaptation Plan
<b>NCCAP</b>	National Climate Change Action Plan
<b>NCCC</b>	National Climate Change Council
<b>NCCRS</b>	National Change Response Strategy
<b>NFCCC</b>	National Framework Convention on Climate Change
<b>NGOs</b>	Non-Governmental Organizations
<b>SDGs</b>	Sustainable Development Goals (of the United Nations)
<b>UNDP</b>	United Nations Development Programme
<b>UNEP</b>	United Nations Environment Programme
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>VIMP</b>	Voluntary Internship Mentorship Program

## 1.3 FORWARD



**Betty Sharon HSC,**

Executive Director Collaboration of  
Women in Development - CWID

Resilience to the impacts of climate change has many determinants. Despite having done the least to cause climate crisis, rural and urban disadvantaged women in low and middle-income settlements bear the brunt of climate-related losses and damages. However, the impacts are particularly acute for women and girls with disability and other groups of key populations experiencing discrimination and inequality based on multiple and intersecting factors. At the same time, they are not only victims of climate change but also contribute significantly towards climate action within their communities, counties, nationally and globally. Their right to participate in decision-making, which affect their lives, is recognized under the UN Framework Convention on Climate Change.

This study unearthed the distinctions of intricacies of environmental challenges and the need for tailored mitigation strategies. It as well revealed that communities possess a varying level of awareness regarding climate change and related vulnerabilities. While some community members demonstrated a basic understanding of climate-related risks, many remained unaware of the specific threats they face.

Climate change and its calamitous effects, such as the extreme heat and El Nino rains in Kenya demand immediate action. It is my emphasis that climate actors, relevant government departments, and development partners elevate more women to the top ranks of climate leadership; this will promote the configuration of choosing leaders that privilege economic growth and job creation with positive social, environmental and climate spillovers.

## 1.4 EXECUTIVE SUMMARY

This Executive Summary provides an overview of the key findings and insights from the baseline study conducted to assess community resilience and preparedness in the face of climate change and other shocks. The study focused on three critical outcome areas:

1. Improved understanding of the risks and vulnerabilities faced by communities in relation to climate change and other shocks;
2. Enhanced adaptive capacity of communities, including improved access to resources and skills;
3. Stronger partnerships and collaborations with local organizations and stakeholders to support community resilience and reduced negative impact of climate change and other shocks in the communities.

### Objectives and Scope of the Study

The assessment objectives endeavored to examine the following aspects:

1. Understand the specific risks and vulnerabilities faced by communities in relation to climate change and other shocks;
2. Identify the coverage of solid waste management systems;
3. Identify and establish the kitchen garden demonstrative sites;
4. Understand Early warning framework mechanisms on Climate Change;
5. Understand people with reduced vulnerability to extreme weather events, and available support for affected communities.

The scope of this baseline study was limited to sampled Key Informant Interviews (KIs) and households in Mombasa County (Nyali, Kisauni, Likoni and Jomvu sub-counties). The study was structured into three phases that sequentially built into each other. These are the inception and planning phase, data collection phase, and data analysis and reporting phase.

The mixed methods adopted for data gathering included literature review, household surveys, Focus Group Discussions (FGDs), and Key Informant Interviews (KIs). An observational approach was employed to evaluate any visible indicators relevant to this study. Finally, a consultative validation meeting was held with multistakeholder groups, CWID and the research team, which provided further insights used to enrich and strengthen the study report.

### Key Insights from the Study

#### **1. Improved Understanding of Risks and Vulnerabilities:**

The study revealed that climate change is having a significant impact on the environment. The most common impacts are erosion, flooding, drought, and water pollution. It also highlights the diverse perceptions of environmental risks and their frequencies. These impacts are negatively impacting on people's lives, and they are also causing damage to the environment. These variations show the complexity of environmental challenges and the need for tailored mitigation strategies. The baseline study revealed that communities possess a varying level of awareness regarding climate change and related vulnerabilities. While some community members demonstrated a basic understanding of climate-related risks, many remained unaware of the specific threats they face. The study underscored the need for targeted education and awareness campaigns to enhance the comprehension of these risks. In addition, the study provides insights to guide decision-making, promote awareness, and drive sustainable solutions to diverse environmental challenges. Understanding risk perceptions and frequencies helps develop effective strategies. Prioritizing resources and allocating funding to areas at risk can lead to more inclusive and comprehensive approaches to mitigating environmental risks.

#### **2. Enhanced Adaptive Capacity of Communities:**

The findings indicated a range of adaptive capacities within the communities. Some households had access to resources and skills, enabling them to better cope with climate-related challenges and other shocks. However, disparities in resource distribution and skill development were evident, with marginalized groups especially women often having limited access. Addressing these disparities will be crucial for enhancing overall adaptive capacity.

### **3. Stronger Partnerships and Collaborations:**

The baseline study identified several opportunities to strengthen partnerships and collaborations with local organizations and stakeholders to bolster community resilience. Although existing partnerships existed, they were often fragmented and lacked coordination. The study highlighted the importance of fostering synergistic relationships among local actors, including community-based organizations, government agencies, and non-governmental organizations.

### **Study Recommendations**

The recommendations are intended to improve community resilience, particularly among women, in four Mombasa County sub-counties by addressing specific challenges and encouraging active participation, providing resources and support networks, disaster-prevention education initiatives, and providing opportunities for women to participate in local decision-making.

#### **Outcome 1: Improved Understanding of Risks and Vulnerabilities:**

Improved understanding of risks and vulnerabilities is critical when climate change is a major threat to coastal communities, particularly women. Women in coastal communities face disproportionately high climate change impacts due to their unique roles in livelihood and caregiving, limited access to resources, and lack of decision-making power. Improving understanding of climate risks and vulnerabilities is crucial.

- **Gender-sensitive climate education programs, focusing on women in coastal areas**, are crucial for understanding climate change and its implications. These programs should be designed to explain observable climate changes and weather patterns, emphasizing the importance of climate literacy and awareness. This approach can help mitigate uncertainty about climate change among respondents.
- **Enhance localized climate data collection for informed decision-making and adaptive strategies**, ensuring real-time data on weather patterns and changes is disseminated among communities to enable effective responses to changing climate conditions.
- **Gender-specific climate risk assessments are crucial for understanding the unique vulnerabilities** faced by women, who play a multifaceted role in livelihoods and caregiving, enabling the identification of vulnerabilities and prioritization of adaptation strategies.
- **Community-based adaptation programs, involving women as key stakeholders**, are crucial for addressing climate impacts on sectors like agriculture and fisheries. Programs should be tailored to cater to women's resources and skills, fostering their adaptability, resilience, and recognition of their crucial role in various sectors.
- **Support for women's economic resilience can help them diversify their income sources** and reduce their reliance on climate-sensitive livelihoods by providing access to alternative income-generating activities and conducting extensive training projects.

#### **Outcome 2: Enhanced Adaptive Capacity:**

Climate change poses a significant threat to coastal communities, but it also presents an opportunity for women to enhance their adaptive capacity. By improving their knowledge, skills, and access to resources, they can better withstand climate change's impacts and build a more resilient future.

- **The Climate-Resilient Farming Practices training program** provides women farmers with the knowledge and resources to adopt innovative agricultural practices, including drought-resistant crop varieties, effective water management techniques, and innovative pest control strategies.
- **Bridging the Access to Climate Information Gap by enhancing women's access to timely climate information** through digital tools and technology is critical. Women are better equipped to make informed choices and adjust to changing weather as a result of this empowerment.
- **Support Women's access to critical resources and productive assets, such as agricultural land and credit**, is paramount. Ensuring equitable access to these resources is indispensable for effective climate change adaptation.

- **Community-based disaster preparedness plans, involving women's active participation and leadership**, should be developed, and implemented, tailored to their unique needs and households, and encompassing response and recovery strategies.
- **To strengthen partnerships for capacity building that provide women with opportunities** for capacity building, it is crucial to collaborate with local groups and stakeholders. These programs ought to emphasize developing leadership, entrepreneurship, and skills connected to Climate-Resilient Agriculture.

### **Outcome 3: Stronger Partnerships and Collaborations:**

Climate change is not just a local but a global challenge that requires a coordinated response. Partnerships and collaborations are essential for building a more resilient future for coastal communities.

- **Gender-inclusive climate dialogues promote women's participation in policy creation**, climate talks, and decision-making processes, ensuring their voices are heard and incorporated into climate policy.
- **Support and funding for networks and organizations led by women** are crucial for climate change adaptation and mitigation. These organizations play a vital role in promoting gender-responsive policies and mentoring women.
- **Advocating for increased government commitment to gender-inclusive climate action is pivotal**. This entails urging the allocation of adequate resources and personnel for the effective implementation of climate policies that prioritize gender equality.
- **Promoting collaboration among stakeholders, including government agencies, NGOs, and community groups**, is essential for streamlining climate initiatives and avoiding duplication of efforts. Such collaboration can significantly enhance the impact of climate projects.
- **Encouraging partnerships between women entrepreneurs and the private sector**, particularly in renewable energy and sustainable practices, is paramount. These collaborations can unlock essential funding for climate-smart projects and initiatives led by women.
- **Facilitating partnerships between women experts, academic institutions, and research centers** is imperative for generating climate science and policy research that addresses the specific challenges faced by coastal communities, with a distinct focus on women's invaluable contributions to climate adaptation and mitigation.

In conclusion, this baseline study serves as a critical starting point for our community resilience-building efforts. It underscores the need for tailored interventions that address the varying levels of understanding, resource access, and collaboration among communities. It is envisaged that the findings will guide the development of a comprehensive community-based resilience strategy aimed at improving climate change awareness, enhancing adaptive capacity, and fostering stronger partnerships with local stakeholders. By focusing on these three key outcome areas, CWID in collaboration with other primary actors in government and private sector should aim to empower communities to proactively mitigate the negative impacts of climate change and other shocks while building a more resilient and sustainable future.

The coastal region of Mombasa County can be transformed by enhancing climate risk understanding, strengthening adaptive capacity among coastal communities, particularly women, and fostering robust partnerships for community resilience. This will lead to more effective, inclusive, and sustainable responses. Prioritizing climate risk understanding helps anticipate and mitigate climate change impacts, while empowering coastal communities, particularly women, ensures active participation in resilience-building efforts. Forging strong partnerships between stakeholders fosters a collaborative approach towards community resilience and long-term sustainability.

## 2.0 STUDY OVERVIEW

### 2.1 INTRODUCTION

The effect of climate change is a global challenge whose effects are experienced in nearly all sectors of the economy at varied lengths. To mitigate and adapt to the effect of climate change, Nations have developed strategies and policies to address this challenge. Kenya is one of the nations that has agreed to take part in the ad hoc response to weather-related events and the effects of climate change. In this regard, it has ratified a number of international treaties and agreements to demonstrate its commitment to addressing climate change. For instance, Kenya is a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement. These agreements outline the country's obligations to reduce greenhouse gas emissions and implement measures to adapt to the impacts of climate change. The National Adaptation Plan (NAP), which has been submitted to the National Framework Convention on Climate Change (NFCCC), the National Change Response Strategy (NCCRS), 2010, Kenya Vision 2030, the long-term National Development blueprint that encapsulates flagship programs and projects on adaptation and mitigation, the National Livestock Policy 2015, the National Risk Management Framework, and the Agricultural Sector Transformation and Growth Strategy (ASTGS), National Oceans & Fisheries Strategy (2017-2028), National Oceans & Fisheries Policy (2008), and the Climate Change Act (2016)

In Kenya the Private Sector is already playing a huge role in tackling climate change risks to promote growth of a green economy through advocacy, capacity building, policy implementation support as well as implementation of projects and programs that support mitigating and adapting to the adverse effects of climate change. Despite the investments made in this area, there is still need for concerted efforts to minimize the effect of climate change on the environment and peoples' lives.

Perhaps the most prominent characteristic of Mombasa city is its sweltering heat. In past times, the city has experienced temperatures as high as 38°C, at daytime and around 26°C at night. With such high figures, it's only been wise and sane to keep off as many clothes as possible. However, with climate change, the city is taking a new turn, at least for now. It is no longer as hot as before. In fact, the cold conditions brought about by rains and extreme winds have sent many people to the market to shop for warm clothes. Having a sweater, hoodie and even a scarf is now very important. Having a portable umbrella is even more important<sup>1</sup>.

### COLLABORATION OF WOMEN IN DEVELOPMENT (CWID)

Collaboration of Women in Development (CWID) is a premier grassroots women led non-profit making organization based in Mombasa County, committed to creating a society that improves the lives of the vulnerable women living at the grassroots level with a mission of identifying and reinforcing women's role in Education, Leadership Development, and Governance.

CWID endeavors to respond to the needs of grassroots women, girls and other vulnerable populations, providing short-term/long-term support, empowering women leadership, complementing the efforts of government and other development partners, addressing economic justice and influencing policies and research work. The main priority areas include promoting environmental adaptation and resilience; improving women Social Economic Empowerment and Education; promoting governance; access to health services; peace and security; Gender Justice and influencing policies and access to justice.

### TABASAMU YA WAMAMA

In March 2023, CWID launched the "Tabasamu ya Wamama" Initiative project under the Wajibu Wetu Programme phase (III) supported by Forum CIV which is an organization that enables people to claim their rights and take control of their lives. The project is created in the context of responding to effects of climate change through Grant agreement for a period covering (March 2023–December 2025). CWID through this sub project under Wajibu Wetu III intends to contribute

<sup>1</sup> <https://www.the-star.co.ke/news/big-read/2021-08-05-why-you-need-to-dress-differently-in-mombasa/>

to enhance inclusive governance, empowerment, and resilience of communities towards the realization of human rights. The outcome journal (See annex 1) articulates program results and interlinkages between the Tabasamu ya Wamama and the broader Wajibu Wetu III. Tabasamu ya Wamama is anchored in Result Area 2 on Community Empowerment, Resilience & Adaptation so that communities can cope with the effects of climate change and other shocks from unprecedented disasters.

CWID proposes to implement Tabasamu Ya Wamama - Smiles of Women initiative project. This project is seeking to enhance the adaptive capacities of communities to cope with effects of climate change and other shocks from unprecedented disasters in Mombasa County (Kisauni, Nyali, Likoni, Jomvu) Sub-Counties. The project envisions three main outcomes namely: Improved understanding of the risks and vulnerabilities faced by communities in relation to climate change and other shocks; Enhanced adaptive capacity of communities, including improved access to resources and skills; stronger partnerships and collaborations with local organizations and stakeholders to support community resilience.

### **Baseline Objectives and Anticipated Deliverables**

The main objective of the Tabasamu ya Wamama baseline survey is to assist CWID in the collection of baseline data to determine the current level of each of the project indicators, to facilitate Monitoring Evaluation, Accountability and Learning (MEAL) of the progress of the project, develop, test and use data collection tools, update the project's Monitoring Evaluation, Accountability and Learning system, and revise the project documents. Secondly is to benchmark the project indicators and provide a better understanding of the operational environment and existing priorities in the targeted areas of intervention. Data and information emanating therefrom is expected to inform the planning and implementation process including potential redesign of activities as well as the design of the MEAL systems. The assessment objectives endeavored to find out the following aspects:

1. Understand the specific risks and vulnerabilities faced by communities in relation to climate change and other shocks;
2. Identify the coverage of solid waste management systems;
3. Identify and establish the kitchen garden demonstrative sites;
4. Understand Early warning framework mechanisms on Climate Change;
5. Understand people with reduced vulnerability to extreme weather events, and available support for affected communities.

The scope of this baseline study was limited to sampled Key Informant Interviews (KIs) and households in Mombasa County (Nyali, Kisauni, Likoni and Jomvu sub-counties).

## 2.0 LITERATURE REVIEW

CWID seeks to implement a series of interventions in line with their conceptual framework seeking to solve identified situations affecting Mombasa County specific to Kisauini, Nyali, Likoni, and Jomvu Sub-Counties. In line with this, the chapter presents a comprehensive review of the existing literature relevant to the objectives of the baseline survey for the "Tabasamu Ya Wamama" initiative project in Mombasa County, Kenya. The review is structured around the three main objectives of the project:

1. Improved understanding of the risks and vulnerabilities faced by communities in relation to climate change and other shocks;
2. Enhanced adaptive capacity of communities, including improved access to resources and skills;
3. Stronger partnerships and collaborations with local organizations and stakeholders to support community resilience and reduced negative impact of climate change and other shocks in the communities.

### **Outcome 1: Improving Understanding of Risks and Vulnerabilities**

Understanding the risks and vulnerabilities associated with climate change and other shocks is crucial for developing effective resilience strategies. Climate change is causing shifts in weather patterns, leading to increased frequency and intensity of extreme weather events, such as floods, droughts, and storms. These events disproportionately affect vulnerable communities in low-income regions, like Mombasa County. Previous studies (Smith et al., 2007; Rahman et al., 2009) have highlighted the urgent need to assess local vulnerabilities and develop context-specific adaptation plans. While severe climatic conditions have been experienced in various parts of the country, Mombasa County has recorded a history of disasters related to climate extremes including floods, which cause serious damage nearly every year and, often, loss of life. For instance, the experienced floods in October 2006 were particularly serious, affecting at least 60,000 people in the city and the wider county. Around 17 percent of Mombasa's area could be submerged by a sea-level rise of 0.3 meters, with a larger area rendered uninhabitable or unusable for agriculture because of water logging and salt stress<sup>2</sup>. Interventions geared towards enhancing communications and understanding the risks and vulnerability of individuals towards climate change impacts have been undertaken within the county, however, there seems to be a disconnect in the specific targeted approach of climate change awareness to key groups within the society. The Kenya Climate Change Act, 2016, for example, devolved climate change action to counties in order to achieve low carbon, climate resilient sustainable development (Government of Kenya, 2016); the Kenya Climate Change Learn Strategy, 2021–2031, recognizes climate change as a cross-cutting issue affecting various sectors; and the Climate Smart Agriculture Strategy 2017–2026 aims to achieve sustainable food production and income generation while also building climate resilience and decarbonization (Ministry of Agriculture, 2017). Despite these diverse and informative structures, there is still an overlook of the enormous potential of informative communication to contribute to climate-resilient responses by inculcating local knowledge of the effects of climate change, acclimatization, and building resilience (Mitchell et al., 2021). While embracing Kenya's strong climate policy, local planning and action have been largely separated from the national approach. This is evident from the insufficient technical capacities of county governments and local authorities. A key contributor to this is lack of inclusive development planning and understanding of the community route course for their unpreparedness towards combating the climate change effects. Vital community priorities are ignored at planning as well as the scarcity of financial resources at county level to undertake the already identified measures within the communities aimed at enhancing the climatic risks and vulnerability preparedness.

In order to support the communities in understanding these unprecedented climatic challenges, there needs to be an impactful awareness and targeted communication by the stakeholders. Initiatives at grassroots level should be considered to address the ability to effectively convey climate change information which relies heavily on being able to comprehend the phenomenon and finding ways to simplify it while conveying its full significance.

<sup>2</sup> Cynthia Brenda Awuor, Victor Ayo Orindi, & Ochieng Adwera, A. (2008). *Climate change and coastal cities: the case of Mombasa, Kenya. Environment and Urbanization, 20(1), 231–242.* <https://doi.org/10.1177/0956247808089158>

## **Outcome 2: Enhancing Adaptive Capacity of Communities**

Adaptive capacity refers to a community's ability to respond effectively to change and adversity. A critical aspect of enhancing adaptive capacity is providing communities with improved access to resources and skills. Previous research (Adger et al., 2005; O'Brien, 2012) emphasizes the importance of empowering local communities through skill-building initiatives, such as vocational training and educational programs. These interventions not only enhance livelihood options but also contribute to the overall resilience of communities by diversifying income sources. Most climate change action models confirm the intensity and frequency of extreme climate events projected to increase in the future with significant disparities in terms of regional impacts and sectorial risks (Intergovernmental Panel for Climate Change [IPCC], 2013). This calls for immediate and effective adaptation strategies to climate change in dealing with the negative consequences or taking advantage of potential opportunities.

Mombasa County being an island is one of the most impacted ecosystems by climate change. These notable changes in climate have caused and will cause extensive direct and indirect harm to the county's ecosystem and its people (Mombasa County Climate Change Action Plan 2020-2024). Special adaptation efforts have been undertaken towards addressing adaptation needs of the coastal communities which are home to a large and growing proportion of the world's population (Merkens et al., 2016; Neumann et al., 2015). Concentration of human activity on the coast has heavily impacted the natural environment, often leading to resource degradation (Agardy et al., 2017; United Nations Environment Programme [UNEP], 2006). The combined effects of high and increasing population density in coastal zones, increasing pressure on resources, and superimposed climate hazards requires urgent policy responses. Mombasa County has strived to diversely integrate adaptation measures for the coastal region with the National Climate Change Action Plan 2018-2022), Kenya Climate Smart Agriculture Strategy (2017-2026), Climate Risk Management Framework (2017), National Climate Change Policy (2018), and National Climate Finance Policy (2018), among other sector plans and policies that address aspects of climate change. However, a key challenge remains the effective implementation of these identified actions. Limited capacity of the county government ranging from inadequate technical resources to build the capacity of the communities to adapt to these climatic impacts and financial resources from the county government kitty poses a serious adaptive capacity gap within the county.

In order for the communities to cope and adapt to the unprecedented climate impacts, there need to be available financial resources to support the technical capacity of these communities. Currently, the County Government of Mombasa has prioritized climate change, environmental conservation, clean energy, waste management and support to gender specific initiatives within their FY 2023/2024 budget. Averagely, up to KES. 1,123,000,000 out of the projected KES.13,700,000,000 county budget expenditure has been allocated in support to Environment and Waste management, Water, Natural resources and Climate change resilience interventions support<sup>3</sup>. Consequently, a number of challenges have been identified including high reliance of donor funds to the annual development budget for the department, inadequate development funds from the County Treasury, inadequate technical personnel, inadequate data for informed decision making as well as inadequate county legislations and policies. These constraints if not addressed would possibly derail the expected improved adaptive capacity of the county towards the climate change impacts, hence drizzling the impacts down to the grassroots communities.

Looking into the global aspect in enhancing adaptive capacity through strengthening finance as a resource, access to the climate fund has been very challenging, especially in African countries. In the conference of parties (COP), countries submitted Nationally Determined Contributions (NDCs) that outline national goals for greenhouse gas emissions reductions and identify financial needs for mitigation and adaptation efforts, however, there has been an inadequacy of this NDC's commitments (Qimin et al., 2020). Few incentives for national leaders to launch and sustain long-term implementation has raised global concerns. This has triggered inadequacy of accountability by international regimes on climate goals with both international and national policies focused on climate change seem to be divided, impacting the efforts laid for mitigation and adaptation

<sup>3</sup> County Government of Mombasa Programme Based Budget Estimates 2023/2024

measures. The financial resources mobilized to help vulnerable communities, especially those in developing countries, are still low and limited. Climate hazards have increased vulnerability and reduced the capacity of communities to adapt to the changing impacts of climate change. In developing countries, the most vulnerable people have to deal with the effects of climate change because the climate fund and donor support are not always reliable (Broberg, 2020).

### **Outcome 3: Building Stronger Partnerships and Collaborations**

Building partnerships and collaborations with local organizations and stakeholders is fundamental for supporting community resilience efforts. Studies (Pelling, 2010; Leach et al., 2010) have demonstrated that successful resilience-building projects require active involvement and engagement of local actors. Engaging with government agencies, non-governmental organizations, and community-based organizations can ensure that interventions are contextually appropriate and sustainable. Additionally, these collaborations enable the pooling of resources, knowledge, and expertise, leading to more effective outcomes. While there is compelling evidence to increase climate finance to meet the 2°C targets and to catalyze scale-up of locally-led adaptation among the local communities in the global south from the impacts of climate change, climate finance is largely implemented by the public sector, it is evident that the private sector must play a significant role in locally-led adaptation financing. As a result, a significant public-private dedication is required to facilitate collaboration between the private and public sectors to mobilize and facilitate access to climate finance among the local communities for locally-led adaptation.

Mombasa county government has played a key role in enhancing partnership growth with a well stipulated Climate Change Policy on how these engagements are to be realized. This is through the continuous collaboration with the National Government, other County Governments, development partners, the private sector, academia, NGOs, UN agencies and others. The engagement with these partners majorly seeks to harness the pool of knowledge, expertise and financial contributions aimed at realizing climate change goals within the county. Further, the county government has strived to provide an enabling environment and appropriate incentives to enhance public private partnerships (PPP) in the design and implementation of climate change initiatives<sup>4</sup>.

Various non-governmental organizations have embraced collaboration with the local stakeholders and government towards creating community driven approaches in addressing climate change issues within Mombasa County. These initiatives involve having the communities take lead in defining the root cause of the climate challenges faced within their locality, and embracing local knowledge about the ecosystem and ongoing projects in order to build resilience to the impact experienced within the region, a case of DANIDA engagement which led to the formation of Mombasa Sustainable City Forum. These platforms emphasize on the need for a comprehensive approach to dealing with climate change, while stressing on the importance of placing people and communities from the most climate-affected regions at the forefront of adaptation efforts. Further to enhance support and collective fight towards combating climate change, Mombasa County is lauded to be part of Covenant of Mayors in Sub-Saharan Africa (CoM SSA). These partnerships strengthen the foundation for future activities to tackle climate change and provide access to sustainable energy through the joint commitment in taking ambitious climate action in the face of these challenges.

### **Integrated Approaches to Community Resilience**

A common thread in the literature is the recognition of the interconnected nature of the objectives outlined above. Community resilience to climate change and other shocks requires a holistic approach that integrates risk assessment, capacity-building, and collaborative efforts. Studies (Folke, 2006; Berkes et al., 2003) underscore the importance of considering social, ecological, and economic dimensions of resilience to create comprehensive strategies that address multiple facets of vulnerability.

<sup>4</sup> *Mombasa County Climate Change Policy 2021*

### 3.0 APPROACH AND METHODOLOGY

The study used a partially mixed, concurrent, dominant design (Leech and Onwuegbuzie 2009) of the mixed method design where different data that complement each other was collected in this study. The quantitative aspect of the study was accomplished using a structured questionnaire to assess demographic characteristics, disaster risk preparedness & mitigation, waste management and pollution aspects in the study area. While the qualitative data collection was based on the phenomenological study approach that describes attitude, perceptions among target respondents in relation to the desired project results.

#### Evaluation Research Design

The evaluation study employed a Results Based Management (RBM) Approach, this approach allows for assessment of all aspects that are responsible for successful delivery of the project as summarized below. The RBM approach allows for the assessment of the project's Theory of Change (ToC), factors that are responsible for the project's level of efficiency, effectiveness, relevance, coherence, sustainability, and impact. The operational framework of this approach is summarized in the figure below.

**Figure 1:Results Based Management Operational Framework**



#### Sampling Design & Sample Size Determination

Primary population respondents for this study were drawn from all the households in the four project targeted sub-counties. The desired overall sample size of the respondents was calculated using RaoSoft<sup>5</sup> sample size calculator at 95% level of confidence, 5% margin of error and a population size of 1,500 where the response distribution is assumed to be 50%, giving a sample size of 230.

A cluster sampling procedure was adopted to select respondents of the study with administrative boundaries and project sites being the main criteria used to cluster respondents of interest. This method was found suitable as it minimizes sampling error by ensuring that all relevant portions of the population are included in the sample hence yielding a more representative sample of the population. Moreover, it is also economical as it reduces other travel and data collection costs. A simple random sampling approach that gives equal chance for every project participant to participate in the study was then used to select study participants. Analysis unit for this study was pegged at household level.

#### Data Collection Methods and Tools

An array of data collection instruments were developed to comprehensively collect data that meets objectives of this study as stated in the above sections, the tools and methods for data collection are discussed below. The household survey was conducted using a computer aided questionnaire on Kobo Toolbox for robust data quality. The HH data collection was carried out by a team of eleven

<sup>5</sup> <http://www.raosoft.com/samplesize.html>

(11) enumerators in the project implementing sub-counties. The enumerators underwent a thorough one-day training and tools pretesting exercise prior to real data collection. The data collection procedure at the household level was conducted as follows:

1. At the respondent household, the enumerators introduced themselves and provided detailed explanations why the survey is being carried out.
2. The enumerators then sought the consent of the respondents and only commence the interview where consent is provided.
3. The enumerators then administered the questions as trained.
4. After the completion of the interview, the enumerators gave the respondent a chance to ask questions or comments which were captured as notes.

### **Household Survey**

Primary data collection was undertaken through a household survey at household/community level from potential project beneficiaries. The household questionnaire tool was developed by the consultant taking into consideration input from CWID team. The tool was further pretested prior to real survey in non-study area to avoid contamination of results by respondents who may have had prior contact with enumerators during pre-test phase, corrections to the tool was adjusted after the pretest session and a final survey uploaded in the android devices for subsequent data collection.

A total of 234 respondents were surveyed during the three-day's household data collection period; this constituted 53% (n=124) female, 46% (n=108) male, 1 intersex and one respondent with undisclosed sexual orientation status as shown in table below.

**Table 1: Survey Household Sample Size by Sex and Sub-County**

Sub County					
Characteristic	Overall, N = 234 <sup>1</sup>	Jomvu, N = 64 <sup>1</sup>	Kisauni, N = 64 <sup>1</sup>	Likoni, N = 42 <sup>1</sup>	Nyali, N = 64 <sup>1</sup>
<b>Sex</b>					
Female	124 (53%)	31 (48%)	36 (56%)	25 (60%)	32 (50%)
Male	108 (46%)	33 (52%)	28 (44%)	17 (40%)	30 (47%)
Intersex	1 (0.4%)	0 (0%)	0 (0%)	0 (0%)	1 (1.6%)
Other	1 (0.4%)	0 (0%)	0 (0%)	0 (0%)	1 (1.6%)

### **Key Informant Interviews**

Key informant interviews (KII) was also adopted to provide data from individuals who had specific relevant information to the study such as, government policies and legal framework relating to food security intervention in the region, climate change and early warning and early response system etc. KII targeted mainly; county government officials, local CBOs, BMUs etc. Selection of KII participants was purely based on a purposive sampling approach given their knowledge of subject matter of interest to the study. A total of 22 KII were conducted as tabled below.

**Table 2: KII Sample Size**

No.	INTERVIEWEE
1.	Muungano Wa Wanavijiji
2.	Department of Environment,
3.	Department of Solid Waste Management
4.	Department of Renewable Energy
5.	Dream Achievers Youth Organisation (DAYO)
6.	Beach Management Unit (BMU) Mshomoroni
7.	Beach Management Unit BMU Jomvu Kuu
8.	GAEC
9.	BIGSHIP
10.	Department of Water, Natural Resources
11.	Department of Climate Change Resilience.
12.	Department of Agriculture
13.	Department of Blue economy
14.	Department of Livestock
15.	OKOA CBO Kisauni, Mtopanga
16.	BMU - OLD TOWN
17.	BMU - Nyali
18.	Chiefs office- Kadzandani Location
19.	Community policing- Kadongo ,Kisauni
20.	Department of Youth Gender, Sports and Cultural affairs
21.	Collaborative Center for Gender Development
22.	Tunaweza Women with disability

### Desk Review of Secondary Literature

A desk review of secondary data was exploited to augment primary data collected. These included key project design and implementation documents such as the proposal, the logical framework, M&E plan, implementation/work plan, budget, among other narrative reports relevant to the study. The rationale was to have a deep background insight into the project's Theory of Change (ToC) and the various approaches and strategies being used to implement the project. This further allowed the consultants to put in place robust data triangulation processes to guarantee quality, credibility and reliability of all data that was collected in the field.

## Data Quality Assurance Consideration

The following ethical consideration were undertaken during the study:

- All household respondents and KII respondents received verbal explanation from the data collectors, including the purpose of the study and confidentiality rules. Verbal consent was obtained from each informant. Specific respondent information (i.e., name, address) was not recorded during data collection, analysis, or in the study report.
- Supervisors responsible for monitoring the data collection of the enumerators (data collectors) ensured that all collection, checking, and review processes were appropriate and ethical.
- Enumerators sought the consent from all their respondent as the first consideration for participating in the study, the study would only proceed where voluntary informed consent was obtained.

## Research Ethics Consideration

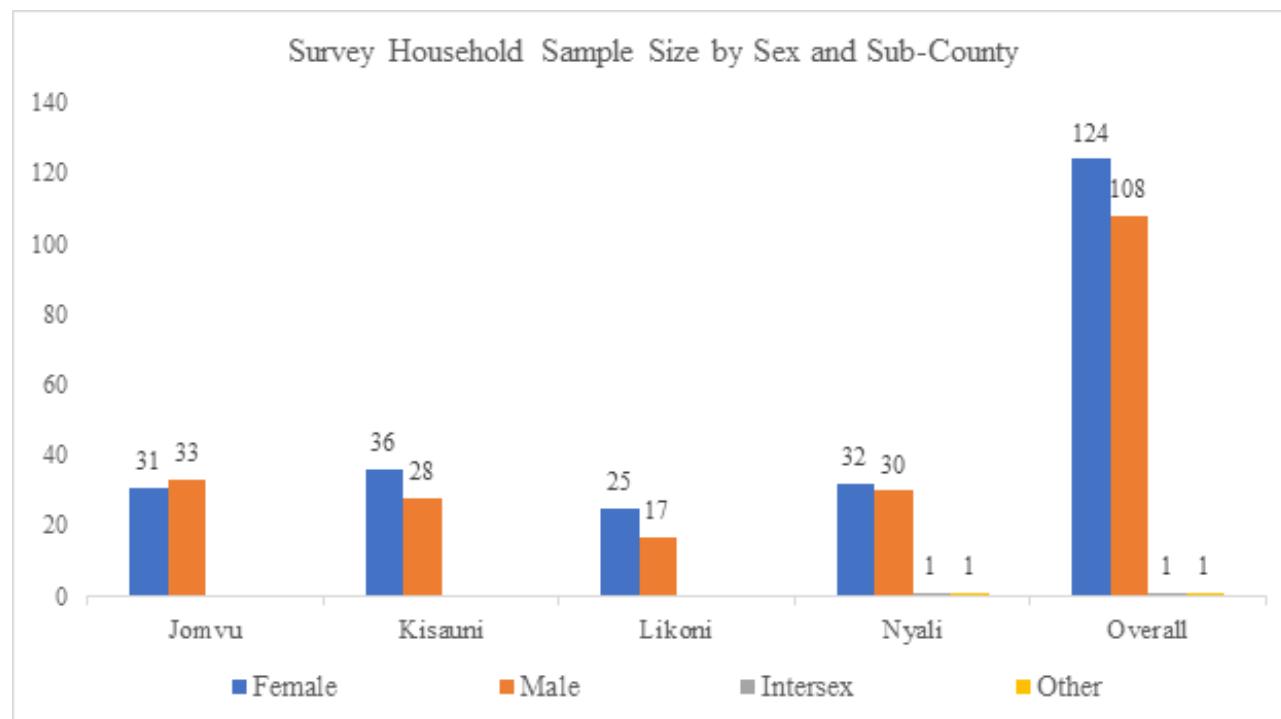
Since researchers are people genuinely concerned about other people's quality of life, they must be people of integrity who will not undertake research for personal gain or research whose result will have a negative effect on others (Mugenda & Mugenda, 2019). To this extent, the study endeavored to ensure that this assignment is conducted with the highest principles and quality standards that pertains to research of such nature. Specifically, the research endeavored to uphold the principles of beneficence and non-maleficence, informed consent, security of identity and that of data, respect for human rights and equity, honesty, competence, integrity and accountability (Thorley & Henrion, 2019).

## 4.0 FINDINGS: SOCIO-DEMOGRAPHIC CHARACTERISTIC

**Table 3: Respondents' Socio-Demographic Characteristics**

Characteristic	Sub County				
	Overall, N = 234 <sup>1</sup>	Jomvu, N = 64 <sup>1</sup>	Kisauni, N = 64 <sup>1</sup>	Likoni, N = 42 <sup>1</sup>	Nyali, N = 64 <sup>1</sup>
<b>Sex</b>					
Female	124 (53%)	31	36	25	32
Male	108 (46%)	33	28	17	30
Intersex	1 (0.4%)	0	0	0	1
Other	1 (0.4%)	0	0	0	1
<b>Marital Status</b>					
Married	127 (54%)	23	44	23	37
Single	74 (32%)	32	13	7	22
Separated	20 (8.5%)	5	3	8	4
Widow	7 (3.0%)	1	3	2	1
Widower	6 (2.6%)	3	1	2	0
<b>HH Head Category</b>					
Male Headed	181 (77%)	46	53	31	51
Female Headed	53 (23%)	18	11	11	13
<b>Education Level</b>					
Secondary	87 (37%)	28	22	14	23
Tertiary	74 (32%)	22	16	12	24
Primary	62 (26%)	11	24	12	15
No Schooling	11 (4.7%)	3	2	4	2
<b>Livelihood</b>					
Casual employment	96 (41%)	29	30	11	26
Trader	75 (32%)	20	19	13	23
Formal employment	30 (13%)	5	7	7	11

Other	29 (12%)	10	7	8	4
Fishing	4 (1.7%)	0	1	3	0



## GENDER DISTRIBUTION

The study had 53% female and 46% male respondents, which ensured a representative sample population, increased the reliability of the findings, and provided a better understanding of the issues. The survey indicated that the gender distribution differs within Mombasa County. In Jomvu, 48% of the population is female, while 52% is male. In Kisauni, 56% of the population is female, while 44% is male. In Likoni, 60% of the population is female, while 40% is male. In Nyali, 50% of the population identifies as female, while 50% identifies as male.

The study revealed that Mombasa County has a small number of non-binary individuals, with one person in Jomvu and one in Nyali. This highlights the diversity of gender identities in the county, with no single "typical" gender identity. Recognizing and respecting this diversity is crucial for creating an equitable and inclusive society for all people.

## MARITAL STATUS

Married people make up the largest group, followed by single people, separated people, widows, and widowers. The study found that 54% of the respondents were married, 32% were single, 8.5% were separated, 3.0% were widows, and 2.6% were widowers. The distribution of marital statuses varied across different Sub-counties.

In Jomvu, 36% of the respondents were married, 50% were single, 7.8% were separated, 1.6% were widows, and 1.6% were widowers. Kisauni had the highest percentage of married people, with 69% of the respondents in that category. 20% of the respondents in Kisauni were single, 4.7% were separated, 4.7% were widows, and 1.6% were widowers. Likoni had the second-highest percentage of married people, with 55% of the respondents in that category. 17% of the respondents in Likoni were single, 19% were separated, 4.8% were widows, and 1.6% were widowers. Nyali had the lowest percentage of married people, with 58% of the respondents in that category. 34% of the respondents in Nyali were single, 6.3% were separated, 1.6% were widows, and no one reported being a widower.

This diversity in marital statuses highlights the different cultural and societal dynamics shaping relationships in Mombasa County. The study also found that there were unique experiences associated with each marital status. For example, widows and widowers may face unique

challenges related to grief and loss. The study provides valuable insights into the lives and relationships of people in Mombasa County. It can help us better understand the challenges and opportunities facing different groups of people and develop more effective interventions to support them.

## HOUSEHOLD HEADS

The scope of the study indicates a significant gender disparity in household heads, with male-headed households representing 77% of the total and female-headed households representing 23%. This pattern holds true across all sub-counties. It was noted that 72% of households in Jomvu are male-headed, while 28% are led by women. In Kisauni, male headed 83% of the households, while women-headed 17%. Also, 74% of households in Likoni are male-headed, while 26% are led by women. In Nyali, males control 80% of homes, while women control 20%.

In some societies, men dominate, but women may be widowed or divorced, leaving them as the head of the family. The study emphasizes the significance of gender consideration in planning interventions and initiatives in Mombasa County. By understanding the challenges and opportunities faced by male- and female-headed households, policymakers and community leaders can develop more effective programs that cater to all residents. Additionally, understanding the diverse household structures in Mombasa County helps gain a better understanding of the region's social fabric.

## EDUCATION

In Mombasa County, secondary education is the most common, followed by tertiary education, primary education, and no schooling. The study found that 37% of the respondents had completed secondary education, with the highest percentage in Jomvu (44%) and the lowest percentage in Nyali (36%). 32% of the respondents had completed tertiary education, with the highest percentage in Nyali (38%) and the lowest percentage in Jomvu (34%). 26% of the respondents had completed primary education, with the highest percentage in Kisauni (38%) and the lowest percentage in Jomvu (17%). And 4.7% of the respondents had no formal schooling, with the highest percentage in Likoni (9.5%) and the lowest percentage in Jomvu (4.7%).

The study reveals the diverse educational attainment in Mombasa County, highlighting opportunities and challenges. Tertiary education offers more employment opportunities, while primary education lacks them, presenting unique experiences. The study offers valuable insights into the educational landscape in Mombasa County, revealing challenges and opportunities for various groups and highlighting the importance of education. It emphasizes the role of education in improving job prospects and the quality of life. However, there is still work to be done to enhance access to education, particularly for rural and marginalized communities.

## LIVELIHOOD

It's an interesting period for one to be at the Coast. Walking around in the evening, a good number of people are in sweaters and jackets, not necessarily because it's raining but because it gets cold at such times. These new weather conditions have impacted various businesses, especially the ones pegged on hot temperatures. For instance, ice cream sellers, who were in almost every street and corner of the city, are not as visible as before. While there is still some degree of heat, the extent which almost forced people to seek coolants has gone down.

Another business whose vibrancy has been dimmed by the winds and rains is that of hawking water in small bottles around. The water business is a huge economic activity for especially small and medium enterprises in Mombasa. They are almost always sure of going home with some handsome pay at the end of the day. That was in the past. They still make sales but not as much as before. Who can buy water for drinking when it is cold and raining? However, carrying your bottle of water is also important. At least have one in your bag.

Perhaps the most affected activity is the beach experience. Beaches are sweet when it's hot and sweeter when it's extremely hot. Then, both visitors and locals throng the beaches to cool down

and feel the soothing breeze. That fun can't be there when it's cold and raining. In fact, going to the beach, especially in the afternoon, is now becoming a gamble, as rains and storms can come at any time<sup>6</sup>.

There were a wide variety of livelihoods in Mombasa County, with casual employment being the most common, followed by trading, formal employment, other employment forms, and fishing. The study found that 41% of the respondents were employed in casual jobs, with the highest percentage in Jomvu (45%) and the lowest percentage in Likoni (26%). 32% of the respondents were traders, with the highest percentage in Nyali (36%) and the lowest percentage in Jomvu (31%). 13% of the respondents were employed in formal jobs, with the highest percentage in Likoni (17%) and the lowest percentage in Jomvu (7.8%). 12% of the respondents were employed in other forms of employment, with the highest percentage in Jomvu (16%) and the lowest percentage in Nyali (6.3%). And 1.7% of the respondents were fishermen, with the highest percentage in Likoni (7.1%) and the lowest percentage in Nyali (0%).

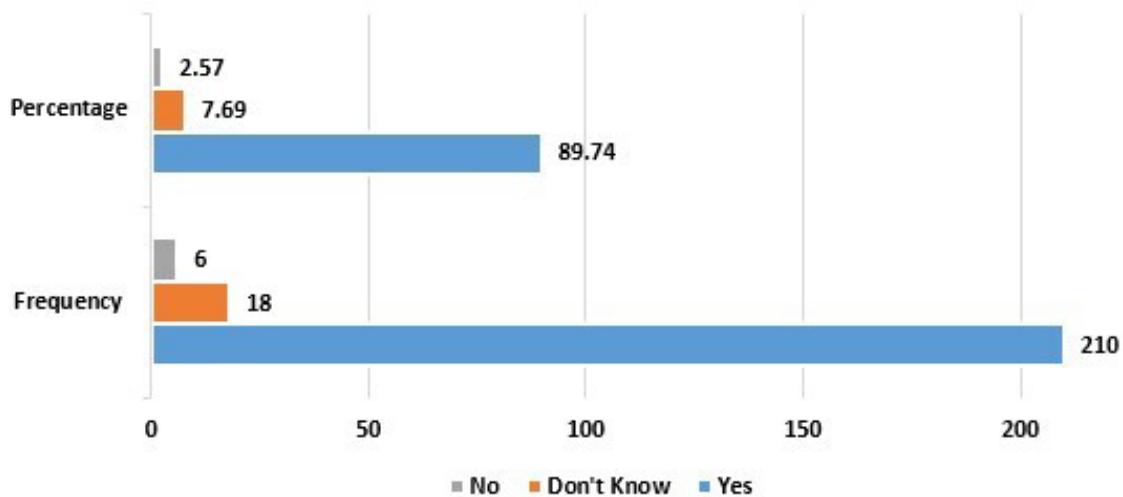
The study explores diverse livelihoods in Mombasa County, revealing opportunities and challenges. Casual jobs offer less job security and lower wages, while formal jobs provide more security and higher wages. Each type of livelihood has unique experiences, emphasizing the importance of economic diversification. Having a variety of livelihoods increases resilience to economic shocks and job opportunities. However, work is needed to improve livelihoods in Mombasa County.

## **2.2 OUTCOME ONE: IMPROVED UNDERSTANDING OF RISKS AND VULNERABILITIES FACED BY COMMUNITIES IN RELATION TO CLIMATE CHANGE AND OTHER SHOCKS.**

### **Evolution in Weather Pattern**

According to the statistics, an overwhelming 89.74% (210 responses) of participants stated that they observed changes in climate and weather patterns while in the area. This sizable majority reflects increased vulnerability among local populations to changes in weather conditions. Interestingly, 7.69% (18 responses) of participants indicated doubt ("Don't Know") concerning changes in climate and weather patterns. This uncertainty might be attributable to causes such as weather pattern variations or a lack of attention to these changes. In contrast, a smaller fraction of respondents, 2.57% (6 responses), stated that they had not noticed any alterations in climate and weather patterns ("No"). This minority might be influenced by personal perceptions or a belief in the stability of the local climate.

**Figure 2: Respondents Reporting Climatic and Weather Change in their Locality.**

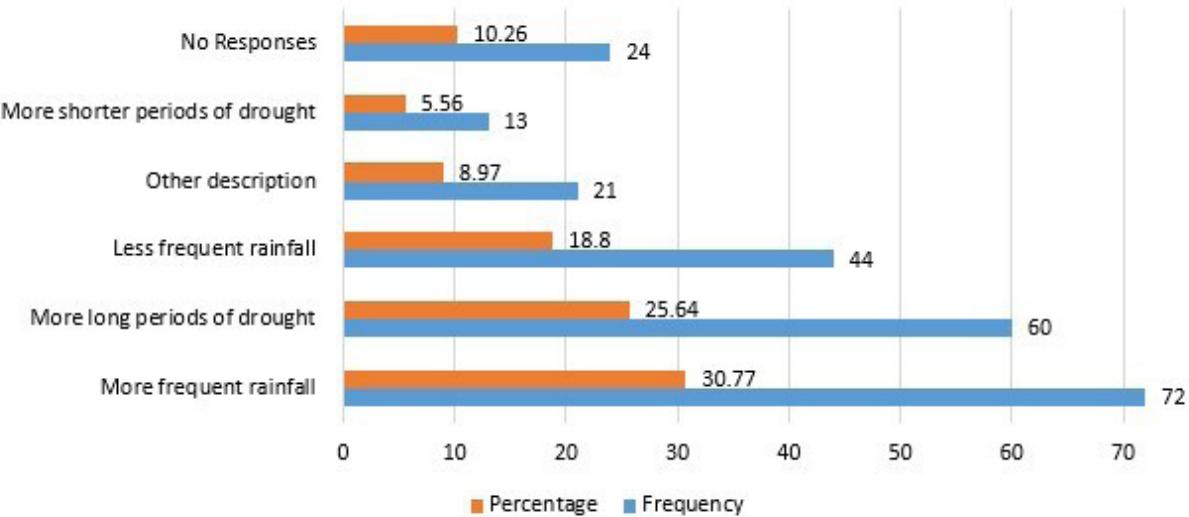


The high number of "Yes" responses highlights the need for community education and communication on climate change impacts. Most residents recognize environmental changes aligning with global trends. Addressing concerns of "Don't Know" could improve local climate literacy and engagement. The survey data emphasizes the importance of fostering climate

<sup>6</sup> ibid

awareness in communities as residents recognize climate and weather changes. It emphasizes the need for adaptation and mitigation strategies, research, education, and community involvement to effectively address climate change impacts.

**Figure 3: Respondents' Description of Current Change in Weather Pattern**



Climate change is a global concern, impacting weather patterns. To understand how people perceive changes over time, researchers asked people from various backgrounds to share their observations of unusual weather events like rain and drought. The study noted that 30.7% (72 people) reported increased rainfall, possibly due to increased rainfall in some areas. 25.6% (60 people) reported longer periods of insufficient rain, potentially affecting water-reliant areas. Less rain may hinder food production and water availability. Around 18.8% (44 people) of respondents noticed less rain, potentially impacting food production and water availability. 8.9% (21 people) reported changes in temperature, wind, or weather. 5.6% (13 people) believed dry times had decreased, potentially indicating more consistent water availability. Around 10.3 % (24 people) didn't know or weren't interested.

The study highlights the impact of climate change on regions through people's observations of weather aspects. Policymakers and stakeholders must adapt strategies to mitigate food production and water availability. Respondents may lack knowledge or education on climate change, requiring further education and adaptation. Understanding factors like location, financial status, and knowledge can improve communication and help develop effective solutions to address climate change.

The study indicated insights from 234 individuals in Mombasa regarding shifts in weather patterns over time. 91.4% (214 individuals) did not address the topic. Only 8.6% (20 individuals) discussed these changes. There were diverse perspectives on rainfall alterations and droughts raise concerns about the unpredictable nature of the weather. Some people felt the weather had become cooler, while others believed it had become colder. The mix of rain and dry spells creates uncertainty in predicting future conditions, making understanding local climate shifts challenging. Extreme events like droughts, strong winds, and cold days felt sudden, and the difficulty in predicting weather was a common theme. This uncertainty worsened due to new diseases connected to changing weather patterns.

The survey highlights the complexity of weather changes in Mombasa, with fluctuating rainfall and temperature shifts. Predicting the weather has become a significant concern, with people in Mombasa sharing their thoughts on the changing weather. Studying local climate trends is crucial to handling unexpected shifts and preparing for the future.

### Nature of Risks and Vulnerability

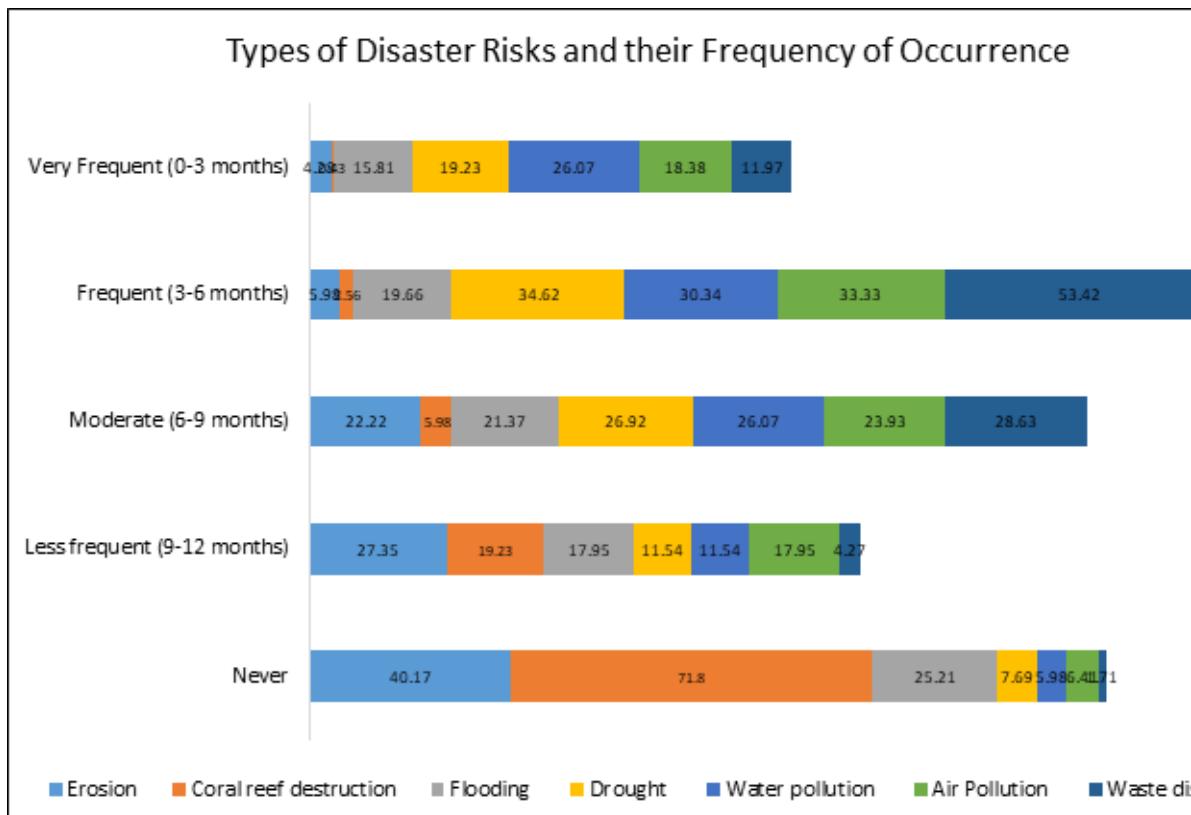
The survey collected responses from a varied sample; the five response options for frequency were "Never," "Less frequent (9–12 months)," "Moderate (6–9 months)," "Frequent (3–6 months)," and

"Very frequent (0–3 months)."

**Table 4: Types of Disaster Risks and their Frequency of Occurrence**

Risks	Value	Frequency	Percentage (%)
<b>Erosion</b>	Never	94	40.17
	Less frequent (9-12 months)	64	27.35
	Moderate (6-9 months)	52	22.22
	Frequent (3-6 months)	14	5.98
	Very Frequent (0-3 months)	10	4.27
	<b>Sub-Total</b>		<b>100.0</b>
<b>Coral reef destruction</b>	Never	168	71.79
	Less frequent (9-12 months)	45	19.23
	Moderate (6-9 months)	14	5.98
	Frequent (3-6 months)	6	2.56
	Very Frequent (0-3 months)	1	0.43
	<b>Sub-Total</b>		<b>100.0</b>
<b>Flooding</b>	Never	59	25.21
	Moderate (6-9 months)	50	21.37
	Frequent (3-6 months)	46	19.66
	Less frequent (9-12mth)	42	17.95
	Very Frequent (0-3mth)	37	15.81
	<b>Sub-Total</b>		<b>100.0</b>
<b>Drought</b>	Frequent (3-6 months)	81	34.62
	Moderate (6-9 months)	63	26.92
	Very Frequent (0-3 months)	45	19.23
	Less frequent (9-12 months)	27	11.54
	Never	18	7.69
	<b>Sub-Total</b>		<b>100.0</b>
<b>Water pollution</b>	Frequent (3-6 months)	71	30.34
	Moderate (6-9 months)	61	26.07
	Very Frequent (0-3 months)	61	26.07
	Less frequent (9-12 months)	27	11.54
	Never	14	5.98
	<b>Sub-Total</b>		<b>100.0</b>
<b>Air Pollution</b>	Frequent (3-6 months)	78	33.33
	Moderate (6-9 months)	56	23.93
	Very Frequent (0-3 months)	43	18.38
	Less frequent (9-12 months)	42	17.95
	Never	15	6.41
	<b>Sub-Total</b>		<b>100.0</b>
<b>Waste disposal</b>	Frequent (3-6 months)	125	53.42
	Moderate (6-9 months)	67	28.63
	Very Frequent (0-3 months)	28	11.97

Risks	Value	Frequency	Percentage (%)
Waste disposal	Less frequent (9-12 months)	10	4.27
	Never	4	1.71
	<b>Sub-Total</b>		<b>100.0</b>



The collected data offered a comprehensive understanding of how participants perceive the frequency and risk associated with various environmental challenges.

- Erosion: 94 people (40.2%) have never experienced erosion, while 64 people who are 27.4% have experienced it less frequently (every 9–12 months). 22.2% (52 people) experienced it moderately (every 6–9 months), and 5.9% (14 people) experienced it frequently (every 3–6 months). Only 4.3% (10 people) experienced it very frequently (every 0–3 months).
- Coral Reef Destruction: The vast majority (72%) have never experienced coral reef destruction. 19% experienced it less frequently (every 9–12 months), 6% experienced it moderately (every 6–9 months), 2% experienced it frequently (every 3–6 months), and only 0.4% experienced it very frequently (every 0–3 months).
- Flooding: 25% of people have never experienced flooding. The rest experienced it with varying frequencies: 21% moderately (every 6–9 months), 19% frequently (every 3–6 months), 18% less frequently (every 9–12 months), and 16% very frequently (every 0–3 months).
- Drought: 35% of people experienced drought frequently (every 3–6 months). 27% experienced it moderately (every 6–9 months), 19% very frequently (every 0–3 months), 12% less frequently (every 9–12 months), and 8% never experienced it.
- Water Pollution: 30% of people experienced water pollution frequently (every 3–6 months). 26% experienced it moderately (every 6–9 months), and another 26% experienced it very frequently (every 0–3 months). 12% experienced it less frequently (every 9–12 months), and 5% never experienced it.
- Air Pollution: 33% of people experienced air pollution frequently (every 3–6 months). 24% experienced it moderately (every 6–9 months), 18% very frequently (every 0–3 months), 18% less frequently (every 9–12 months), and 6% never experienced it.
- Waste Disposal: 53% of people experienced waste disposal issues frequently (every 3–6 months). 29% experienced it moderately (every 6–9 months), 12% very frequently (every 0–3

months), 4% less frequently (every 9–12 months), and 1% never experienced it.

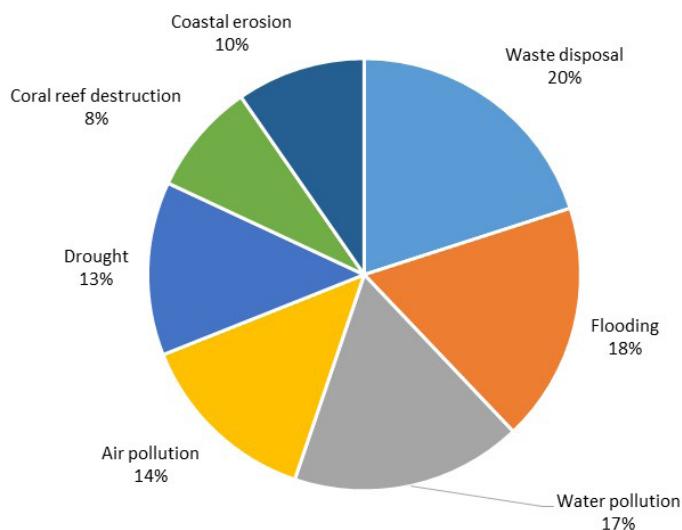
In general, these results show that climate change is having a significant impact on the environment. The most common impacts are erosion, flooding, drought, and water pollution. These impacts are having a negative impact on people's lives, and they are also causing damage to the environment. The study highlights the diverse perceptions of environmental risks and their frequencies, with "never" and "frequent" responses being the most common. These variations highlight the complexity of environmental challenges and the need for tailored mitigation strategies. The study provides insights to guide decision-making, promote awareness, and drive sustainable solutions to diverse environmental challenges. Understanding risk perceptions and frequencies helps develop effective strategies. Prioritizing resources and allocating funding to areas at risk can lead to more inclusive and comprehensive approaches to mitigating environmental risks.

## 2.3 OUTCOME TWO: ENHANCED ADAPTIVE CAPACITIES OF COMMUNITIES INCLUDING IMPROVED ACCESS TO RESOURCES AND SKILLS

### Impacts of Environmental and Climate Change Challenges to Households.

Emerging from the study (Table 5 below), Climate change impacts global communities, and ecosystems, with Mombasa County, Kenya, facing unique vulnerabilities. The study investigated environmental challenges faced by households, revealing priorities and concerns.

**Table 5: Top Three Environmental & Climatic Challenges with Greatest Risk to HH**



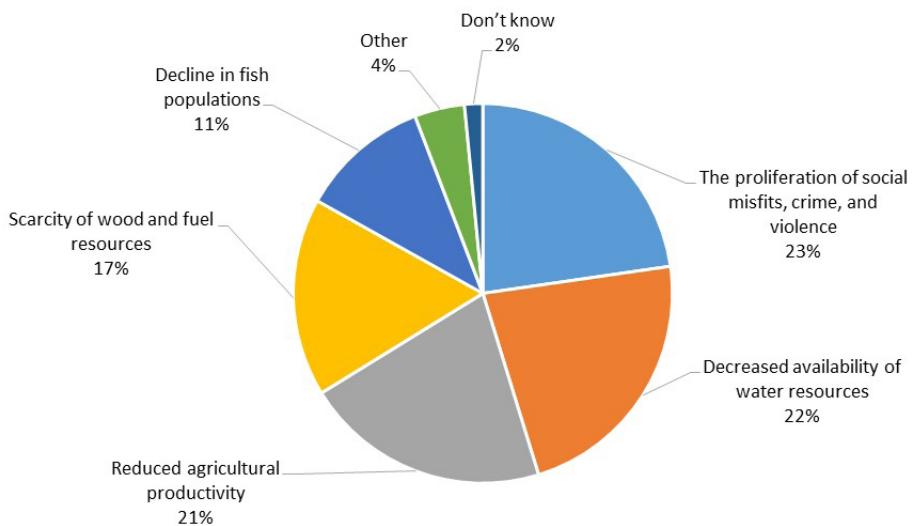
Depicting from the household survey involving 234 respondents from diverse backgrounds within Mombasa County, the top three climate-related challenges were ranked, waste disposal topped the list 20.0% (131), signifying its impact on both human health and ecosystems. Floods followed 17.9% (117 respondents) under scoring Mombasa's susceptibility due to low-lying areas and inadequate drainage. Water pollution ranked third. Similarly. Additional challenges emerged as 13.7% (90 respondents) expressed apprehension about air pollution. 13.0% (85 respondents) indicated concerns drought, coral reef destruction and coastal erosion were also mentioned.

Integrating the results above with the 22 key stakeholders' responses, it's evident that the experienced climatic impacts affect Mombasa County and the globe in general. Specifically, Mombasa County significantly experiences unpredictable rainfall, where mostly floods are experienced due to heavy downpours. Subsequently, due to the humid nature of the region, high temperatures had been experienced within the region, however, the currently abnormal cold conditions stand a threat to the whole Mombasa community. With the extreme temperature conditions, diseases outbreaks have been recorded within the county. Skin rashes and cholera are among the diseases identified by the respondents as noted to be resulting from the climatic

changes. Finally, a number of malnutrition cases on children had been identified as food insecurity hits the communities depending on agriculture and fishing for livelihoods. As rivers dry up and low rainfalls are experienced, shortage of nutritious food is experienced hence the children remain vulnerable feeding on only carbohydrate foods. These include cassava which are being planted due to their high tolerance to the climatic conditions.

These findings underscore household concerns about environmental challenges. Coastal erosion, flooding, and waste disposal being the major risks and likely impacts on other areas of community livelihoods, urging policymakers, local authorities, and environmental groups to address these issues for a more resilient Mombasa County. While investigating the effects of climate change on vulnerable Mombasa counties with a focus on water access, agriculture, and fish populations, below summarized analysis were arrived at.

**Table 6: Description of Impacts of Environmental and Climate Change Challenges**



Of the 234 households from Mombasa's four sub-counties submitting their responses during the survey, an alarming 49.57% (116 households) faced parched water sources due to shifting rainfall patterns, severely impacting daily life and agriculture. Approximately 46.15% (108 households) battled shrinking yields and incomes due to erratic rainfall, prolonged droughts, and rising temperatures. It confirmed that 37.18% (87 households) grappled with disappearing wood and fuel reserves, a dire consequence of deforestation, leading to cooking and heating crises. Oceanic shifts and unchecked overfishing caused 24.36% (57 households) to confront drastic declines in fish catches, jeopardizing both sustenance and livelihoods. Additionally, the households alluded to the health impacts as a cohort of 9.4% (22 households) stating the climate-induced aftermaths, spanning health issues and disruptions to daily routines. On the other hand, charcoal production has been noted as a rampant activity, since most households cannot afford clean cooking technologies to help them adapt to the changing livelihood costs. As a result, the forests remain deteriorated, affecting the agricultural potential of the region.

While attempting to connect these impacts to the local stakeholders' views, there was a confirmed link to the reduced crop harvests since communities mostly depend on subsistence farming to sustain the food security. Poor agricultural practices were also identified to be a contributor to the reduced water level within the rivers these communities depend on. On the other hand, increased downpour resulting from the unpredictable rainfall patterns leads to increased diseases and pathogens which results to loss in harvests, destruction to transport systems, and affecting the movement of children to schools and access to health facilities. Drainage systems within some parts of the county are not up to standards hence not suitable in sustaining the effective drainage of water. The experienced heat waves, on the other hand, resulted into skin diseases, hence increased household expenses on health care. Most households cannot afford the health services due to their vulnerable situation affected by reduced income from the climatic shocks and threats. Linking this to the economic hardship experienced by the households, most girls and women find it hard sustaining themselves,

ending up in sex trade in exchange for food to sustain their livelihoods. This is majorly contributed by the unbearable climatic conditions limiting other income diversification in agriculture and other businesses.

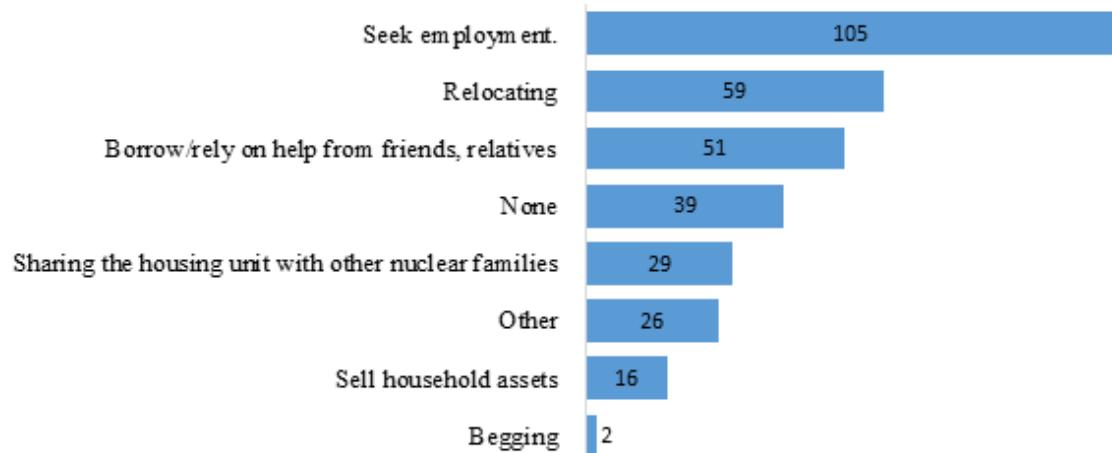
In an unlikely situation, a number of respondents accounting for 3.42% (8 households) did lack knowledge about the climate impact, emphasizing the need for additional information dissemination. Lack of knowledge about climate impacts highlights the need for education, information, and adaptation to reduce overfishing, protect livelihoods, and enhance overall well-being and resilience. Mombasa's households face multifaceted climate challenges. Adapting and mitigating through strategies and education are crucial for resilience.

While looking into the specific responses on the other impacts caused by the climate change challenges, 234 respondents were expected to share their specific challenges related to floods and environmental difficulties, focusing on the effects on well-being, health, the economy, and daily life. 214 (91.4%) responses were received with no response, indicating a reluctance of community members to share stories due to sensitive themes or emotional toll. Analyzing non-responses is critical since they may represent a sizable fraction of the affected population.

The respondents emphasized flooding and water-related concerns, spanning water and house flooding, clean water scarcity, and tainted tap water by a person (1.43%). These disrupt everyday life and put health at risk. Flooding has effects on children's health beyond watery infections, including difficulties with the eyes and skin rashes that affect another person (1.43%), whereas airborne diseases only harm one person (1.43%) like flu, cough, and diarrhea rise due to polluted post-flood air. Economically, flooding reduces business profits due to market inaccessibility, raises living costs, lowers business income, and contributes to a harsh economy for one person (1.43%), heightening community vulnerability. Floods significantly limit movement, hindering daily activities, schooling, and shopping by one person (1.43%), leading to reliance on motorcycles even for short distances. Healthcare challenges arise due to flooding, leading to malaria spikes from stagnant water and breeding mosquitoes, and increased viral infections by one person (1.43%) due to compromised post-flood hygiene. Intriguingly, a person (1.43%) took note that there was no direct impact, highlighting varied community effects and emphasizing the need for nuanced understanding. A limited number of respondents who gave their inputs indicated that flooding, environmental challenges, health issues, economic setbacks, or holistic approaches are crucial for resilience and community well-being.

### **Disaster Risk Coping Strategies**

Communities surveyed indicated various coping strategies adopted by households in response to natural disasters and environmental challenges. Out of the involved 234 participants, 227 respondents unveiled a range of disaster response approaches, including seeking employment, relocation, and reliance on social networks. The analysis revealed prominent coping strategies: 44.87% (105 respondents) prioritized financial stability by seeking employment during disasters, while 25.21% (59) chose relocation to enhance safety and living conditions. Further, 21.79% (51) turned to friends and relatives for crucial support, emphasizing the significance of social connections. Interestingly, 16.67% (39) managed difficulties without specific strategies, potentially due to resource constraints or inherent resilience. Meanwhile, 12.39% (29) engaged in communal living with other nuclear families, emphasizing shared resources. A flexible 11.11% (26) adopted adaptable, unspecified strategies to address unique circumstances. Moreover, 6.84% (16) resorted to selling household assets for immediate relief, displaying a readiness to forego possessions. In extreme circumstances, 1% (2) had to resort to begging.

**Table 7: Coping Strategies against Disaster Risks Employed**

Further to the household testimonials, various persons interviewed on specific coping interventions noted in their communities responded to have recognized a lot of interventions to have been resorted to by the communities in adapting to the climate change impacts and shocks. Growing of drought tolerant crops, like cassava, mchicha and other crops in subsistence scale has helped the communities resolve temporarily the food insecurities within the region. A good practice identified, linked to the diminishing land sizes, is that most people have resorted to the kitchen gardening practices. (Agricultural lands are being turned into commercial plots) use of micro-gardens, and plastic container wastes for plant potting's. Initiatives by the local CSOs and National and County government have also been noted in supporting the communities in various ways of adaptation through increased knowledge and capacity to adopt practices like Mari culture, aquaculture, crab farming, and also shrimp farming due to the over-utilization of fishery resources. In terms of the access to clean energy for household and other productive use, the government has highly advocated for the utilization of renewable forms of energy like solar, wind, biomass fuel (briquettes).

The Youth were also noted to have been empowered by various institutions and engaged as waste collectors; example is the Big Fish Dock Waste Management Project which has involved youths in Voluntary Internship Mentorship Program (VIMP) in collaboration with other partners who offer career guidance and prepare them with the soft skills. Civil Society Organization (CSOs) such as Dream Achievers Youth Organisation (DAYO) and the Aga Khan Foundation as well mentor youth and provide financial support in setting up various Projects.

In order to protect the forest and mangrove ecosystem within, some of which are envisioned to lead into carbon credit initiatives. Both women and youth are recognized as champions leading in advocacy towards forest cover rehabilitation and are actively involved in climate change actions.

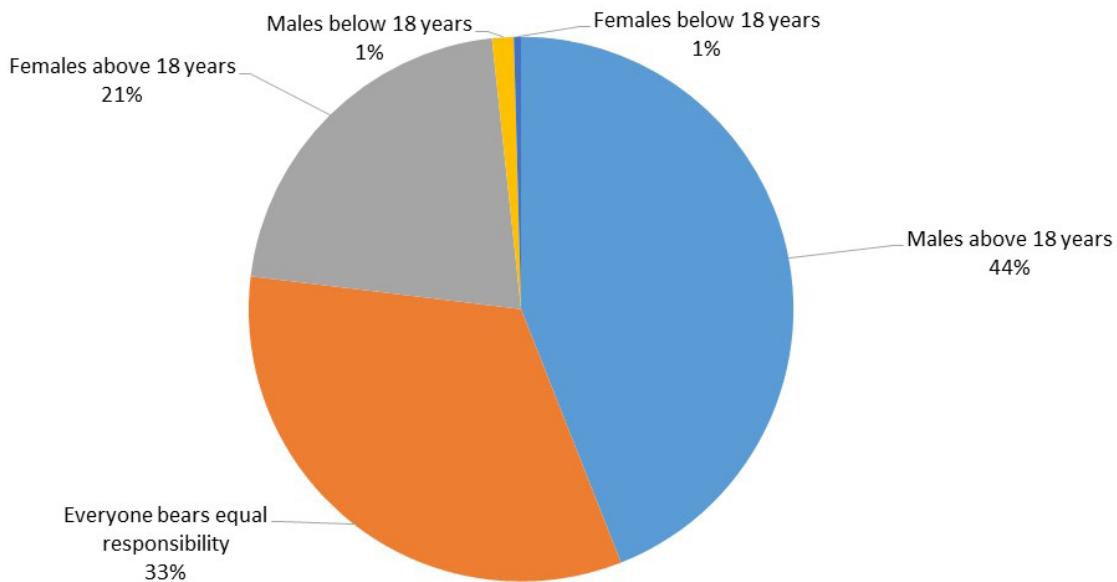
These findings indicate that whereas a significant portion of respondents faced challenges without access to specific coping mechanisms, possibly due to resource limitations or personal resilience; some interventions are currently implemented to build the community capacity to cope with climate change impacts. Notably, communal living arrangements with other families were chosen by a considerable percentage, underscoring the importance of mutual resources and support networks during hardships. This survey highlights diverse strategies for crisis management, offering guidance for policymakers, relief organizations, and communities. Future research should explore factors shaping strategy selection and their lasting effects on resilience and recovery.

Other coping strategies employed included: Start and run our own business, calling the relevant department, forgo meals in order to meet the numerous needs, Garbage collection, Hustle, Work on upcoming jobs etc.

The findings and results show a range of coping mechanisms used by participants: Some (7.3%) went into the company to diversify their income streams for stability. Surprisingly, the majority

(90.5%) lack specific coping skills, indicating awareness gaps. A small percentage (0.43%) asked the government for help, emphasizing institutional support. Only a small percentage of individuals (0.43%) skipped meals because of financial strain. A small percentage (0.43%) worked odd jobs, gathered trash, or engaged in herbal medicine. Only 0.43% of people worked for themselves or supported their families. Few (0.43%) used physical means to deal with immediate problems. A modest percentage (0.43%) reported youth participating in manual labor.

The majority of surveyed individuals did not resort to extreme measures to cope with financial difficulties. A small proportion used unconventional methods like odd jobs, trash collection, and herbal medicine. A small percentage of youth engage in manual labor. The study emphasizes diverse coping strategies for environmental challenges, including entrepreneurial ventures, resourcefulness, and seeking institutional support. Tailored interventions and awareness campaigns are crucial for effective responses.



**Table 8: HH Member Bearing Greatest Responsibility for Copying Strategies**

Family Member Category	Frequency	Percent
Males above 18 years	103	44.02%
Everyone bears equal responsibility	77	32.91%
Females above 18 years	50	21.37%
Males below 18 years	3	1.28%
Females below 18 years	1	0.43%
<b>Total</b>	<b>234</b>	<b>100</b>

The study results revealed five distinct response categories based on gender and age: adult males (103 respondents, 44.02%), equal sharing (77 respondents, 32.91%), adult females (50 respondents, 21.37%), younger males (3 respondents, 1.28%), and younger females (1 respondent, 0.43%). It is important to note that 44.02% believed adult men bore the primary responsibility for disaster coping, reflecting traditional gender norms that position men as providers and protectors even during crises. 32.91% endorsed equal responsibility, signaling a move towards balanced and inclusive family roles regardless of gender. 21.37% perceived adult women as shouldering the most significant environmental coping burden, potentially indicating shifting perceptions of women's roles in family decisions and support systems. A smaller portion (1.28% and 0.43%, respectively) assigned disaster coping to younger males and females, suggesting a recognition of emergent

leadership traits among the youth.

Even though the quantitate data represents the male adults to be bearing a heavy burden on disaster coping, the qualitative feedback from the 15 respondents alluded that each and every individual is affected in different ways by the climate change and other shocks, further, additional responses demonstrated that women are as well affected as most of them work in the farms, hence with the reduced income from farms due to floods and the reduced rainfall at time most of their livelihoods are affected. Women were also recognized by their capability in supporting in access to basic needs for the family, these includes collection of water and fuel. With water scarcity, women are forced to walk long distances to fetch water, or rather spend extra cash to buy it. Women also are mostly affected when the diseases strike. They have to stay at home with the kids hence missing on both formal and informal work.

Another hard-hit group of individuals are the People with Disability (PWDs) and children whom are highly challenged in terms of disease outbreak and malnutrition problems. Unemployed farmers and youth in business are also affected as some depend on agricultural and fishery produce to sustain their hustle. The prices of agriculture commodities are expensive hence affecting their livelihoods. In so much of the impacts described, the feedback from the key interview respondents lauded the efforts by the women in championing matters of climate change. Women have been noted to being resilient in their communities, they are working and doing what they need to do to be able to have that future for their children and have that sustainable community where they can contribute in terms of providing information, in terms of advocating for climate change justice. From the above analysis, there is a confirmed complexity of interplay of traditional and evolving gender roles in family disaster coping. While equal responsibility suggests progress towards more equitable dynamics, the persistence of traditional norms in assigning primary coping to adult males highlights the ongoing transformation of gender roles in modern society. Promoting open discussions about shared responsibilities and challenging traditional norms is essential for families to better prepare for and recover from adversities, fostering inclusivity and resilience across genders.

### **Perception of Preparedness towards Disaster Risk Impacts**

In likeliness to understand how prepared the communities were to handle flood impacts as a recurring threat in coastal regions like Mombasa County, Kenya, views on households' vulnerability to flooding in preparation for disaster preparedness were documented. This study examined responses from 234 participants to the question, "How likely is it that you and your family would be severely affected by flooding today?"

**Table 9: Perception of Preparedness towards Flood**

Perceived Rank	Frequency	Percentage
Likely	91	38.89%
Very likely	89	38.03%
Unlikely	43	18.38%
Does not know	11	4.7%
<b>Total</b>	<b>234</b>	<b>100.00</b>

About 38.03% (89 respondents) thought severe flooding consequences were "very likely," suggesting considerable worry. 38.89% (91) believed the severe effect was "likely," agreeing with the highly probable group. 18.38% (43) said a serious effect was "likely," indicating optimism. 4.70% (11) were unsure, indicating a lack of awareness. This demonstrates that a sizable proportion of respondents are anxious about catastrophic floods affecting them and their families, with a smaller proportion optimistic or unclear about the severity.

In Mombasa County based on the project scope, 76.92% of people feel they are at risk of floods, according to the study. Local governments might respond to these concerns by developing catastrophe mitigation strategies such as specialized education, warning systems, and research.

Participation from the community may enhance disaster preparation and response strategies, making the county more resilient to recurrent flooding disasters.

Due to the unpredictable weather patterns, with more specific to prolonged drought which poses a recurring threat to communities, particularly those reliant on water and agriculture. The study explored Mombasa County residents' vulnerability and potential family impacts during drought.

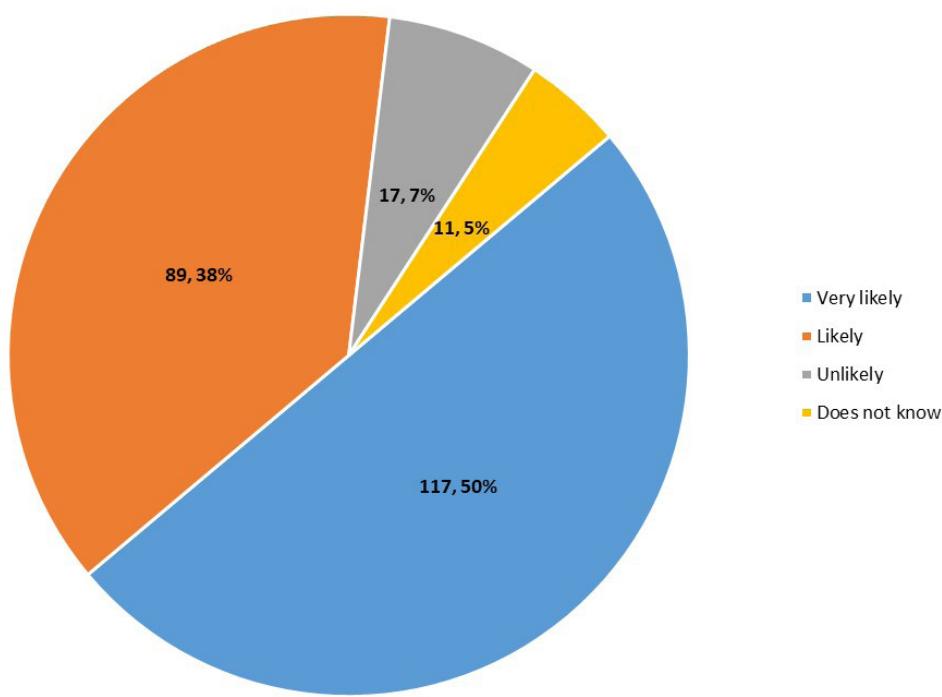
**Table 10: Perception of Preparedness towards Drought**

Perceived Rank	Frequency	Percentage
Likely	101	43.16%
Very likely	88	37.61%
Unlikely	37	15.81%
Does not know	8	3.42%
<b>Total</b>	<b>234</b>	<b>100.00</b>

In summary, out of the 234 respondents, 88 (37.61%) said it was "very likely" that serious consequences would harm their family. 101 respondents (43.16%) said it was "likely" that a drought would have a significant negative impact on their family. 37 respondents (15.81%) thought serious repercussions were "likely" to harm their family. 8 respondents (3.42%) indicated that they were unsure by choosing "does not know." These data portray a strong concern among the respondents about the drought, with a total of 80.77% expressing their belief that the likely affected communities could face severe impacts due to the drought, primarily categorizing their response as "very likely" or "likely." This underscores a prevalent apprehension within the community regarding the potential consequences of drought for their families.

The higher perceived vulnerability in Mombasa County highlights potential drought consequences, emphasizing water management and preparedness. Data errors need correction, and policymakers should prioritize drought readiness, awareness campaigns, and responsive strategies. Further research can explore underlying factors for targeted interventions.

The study investigates the perceived risks of water pollution for families in Mombasa County, Kenya, focusing on health and environmental consequences. A structured survey was conducted to gauge respondents' perceptions of severe consequences.



**Table 11: Perception of Preparedness towards Water Pollution**

Perceived Rank	Frequency	Percentage
Very likely	117	50
Likely	89	38.03
Unlikely	17	7.26
Does not know	11	4.7

Data reveals significant concern, with 117 (50.0%) asserting a "very likely" family impact due to water pollution. An additional 89 (38.0%) consider such an impact "likely," indicating widespread apprehension. Cumulatively, 88.0% foresee severe consequences, reflecting broad awareness of pollution hazards. Conversely, a minority of 17 (7.3%) perceive an "unlikely" family impact, suggesting faith in existing pollution mitigation efforts. Some respondents, 11 (4.7%), indicate uncertainty, possibly due to a lack of awareness or complexity. The high percentage of respondents foreseeing severe consequences of water pollution highlights widespread concern about its effects on families. Increased efforts in pollution control and mitigation are needed to address these concerns. A small minority of respondents expressed faith in existing mitigation efforts. Mombasa County residents need urgent community awareness, proactive measures, and continuous monitoring to mitigate health and environmental risks.

### **Government & Local CSOs Support towards Adaptive Mechanisms in the County**

Initiatives by the local CSOs and county government have also been noted in supporting the communities in various ways of adaptation through increased knowledge and capacity to adopt practices like mariculture, aquaculture, crab farming, and also shrimp farming due to the over-utilization of fishery resources. In terms of the access to clean energy for household and other productive use, the government has highly advocated for the utilization of renewable forms of energy like solar, wind, biomass fuel (briquettes). On the other hand, the youth have also taken a key role in supporting the waste management initiatives by supporting various institutions engaged in waste management e.g. Big Fish Dock Waste Management Project, Mombasa ni Yangu initiative by the County Government.

### **Key Policy gaps or challenges at the local or national level that hinder effective community resilience efforts in Mombasa County?**

Several cross-cutting challenges were identified by the Key Informant Interviews. Inadequate legal backing to climate change initiatives and actions e.g. the climate change act which is currently under review, and the natural resource act which is missing in place to help utilize the conserved forest for ecosystem services hence a challenge in supporting the dynamic suggested adaptive changes. Another major challenge noted is the weak policy enforcement which don't necessarily take into consideration the needs of the communities. Example is the waste management issue which is not handled properly despite having frameworks in place. To some extent, the wastes like oil from factories drain directly into the ocean hence impacting the fish volumes in the ocean. Lack of modern technologies for the waste management interventions still remains a very big gap to waste management practices. It was noted that the weak implementation of these policies and plans are directly linked to the inadequate funding for policy actions, as well as inadequate personnel at county level to support on awareness and advocacy on matters climate change adaptation and mitigation. These are critical gaps affecting the delivery capability of the county government. Whereas there isn't adequate budget to climate change related initiatives by the County government Planning and Budgeting Committee (CPBC), no integration of departmental interventions, even in pooling resources at the County level to mitigate climate change impacts. Departments at County level and even Non-Governmental Organizations are working in silos, hence no consolidated approach to resource mobilizing and information sharing on adaptive mechanisms and interventions for the affected communities.

Further, it is worth to note that the issue of inclusive participation of stakeholders in developing key policies in support to the local challenges has not been taken into consideration. Women and youth are not participating in this policy framework formulation, and there is also a challenge of

inadequacy of information to the communities on these climate change plans and policies to inform their behaviors. As a result of this, there is minimal promotion of the locally led development projects, and minimal support to the local initiatives in terms of fiscal policy environment (taxes).

### Livelihood Strengthening and Kitchen Gardening

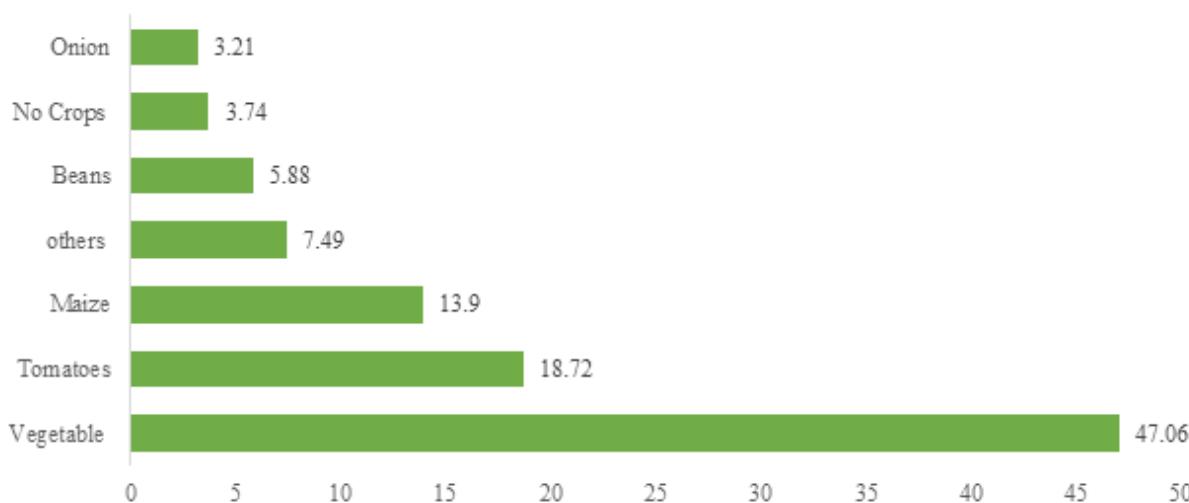
The Tabasamu ya Wamama Initiative Project conceptualized the establishment of kitchen gardens among households as a livelihood strengthening strategy to cushion targeted households especially those at risk to the effect of climate change and food insecurity towards vagaries of these hazards. Of the sampled households, it was established that only 72 people (31%) have a kitchen garden with Kisauni having the highest number. A huge number of 163 did not have a kitchen garden. Some of the reasons cited as hindrance towards establishing a kitchen garden included unavailability of space given most of respondent live in a rental house, insufficient funds, and inadequate water for irrigation. Further, this best practice on kitchen gardening adoption of micro-gardens, and plastic container wastes for plant potting's has been linked to the diminishing land sizes as most of the agricultural lands are being turned into commercial plots. Additionally, the land ownership rights within the communities are complicated, and efforts by the government to align these critical land issues have not been a success.

There is, however, interest among those who do not currently have a kitchen garden to establish one, with 69 people (43%) stating that they can establish a kitchen garden given support, with high goodwill found among 30 people from Jomvu. CWID can therefore tap into this opportunity and help support respondents in this area.

**Table 12: Kitchen Garden Establishment Coverage**

Characteristic	Overall (N 234)		Sub County							
	Yes	No	Jomvu		Kisauni		Likoni		Nyali	
			N = 64 <sup>1</sup>	N = 64 <sup>1</sup>	N = 42 <sup>1</sup>	N = 64 <sup>1</sup>	Yes	No	Yes	No
HH Having Kitchen Garden	72 (30.3%)	162 (69.66%)	18	46	21	43	16	26	17	47
Can Establish Kitchen Garden	69 (29.49%)	165 (70.5%)	30	34	22	42	9	33	8	56

The study found out that vegetables were the most common types of crops grown in the kitchen gardens among households that established the garden, followed by tomatoes and maize. Onion and beans were the least preferred types of crops. 7% of households did not grow any type of crop despite having a space for the kitchen garden.



The evaluation further established that crops cultivated in the kitchen garden are majorly used for both household consumption and sales. Those who cultivate purely for commercial purpose earn an average of KES 2,400 per month on their sales.

**Table 14: Purpose of Kitchen Garden Crops & Revenue**

Characteristic	N = 72 <sup>1</sup>
<b>Crops purpose</b>	
HH Consumption	56 (78%)
Both HH Consumption & Commercial	14 (19%)
Commercial	2 (2.8%)
<b>Monthly Crops Income</b>	
Mean	2,439
Range	88 - 5,000

### Livelihood Skills

While assessing level of skills possessed by households it was established that 52% (n=122) of the respondents possess skills that can be strengthened to support livelihoods. These included; tailoring, catering, plumbing, masonry among others. In terms of utilization of the skill to support household needs, only 44%(n=103) reported to be earning income associated with their livelihood skills. CWID should leverage on these existing skills/ assets within the community and support their enhancement for sustained livelihood opportunities.

Limited information on the traditional knowledge and skills were provided by the key respondents, however, the coastal communities being fishermen as well as bearing knowledge in Agriculture have managed to diversify their income streams as well as sustain their household food needs.

In the Agriculture setup, communities have resorted into growing traditional food crops like cassava, kunde and Mchicha among other crops. To sustain the traditional knowledge amongst the communities, youth have been engaged in discussions related to ecosystem conservation since they are very critical as the leaders of the future. They are seen to have a lot of determination in learning new adaptive skills and are engaged as a resource for promoting culture within their communities.

Further, the study identified various gaps which could improve the livelihood skills and adaptive capacity of the communities within the project area. Community education on the importance of maintaining the environment was key in sustaining the available natural resources in light of combating the current unprecedented challenges posed by climate change. Sensitization on adoption of clean cooking and lighting solutions as well as energy for productive use, as most of the households' resort into utilizing biomass fuel, more so firewood in their cooking activities hence negatively impacting the forest cover. Additionally, trainings on income diversification initiatives to sustain their food security and livelihoods was preferred by the key interview respondents, in as much as various individuals have invested into some income diversification activities, proper knowledge need to be shared on how climate change integrates into these initiatives. Training of communities on adaptation, post-harvest processing and Climate Smart Agriculture (CSA) like use of solar powered irrigation system instead of relying on Kenya Power and Lighting Company (KPLC), utilizing drip irrigation to minimize on water usage, shade nets to protect young plants, cross breeding for the livestock varieties were identified to enable the capacity of the communities to adapt to the changing climatic scenarios.

## How can access to these resources be improved to enhance community resilience in the face of climate change and other shocks?

Limited resources by the communities to support their capacity and adaptive needs was noted. To address these, the respondents alluded to ensure integration of actions by every stakeholder to support in mobilizing resources towards climate change actions. Most stakeholders operate in silos, hence lack of adequate information and resources to support the communities. Furthermore, to embrace the digital resources available within the region, it was noted that youth are critical in exploring and tapping into technology to inform awareness on various climate change coping mechanisms.

The study further assessed level of involvement of women in household decision making particularly with respect to income earned. It was found out that decision at household level is largely male dominated with only 38.5% (n=90) female participating either solely or jointly with spouse or other household members in deciding how their income is spent.

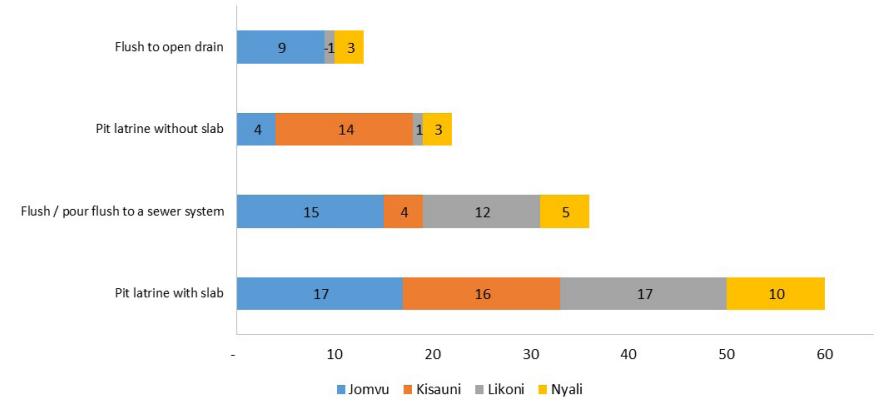
**HH Income Decision Making**



## Sanitation and Waste Management

This study explored into sanitation and waste management practices adopted by residents. In terms of human defecated waste disposal facility used, it was established that the area is open defecation free (ODF) as none of the households used bush or defecated in the open ground. The facilities used were of different types. 64.6% (n=152) used a water flushed facility which drains into either; septic tank, sewer system or open ground. The remaining 35.4% used a pit latrine either with or without slab. Based on these characteristics - informed by JMP criteria for sanitation standard category, it was established that 85% of the population use improved human waste disposal facility. Majority of households 53% (n=123) have their facilities located within their compound, while 46% (n=106) have the facility within their houses and only 2% (n=5) were found to be seeking for the facility elsewhere from their compounds or houses - perhaps neighbors'.

**Figure 4: Type of Sanitation Facilities Used by Sub-County**



**Table 15: Characterization of Respondents' Sanitation Status by Sub-County**

Sub County					
Characteristic	Overall, N = 234 <sup>1</sup>	Jomvu, N = 64 <sup>1</sup>	Kisauni, N = 64 <sup>1</sup>	Likoni, N = 42 <sup>1</sup>	Nyali, N = 64 <sup>1</sup>
<b>Facility Type</b>					
Flush to septic tank	103 (44%)	19	30	11	43
Pit latrine with slab	60 (26%)	17	16	17	10
Flush / pour flush to a sewer system	36 (15%)	15	4	12	5
Pit latrine without slab	22 (9.4%)	4	14	1	3
Flush to open drain	13 (5.6%)	9	0	1	3
<b>Facility Category</b>					
Improved	199 (85%)	51	50	40	58
Unimproved	35 (15%)	13	14	2	6
<b>Facility Location</b>					
Own compound / plot	123 (53%)	34	35	22	32
Own dwelling	106 (45%)	30	26	19	31
Elsewhere	5 (2.1%)	0	3	1	1
% Sharing Facility	103 (44%)	37	14	24	28

**Excreta Waste Management Practices**

Majority of the households surveyed have never emptied waste disposal points. Only 16% (38) confirmed having emptied waste disposal points. Generally, it's the adults who are responsible for this work, when the facility is full and content emptied, 8.5% of the respondents reported that this is done by service providers who take such contents to unknown destination, while 3.4% reported that the service providers take the content to a treatment plant. Using service providers at an average cost of KES 20,000, where a service provider is not involved and households themselves have to empty their latrines, such contents are deposited in a covered pit. However, 200 people (85%) who use other methods to manage waste often resort to unsafe practices such as open defecation or improper disposal in nearby water bodies. These practices contribute to the spread of diseases and contamination of the environment, posing significant health risks to both individuals and communities.

**Table 16: Management of Filled Excreta Pit**

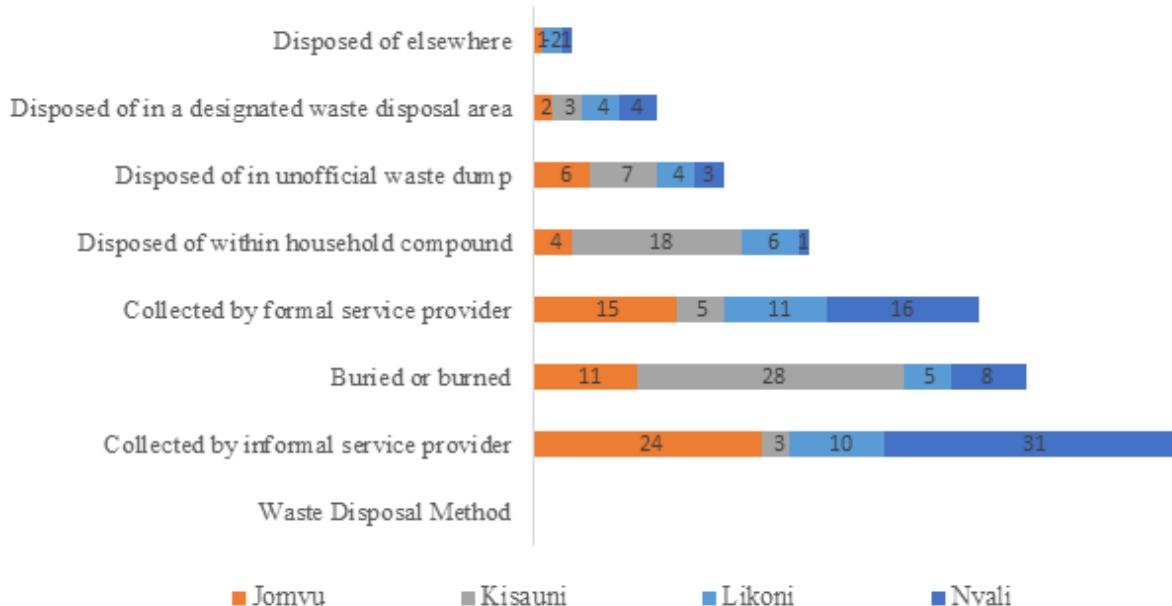
Sub County					
Characteristic	Overall, N = 234 <sup>1</sup>	Jomvu, N = 64 <sup>1</sup>	Kisauni, N = 64 <sup>1</sup>	Likoni, N = 42 <sup>1</sup>	Nyali, N = 64 <sup>1</sup>
<b>% Emptying Facility</b>					
No	101 (43%)	22	42	17	20
Don't Know	95 (41%)	32	16	20	27
Yes	38 (16%)	10	6	5	17
<b>Facility Waste Location</b>					
Other	200 (85%)	55	58	39	48

Characteristic	Sub County				
	Overall, N = 234 <sup>1</sup>	Jomvu, N = 64 <sup>1</sup>	Kisauni, N = 64 <sup>1</sup>	Likoni, N = 42 <sup>1</sup>	Nyali, N = 64 <sup>1</sup>
Removed by service provider to unknown destination	20 (8.5%)	4	4	1	11
Removed by service provider to a treatment plant	8 (3.4%)	2	1	2	3
Emptied by HH to a covered pit	5 (2.1%)	2	1	0	2
Emptied by HH to open ground	1 (0.4%)	1	0	0	0
<b>Facility Emptying Cost</b>					
Mean	20,525	9,500	50,000	56,667	12,708
Range	1,000 - 70,000	1,000 - 20,000	50,000 - 50,000	40,000 - 70,000	2,500 - 20,000

### Household Waste Disposal Practices & General Hygiene

Most households depend on informal service providers to collect their waste leading to unhygienically collected waste. Burning as a method is also employed by 22% of the households, while only 20% of the households use formal service providers to collect their waste. Some wastes are either disposed within the compound or in unofficial dumping site. Only 5% use designated dumping sites for waste disposal. In general, 74% of households use unsafe waste disposal methods to manage their waste as such requiring intervention to achieve a clean and healthy environment.

**Figure 5: Waste Disposal Methods Used**



**Table 17: Household Waste Management Practices**

Characteristic	Sub County				
	Overall, N = 234 <sup>1</sup>	Jomvu, N = 64 <sup>1</sup>	Kisauni, N = 64 <sup>1</sup>	Likoni, N = 42 <sup>1</sup>	Nyali, N = 64 <sup>1</sup>
<b>Waste Disposal Method</b>					
Collected by informal service provider	68 (29%)	24	3	10	31
Buried or burned	52 (22%)	11	28	5	8

Sub County					
Characteristic	Overall, N = 234 <sup>1</sup>	Jomvu, N = 64 <sup>1</sup>	Kisauni, N = 64 <sup>1</sup>	Likoni, N = 42 <sup>1</sup>	Nyali, N = 64 <sup>1</sup>
<b>Waste Disposal Method</b>					
Collected by formal service provider	47 (20%)	15	5	11	16
Disposed of within household compound	29 (12%)	4	18	6	1
Disposed of in unofficial waste dump	20 (8.5%)	6	7	4	3
Disposed of in a designated waste disposal area	13 (5.6%)	2	3	4	4
Disposed of elsewhere	4 (1.7%)	1	0	2	1
Other	1 (0.4%)	1	0	0	0
<b>Waste Disposal Category</b>					
Unsafe Disposal	174 (74%)	47	56	27	44
Safe Disposal	60 (26%)	17	8	15	20
'n (%)					

### Partnerships and Collaborations

The Tabasamu ya Wamama Initiative Project envisaged collaborations and building stronger partnerships with both community-led governance structures as well as the County Government as a strategy towards combating waste management challenges in the County. The study thus sought to understand presence of waste management committee at the local level. It was established that very few such structures do exist (21%) or even where they might have existed, their presence are unknown by the community (36%) signaling weak waste management committee structures; even in the few locations where they exist they would require invigoration. Further inquiries show that there are different players mostly in Jomvu Sub-County supporting climate change related projects. However, most of the community members have not participated in these projects with only 38% (n=89) reporting to have participated in projects such as tree planting, beach cleaning etc.

**Table 18: Partners Availability & Effectiveness in Community Hygiene**

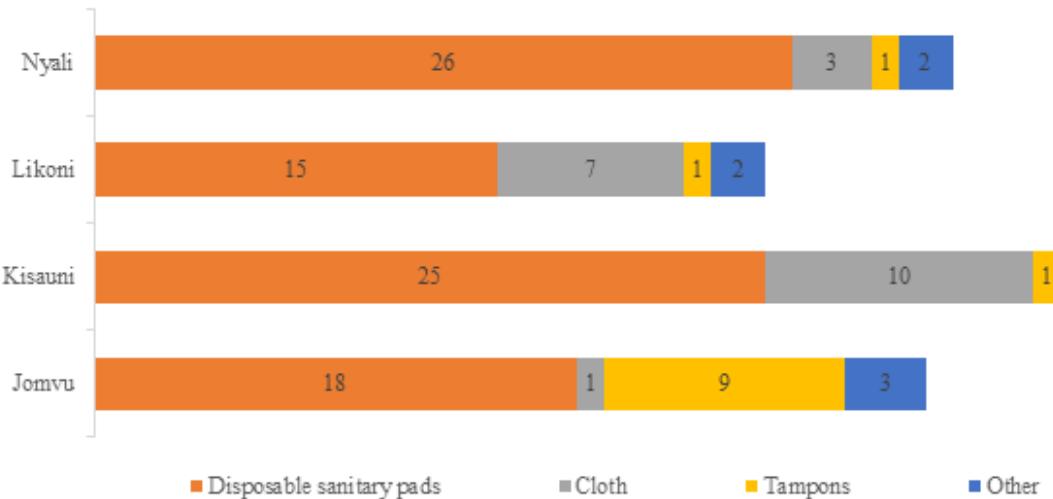
Sub County					
Characteristic	Overall, N = 234 <sup>1</sup>	Jomvu, N = 64 <sup>1</sup>	Kisauni, N = 64 <sup>1</sup>	Likoni, N = 42 <sup>1</sup>	Nyali, N = 64 <sup>1</sup>
<b>Waste Mngt Committee Present</b>					
No	102 (44%)	21	27	21	33
Don't Know	84 (36%)	21	29	16	18
Yes	48 (21%)	22	8	5	13
<b>Waste Management Committee Effectiveness</b>					
Effective	16 (41%)	8	1	0	7
Neutral	13 (33%)	7	2	2	2
Very effective	10 (26%)	0	5		3
<b>Partners' Present</b>	100 (43%)	43	27	11	19
<b>% Participating in CC project</b>	89 (38%)	36	29	8	16

## Menstrual Hygiene

While assessing the standard of menstruation hygiene, the study established that there exist safe, dignified, and private changing rooms among households dwelling 91% (n=113). However, the public facilities in markets and schools do not offer this level of standard.

Access to dignified sanitary towels seems to be a challenge. Whereas 75%(n=96) are considered to have access to dignified sanitary products (e.g. disposable sanitary pads and tampons), the remaining 25% use poor products such as cloths/ tissue paper and others. This greatly affects their personal hygiene, self-esteem and ability to fully engage in daily activities hence more support should be geared towards enhancing access to proper dignified sanitary products.

**Figure 6: Type of Menstruation Material Used**



**Table 19: Menstrual Hygiene Products Used**

Characteristic	Overall, N = 124 <sup>1</sup>	Jomvu, N = 31 <sup>1</sup>	Kisauni, N = 36 <sup>1</sup>	Likoni, N = 25 <sup>1</sup>	Nyali, N = 32 <sup>1</sup>
% with safe changing space	113 (91%)	29	36	22	26
<b>Menstrual material used</b>					
Disposable sanitary pads	84 (68%)	18	25	15	26
Cloth	21 (17%)	1	10	7	3
Tampons	12 (9.7%)	9	1	1	1
Other	7 (5.6%)	3	0	2	2
<sup>1</sup> n (%)					

## 2.4 OUTCOME THREE: BUILDING STRONGER PARTNERSHIPS AND COLLABORATIONS

This chapter looks at policy, legal, and institutional frameworks including partnership building and sectoral collaborations.

### Stakeholder Engagement Levels

Effective collaborations and partnerships with local organizations and stakeholders are key to ensuring that climate resilience projects in Kenya are contextually relevant, sustainable, and beneficial to the communities they aim to support. Tailoring strategies to local needs and building on local strengths can lead to more successful outcomes.



**In response to the situation in Changamwe, which involved the displacement of people due to a disaster: "In Changamwe, people were displaced due to a disaster, requiring the establishment of a temporary camp with the help of organizations, Mombasa County, and community disaster management committees. The camp was set up at Kipevu Primary School, where affected individuals stayed for nearly a week. The government failed to effectively protect green areas and mangroves, leading to concerns about global warming."**

**KII Muungano Ya Wanakijiji**

According to the World Bank, there are five levels of stakeholder engagement when engaging with non-state stakeholders as part of an engagement continuum. The engagement continuum's five steps comprise: *information-sharing; policy dialogue; formal consultation; programmatic collaboration; and institutional partnership*<sup>7</sup>. As the table below demonstrates, each of the five levels represents different types of activities, intensity of interactivity, levels of decision-making, and expected outputs. Further, as the graph below shows, the higher one ascends the continuum the more influence one can have in terms of participation in the decision-making process.

Activity	Nature of Interactivity	Level of Decision-Making	Expected Outputs
Information access and dissemination	One-way	None	Better informed outside stakeholders
Policy dialogue	Two-way	None	Both sides are better informed
Policy and programmatic consultation	Two-way	Low	Views of stakeholders taken into account
Collaboration	Two-way	Shared	Shared goals and action (short-term, ad hoc)
Partnership	Two-way	Equal	Common goal and action (long-term and institutional)

**Source:** World Bank – Civil Society Engagement Review (2010 – 2012)

**Information Sharing** - While information-sharing is considered a one-way type of communication and does not require active response from stakeholders, it nonetheless represents the very foundation of the stakeholder engagement process. It allows stakeholders to be aware of the existence of policies and programs, but more importantly of the decisions being made by international organizations. It is also one of the hallmarks of ensuring greater transparency and accountability in the governance and operations of these organizations. The most effective time to provide information is during the upstream phase when climate policies and strategies are being proposed and formulated, as this provides stakeholders with the most leverage to influence these decisions.

CWID in collaboration with other primary actors should lobby the National and County-level Government agencies to develop and implement proactive information-sharing policies and practices. This should allow stakeholders to be at the table when policies and programs are formulated, reviewed, and enforced.

**Policy Dialogue** – Dialogue is a two-way engagement in which parties become better informed, identify disagreements, and find commonalities. Effective dialogue can help diffuse conflict, build

<sup>7</sup> Based on the World Bank – Civil Society Engagement Review (2010 – 2012), World Bank, Washington, 2012 (page xviii)

consensus, and lead to collaboration. There are different kinds of dialogues in the area of climate change such as those related to broad policies and strategies, scientific or technical issues, and operational or project matters.

This confers with Allen, Munala, and Henderson (2021) who emphasize the importance of acknowledging the significant role of women in tackling climate change challenges, as over half of them have experienced discrimination. Their lower socioeconomic status and insufficient recognition of their fundamental human rights exacerbate this disproportionate impact. It is essential to involve women in decision-making processes to devise strategies to mitigate climate change and protect women. Kenya's parliament has a significant gender imbalance, with men comprising 78% and women only 22%. Rectifying this disparity is crucial for women's equitable presence and influence in climate change matters<sup>8</sup>.

CWID is uniquely positioned to play an active role in promoting extensive and ongoing dialogue between governments, civil society, the private sector, and other stakeholders based on a multi-stakeholder institutional model. This can be achieved through undertaking extensive policy dialogue on climate change issues with a wide range of grassroots-based CSOs and duty-bearers through global, regional, and local dialogue meetings.

**Formal Consultation** – Much like dialogue, consultations comprise a two-way flow of information and views between parties. Unlike dialogue, however, it is considered a more formal process and requires a higher level of commitment by the parties involved. It implies that the party initiating the consultation will carefully consider the views and recommendations made by stakeholders and adopt them if possible, and a commitment by the parties being consulted will provide careful and well-thought-out input. It is also considered good practice for those consulting to provide timely feedback on whether they considered and adopted the input they received from stakeholders, and if not, why not.

CWID should create spaces for grassroots-based communities to engage key duty bearers and relevant National and County-level agencies to develop a culture of promoting consultation with its major stakeholder groups around climate strategies, operational programs, and projects. The participation of civil society and communities' National and County-level decision-making committees and sub-committees will reflect a strong commitment to the principle of consultation.

**Programmatic Collaboration** – This form of collaboration occurs when two parties enter an agreement to work jointly on implementing a program, undertaking research, hosting an event, or undertaking another activity.



**The Changamwe Sub-County, which is impacted by the increased number of informal settlements requires programmatic collaboration. However, the youth and women are not fully involved in decision-making, indicating a lack of 100% participation. Many engage through CBOs in climate change solutions, such as tree planting, which can help avoid duplicating ideas and ensure a more effective approach. We should engage individuals in meaningful discussions about the crisis rather than relying solely on traditional solutions like tree planting or beach cleanups to address the issue and leaving them to their own devices.**

**KII Department of Gender.**

Collaboration is generally time-bound and one-off rather than continuous or institutional in nature. CWID has growing experience in collaborating with Government agencies, Civil Society, Development Partners and Private Sector stakeholders. This can be realized through convening policy dialogue events and consultation workshops with key duty bearers, CSOs, and grassroots communities.

<sup>8</sup> Allen, E.M.; Munala, L.; Henderson, J.R. Kenyan Women Bearing the Cost of Climate Change. *Int. J. Environ. Res. Public Health* 2021, 18, 12697. <https://doi.org/10.3390/ijerph182312697>

Institutional Partnership – The most advanced form of engagement occurs when stakeholders take co-ownership of the design, planning, financing, implementation, and/or evaluation of a program or project. In these situations, stakeholders fully share in the decisions, commitments, and resources allocated. Generally, partnerships involve legal agreements such as Memorandum of Understanding (MoUs) and formal contracts. This is the most difficult level to achieve as it requires trust, institutional commitment, and time. CWID should invest in developing and sustaining partnerships with relevant Regional, National, and County-level agencies, Civil Society Organizations, and Private Sector stakeholders.

According to the study by Awuor, Orindi, and Ochieng (2020), county governments should collaborate with wards that have district-level disaster surveillance committees to prioritize disaster preparedness. This involves community education, regulatory enforcement, and predictive mechanisms for climate-related disasters. Economically driven groups like boat operators, fishermen, and farmers should be involved in understanding early warning signs, response strategies, and recovery plans. Comprehensive disaster preparedness training is essential. Community-based groups can improve livelihoods by initiating low-capital ventures in peri-urban areas, such as high-value agriculture and livestock production. Strengthening these initiatives with government and non-governmental organizations can increase incomes and aid communities in adapting to climate-related disasters. Diversifying economic activities, such as community-based seafood farming, is another viable adaptation strategy<sup>9</sup>.

In the context of partnerships and collaboration, Mombasa County Climate Change 2021 endeavors to:

**Strengthen existing partnerships and establish new linkages between the National Government and other County Governments, development partners, UN agencies, the private sector, academia, NGOs, and CSOs to enhance cooperative planning and implementation of climate-smart solutions for a clean, green climate-resilient future.**

Mombasa County aims to collaborate and partner with the National Government, other county Governments, development partners, the private sector, academia, NGOs, UN agencies, and others. It draws on the partners' knowledge, expertise, and financial contributions that will make it possible for the county to realize its climate change goals. This is the space where NGOs such as CWID can leverage their efforts. It emerged that duplication of efforts among various partners remains a key challenge due to weak collaboration.



**A respondent observed, "You find that most organizations operate in a silo-like way. And we need to sit down so that we complement one another. You might have the money. I might have the technology. So, you can partner with us, and we will build the capacity of the community down there."**

**Table 1: County Legislations and Plans**

Document	Relevance to Climate Risk Management
County Drought Contingency Plan	The Drought contingency plans have been developed in 23 ASAL counties to address drought-related challenges across various sectors. The plans encompass a variety of interventions based on different drought scenarios and are intended to facilitate timely and coordinated response.

<sup>9</sup> Cynthia Brenda Awuor, Victor Ayo Orindi, & Ochieng Adwera, A. (2020). Climate change and coastal cities: the case of Mombasa, Kenya. Environment and Urbanization, 20(1), 231–242. <https://doi.org/10.1177/0956247808089158>

Document	Relevance to Climate Risk Management
<b>County Drought Contingency Plan</b>	The Drought contingency plans have been developed in 23 ASAL counties to address drought-related challenges across various sectors. The plans encompass a variety of interventions based on different drought scenarios and are intended to facilitate timely and coordinated response.
<b>County Climate Change Fund (CCCF) legislation</b>	The CCCF legislation aims to help counties mobilize finance from a variety of sources (public and private, local, and international) to implement priority climate change interventions (Ada Consortium, 2014a and 2014b).
<b>County Integrated Development Plan (CIDP)</b>	The CIDPs are five-year development blueprints that aim to improve livelihoods through citizen engagement and the creation of an enabling environment for mobilizing and sustainably using resources in the counties.
<b>County Environment Action Plans</b>	These plans address environmental issues across various sectors in an integrated manner and discuss their significance in development planning. They propose a strategy for achieving sustainable development in line with the SDGs and the Kenya Vision 2030 Medium Term Plan.
<b>Mombasa County Water and Sewerage Act 2016<sup>10</sup>.</b>	This Act provides concerning water supply and sewerage in Mombasa County. The Object and purpose of the Act is to establish reliable systems for the delivery of water and sewerage services. The Act aims, among other things, at ensuring the provision and delivery of potable water to consumers and securing and sustaining the progressive realization of the human right to water.
<b>Mombasa County Climate Change Action Plan<sup>11</sup>.</b>	The Mombasa County Climate Change Action Plan has been developed to guide the county in mitigation and adaptation of climate change impact. The development of the action plan is in line with the Climate Change Act 2016 which requires the government to develop action plans to guide the incorporation of climate change in the sectoral projects. The action plan covers a period of three years from the financial year 2020/2024.

There are diverse levels of collaboration between local organizations, stakeholders, and communities in addressing climate change impacts and disaster resilience in Mombasa County. These are as follows:

- International Partnerships: Kenya collaborates with international organizations and donors to access funding and technical support for climate change and disaster resilience projects. These partnerships often involve collaboration between government agencies and international development organizations.
- National Climate Change Action Plan: At the national level Kenya is guided by the National Climate Change Action Plan that outlines strategies for climate change mitigation and adaptation. This has been domesticated at the County Government level. Collaboration among Government agencies, Civil Society Organizations, and communities is essential for implementing these strategies.
- County-Level Initiatives: Kenya has a decentralized system of governance, with various counties responsible for their own development and disaster resilience plans. Collaboration at the County level involves local governments, NGOs, community-based organizations, and international partners.

At the county level, “private waste collectors are thinking about whether we want to move from a linear model of waste management to a circular economy of waste management. The model allows the private sector to invest in that recycling activity. However, the County’s Government does not have enough funds to invest in this recycling machine. Currently, I have about seven companies that have invested in the recycling of PET plastics, PET GPEs, paper, and boxes. All of those are

<sup>10</sup> <https://www.mombasaassembly.go.ke/wp-content/uploads/2017/06/The-Mombasa-County-Water-and-Sewage-Services-Act-2016.pdf>

<sup>11</sup> <https://www.mombasa.go.ke/wp-content/uploads/2021/10/County-Climate-Change-Action-Plan.pdf>

currently being handled by the private sector. We already have the private sector collecting waste in Mombasa. If we move into making waste management an economy where we are looking to value addition within the waste sector, the director must come in because the interest is in business and the contribution of the product, which is possible currently."

- **Community-Based Adaptation Programs:** Many organizations in the coastal region have been engaging local communities in climate change adaptation efforts. These initiatives often aim to build the resilience of vulnerable communities by providing training, resources, and support for climate-smart agriculture, water management, and disaster preparedness.
- **Research and Knowledge Sharing:** Collaboration also occurs in the realm of research and knowledge sharing. Local universities, research institutions, and non-governmental organizations work together to collect data, conduct studies, and share information on climate change impacts and adaptation strategies.
- **Awareness and Advocacy:** Civil society organizations and community groups in the coastal region collaborate to raise awareness about climate change and advocate for policies that promote sustainability and resilience.
- **Disaster Preparedness and Response:** Collaboration between government agencies, NGOs, and local communities is critical for disaster preparedness and response efforts. This includes early warning systems, evacuation plans, and disaster relief efforts.

### **Provide an enabling environment and appropriate incentives to enhance public-private partnerships. (PPP) in the design and implementation of climate change initiatives.**

An enabling environment and appropriate incentives are essential for fostering successful public-private partnerships in climate change initiatives. They attract private sector investment and expertise, mitigate risks, ensure efficiency, and help achieve climate goals more effectively and efficiently. Governments and international organizations play a crucial role in creating the conditions that encourage private sector engagement in tackling the urgent challenges posed by climate change.

Some various existing platforms or networks facilitate collaboration and information sharing among relevant stakeholders. Some of the platforms at the national level include but are not limited to:

**Kenya Climate Change Working Group (KCCWG):** KCCWG is a network of civil society organizations, research institutions, and community-based organizations that work together to advocate for climate change policies and actions in Kenya. They engage in research, advocacy, and capacity-building activities.

**National Climate Change Council (NCCC):** NCCC is a government-led platform responsible for coordinating climate change actions in Kenya. It brings together relevant government ministries, agencies, and stakeholders to develop and implement climate policies and strategies.

**Climate Adaptation Fund for Africa (CAF):** CAF is a platform that aims to mobilize resources and expertise to support climate adaptation efforts in Africa. It facilitates collaboration between governments, development partners, and the private sector. While it's not specific to Kenya, the country can participate in its initiatives.

**County-Level Climate Change Committees:** Many Kenyan counties have established climate change committees or task forces that facilitate local-level collaboration. These committees often include representatives from county governments, NGOs, community organizations, and other stakeholders.

**Research and Academic Networks:** Universities and research institutions in Kenya often collaborate on climate change research and share their findings through conferences, seminars, and publications. These networks can help disseminate valuable information to stakeholders.

**International Organizations and Initiatives:** Kenya collaborates with international organizations such as the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP) on climate change projects and initiatives. These collaborations involve information sharing and capacity building.

**Regional Organizations:** Kenya is part of regional bodies like the East African Community (EAC) and the Intergovernmental Authority on Development (IGAD), which have climate change-focused programs and initiatives that involve collaboration and information sharing among member states.

**Community Ownership and Involvement:** Communities must have a genuine sense of ownership and be actively involved in the project from planning to implementation. Their participation in decision-making and project activities is vital for sustainability.



A key informant observed; “Remember that building trust and fostering a sense of ownership among community members is key to successful engagement. By actively involving local communities in the planning and implementation of climate resilience projects, you can help ensure that these initiatives are not only effective but also meaningful and sustainable.”



According to a key informant; “One of our national values is public engagement, public participation. So, it is important that when in these spaces where people are talking about climate change and climate justice, they must be engaged right from the process of conceptualization, undertaking the research, and then also coming up with proposals in terms of mitigation measures and being the people who now roll out whatever programs are developed. So holistically they must participate horizontally, vertically in all aspects of it.”



Efforts are being made to formulate and enforce relevant policies. “We have a lot of natural resource legislation coming up. We have not started yet, but we are looking for partners that can help us develop a natural resource act in the county. And then we also need a natural resource policy. In the energy sector, we have a lot of support from the national government and are working on renewable energy as a main piece of legislation in the department specifically in Mombasa County,” observed a key informant.



To foster an enabling environment, both national and county governments should consider “promoting locally-led development projects where we believe that climate justice is needed. There is a need for the government to at least support them, minimize, say, their taxes, and promote a good environment so that these people can do what they can to at least protect their environment.”



CSOs also play a fundamental role in triggering broader public awareness. For example; "CSOs come out strongly in terms of sensitization and awareness-building. We also expect the CSOs to help and guide us because the government is tied to its mandate in policing and enforcement. And we can partner with the different CSOs so that we get all these institutions on board. When the CSOs advocate for the need to protect our climate and the need to embrace the different mitigation strategies we put in place, then we know that we can achieve greater milestones," observed a key respondent.

Some of the platforms at the County level include but are not limited to:

**Coastal Counties Environmental Stakeholders Forum:** This is a platform that brings together stakeholders from the coastal counties of Kenya, including county governments, NGOs, community-based organizations, and research institutions. It focuses on environmental conservation and sustainable development in the coastal region, including climate change issues.

**Partnership for Resilience and Adaptation (PfRA) - Kenya:** PfRA is an initiative that works in several counties along the Kenyan coast. It aims to enhance the resilience of coastal communities to climate change impacts. PfRA often collaborates with local governments, NGOs, and communities to implement climate adaptation projects.

**Western Indian Ocean Marine Science Association (WIOMSA):** WIOMSA is a regional scientific organization that brings together researchers and stakeholders focused on the Western Indian Ocean region, which includes the Kenyan coast. While its primary focus is marine science, it often addresses climate change and environmental issues in the region.

**Kenya Marine and Fisheries Research Institute (KMFRI):** KMFRI is a government research institution with a presence along the Kenyan coast. It researches marine and fisheries resources and often collaborates with other stakeholders on issues related to climate change impacts on coastal ecosystems.

**Local Community-Based Organizations:** Numerous community-based organizations and non-governmental organizations (NGOs) work directly with coastal communities to address climate change challenges. These organizations often form networks or partnerships to share information and resources. According to County and National government level agencies, local CSOs should, "**Support government effort in addressing climate change. They should do advocacy, sensitization, and awareness on the impact of climate change and the progress that should be made so that we can reduce the impacts of climate change, including tree planting, restoration of the dreaded areas, including waste management. And the other areas of the residents know themselves, they should also be sensitive. They should, by themselves, understand the issues around climate change so that they can stop doing things that will lead to climate change.**"

**International and Regional Initiatives:** Kenya's coastal region is part of larger international and regional initiatives focused on climate change and environmental conservation. These initiatives may involve collaboration with neighboring countries and organizations such as the United Nations Environment Programme (UNEP).

Currently, "**we have over four stakeholders that are helping us, including policy formulation and waste management. They are also financing the waste management activities, including coming up with the material cover facilities. These include WWF, JICA, Hand in Hand, and YWCA,**" observed a respondent. There are equally more efforts by the County and National government agencies to onboard more partners. "**We have partners that are helping us fund the waste management model that we are proposing. We are currently coming up with a circular corner model in waste management where waste should be segregated at the source into two bins for dry and wet waste so that the dry waste is taken for recycling. We have already floated an international tender. So that you can have someone who can invest specifically in waste management, converting even the dumpsite into a recycling center.**"

Strengthening collaboration and partnership for climate change and resilience building, especially for women in Kenya, is essential to address the unique vulnerabilities and opportunities that women face. Some of the strategies that can be harnessed to enhance collaboration and empower women in climate resilience initiatives include:

- **Gender-Sensitive Needs Assessment:** Conduct a gender-sensitive needs assessment to understand the specific climate-related challenges and vulnerabilities that women in different communities face. This assessment should involve consultations with the women themselves. This study addresses this gap.
- **Engage Women's Groups:** Collaborate with women's groups, self-help groups, and women-led organizations in the coastal region. These groups often have valuable local knowledge and networks and can serve as effective entry points for engaging with women.
- **Gender-Responsive Policy Frameworks:** Advocate for and support the development and implementation of gender-responsive climate change and resilience policies and strategies at both national and county levels. This can create an enabling environment for women's participation.
- **Capacity Building:** Offer training and capacity-building programs specifically tailored to women's needs and preferences. This could include training in sustainable agriculture, water management, climate-resilient livelihoods, and leadership skills.
- **Technical Support:** Provide technical support and mentoring to women entrepreneurs and farmers in adopting climate-smart practices and technologies.
- **Data Collection and Analysis:** Collect sex-disaggregated data on climate change impacts, adaptation strategies, and resilience outcomes. Use this data to inform policy and project design.
- **Partnerships and Networking Opportunities:** Create networking opportunities for women to connect with other women leaders, experts, and organizations involved in climate resilience and environmental conservation. This can be achieved through collaboration with women's organizations, NGOs, and gender-focused agencies to leverage their expertise and resources in climate resilience projects.
- **Recognition of Indigenous Knowledge:** Recognize and respect indigenous knowledge held by women in indigenous communities. Incorporate their traditional practices into resilience strategies where relevant.

By integrating these strategies into climate change and resilience-building initiatives, it is possible to strengthen collaboration and partnership while ensuring that women are empowered to actively participate in and benefit from efforts to address climate change impacts and build resilience in their communities.

### **Why is Climate Change an issue to Women in the Coastal region?**

This analysis examines the issues faced by Coastal women due to climate change, underlining the connection of gender and climate dynamics. Many women rely on natural resources for livelihoods like fishing and farming, are disproportionately affected by climate-related disasters, leading to displacement, income loss, and an increased caregiving load. The study explored the gender-specific issues is crucial for developing effective strategies to address climate change's impacts on Coastal communities.

The study's examination of the perception of climate change underscores the heightened vulnerability of coastal populations to the climate crisis. An overwhelming 89.74% of respondents from Coastal areas reported having observed discernible changes in climate and weather patterns. This finding vividly illustrates the intimate link between climate change and the everyday experiences of coastal communities, especially women. However, it is noteworthy that 7.69% expressed uncertainty regarding these changes. This uncertainty may stem from variations in weather patterns or a lack of adequate attention paid to these alterations. Additionally, a smaller fraction of respondents, constituting 2.57%, reported not having noticed any changes. This minority may be influenced by personal perceptions or entrenched beliefs about the stability of the local climate. The preponderance of respondents who expressed uncertainty further underscores the need to address this issue comprehensively. The survey data highlights the importance of

of Community-based education and effective communication about climate change among coastal residents. The high number of "yes" responses indicates a growing awareness of global environmental changes, emphasizing the need for climate awareness. Addressing the concerns of those who don't know is crucial for enhancing local climate literacy. The survey data emphasizes the need for adaptation and mitigation strategies, research, educational programs, and community involvement to effectively address climate change impacts, particularly focusing on women's disproportionate impact.

Climate change is impacting coastal communities, particularly women, by affecting weather patterns. 31% of respondents reported increased rainfall, potentially due to shifts in precipitation patterns, which affect water management and agriculture. However, 26% experienced extended periods of insufficient rain, exacerbated by food production challenges and water scarcity. 19% reported a decrease in rainfall, further affecting food security and water availability.

***This was confirmed by the health staff of KII county government of Mombasa who shared that since 2010, crop failures and pests like fall amber have significantly impacted the agricultural sector, leading to reduced food availability and school attendance. Climate change impacts agriculture, particularly women, children, and disabled individuals. Fragile production may lead to food price increases, causing people to consume locally available carbohydrates. Rising food prices, particularly for lactating, pregnant, and breastfeeding individuals, pose a significant health risk to these populations, emphasizing the need for a balance between health and food production.***

Additionally, 9% experienced changes in temperature, wind, or weather conditions, and 6% believed dry spells had become less frequent, indicating potential water availability shifts. These findings highlight the complex relationship between climate change and women's livelihoods in coastal regions. The study also underscores the complex and multifaceted nature of weather changes in these coastal areas. The study reveals that erratic weather patterns, exacerbated by extreme events like droughts, strong winds, and cold days, disrupt daily life and make future planning challenging. The emergence of new diseases linked to these changes adds uncertainty and vulnerability, especially for women, who often serve as caregivers in their communities.

The study meticulously examined various environmental challenges faced by coastal communities, encompassing erosion, coral reef destruction, flooding, drought, water pollution, air pollution, and waste disposal. Erosion emerged as a prevalent challenge, with 40% of respondents having never experienced it. Coral reef destruction was less frequently reported, with 72% of respondents having never encountered it. Flooding, on the other hand, emerged as a significant concern, as only 25% of respondents had never experienced it, signaling a critical need for flood mitigation strategies. Drought was a frequent occurrence, with 35% of respondents reporting frequent exposure to it, highlighting its profound impact on water availability and Agricultural sectors where women play pivotal roles.

***This was confirmed by Waste Management Expert who indicated that waste generation in Mombasa is currently estimated at 1000 tons per day according to the study 2019 by UN Habitat. Historically, waste burning has released carbon dioxide, exacerbated the greenhouse effect and harmed the ozone layer. To counter this, Mombasa has enforced a ban on waste burning, with legal consequences for violators. Additionally, the generation of leachate, a harmful liquid seeping from organic waste, poses environmental threats. In Mombasa, leachate has caused nearby vegetation to wither, underscoring the significance of proper waste management in addressing climate change-related challenges. While challenges persist, particularly at the Mwakirunge dump site, ongoing efforts are being made to mitigate their impact on the environment. These actions reflect Mombasa's commitment to reducing climate-related risks and vulnerabilities associated with waste management practices.***

Climate change represents a profound and multifaceted challenge for women residing in Coastal region, where their livelihoods and daily lives are inextricably intertwined with the natural environment. The intricate web of weather changes and varying perceptions of environmental

risks underscores the necessity for tailored mitigation strategies and heightened awareness, especially with a gender-sensitive lens. Recognizing these challenges is pivotal for informed decision-making and resource allocation. The findings of this study hold the potential to guide policymakers, foster community awareness, and drive sustainable solutions that account for the distinct vulnerabilities of women in coastal areas. Prioritizing resources and funding for regions most susceptible to environmental risks is a fundamental step toward formulating inclusive strategies for mitigation and adaptation, thereby ensuring the resilience and well-being of these communities and their women.

The findings center around the challenges and susceptibilities that women and communities in Mombasa face due to climate change and other unforeseen events. Its primary goal is to assist CWID in gathering initial data, serving as a foundation for monitoring project progress and enhancing the overall monitoring and evaluation system. A noteworthy best practice emphasized in the report is the comprehension of climate-related risks, which holds paramount importance in project execution and aligning with the local context. The report delves into the evaluation of ecological, financial, and political risks using The Stimson Center's Climate and Ocean Risk

Vulnerability Index (CORVI), encompassing cities like Mombasa, Kenya as shared below:

*In Stuart et al.'s (2021) study on the CORVI Risk Assessment in Mombasa, Kenya, it was found that the Mombasa County Government in Kenya wields considerable authority in resilience planning and associated initiatives. This increased influence is a result of the decentralization process, which was instituted following the enactment of the new constitution in 2010. The county administration has made the blue economy a top priority and has set up a dedicated Blue Economy Unit to streamline activities across different departments. Additionally, efforts are underway in Mombasa to develop a comprehensive climate change policy and action plan, with support from both domestic and international donors. However, despite these advancements, challenges persist due to data gaps and the presence of isolated issues, impeding the planning and implementation process. Furthermore, county governments in Kenya continue to rely heavily on financial support from the central government, leading to difficulties in achieving seamless integration and execution of resilience projects.*

Mombasa County, Kenya, has been actively engaged in various climate resilience projects funded by both the national government and international donors. Notably, these projects include the Coastal Region Water Security and Climate Resilience Project, a significant initiative valued at \$200 million, aimed at enhancing water accessibility, supply, and sanitation in both Mombasa County and Kwale County. Additionally, Kenya has collaborated with the World Bank on the "Water Security and Climate Resilience for Kenya Project," which seeks to improve access to irrigated water, enhance flood control measures, establish early warning systems, and strengthen institutional capabilities. Nevertheless, interviews conducted as part of this research highlight the necessity for more comprehensive data on the multifaceted impacts of climate change to optimize investment targeting. Kenya's government has also launched the "Go Blue" Program, generously funded by the European Union, in partnership with UN-Habitat and the UN Environment Program. This program's primary objective is to enhance land-to-sea planning in Mombasa, bridging existing gaps and improving planning practices in Kenya's coastal counties. This initiative addresses the critical challenge of integrating climate and ocean-related risks into urban and marine planning, a task made more complex by the country's rapid urbanization and its substantial reliance on the blue economy<sup>12</sup>.

<sup>12</sup> Stuart, J., Yozell, S., Ochanda, V., Rouleau, T., Indasi, V., & Lombardo, K. (2021). CORVI Risk Assessment: Mombasa, Kenya. A holistic city-based assessment of the climate risks facing Mombasa, Kenya. In *Resilience & Sustainability*.

**a. Adaptive capacity of communities, including improved access to resources and skills  
How are women adapting/ mitigating to the impact of Climate Change? (Digital tools/technology or innovations)**

This study examined the adaptive capacities of the communities within four sub counties in Mombasa County, focusing on various demographic setups being affected by the climate change impacts. Findings indicate that all the demographics are impacted negatively by the climate shocks. However, women are hard hit by these impacts, followed by men, who majorly contribute to the needs of the households within Mombasa County. Various adaptive measures, ranging from the traditional knowledge and current adaptive technologies and practices have been adopted by communities to strengthen resilience to the climate change impacts.

The climate impact scenarios from the study indicate that coastal erosions, floods and improper waste management majorly affects the communities within the county. All these in addition to other impacts affect the livelihoods of both the demographics. Majority of the communities rely on agriculture and small-scale businesses to sustain their household incomes, which unfortunately are impacted negatively by these identified shocks. In response, various adaptation practices are undertaken by the individual households, non-state actors and government to cushion households from succumbing to the climate change impacts.

**Adaptation strategies by women form climate change impacts in Mombasa County (Focus on 4 Sub counties)**

Women being vulnerable to the observed climatic changes in Mombasa County need to strategically adapt and mitigate the climate situations in order to cope up and sustain their livelihoods. The study however revealed the unawareness and lack of knowledge on suitable adaptation strategies by women within the project sub-counties. Despite the received 234 respondents unveiling a range of disaster response approaches, majority of the households are not aware whether these strategies are best fit to address their adaptation needs in sustaining proper livelihoods, hence need for enhanced education on climate change adaptation and mitigation strategies to these communities. Further, the study indicates that 16.67% (39) of the respondents managed difficulties without specific strategies, potentially due to resource constraints or inherent resilience. Women are hard hit by resource acquisition ranging from access to proper knowledge and information on climate change, agricultural land, and even the proper capacity to adopt innovative methods of coping up with the climate challenges experienced within the region. A respondent from Kisauni Sub-County alluded to the traditional barriers in access to community land for women, hence they end up utilizing the limited spaces they have for kitchen gardening. Lack of resources for these communities expose them to serious climate change threats. Both Non-state actors and Government need to ensure building capacity and availing relevant resources to reduce the vulnerability of the households from the climate change impacts.

**Interventions by Government and Non-State actors in improving adaptive capacity of women to climate change**

The study depicts the ongoing interventions and initiative by both the non-state and government. It's evident that the weak implementation of Government policies and plans directly affects the adaptive capacity of women within the community. Despite the Government allocation of resources through the departmental budgets, not much actions seem to have been implemented in support to gender inclusivity and women empowerment. The inadequate funding for policy actions, as well as inadequate personnel at the County level; to support on awareness and advocacy on matters climate change adaptation and mitigation still stands a critical gap affecting the delivery capability of the County Government which key Non-state actors can step in to adequately fill in the gap through integration of actions in mobilizing resources towards climate change actions. Most stakeholders operate in silos, hence lack of adequate information and resources to support the communities.

## **Good Practices:**

Communities within Mombasa County have adopted and integrated various best practices in coping up with the climatic impacts. The study highlights various interventions which are dominant across the demographics within the study region, these includes the growing of drought tolerant crops, like cassava, mchicha and other crops in subsistence scale. Similarly, the households have adopted the kitchen gardening practices due to in small scale diminishing land sizes.

The efforts of Government and Non-state actors' involvement in enhancing community knowledge and capacity in adopting best practices like Mari culture, aquaculture, crab farming, and also shrimp farming due to the over-utilization of fishery resources can never be underscored. Perception by the communities on the best income diversification opportunities has been explored, as women seek into investing in other businesses to support the household livelihoods. Additionally, the utilization of clean energy solutions for household and other productive use through advocacy support by the county government e.g. solar, wind, biomass fuel (briquettes) has been noted as a key advocacy support area by the county Government and Non-state actors. The above best practices therefore offer guidance for policymakers, relief organizations, and communities, hence a need for future research to explore strategic factors shaping interventions' selection and their lasting effects on resilience and recovery.

### **b. Stronger partnerships and collaborations with local organizations and stakeholders to support community resilience in four sub counties**

#### **What partnership/collaboration opportunities exist for women?**

This research emerged from the recent African Climate Summit 2023, where diverse African women convened in Nairobi to commemorate the historic launch of the inaugural Africa Women and Gender Constituency. During this pivotal event, Memory Kachambwa, the Executive Director of the African Women's Development and Communications Network, emphasized the critical importance of positioning women at the core of climate discussions. She asserted that achieving a just transition is unattainable unless women are central to the discourse, advocating for the inclusivity of women's voices in climate justice decisions. Renowned Pan-African feminist and journalist, Mildred Ngesa, echoed these sentiments, underscoring the vital need for both climate justice and gender justice. Ngesa emphasized the undeniable reality that African women have borne the brunt of climate change, highlighting that their perspectives must not be disregarded, as gender justice is inseparable from climate justice.

The study further unveiled the disproportionate impacts of climate change on women in Mombasa, despite their unique perspectives and capacities to contribute to climate solutions. Nevertheless, numerous opportunities exist for women to engage in climate change adaptation and mitigation efforts. With the support of CWID, women must actively harness these collaborative opportunities while advocating for gender equality in all aspects of climate action. Forming alliances and partnerships with women-led organizations and networks, both nationally and globally, offers valuable prospects for networking, mentorship, and advocacy.

These organizations collaborate with governments, NGOs, and various stakeholders to ensure that climate policies and initiatives prioritize gender sensitivity and inclusivity, ultimately fostering a more equitable and sustainable future. Notable organizations, including the Green Belt Movement, Feminist for Climate Justice Kenya, and the Kenya Women Parliamentary Association (KEWOPA), work together with governments, NGOs, and stakeholders to ensure gender sensitivity and inclusivity in climate policies and initiatives. These organizations empower Kenyan women through tree planting and environmental conservation, advocating for gender-responsive climate policies. Global organizations like WEDO and WGC work to ensure gender equality in environmental and climate policies. Networks like the Global Gender and Climate Alliance, Women's Climate Centers International, and the International Union for Conservation of Nature provide platforms for advancing gender-responsive climate actions worldwide. These collaborations are crucial to promoting gender-sensitive climate policies and fostering inclusive initiatives.

## **Factors Inhibiting Successful Partnership and Collaboration for Women**

The study highlights the potential for partnerships and collaborations to support community resilience in four sub counties. However, barriers such as inconsistent legal and regulatory frameworks, bureaucratic and administrative hurdles within government agencies, and a lack of clear policies and regulations hinder effective coordination among potential partners. Clear policies and regulations are necessary for collaborative initiatives, while streamlining processes and procedures is crucial for effective collaboration. These barriers hinder the successful implementation of climate projects.

A case in point was the displacement of people due to flooding in Changamwe, which was attributed to the Government's failure to protect the encroachment into the mangrove swamps. Such shortfalls can be addressed through a well-coordinated framework between State and Non-state actors. This same scenario applies to the Mwakirunge dumping site. Effective coordination among various stakeholders is essential for successful climate projects. However, inadequate communication and coordination mechanisms can lead to duplication of efforts and inefficiencies.

The research analysis sheds light on significant challenges in the realm of climate change mitigation and adaptation. Notable obstacles include conflicting stakeholder interests, limited public awareness and education, and critical data gaps. To advance women's rights and representation in climate decision-making, active participation in policy dialogues and campaigns is crucial. Collaboration with Governmental bodies, especially those with gender-centric mandates, can effectively champion gender-responsive climate policies<sup>13</sup>. Resource limitations also constrain both state and non-state actors from participating in joint initiatives.

Furthermore, the study underscores the potential for women entrepreneurs and leaders within the climate-related sectors to explore strategic partnerships with financial institutions and impact investors committed to gender-responsive climate financing. Such alliances are pivotal in securing essential funding for sustainable projects, particularly in the renewable energy sector. Collaboration with academic and research institutions holds promise for contributing to climate science and policy. Numerous institutions in the coastal region, equipped with specialized climate research centers and programs, actively seek collaborations with experts, including women, across various relevant disciplines. Some noteworthy examples include the Kenya Wildlife Service's Marine and Coastal Conservation Unit, the Kenya Agricultural and Livestock Research Organization's Mtwapa station, Pwani University, Jomo Kenyatta University of Agriculture and Technology's Mombasa Campus, the Technical University of Mombasa (TUM), and local government departments, all dedicated to climate action research and initiatives.

The study highlights the significant role women can play in climate adaptation and mitigation efforts. They can participate in community-based adaptation projects, partner with local organizations, NGOs, and community groups, and promote sustainability and climate action in collaboration with businesses. These partnerships can advance environmentally conscious products, facilitate Corporate Social Responsibility (CSR) initiatives, and support climate-smart practices. Building a robust media and communication framework is crucial for amplifying women's voices in climate action. Women can contribute to disseminating essential climate information and enhancing community preparedness and resilience.

<sup>13</sup> <https://www.femnet.org/2023/09/african-climate-summit-2023-no-climate-justice-without-gender-justice/>

## Good Practices:

### An Integrated Seascape Approach to Revitalize Ecosystems and Livelihoods in Shimoni-Vanga, Kenya<sup>1</sup>

Situated in Kwale County within the southern Coastal region of Kenya, the Shimoni-Vanga Seascape is home to over 18,000 community members across seven villages, including marginalized and indigenous groups, as well as rich Floral and Faunal biodiversity. The community-based seascape management approach employed by the Global Environment Facility (GEF) Small Grants Programme (SGP) in Kenya aims to restore ecosystem functions that form the basis of a mosaic of resource uses and enhance the resilience of this socio-ecological production seascape. In the Shimoni-Vanga Seascape, comprising one of Kenya's Marine Protected Areas with the highest coral diversity (203 species) and a strong interconnectedness with surrounding ecosystems, such community-based initiatives are vital to creating a "society in harmony with nature" and conserving the rich local marine and terrestrial biodiversity.

Partnering with a multitude of stakeholders, supported initiatives have been jointly contributing to revitalizing this critical socio--ecological production seascape. As part of an integrated seascape approach, activities are promoting mangrove forest and coral reef rehabilitation, eco-tourism enterprise development, sustainable fisheries and fish processing value chain development, and improved waste management. They are further strengthening multi-stakeholder collaboration, as well as monitoring, control, and surveillance of Locally Managed Marine Areas. Coral reef regeneration initiatives have piloted innovative restoration methods to support the healthy functioning of reef ecosystems, studying the strengths and weaknesses of the methods to determine the most community-accessible and effective models for scaling up and replication.

This case study showcases these activities and documents knowledge and best practices that help build the resilience of socio-ecological production landscapes and seascapes (SEPLS) by developing and diversifying livelihoods while enhancing biodiversity conservation and ecosystem services.

## 2.5 CONCLUSION

From the foregoing discussions and findings, there is a general consensus that weather patterns have changed in the region in recent years with varied description on these changes. Some have noticed longer rainy season others more frequent dry seasons, colder days and night also characterize these changes plausible from the effects of climate change. These pauses far and wide challenges from air pollution, water pollution, floods, drought, erosion, coral reef destruction among others. Policymakers and stakeholders must develop strategies that mitigate and adapt to the effect of climate change if sustainable development and livelihoods has to be sustained now and in the future.

Understanding risk perceptions and frequencies helps develop effective strategies. Prioritizing resources and allocating funding to areas at risk can lead to more inclusive and comprehensive approaches to mitigating environmental risks. Currently, there is little information provided to the community about the nature and evolution of different disasters in their locality. Even though there are different state and non-state actors working around, they majorly operate in silos thus limiting sharing of information and concerted efforts towards adapting and mitigating climate change challenges.

Respondents demonstrated a range of disaster response approaches, including seeking employment, relocation, and reliance on social networks. The analysis revealed prominent coping strategies: 44.87% (105 respondents) prioritized financial stability by seeking employment during disasters, while 25.21% (59) chose relocation to enhance safety and living conditions. Further, 21.79% (51) turned to friends and relatives for crucial support, emphasizing the significance of social connections. Other strategies employed included growing of drought tolerant crops, like

cassava, mchicha and other crops in subsistence to resolve temporarily the food insecurities within the region.

The KII findings alluded that each and every individual is affected in different ways by the climate change and other shocks, further, literature review demonstrates that women are most affected as most of them work in the farms, hence with the reduced income from farms due to floods and the reduced rainfall at time most of their livelihoods are affected.

Disaster preparedness is a key component toward building a resilient community against shocks and stresses of a disaster. From a total of 234 respondents surveyed, majority of household's perceive themselves to be in a precarious preparedness towards disasters with 76% (117) reporting "being likely" affected by occurrence of flood, 70% drought, 88% water pollution.

While striving to build mitigation measures toward effects of climate change, the study takes cognizant of the gaps that exists. For example, lack of legal backing to climate change initiatives and actions e.g. the climate change act which is currently under review, and the natural resource act which is missing in place to help utilize the conserved forest for ecosystem services pose a challenge in supporting adaptive changes. Moreover, weak policy enforcement which don't necessarily take into consideration the needs of the communities. Example is the waste management issue which is not handled properly despite having frameworks in place. Lack of modern technologies for the waste management interventions still remains a very big gap to waste management practices. It was noted that the weak implementation of these policies and plans are directly linked to the inadequate funding for policy actions, as well as inadequate personnel at county level to support on awareness and advocacy on matters climate change adaptation and mitigation.

Establishment of kitchen garden as a livelihood strengthening and coping strategy towards the effect of climate change and food security is a viable approach given only 30% currently have established a kitchen garden while 43% are willing to adopt this approach. Given the urbanized nature of the respondents dwelling areas, this intervention needs an innovative approach to maximize its full benefits given the limited land sizes which would not ordinarily permit the traditional farming approach. In addition, women empowerment.

While assessing the Sanitation component, it was concluded that the study area was an open defecation free with majority (85%) having improved fecal waste disposal facility of different types located either in their dwellings, compound or some distance from the home stead. However, household waste management is still a challenge with most households depending on informal service providers to collect their waste leading to un-hygienically collected and disposed waste as found out among 74%(174) respondents. Among the women respondents particularly, it was established that they have reasonably well secure and dignified dwelling and bathroom to use in management of their Menstrual hygiene at homestead level. However, in public places such as markets and schools, these services are in deplorable condition that offers poor security, confidentiality and dignity. Intervention targeting upgrading such facilities in public places would be relevant and beneficial to most women. Provision of sanitary towels especially to school going pupils was also identified to be a relevant action needed in managing menstruation hygiene.

## 2.6 RECOMMENDATIONS

The recommendations are intended to improve community resilience, particularly among women, in four Mombasa County Sub-counties by addressing specific challenges and encouraging active participation, providing resources and support networks, developing disaster-prevention education initiatives, and providing opportunities for women to participate in local decision-making.

### Improved Understanding of Risks and Vulnerabilities:

Improved understanding of risks and vulnerabilities is critical when climate change is a major threat to Coastal communities, particularly women. Women in coastal communities face disproportionately high climate change impacts due to their unique roles in livelihood and caregiving, limited access to resources, and lack of decision-making power. Improving

understanding of climate risks and vulnerabilities is crucial.

1. Gender-sensitive climate education programs, focusing on women in Coastal areas, are crucial for understanding climate change and its implications. These programs should be designed to explain observable climate changes and weather patterns, emphasizing the importance of climate literacy and awareness. This approach can help mitigate uncertainty about climate change among respondents.
2. Enhance localized climate data collection for informed decision-making and adaptive strategies, ensuring real-time data on weather patterns and changes is disseminated among communities to enable effective responses to changing climate conditions.
3. Gender-specific climate risk assessments are crucial for understanding the unique vulnerabilities faced by women, who play a multifaceted role in livelihoods and caregiving, enabling the identification of vulnerabilities and prioritization of adaptation strategies.
4. Community-based adaptation programs, involving women as key stakeholders, are crucial for addressing climate impacts on sectors like agriculture and fisheries. Programs should be tailored to cater to women's resources and skills, fostering their adaptability, resilience, and recognition of their crucial role in various sectors.
5. Support for women's economic resilience can help them diversify their income sources and reduce their reliance on climate-sensitive livelihoods by providing access to alternative income-generating activities and conducting extensive training projects.

### **Enhanced Adaptive Capacity of Communities:**

Climate change poses a significant threat to Coastal communities, but it also presents an opportunity for women to enhance their adaptive capacity. By improving their knowledge, skills, and access to resources, they can better withstand climate change's impacts and build a more resilient future.

1. The Climate-Resilient Farming Practices training program provides women farmers with the knowledge and resources to adopt innovative Agricultural practices, including drought-resistant crop varieties, effective water management techniques, and innovative pest control strategies.
2. Bridging the Access to Climate Information Gap by enhancing women's access to timely climate information through digital tools and technology is critical. Women are better equipped to make informed choices and adjust to changing weather as a result of this empowerment.
3. Support Women's Access to critical resources, such as Agricultural land and credit, is paramount. Ensuring equitable access to these resources is indispensable for effective climate change adaptation.
4. Community-based disaster preparedness plans, involving women's active participation and leadership, should be developed and implemented, tailored to their unique needs and households, and encompassing response and recovery strategies.
5. To strengthen partnerships for capacity building that provide women with opportunities for capacity building, it is crucial to collaborate with local groups and stakeholders. These programs ought to emphasize developing leadership, entrepreneurship, and skills connected to Climate-Resilient Agriculture.

### **Stronger Partnerships and Collaborations:**

Climate change is not just a local but a global challenge that requires a coordinated response. Partnerships and collaborations are essential for building a more resilient future for Coastal communities.

1. Gender-inclusive climate dialogues promote women's participation in policy creation, climate talks, and decision-making processes, ensuring their voices are heard and incorporated into climate policy.
2. Support and funding for networks and organizations led by women are crucial for climate change adaptation and mitigation. These organizations play a vital role in promoting gender-responsive policies and mentoring women.

3. Advocating for increased government commitment to gender-inclusive climate action is pivotal. This entails urging the allocation of adequate resources and personnel for the effective implementation of climate policies that prioritize gender equality.
4. Promoting collaboration among stakeholders, including government agencies, NGOs, and community groups, is essential for streamlining climate initiatives and avoiding duplication of efforts. Such collaboration can significantly enhance the impact of climate projects.
5. Encouraging partnerships between women entrepreneurs and the private sector, particularly in renewable energy and sustainable practices, is paramount. These collaborations can unlock essential funding for climate-smart projects and initiatives led by women.
6. Facilitating partnerships between women experts, academic institutions, and research centers is imperative for generating climate science and policy research that addresses the specific challenges faced by coastal communities, with a distinct focus on women's invaluable contributions to climate adaptation and mitigation.

The Coastal region of Mombasa County can be transformed by enhancing climate risk understanding, strengthening adaptive capacity among coastal communities, particularly women, and fostering robust partnerships for community resilience. This will lead to more effective, inclusive, and sustainable responses. Prioritizing climate risk understanding helps anticipate and mitigate climate change impacts, while empowering coastal communities, particularly women, ensures active participation in resilience-building efforts. Forging strong partnerships between stakeholders fosters a collaborative approach towards community resilience and long-term sustainability.

## **MODELLING THE TABASAMU PROJECT INTO ACTION:**

### **Tabasamu Model**

The Tabasamu Model is a framework developed by CWID to address the challenges faced by women in Kenya. It is based on the findings and recommendations of the Tabasamu ya Wamama baseline survey, which was conducted to assess the current level of each of the project indicators, facilitate Monitoring Evaluation, Accountability, and Learning (MEAL) of the progress of the project, develop, test, and use data collection tools, update the project's Monitoring Evaluation, Accountability, and Learning system, and revise the project documents.

The Model is a four-pronged approach that focuses on the following areas:

<b>TALK</b>	This component aims to create a safe space for women to dialogue, share their experiences and learn from each other. It involves conducting regular meetings and workshops where women can discuss their challenges and identify solutions together.
<b>BELIEVE</b>	This component focuses on building women's self-confidence and belief in their abilities. It involves providing them with training and mentorship opportunities, as well as access to resources and support services.
<b>SOLVE</b>	This component aims to help women solve the practical challenges they face in their lives. It involves providing them with financial assistance, access to education and healthcare, and other forms of support.
<b>MANAGE</b>	This component focuses on helping women develop the skills and knowledge they need to manage their lives effectively. It involves providing them with training in financial literacy, business management, and other areas.

## Implementation of the Model

The Model is implemented through a variety of programs and activities, including:

- Self-help groups are small groups of women who come together to support each other. They provide a safe space for women to share their experiences, learn from each other, and access resources and support services.
- Savings and loan groups are groups of women who come together to save money and lend it to each other. They help women to build financial assets and invest in their businesses.
- CWID offers a variety of vocational training programs to help women develop the skills they need to get jobs and start their own businesses.
- CWID provides mentoring opportunities to women, connecting them with successful women who can provide them with guidance and support.
- CWID advocates for the rights of women and girls at the Local, National, and International levels.

## Impact of the Tabasamu Model

The Model will have a positive impact on the women and girls in Kenya and help them to:

- Increase their self-confidence and belief in their abilities
- Develop the skills and knowledge they need to manage their lives effectively
- Access resources and support services
- Solve the practical challenges they face in their lives
- Improve their economic and social well-being

## Conclusion

The Model is a comprehensive approach to addressing the challenges faced by women in Mombasa. It is based on the findings and recommendations of the Tabasamu ya Wamama baseline survey, and it has been shown to have a positive impact on the lives of many women. The model is implemented through a variety of programs and activities, including self-help groups, savings and loan groups, vocational training, mentoring, and advocacy.

## PHOTO GALLERY



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