



EMBU COUNTY GOVERNMENT

EMBU COUNTY CLIMATE CHANGE ACTION PLAN

For a climate resilient County

May, 2023

Foreword

Climate Change is a global problem that has increased the frequency and magnitude of extreme weather events globally leading to loss of lives, diminished livelihoods, reduced crop and livestock production, damages on infrastructure among other adverse impacts that demands global solutions and international efforts. The international response to climate change is founded upon the United Nations Framework Convention on Climate Change (UNFCCC). The Paris agreement under UNFCCC aims to strengthen the global responses to the threats of climate change by setting out the Nationally Determined Contributions (NDCs) to be adhered to by nations in order to achieve the global goals set out in the Paris Agreement that includes both adaptation and mitigation measures. Various intergovernmental panels on climate change emphasize on the need to strengthen the resilience and adaptive capacity of developing communities who have continued to bear the blunt impact of climate change.

In Kenya, the efforts to address climate actions are set out by the NCCAP 2018-2022 and the National Climate Change Act 2016, whose objective is to promote low carbon climate resilient development and investments. The Act provides a regulatory framework for enhanced responses to climate change and promotes mainstreaming of climate change actions into the various government functions, levels and sectors. Climate change is likely to negatively impact Kenya's future development and achievement of the goals of Kenya Vision 2030 – the long-term development blueprint as well as the sustainable development goals (SDGs).

Counties are considered to be the first line of defense and therefore the best placed to implement climate action plans that best address the needs of local communities. Climate change has taken a toll on various economic aspects of Embu County. The Embu County Government has therefore enacted the Climate Change Regulations and the Climate Change Policy. Through this policy, the County Government has developed a five-year Climate Change Action Plan (ECCAP) covering 2021-2026 to guide in mainstreaming climate change adaptation and mitigation actions into her sectorial functions. This plan builds onto the CIDP 2023-2027 and provides a framework for the county to contribute towards achievement of NDCs at the national level. The plan and the regulations bring together various stakeholders such as private sector, civil society and other climate change actors in order to develop pathways for climate resilience and adaptation addressing the negative impacts of climate change. These actions include tree planting programmes, protection and conservation of forests and hills, clean energy programmes and drought management interventions. Significant financial resources need to be mobilized and channeled towards climate-resilient activities. To enable the county to take advantage of available opportunities, the right institutional and financial mechanisms have been put in place so that resources are directed efficiently towards county climate resilient development priorities.

The county government leadership is looking forward to creating partnerships with local and international development partners and non-state actors to mobilize adequate resources to implement the Embu County Climate Change Action Plan.

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Acknowledgement

This Embu County Climate Change Action Plan (ECCCAP) 2023-2027 is a five-year plan to guide climate change actions, including the reduction of greenhouse gas emissions. The Plan is a requirement by the Climate Change Act, 2016, which seeks to further Embu county's development goals by providing mechanisms and measures to achieve low carbon climate resilient development, in a manner that prioritizes adaptation. The Plan also sets out initiatives that foster movement towards the County's contributions to the Nationally Determined Contribution (NDC) under the Paris Agreement. The NDC include greenhouse gas emission reductions of 30% by 2030 from the "business as usual" scenario, mainstreaming of climate change adaptation into the Government's planning processes, and implementation of adaptation actions.

The development of ECCCAP 2023-2027 was guided by a Taskforce that was appointed by the Chief Officer for climate change. It also involved the participation of the academic institutions and Agencies of the National Government, County Government departments, Civil Society, the private sector, and the faith-based organization. A wide range of individuals and institutions participated in the development ECCAP 2023-2027. I take this early opportunity to recognize their efforts.

Technical inputs to ECCCAP 2023-2027 were enriched through the Adaptation and Mitigation Thematic Working Groups, whose membership was inclusive and drawn from the National and County Governments, Civil Society, the academia, and the private sector. Contributions from members of the Taskforce and the Thematic Working Groups, both at individual and corporate levels, are greatly appreciated. The County Climate Change Unit is also grateful to the national and local climate change experts that provided valuable technical inputs to the process.

I wish to commend the office of the excellency the governor of Embu for her greater commitment in supporting the development of this document. Her words "*I will support anything for climate change*" kept us moving and this enabled the team to walk miles without delay. Special thanks go to the County Executive Council Member (CECM) for Environment and Climate Change for appointing the Taskforce and coordinating the entire process of developing ECCCAP 2023-2027. The efforts of the Chief Officer (Environment and Climate Change) in managing contributions from experts was critical in ensuring that all inputs from various parties were not lost. I also wish to recognize the support from our very own County Assembly for the support and coordination during the data collection and also for the speedy allocation and approval of budgets which was critical given the strict timelines. Much appreciation goes to the experts from the University of Embu for their professionalism and diligence throughout the process of developing ECCCAP 2023-2027 which cannot go unrecognized.

ECCCAP 2023-2027 was prepared through an extensive consultation process. Over 400 stakeholders, including representatives of state and non-state actors, civil society, the academia, women's groups, youth groups, marginalized and minority groups, and the private sector were consulted. These are gratefully acknowledged for their candid views that form the basis of this Plan. It is appreciated that effective implementation of ECCCAP 2023-2027 will require continued input from these stakeholders, and increased partnerships and enhanced support from development partners.

The development of ECCCCAP 2023-2024 would not have been possible without the support of development partners. These include the Government of Germany through the GIZ and NDMA through the programme coordinator for the Climate-Resilient Development Project, which is managed by IFAD. Other support was also received from KARLO, TARDA, FARM AFRICA, NATURE KENYA, KFS, WARMA as well as the critical department of water and agriculture in the County. These partners and stakeholders will continue to play a significant role in the effective implementation of this document for enhanced resilience of the people of Embu County.

The County Climate Change unit is committed to the implementation of this plan and will take the lead in enactment of all the climate actions that were prioritized by the communities during the engagement process. The unit will work with the National Climate Change Council to ensure a coordinated and effective approach that will involve both the National and County Governments, and other stakeholders across Embu County.

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Executive Summary

The Embu County Climate Change Action Plan (ECCCAP) for the period 2023-2027 aims to enable Embu County to take significant steps to combat the effects of climate change and enhance the resilience of Embu County's communities and residents. Anchored on the National Climate Change Action Plan (NCCAP) and the National Climate Change Act, 2016, the ECCCAP focuses on mainstreaming sustainable climate actions in all sectors. The ECCCAP will increase the capacity of Embu County to achieve its development goals by enhancing the resilience of its citizens to climate change shocks. The action plan emphasizes involvement of special interest groups, especially the youth, women, elderly, people with disabilities and venerable communities.

The timing of the development of ECCCAP is preceded by a period of adverse climatic conditions when human lives and livelihoods have been under significant threat from extreme weather events. The drought experienced in the County during the years 2021 and 2022 was perhaps the worse that the county has had in over 40 years. In the previous years, periods of extreme precipitation were also experienced. Over the years, higher than normal temperatures have been experienced in most parts of the county. These increasing incidences of extreme weather and climatic conditions, that appear to become more severe with time is a cause for concern by most residents of the county. The frequency of hot days and cold nights has been on the increase in the last 5-10 years. Being a county that largely depends on agriculture, these changes in climate means that crops cannot grow to maturity in many seasons, and this has caused a high level of food insecurity.

Floods and drought lead to huge economic losses, not just for the farmers, but also for other people whose livelihoods are dependent on the agriculture value chain. Heavy flooding destroy energy transmission systems, increases breeding of disease-causing agents like mosquitoes and destroy crops on farms. On the other hand, droughts lead to death of livestock, crops in the farms, lowering of waters levels in hydro-electric dams etc. this besides agriculture, other sectors like water, energy, tourism, wildlife, and health are also affected. Thus, climate change has emerged as one of the greatest threats to the well-being of people living within the county. The economic cost of floods and drought in the county has created a long-term financial that is comparable to significant proportions of the county's Gross Domestic product. While the county's contribution to climate warming through greenhouse gas emissions, there is a growing need to develop mechanism for coping with these effects since the world is clearly a global village. Climate change is a global problem, and Embu County participates actively in the international response founded on the United Nations Framework Convention on Climate Change (UNFCCC) through the existing national mechanisms.

The county's prioritized climate actions are all largely mitigation measures, and are as set out in the UNFCCC. These actions are in the sectors of agriculture, energy, forestry, industry, transport, and waste management. Although the impacts of these actions may be minimal, given the national, regional and the global context, the efforts to reduce climate change and lower greenhouse gas emissions is make the situation much better compared to a business-as-usual attitude. This action plan has been developed tough a highly participatory process that has seen the involvement of practically all stakeholders in the community. This process was led by a

taskforce that incorporated. The process involved formation of thematic working groups, workshops and training seminars. experts from the fields of academia, research, civil society and even the government at both levels. In a similar manner, the implementation of the ECCCAP is expected to be as participatory as the planning stages. If these actions are followed, the county could contribute substantially to the county's Nationally Determined Contributions.

The ECCCAP 2023-2027 is underpinned by six key priority areas which are cross-cutting in most of the wards of the county. These are: Agriculture for Food and Nutrition security; Forestry and Agroforestry; Water and Sanitation; Disaster and Risk Management; Energy and Transport. These priority areas are aligned to those which underpin the NCCAP 2018-2022 and through them, the county is able to align climate change action to both national and international development objectives such as the Kenya Vision 2030 and the United Nations Sustainable Development Goals (SDGs). This ECCCAP 2023-2027 seeks to enhance the ability of communities within the county to cope with climatic disasters like floods and drought; increase the number of institutions and households that the county government can help to adapt to climate disasters; increase food productivity by expanding the areas under irrigation; increase adoption of alternative income generating activities, especially amongst the special interest groups (Youth, Women, PWDs and the Elderly) through increased livestock and fisheries production; increase the uptake of climate-smart initiatives such as conservation agriculture and precision agriculture; improve coordination for disaster management and response systems; improved access to clean drinking water by expanding water distribution networks; promote water-use efficiency; increase climate proof water harvesting and storage infrastructure; increase resilience to climate change impacts by diversifying livelihoods; increase the area under forest cover through afforestation and reforestation of degraded areas; significantly reduce the rates of deforestation and other forms of degradation through capacity building amongst the young population on benefits of environmental conservation; promote adoption of the circular economy principles of Reduce, Re-use, Recycle; promote use of green and efficient cooking energy technologies such as kilns, clean biomass cook stoves and biogas; and promote use of renewable energy for electricity generation like wind and solar. Most of these climate actions have been mainstreamed in the Embu County Integrated Development Plan (CIDP) and are important in the successful implementation of the CCCAP.

Embu County has a Climate Change Fund Act, 2019 to finance, facilitate and coordinate financing Climate Change Adaption and Mitigation projects. This Act establishes the Embu County Climate Change Planning Committee which is responsible for identification and management of projects, and providing overall oversight. It also establishes the Ward Climate Change Planning Committees that oversee the delivery of projects at the ward level. The County Climate Change unit is responsible for the coordination and implementation of the ECCCAP under the overall guidance of the County Executive Council Member (CECM). Besides, implementation of the CCCAP will be supported by a number of county institutions and departments with each providing specific enabling actions. These institutions include: Office of the Governor, Embu County government; The County Assembly; the CECM for Environment Climate Change; the County Chief Officer for Environment and Climate Change; The National Environmental Management Authority (NEMA); Ministry of Education; National Treasury & Climate Change Department; Meteorological Department; Kenya Bureau of Statistics; National Disaster Management Authority; Department of Planning; Kenya Agriculture and Livestock

Research Organization; University of Embu; Local Administration; World Bank; Civil Society groups; Ward Climate Change Planning Committee; Department of Water; Department of Agriculture and the Kenya Forest Service (KFS) among others.

Abbreviations and Acronyms

AIG	Alternative Income Generation
CECM	County Executive Committee Member
CSA	Climate Smart Agriculture
CIDP	County Integrated Development Plan
CBO	Community based Organization
CFA	Community Forest Association
EMCA	Environmental Management and Coordination Act
ITIKI	Information Technology and Indigenous Knowledge with Intelligence
SMART	Specific, Measurable, Achievable, Relevant, and Time-Bound
M&E	Monitoring and Evaluation
NCCAP	National Climate Change Action Plan
NGO	Non-Governmental Organization
NDC	National Determined Contribution
PWD	People with Disability
RE	Renewable Energy
RS	Remote Sensing
UNFCC	United Nations Framework Convention on Climate Change
WRUA	Water Resource User Association
WHO	World Health Organization
FOLAREP	Forest, Landscape and Restoration Programme

Definition of Terminologies

Adaptation

Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

Adaptive Capacity

The ability or potential of a system to respond successfully to climate variability and change, and includes adjustments in both behavior and in resources and technologies.

Capacity building

In the context of climate change, the process of developing the technical skills and institutional capability in developing countries to enable them to address effectively the causes and results of climate change.

Carbon market

A trading system through which countries or other entities may buy or sell units of greenhouse gas emissions in an effort to meet their national limits on emissions, either under the Kyoto Protocol or under other agreements, such as that among member states of the European Union. The term comes from the fact that carbon dioxide is the predominant greenhouse gas.

Carbon sequestration

The process of removing carbon from the atmosphere and depositing it in a reservoir or “Sink”, such as soil or trees.

Climate

The average pattern for weather conditions occurs over a long time period not less than 30 years. Weather refers to the atmospheric conditions at a specific place at a specific point in time. Climate has always varied because of natural causes. Increasingly, however, human increases in GHG emissions causing changes in climate as well.

Climate Change

Changes in global or regional climate patterns, including changes in temperature, wind patterns and rainfall. In particular, climate change refers to a change apparent from the mid to late 20th century onwards and attributed largely to human activities that increase levels of GHG emissions, especially atmospheric carbon dioxide produced by the use of fossil fuels. Climate change is sometimes referred to as global warming, which specifically refers to the long-term trend of a rising average global temperature.

Climate Finance

Local, national or international financing that may be drawn from public, private and alternative sources of financing, and is critical to addressing climate change because large-scale investments are required for adaptation and mitigation.

Climate Resilience

Closely linked to adaptation, building climate resilience includes reducing vulnerability to climate change, making sure that the impacts of climate change are avoided or cushioned, and enabling people to respond to climate risks.

Conference of the Parties

The supreme governing body of the UNFCCC, which meets once a year to review the Convention's progress.

Deforestation

The long-term or permanent loss of forest cover. The term implies transformation of forest into another land use, which is caused and maintained by a continued human-induced or natural perturbation.

E10

E10 is a mixture of conventional unleaded petrol and ethanol. E10 means it is 90 per cent petrol and 10 per cent ethanol.

Greenhouse gases

The atmospheric gases responsible for causing global warming and climate change. The major GHGs are carbon dioxide (CO²), methane (CH₄) and nitrous oxide (N₂O). Less prevalent but very powerful greenhouse gases are the hydro fluorocarbons (HFCs), per fluorocarbons (PFCs) and Sulphur hexafluoride (SF₆).

Intergovernmental Panel on Climate Change (IPCC)

Established in 1988 by the World Meteorological Organization and the UN Environment Programme, the IPCC surveys worldwide scientific and technical literature and publishes assessment reports that are widely recognized as the most credible existing sources of information on climate change. The IPCC also works on methodologies and responds to specific requests from the UNFCCC and its subsidiary bodies. The IPCC is independent of the UNFCCC.

Kyoto Protocol

An international agreement standing on its own, and requiring separate ratification by governments, but linked to the UNFCCC. The Kyoto Protocol, among other things, sets binding targets for the reduction of GHG emissions by industrialized countries.

Low Carbon Development Pathway

A national development plan or strategy that encompasses low-emission economic growth. Transitioning to this pathway means taking actions, where possible, to encourage GHG emissions that are lower than business-as-usual practice; and reducing the human causes of emissions by moving toward a resource efficient economy that is as low-carbon as possible and enhancing carbon sinks.

Mitigation

In the context of climate change, a human intervention to reduce the sources or enhance the sinks of greenhouse gases. Examples include using fossil fuels more efficiently for industrial processes or electricity generation, switching to solar energy or wind power, improving the insulation of

buildings, and expanding forests to remove greater amounts of carbon dioxide from the atmosphere.

Measurement, Reporting and Verification Plus (MRV+)

An integrated framework proposed for Kenya to measure, monitor, verify and report results and impacts of mitigation, adaptation and climate finance actions, and the synergies between them.

National Adaptation Plan

A document prepared by developing countries that identifies urgent and immediate needs for adapting to climate change.

National Climate Change Action Plans

National plans of action, prepared at five-year intervals, that set out in detail the requirements and costs for the design and implementation of the various climate change interventions required for Kenya to attain low carbon climate resilient development.

Public Private Partnerships (PPPs)

Public-Private Partnerships are an association between government and private sector through which private financing is utilized to perform a public function, at a profit to the private sector.

Sustainable development

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Technology Transfer

A broad set of processes covering the flows of know-how, experience and equipment for mitigating and adapting to climate change among different stakeholders.

United Framework Convention on Climate Change (UNFCCC)

An international treaty signed by 195 countries that entered into force in 1994. The objective of the Convention is stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate systems

Vulnerability

The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude and rate of climate variation to which a system is exposed, its sensitivity and its adaptive capacity.

CHAPTER 1

Background and Context

1.1.1 Introduction & Background

Embu County is one of the 47 counties in Kenya, located in the eastern part of the country, about 150km east of Nairobi. Its administrative capital is Embu town which previously served as the headquarters of the former Eastern Province. The County is inhabited by several ethnic communities, including the Embu, Mbeere, Kamba, and Tharaka. It lies between latitude 0° 8' and 0° 50' South and longitude 37° 3' and 37° 9' East. The county shares borders with Kirinyaga County to the West, Kitui County to the South East, Machakos County to the South and Tharaka Nithi County to the East. The County covers an area of 2,818 square kilometers and has 20 wards namely: Nthawa, Mbeti North, Mbeti South, Kyeni North, Kyeni South, Kithimu, Kirimari, Gaturi North, Gaturi South, Evurore, Muminji, Kagaari North, Kagaari South, Kiambere, Mwea, Makima, Nginda, Ruguru Ngandori and Mavuria (Figure 1).

The County exhibits distinct ecological conditions within its boundaries, that create two major agro-climatic regions that are characterized by a range of agro-ecological zones from the cool and wet highlands of Mt Kenya to the hot and dry lowland zones. These agro-ecological zones from the highlands to the lowlands include: The snow zone; Forest zone 1 (UH 0); Forest zone 2 (LH 0); Dairy-Tea zone (LH 1); Mini coffee zone (UM 1); Main Coffee zone (UM 2); Coffee-Mango zone (UM 3); Sunflower zone (UM 4); Lowland livestock-Millet zone (IL 5); Cotton zone (LM 4) and Lower midland livestock-Millet zone (LM 5) (Figure 2). The average annual rainfall for the county ranges from 600 mm in the lowland zones to 2200 mm in the highlands. The annual average minimum and maximum temperatures range between 18-19 °C and 27-28 °C in the lowlands, and between 14 -15 °C and 25-26 °C in the highlands respectively. The main economic activity for the county is agriculture with main food crops being maize, beans, cowpeas, green grams, bananas, sorghum, tomatoes, pawpaw, avocado, and citrus fruits. The main cash crops include tea, coffee, khat and macadamia. The main livestock reared include cattle, sheep, goats, chicken and fish. However, communities are also involved in other economic activities like artisanal mining, trading and food processing.

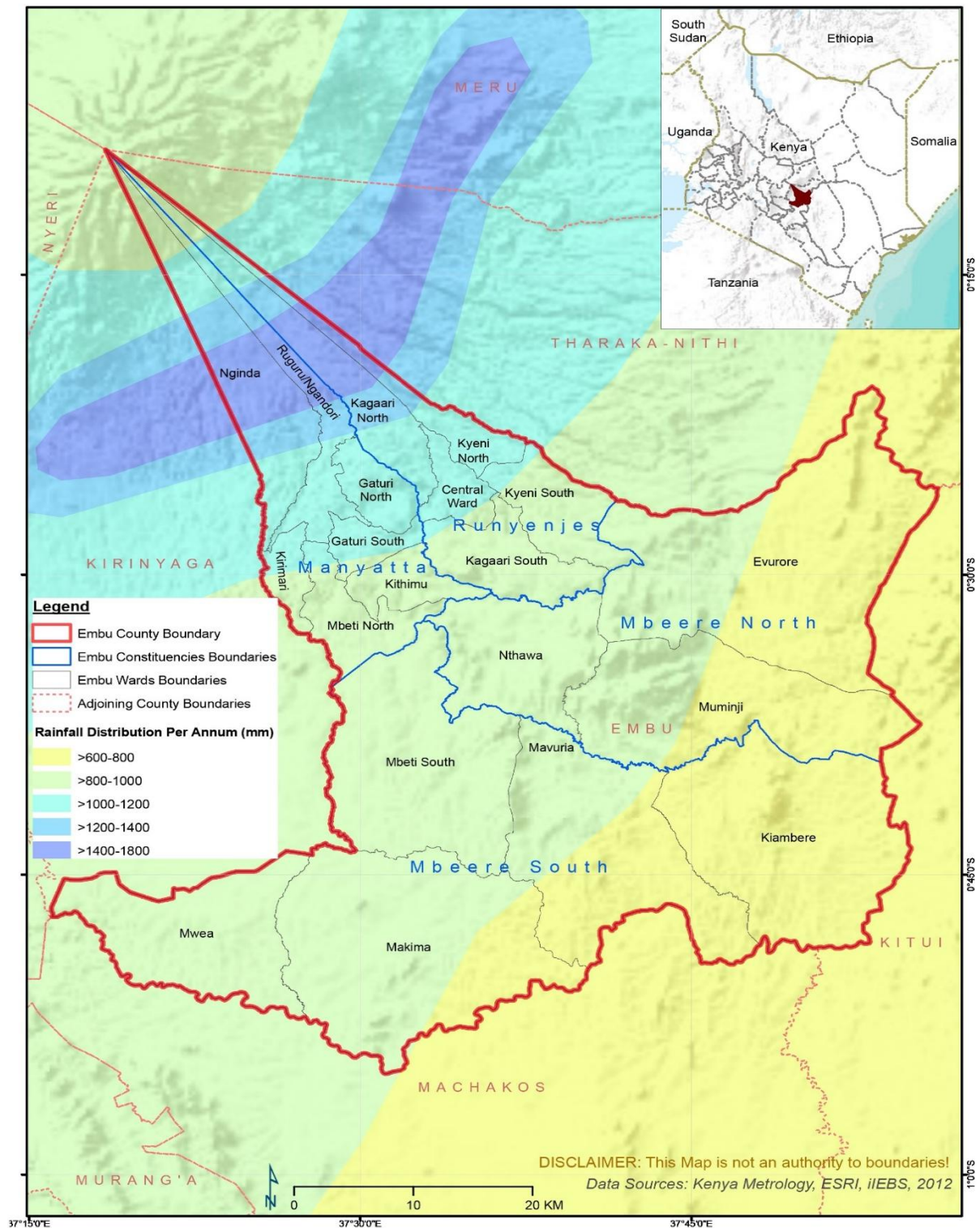
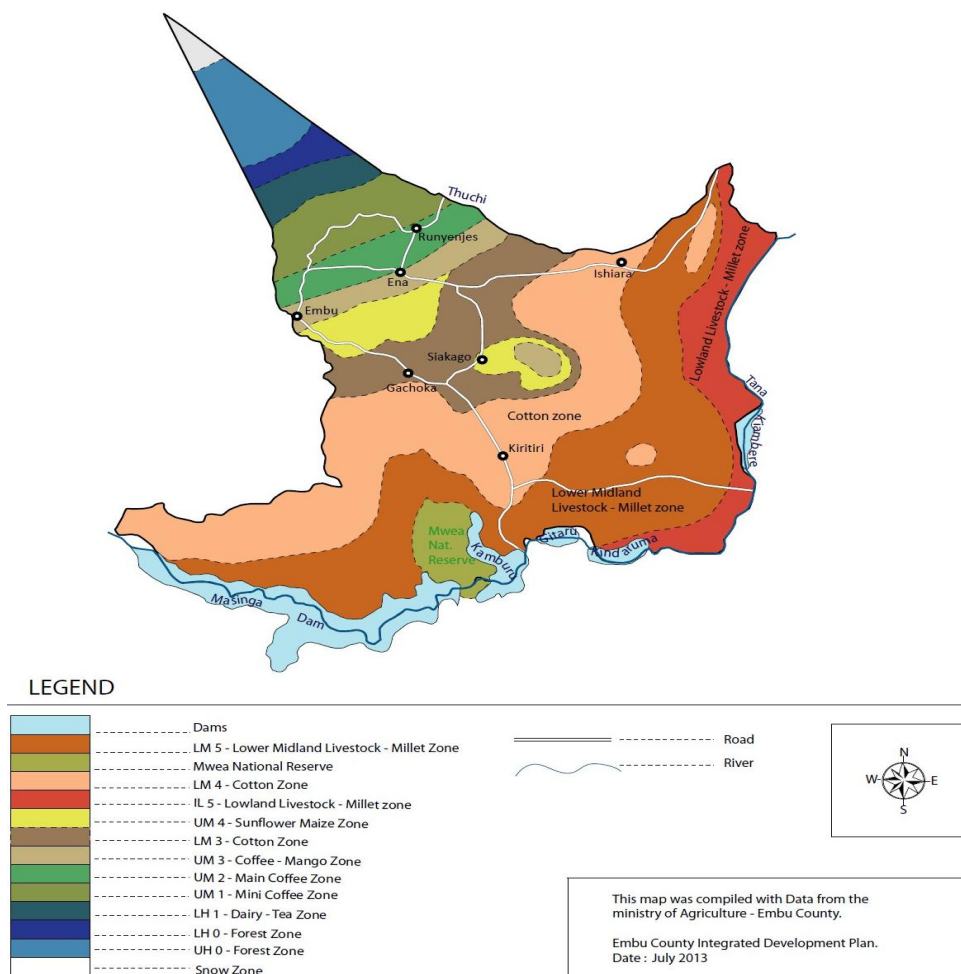


Figure 1: Map of Embu County showing its location in Kenya, the different wards within the County and the boundaries with its adjoining counties



Source: Embu County Integrated development plan, 2013

Figure 2: Agro-Ecological zones in Embu county. Different abbreviations for the zones indicate: UM=Upper Highland zones); LH =Lower Highland zones; UM=Upper midland zones; LM=Lower Midland zones; IL=Intermediate Midland; and LM=Lower Midland zones.

1.1.2. Purpose and process of the CCCAP

The development of the Embu County Climate Change Action Plan (ECCCAP) was informed by the National Climate Change Action Plan (NCCAP, 2018-2022) and the National Climate Change Act, 2016 whose objective is to encourage low carbon climate resilient development. The process for the development of the ECCCPA started after the development of a participatory climate risk assessment (PCRA) report.

The CCCAP is expected to cover the period of 2023 to 2027 and is based on submissions by the local communities in all the 20 Wards, and other key stakeholders including the private sector, Civil Society Organizations (CSOs), academic institutions, and other development partners. It

covers key sectorial areas outlined in the FLLoCA guidelines and the NCCAP namely disaster risk management; agriculture sector (climate smart agriculture); water and the blue economy; environment and forestry, wildlife and tourism; clean and renewable energy, circular economy circular economy and climate proofing infrastructure. In all engagements, the needs of women, youth, ethnic minorities, people living with disabilities and other marginalised and vulnerable groups were mainstreamed. The PCRA process that preceeded the development of ECCCCAP sought to engage the community in assessment of the climate risks and hazards that they face as well as the adaptation action priority areas that seek to enhance climate resilience. It also enabled them to assess their needs by looking at their own interventions and the stakeholders/institutions that support them, come up with options that can better the actions they are currently employing to make them more resilient. More importantly, the PCRA process enabled the participants within the wards to make proposals for the actions they felt could require external assistance from partners, government and non-governmental organizations. Thus, the process helped generate ward-level climate actions that informed the County Climate Change Action Plan (CCCCAP).

A multi-stakeholder workshop was organized where community representatives were invited to prepare summary data that would be used in preparing the final draft. The ECCCCAP 2023/2027 was guided by the task force that was appointed by the CECM with the Chief Officer for the Climate Change unit as the chairperson. This task force spearheaded the process through the multi-stakeholder workshop that involved the participation of academic institutions, government agencies, county government departments, civil societies as well as faith-based institutions. The ECCCCAP was prepared through an extensive consultative process with over 400 stakeholders who included representative from actors and non-state actors.

During the multi-stakeholder workshop, stakeholders were grouped into sector working groups based on their interests and guided through by workshop facilitators in thematic areas of expertise. The sector groups analyzed all sector priority actions as proposed in the ward climate change action plans, and were also given an opportunity to contribute their views on the suggested priority projects.

A participatory approach involving all stakeholders was adopted to allow for validation and ownership of the CCCCCAP (Figure 3). The approach was anchored by the following principles:



Figure 3: Stakeholders on the validation exercise

Transparency: There was openness throughout the entire process.

Inclusivity: Addressing the needs of the vulnerable groups within the society including the minority members, women, PLWD, youths and the elderly.

Fairness: Ensuring the climate actions are equitably distributed across the ward.

Consensus-building: Ensuring a common mutual agreement is reached amongst the stakeholders.

The above principles laid the ground for effective participation of all the community members. Among the stakeholders were the marginalized groups, youth, women, PWDs, and the elderly. Deliberate effort was made to ensure adequate participation of members from these marginalized groups. At least 60% of the community members invited were from these marginalized groups.

The following steps in making ECCCCAP was followed;

1. Establishing the scope and objectives of the plan: This included identifying the key climate change impacts affecting the county, the geographic area to be covered, and the goals and objectives of the plan
2. Technical Working Group (TWG): This group typically consisted of experts from various sectors, including government agencies, which were composed of technical members from line department, academia, NGOs, and the private sector. The TWG was responsible for reviewing the plan, conducting technical analyses, and providing technical inputs to the plan and included Agriculture and Livestock, Meteorological department, NDMA, County department of disaster and risk management, Roads and infrastructure, Water and Irrigation, Environment and Forestry, Communication department, Social services, Embu municipality, University of Embu, KFS and NEMA among others.
3. Community Engagement: Consisted of the reviewed information from the PCRA exercise

4. Stakeholder Engagement: This process involved engaging with stakeholders to gather inputs, build support, and ensure the plan is tailored to the needs of the community. Stakeholders included TARDA, KARLO, Nature Kenya, Farm Africa, GIZ, Climate Resilience for Poverty Reduction, KFS, NEMA, WCCPCs among others (Figure 4)
5. Validation: Planned actions were validated by the representatives of the stakeholders involved in the PCRA exercise called at a central point at IFAD Hall-Kangaru. Another session of validation was done by the MCAs at FK resort, Nyeri.



Figure 4: Participatory process involving the key stakeholders in Embu County

6. Report compilation: The final report was compiled by the CCU-Embu county and forwarded to the cabinet for ratification
7. Cabinet Approval: The final ECCCCAP was approved by the cabinet and forwarded to the Embu county assembly for oversight
8. Governors accent and forwarding to the PIU of the FLLoCA programme

1.2 Underlying Climate Resilience Context

Embu County has continued to experience an increase in frequency and magnitude of extreme weather events especially high intensity rainstorms, flash floods, and prolonged droughts which have devastated livelihoods especially for the marginalized households. Several communities especially those in the lowland Wards have experienced crop failure and livestock losses

associated with the increased natural disasters. Other major impacts include damage to infrastructure among other adverse effects. The recent prolonged drought in 2021/2022 experienced in the county devastated families who were still struggling to recover from COVID 19. According to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), there is increased evidence that widespread, pervasive impacts to ecosystems, people, settlements, and infrastructure have resulted from observed increases in the frequency and intensity of climate and weather extremes, including hot extremes on land and in the ocean, heavy precipitation events, and drought (IPCC, 2022). The observed impacts have been attributed to human-induced climate change particularly through increased frequency and severity of extreme events.

Climate change therefore remains a threat to sustainable development and implementation of major development initiatives in the county like the governor's manifesto. This justifies why Embu county government has taken critical steps to enhance climate change resilience and adaptation strategies. This is demonstrated by the enactment of Climate Change Fund bill, 2019 and the draft Climate Change policy which provides the first step by the county government to address the issues of climate change. The documents provide the regulatory framework for the structure and financing mechanisms of climate actions in the county. The Embu County draft finance policy emphasizes on sustainable development while prioritizing adaptation and recognizing the importance of enhancing climate resilience among the vulnerable groups that include women, youth, PLWD category and the marginalized communities.

1.2.1 Impacts of Climate Hazards in the County

Extreme weather events especially those associated with drought and erratic rainfall have disrupted livelihood patterns triggering major socio-economic and environmental upheavals. In Embu county these disruptions have been the key source of vulnerability for different categories of community members, their lives and livelihoods. The major impacts have been categorized as:

Social impacts: Climatic hazards causes huge disruption to human lives, social conflicts, migrations, resource scarcity, increase poverty and dependency levels.

Environmental impacts: Climatic hazards have adverse effects from natural resources, contributes to loss of biodiversity, loss of livelihoods, loss of ecosystems and biodegradation e.g droughts have been linked to loss of biodiversity and livelihoods and degradation of productive lands. Drought also lead to desertification of land that was previously productive. The intergovernmental science policy platform on biodiversity and ecosystem services reported that climate change could result to significant losses of many African animal and plant species, and decline in the productivity of fisheries.

Economic impacts: Climatic hazards like drought and floods have led to loss of investments mainly the built environment. Floods for example have been associated with destruction of the road networks and buildings. Droughts have been associated with a decline in water levels of dams that are used for electricity generation. Such losses diminish the available economic capacity for communities.

The overall likely impacts to the county include greater food insecurity due to declining crop yields and livestock populations especially in the lower midland Wards with ASAL conditions. Most of these areas experience drought occurrences and reduced precipitation.

The impacts of hazards can be either direct or indirect. Hazards are events or conditions that cause negative impacts on people, their assets and their livelihoods. The analysis of hazards in Embu was done during the community engagements at the ward level through a participatory process. The hazards were then ranked using a pairwise ranking after which the key hazards were identified. The hazards were uniquely identified based on the distinct ecological zones. The hazards found in the upper zones which is cold and wet were different from those identified in the hot and dry lower zones. This is clearly demonstrated in the Embu county hazard map.

1.2.2 County Climate Hazard Map

The key climate risks and hazards that were identified by the community are:

- i. Drought
- ii. Erratic rainfall
- iii. Crop/animal pest and diseases
- iv. Flash Floods

These hazards in Embu county were identified during the PCRA process using various tools such as the Hazard/resource maps of wards, historical profile, Seasonal calendar, Daily clock, vulnerability matrix and were then ranked in a pairwise ranking. A climate hazard map helps communities to recognize the various potential hazards that are posed by climatic factors in their localities and therefore be able to adapt to them. Knowledge of these potential hazards also helps communities to plan their resources and activities in a way that the impacts of the hazards are minimal, and that they can continue to draw benefits from their resources. Figure 5 shows the climate and resource hazard map that was used to map and identify climatic hazards in the County.



Figure 5: A climate hazard and resource map for all the wards in Embu County

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

Community Vulnerability is the degree or extent to which a community is susceptible to Climate Hazards and Risks. The priority hazards were: Drought, Erratic rain, emerging crops and livestock diseases and Flash floods. Community Livelihood Strategies are disrupted in the event of Climate hazards. The Vulnerability matrix is a tool that is used to indicate the levels of vulnerability in the community. The community vulnerability due to climate hazards is best expressed in summary by Figure 6.

The Community identified the following Livelihood Strategies and assets from the Seasonal Calendar;

- 1) Agricultural land
- 2) Livestock

- 3) Water sources
- 4) Trade/market
- 5) Casual labor
- 6) Formal employment
- 7) Transport

The Community participants developed criteria of measuring the impact of the hazards on their livelihood Strategies. A criterion for scoring on a scale of 1– 4 was adopted (where 1=Not affected, 2= Least affected, 3=Moderately affected, 4=Severely affected). An evaluation of the vulnerabilities of four different special interest groups (Women, PLWD, Youth, Minority and other marginalized groups) to the four most severe hazards (Drought, Erratic rain, emerging crops and livestock diseases and Flash floods) showed that Women & Youth are the most affected followed by PLWD and Minority /Marginalized groups (Tables 1; Table 2; Table 3 and Table 4). Women may not have control of the strategic resources (livelihood strategies) but have access and directly interacts with them. At the household level, women are the caregivers of the other VMGs as well as undertaking most of the household chores.

Table 1: Vulnerability Matrix showing the scores of vulnerabilities based on the level by which each of the groups is affected by Drought (1=Not affected, 2= Least affected, 3=Moderately affected, 4=Severely affected)

Livelihood Strategies/resource	Hazard (Drought)			
	Women	PLWD	Youth	Minority and marginalized
Agricultural land	4	4	4	4
Livestock	3	3	3	3
Water sources	4	4	4	4
Trade/market	3	2	2	1

Casual labour	3	1	2	2
Formal employment	2	1	1	1
Transport	1	1	1	1
Beekeeping	3	2	1	1
Crops	4	3	3	3
TOTAL	27	21	21	20

Table 2: Vulnerability Matrix showing the scores of vulnerabilities based on the level by which each of the groups is affected by Emerging crop and livestock diseases where 1=Not affected, 2= Least affected, 3=Moderately affected, 4=Severely affected

Livelihood Strategies/resource	Hazard (Emerging crop and livestock diseases)			
	women	PLWD	youth	Minority and marginalized
Agricultural land	4	2	3	3
Livestock	4	3	2	2
Water sources	1	1	1	1
Trade/market	3	2	2	1
Casual labour	2	1	3	2
Formal employment	1	1	1	1
Transport	1	1	1	1
Beekeeping	2	1	1	1
Crops	4	3	4	4
TOTAL	22	15	18	16

Table 3: Vulnerability Matrix showing the scores of vulnerabilities based on the level by which each of the groups is affected by Erratic rain where 1=Not affected, 2= Least affected, 3=Moderately affected, 4=Severely affected

Livelihood Strategies/resource	Hazard (Erratic rain)			
	women	PLWD	youth	Minority and marginalised
Agricultural land	4	4	4	4
Livestock	3	3	3	1
Water sources	4	4	4	4

Trade/market	3	2	2	1
Casual labour	4	2	3	3
Formal employment	1	1	1	1
Transport	1	1	3	1
Beekeeping	2	1	1	1
Crops	4	3	3	3
TOTAL	26	22	24	19

Table 4: Vulnerability Matrix showing the scores of vulnerabilities based on the level by which each of the groups is affected by Flash floods where 1=Not affected, 2= Least affected, 3=Moderately affected, 4=Severely affected

Livelihood Strategies/resource	Hazard (Flash floods)			
	women	PLWD	youth	Minority and Marginalised
Agricultural land	4	4	4	4
Livestock	2	2	1	2
Water sources	3	3	3	2
Trade/market	3	2	3	1
Casual labour	4	2	4	4
Formal employment	1	1	1	1
Transport	3	2	4	2
Beekeeping	1	2	3	1
Crops	4	2	3	2
TOTAL	26	20	26	19



Figure 6: Water scarcity in parts of parts of Embu County impacted by climate change, and a borehole constructed to mitigate the problem of water scarcity

1.3 Brief Overview of Climate Change Actions in the County

The role of the county government is to ensure that the priority actions in the CCCAP are proactive rather than reactive.

1.3.1 Mainstreaming of NCCAP in County Actions

The main objective of mainstreaming the NCCAP in all county actions are:

- To enable all sectors work towards mitigation and adaptation objectives that have been identified at the national level.
- To ensure all sectors work towards supporting the Nationally Determined Contributions (NDCs)
- To ensure all County climate actions are geared towards enhancing adaptive capacity
- To ensure all County climate actions work towards lowering emissions to acceptable levels
- To ensure that all climate actions are integrated when addressing several priority areas such as water projects that address food security across the country

The national government climate regulatory framework requires that the County governments mainstream the priority climate actions in the CCCAP with those in the NCCAP. Such County actions should therefore address areas relating to:

- Sustainable agriculture and food security, including climate smart agriculture, conservation agriculture and precision agriculture
- Sustainable and renewable clean green energy

- Sustainable waste management including material recovery
- Ecosystem restoration and conservation of environment and natural resources
- Improved water availability and access
- Sustainable growth in industries relating to value addition
- Effective climate proofing infrastructure
- Addressing the needs of the vulnerable, marginalized groups and people living with disability

The County government has been mandated to mainstream climate change actions in all the sectors so as to build resilience and adaptive capacity so as to be able to contribute to the (NDCs) as per the Paris agreement. This CIDP 2023/2027 has outlined key sector priority areas in responding to climate change. The predominant economic activity in Embu county is agriculture, with over 70% of population deriving their livelihood from crop production and livestock keeping.

This ECCCCAP identifies a number of sectoral climate actions and objectives that need to be prioritized in order to adequately address the challenges of climate change, and proposes various strategies to address them. These actions relate to: reliable and affordable quality water; conservation and protection of catchment areas; provision of sewerage systems in the urban centres; provision of improved sanitation facilities in the market centres; creation of awareness on importance of safe sanitation to households; implementation of environmental policies and practices; ensuring compliance with environmental legislation; rehabilitation of hills, water catchment and wetlands; protection of riverine and riparian land; promotion of green energy; sustainable natural resources management and conservation; agricultural and forestry extension services; increasing forests and tree cover; creation of awareness on forest values and products; implementations of government and world related agenda on climate change and natural resources management. The key priority areas of climate action for the County and the proposed strategies for implementation of those actions are outlined in Table 5 below.

Table 5: Prioritized climate actions and objectives for addressing the challenges of climate change in Embu County, and the proposed strategies to achieve them

Priority climate action	Strategies
Water Services Sub-sector	
To improve access to adequate, reliable, and affordable quality water.	<ol style="list-style-type: none"> 1 Construction of treatment plant to provide safe, clean drinking water. 2 Construction of Water storage tanks 3 Drilling of boreholes 4 Protection of water sources and catchment areas 5 Expansion of Water distribution networks 6 Prepare and disseminate advisories
Sanitation Services Sub-sector	
<ol style="list-style-type: none"> 1. To provide quality and adequate sewerage systems in urban centres 2. Sensitize households on sanitation 	<ol style="list-style-type: none"> 1. Improve sanitation and drainage systems to harness and manage storm water in urban areas. 2. Construction of sewerage systems in major towns 3. Construction of 5000m³/day Decentralized treatment facilities for growing markets places
Irrigation Services Sub-sector	
To increase area under irrigation by 1500ha	<ol style="list-style-type: none"> 1. Construction of irrigation distribution networks 2. Sensitize and train farmers on irrigation water harvesting. 3. Support farmer led irrigation projects. 4. Protect catchments areas and riverbanks. 5. Prepare and disseminate advisories
Environment, Climate Change and Natural Resource Sub-sector	
Sustainable Utilization and Management of County Natural Resources and Landscapes	<ol style="list-style-type: none"> 1. Undertake public education and environmental awareness campaigns. 2. Protect catchment areas, riverbank and riparian land. 3. Promotion of environmentally friendly practices and technologies 4. Prepare and disseminate advisories and information. 5. Develop legislative framework. 6. Rehabilitation and conservation of forests, hills, swamps, wetlands, springs areas
Sustainable solid waste management	<ol style="list-style-type: none"> 1. Acquisition of integrated solid waste management infrastructure 2. Reduce, reuse, recycle. 3. Establish material recovery facilities. 4. Establish transfer stations. 5. Waste to energy facilities
Climate change mitigation and adaptation action	<ol style="list-style-type: none"> 1. Establishment of climate change policy and legal framework

	<ol style="list-style-type: none"> Promoting partnership in addressing climate change issues Implementation of adaptive and mitigative measures Clean energy transition initiatives
Agriculture Sub-sector	
To enhance adaptation and mitigation to climate change	<ol style="list-style-type: none"> Adoption of climate smart, technologies, innovation, and management practices (including conservation agriculture, climate smart seeds varieties, ecologically adapted crops, agroforestry, regenerative agriculture). Enhancing the use of climate change adaption information.
To reduce soil degradation	<ol style="list-style-type: none"> Enhancing sustainable land management through promotion of appropriate technologies and practices (e.g., conservation agriculture, soil and water management practices, and structural and mechanization practices).
To reduce overreliance on rain fed agriculture.	<ol style="list-style-type: none"> Expansion of irrigation infrastructure including efficient water use technologies (e.g., drip, sensor-based irrigation). Investment in water harvesting for crop production (e.g., small earth dams, boreholes, water pan, ponds).
Livestock Sub-Sector	
Increase livestock productivity.	<ol style="list-style-type: none"> Support farmers with high producing and climate adapted breeds Promotion of destocking Promote climate smart genetic resources
Sustainable livestock pasture and fodder supply	<ol style="list-style-type: none"> Promote establishment, conservation & preservation of fodder. Promote use of community hay bans Promote pasture & fodder production mechanization
To reduce post-harvest losses	<ol style="list-style-type: none"> Promote value addition for livestock products & by products. Installation of satellite milk coolers. Establishment of cold chain infrastructure (satellite coolers, transport, ripening cheeses facilities) Construction of milk processing plant
Promote Livestock waste management systems	<ol style="list-style-type: none"> Promote Agri-circularity (recycling of livestock product wastes) Enhance promotion of biogas installation and use. Recruit and train biogas artisans
Promote & strengthen participation of vulnerable categories in Livestock production	<ol style="list-style-type: none"> Develop a county bill on involvement of vulnerable categories on livestock production. Develop youth & women agribusiness acceleration & resource centres

Promotion of apiculture	1. Support farmers with bee keeping equipment. (Hives, harvesting kits)
Transformation of mineral mining groups to cooperatives	1. Promote registration of sand harvesters and quarry mining groups. 2. Sensitize the registered sand harvesting mining societies on the importance of adopting new methods/technologies for mineral mining, relevant legal licensing/permits and environmental conservation issues.
Disaster Management sub-sector	
To help residents of Embu build a resilient community in the face of all types of disasters and emergencies	1. Support our community in identification of risks, mitigation strategies and facilitate in designing of community led solutions. 2. Promotion of social inclusion at all levels and structures of the community 3. Enhance and provide timely and actionable information to our people through appropriate communication and approach to encourage disaster risk mitigation behaviour change. 4. Develop innovative economic empowerment through mobilizing existing community structures, seed funding for business activity start-ups and promoting linkages. 5. Support sustainable integrated community led livelihood programs that guarantee food security and household income among the vulnerable members of the community.
To develop, disseminate and implement a community led Early Warning Early, Action (EWEA) mechanism to help residents of Embu anticipate, prepare, respond to, and recover from emergencies.	1. Establish a well-functioning call out system from the ward, Sub County, county and link with the county disaster operations Centre. 2. Champion community driven Early Warning Early Action systems including contingency planning to enhance relevant climate forecast- based actions and climate change financing as per the SENDAI framework of action 2015. 3. Develop an effective multi hazard early warning system and preparedness. 4. Develop disaster risk management information data base and hazard and risk mapping in the county
To Strengthen Disaster Risk Governance to Manage Disaster Risk.	1. Strengthening community participation and adapting lessons learnt to enhance community lead solutions and future programming.
Environment, Climate Change and Natural resource sub-sector	

Sustainable Utilization and Management of County Natural Resources and Landscapes	<ol style="list-style-type: none"> 1. Undertake public education and environmental awareness campaigns. 2. Protect catchment areas, riverbank and riparian land. 3. Promotion of environmentally friendly practices and technologies 4. Prepare and disseminate advisories and information. 5. Develop legislative framework. 6. Rehabilitation and conservation of forests, hills, swamps, wetlands, springs areas
Sustainable solid waste management	<ol style="list-style-type: none"> 1. Acquisition of integrated solid waste management infrastructure 2. Reduce, reuse, recycle. 3. Establish material recovery facilities. 4. Establish transfer stations. 5. Waste to energy facilities
Climate change mitigation and adaptation action	<ol style="list-style-type: none"> 1. Establishment of climate change policy and legal framework 2. Promoting partnership in addressing climate change issues 3. Implementation of adaptive and mitigative measures 4. Clean energy transition initiatives

1.3.2 Climate Change in CIDP

The revised (3rd generation) CIDP which covers the period of five years (2023-2027) was developed in the backdrop of the need for sustainable development for the people. A CIDP provides a platform for budgeting, financing, implementation and performance review of county projects. Such projects and programs were identified through a public participation approach and sector consultations. The County Climate change unit ensures that all sectors mainstream climate actions in their sectoral priorities. For example, in the agriculture sector, the key priority was in climate smart agriculture while in the water sector, there was emphasis on increased water access, storage, harvesting. In the energy and infrastructure sector, the focus was on climate proofing infrastructure, solar energy investment, clean cooking energy, climate proofing infrastructure like bridges and drifts while the youth and gender department focused on projects suitable for the marginalized and vulnerable groups.

1.3.3 Other key climate actions/strategies in the County

Some of the other key climate actions and strategies in the county are outlined in Table 6 below

Table 6: Analysis of Risks and Strategies by Sectors in Embu County

DROUGHT				
SECTOR	RISK	STRESSOR/SHOCK/CAUSE/WHAT IS BEHIND THE RISK	ADAPTATION STRATEGIES	WARDS
Water	Increased water scarcity Water resource conflict Wastage of productive time looking for water	Deforestation Uncontrolled sand harvesting	Sinking and rehabilitation of boreholes Solarization of existing boreholes Construction and Rehabilitation of earth dams, sand dams and water pans Spring and riverine protection Water harvesting strategies Extension of existing pipelines	Mbeti South, Nthawa, Mbeti North, Kithimu, Kirimari, Kagaari South, Kyeni South, Gaturi South, Makima, Mwea, Kiambere, Mavuria, Muminji, Evurore
Agriculture	Crop failure and low yields	Delayed rainfall onset	Investment in CIS systems Adoption of early maturing and drought resistant crops Conservation agriculture	Mbeti South, Nthawa, Mbeti North, Kithimu, Kirimari, Kagaari South, Kyeni South, Gaturi South, Makima, Mwea, Kiambere, Mavuria, Muminji, Evurore
Infrastructure	Energy shortage	water shortage impact hydropower generation	Use of alternative energy sources Water infrastructure improvement	
Environment	Deforestation	Cutting down trees	Practice	Mbeti South,

and forestry	Land degradation Loss of habitat Forest fires	Extreme heat Human encroachment	agroforestry Greening programs Woodlot establishment Use of Energy saving jikos	Nthawa, Mbeti North, Kithimu, Kirimari, Kagaari South, Kyeni South, Gaturi South, Makima, Mwea, Kiambere, Mavuria, Muminji, Evurore
FLOODS				
water	Water borne diseases High Surface runoff Landslides disrupting water supply channels	Water stagnation	Use of terraces and gabions Digging cut off drains	Kyeni North, Gaturi North, Ruguru ngandori, Nginda, Kagaari north, Runyenjes Central
Agriculture	Destruction of crops Aflatoxins	Excessive water intake Extreme cold	Agricultural weather tracking Use of gabions and terraces	Kyeni North, Gaturi North, Ruguru ngandori, Nginda, Kagaari north, Runyenjes Central
Forestry and environment	Disruption of ecosystem and soil erosion Siltation and debris	Surface water runoff	Restoration of wetlands and springs Implementation of post flood restoration projects Implementation of early weather warning systems Erosion control practices	Kyeni North, Gaturi North, Ruguru ngandori, Nginda, Kagaari north, Runyenjes Centra
Infrastructure	Damaged roads and bridges	High levels of water flows	Inspection and maintenance of critical	Kyeni North, Gaturi North, Ruguru

			infrastructure Construction of resilient infrastructure	ngandori, Nginda, Kagaari north, Runyenjes Central
ERRATIC RAINFALL				
Water	Reduced water availability Sudden and intense storms leading to floods	Climate change and variability. Natural climate phenomena like El Niño.	Diversify water sources and supply systems Promote rainwater harvesting	Kyeni North, Gaturi North, Ruguru ngandori, Nginda, Kagaari north, Runyenjes Central
Agriculture	Low crop yield Poor planting plans	Variability in rainfall patterns	Adoption of drip and sprinkler irrigation system Implementation of smart irrigations systems Promote the use drought resistant crops	Kyeni North, Gaturi North, Ruguru ngandori, Nginda, Kagaari north, Runyenjes Central
Environment and forestry	Fluctuating moisture levels	Climate change and variabilities Human activities like deforestation	Implement conservation and restoration programs to protect critical habitats. Develop adaptive management plans for ecosystems. Promote sustainable land-use practices to minimize habitat destruction. Conduct wildlife	Kyeni North, Gaturi North, Ruguru ngandori, Nginda, Kagaari north, Runyenjes Central

			corridor planning to facilitate species movement.	
Infrastructure	Damaged road that hinder transportation	Intense and unpredictable rainfall events. Poorly designed or maintained infrastructure.	Design infrastructure with climate resilience in mind. Develop effective drainage systems and flood control measures.	Kyeni North, Gaturi North, Ruguru ngandori, Nginda, Kagaari north, Runyenjes Central
EMERGING CROPS AND ANIMAL PESTS AND DISEASES				
Water	Waterborne diseases	Contaminated water Increased temperature and altered rainfall patterns	Implement water quality monitoring and treatment systems to ensure safe drinking water. Promote sustainable agricultural practices to reduce pesticide and nutrient runoff. Develop and enforce regulations on industrial and agricultural waste management.	Kyeni North, Gaturi North, Ruguru ngandori, Nginda, Kagaari north, Runyenjes Central, Mbeti South, Nthawa, Mbeti North, Kithimu, Kirimari, Kagaari South, Kyeni South, Gaturi South, Makima, Mwea, Kiambere, Mavuria, Muminji, Evurore
Environment and forestry	Introduction of invasive species	Climate change facilitating the expansion of pests and diseases into new regions. Human activities like logging and land use changes	Conduct regular forest health monitoring and implement pest management	Kyeni North, Gaturi North, Ruguru ngandori, Nginda, Kagaari north,

			programs. Promote sustainable forestry practices that reduce vulnerability to pests and diseases.	Runyenjes Central, Mbeti South, Nthawa, Mbeti North, Kithimu, Kirimari, Kagaari South, Kyeni South, Gaturi South, Makima, Mwea, Kiambere, Mavuria, Muminji, Evurore
Agriculture	Reduced crop yield and food production	Climate change altering pest and disease distribution. Monoculture farming practices that promote pest outbreaks.	Promote integrated pest management (IPM) practices to reduce reliance on pesticides. Develop pest-resistant crop varieties through selective breeding or genetic modification. Enhance agricultural diversification to reduce pest pressure on specific crops.	Kyeni North, Gaturi North, Ruguru ngandori, Nginda, Kagaari north, Runyenjes Central, Mbeti South, Nthawa, Mbeti North, Kithimu, Kirimari, Kagaari South, Kyeni South, Gaturi South, Makima, Mwea, Kiambere, Mavuria, Muminji, Evurore

CHAPTER TWO

Policy Environment

2.1 Introduction

Globally, the Paris Agreement of 12 December 2015 legally binds 196 Parties that participated at the UN Climate Change Conference (COP21) in Paris, France. This treaty was entered into force on 4 November 2016. Its overarching goal is to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels” and pursue efforts “to limit the temperature increase to 1.5°C above pre-industrial levels.” However, in recent years, world leaders have stressed the need to limit global warming to 1.5°C by the end of this century. That’s because the UN’s Intergovernmental Panel on Climate Change indicated that crossing the 1.5°C threshold risks unleashing far more severe climate change impacts, including more frequent and severe

To limit global warming to 1.5°C, greenhouse gas emissions must peak before 2025 at the latest and decline 43% by 2030. The Paris Agreement is a landmark in the multilateral climate change process because, for the first time, a binding agreement brings all nations together to combat climate change and adapt to its effects.

Kenya on its part, has a robust framework of policies, plans, and institutions that are progressively addressing climate change at the National and County levels. The National Climate Change Action Plan outlines the guidelines for engagement by different stakeholders at the national level. The Climate Change Directorate (CCD) under the Ministry of Environment and Forestry is responsible for overall coordination of the implementation of NCCAP, including coordination and reporting on implementation of actions by partners (GoK, 2018). At the county level, the policy direction with regard to climate change in Embu County is outlined with specific goals and objectives. It also spells out the guiding principles that will underpin the implementation of the Action Plan.

2.2. National Policy Context

2.2.1. The National Perspective

At the national level, the country is responding to climate change by formulating domestic legislation, policies, and strategies that are pinned on international climate policies and agreements. Kenya has developed a Climate Change Response Strategy 2010, Climate change Act 2016, National Adaptation Programme 2015-2030, Energy Act, Nationally Determined Contributions (NDCs) amongst others (GoK, 2018). These are commendable efforts; the key challenge remains cascading these national documents to the county and local communities. Kenya is committed to the 2030 Agenda for Sustainable Development that was adopted by world leaders, including the President of the Republic of Kenya, in September 2015 at the United Nations (UN) Sustainable Development Summit. On 1st January, 2016, the 17 Sustainable Development Goals (SDGs) officially came into force.

While the SDGs are not legally binding, the Kenyan government has taken ownership, and established national frameworks for their achievement. The 2030 Agenda includes dedicated goals for climate change (SDG 13), protecting, restoring, and promoting sustainable use of terrestrial ecosystems (SDG 15), and mainstreaming climate change impacts and climate actions across all the SDGs (UNDP, 2014).

The Agenda introduces the overriding objective of “leaving no one behind” that has strong implications for the definition, and selection of climate actions. This objective prioritises the poorest and most marginalised people, so that they progress at a higher rate than those that are better off. To ensure that no one will be left behind, world leaders committed to end extreme poverty, and curb inequalities by 2030 and, underscored that no goal of the 2030 Agenda will be met until it is met for everyone.

2.2.2. National Legal and Policy Framework

A robust framework of policies, plans, and institutions is being progressively established at the National and County levels in Kenya to address climate change. The foundation of the institutional and legal framework for climate change action is the Constitution of Kenya (2010). Article 10 sets out national values and principles of governance, such as sustainable development, devolution of government, and public participation, which are mandatory when making or implementing any law or public policy decisions, including those relating to climate change. Article 42 provides for the right to a clean and healthy environment for every Kenyan, which includes the right to have the environment protected for the benefit of present and future generations through legislative and other measures.

The Constitution of Kenya (2010) created the devolved system of government comprised of the National Government and 47 County Governments. The concept of devolution goes beyond mere decentralisation of government services, providing a form of self-governance at the local level, and a process of equitable sharing of resources. County Governments have a key delivery role in implementing the Climate Change Act, 2016, having jurisdiction, as set out in the Fourth Schedule (Part 2) of the Constitution, over sectors relevant to climate change action, such as agriculture, soil and water conservation, forestry, water and sanitation, tourism, and health. Article 203(2) of the Constitution requires that County governments be allocated a minimum of 15% of national revenue received annually, but the allocation often surpasses this minimum, which gives County Governments considerable scope to influence investments in climate change action.

The Constitution of Kenya (2010) advances gender equality, stating in Chapter 4, the Bill of Rights that “women have the right to equal opportunities in political, economic, and cultural spheres,” and in order to achieve that equality, requires that government puts in place, and implements affirmative action that delivers equity for women. This commitment to gender equality and implementation of gender equity is taken up in section 7(6) of the Climate Change Act, 2016 that requires the President to ensure compliance with the two-thirds gender principle when appointing members to the National Climate Change Council (NCCC). Further, section 8(2)(c) of the Climate Change Act, 2016 obligates the Cabinet Secretary responsible for climate change affairs to formulate and implement a national gender- and intergenerational-responsive public education and awareness strategy.

The Climate Change Act, 2016 is the key legislation guiding Kenya's climate change response. It is the legal basis for mainstreaming climate change considerations and actions into sector functions, and provides the legal foundation for NCCAPs. NCCAP 2018-2022 responds to provisions in the Climate Change Act, 2016 that require the updating of the NCCAP every five years.

2.3 County Enabling Legal & Policy Framework

In the past, a number of strategies and programmes have been pursued by various governmental and non-governmental entities to address the effects of climate change in the Embu County. However, these initiatives have taken place without a coherent policy framework and therefore appeared reactive and uncoordinated. Accordingly, the current draft Policy reflects the County Government of Embu's commitment to formulating a proactive, coherent and integrated climate change response that focuses on reducing vulnerability and building the resilience of the people, property, environment and economy. The Policy will position the County of Embu to capture the economic, social and environmental benefits of the transition to a low carbon climate resilient economy.

The Policy is therefore, designed to provide a framework to guide the development and implementation of specific, detailed and costed climate change interventions through regular and periodic Climate Change Action Plans to be integrated into the periodic CIDPs. By putting in place this policy architecture, the county of Embu aims to safeguard the wellbeing of its citizens, their property, and the county's prosperity in the face of a changing climate. This Policy therefore aims to enhance adaptive capacity and build resilience to climate variability and change, while promoting climate change resilient development pathways.

This Policy's focus is on the interlinkages between sustainable county development initiatives, the six pillars of Embu County (Value Addition, Tourism, Housing, Energy, ICT-Business process outsourcing and Financial Services and climate change. Climate change adversely impacts key sectors that are key to the economy of Embu County and Kenyan society at large: Environment, Water and Forestry; Agriculture, Livestock and Fisheries; Trade; Extractive industries; Energy; Physical Infrastructure; Tourism; and Health. This Policy therefore elaborates intervention measures that can help to achieve the goal of low carbon climate resilient development in Embu County.

It adheres to the constitutional governance framework and commitment to sustainable development, while addressing the goal of attaining low carbon climate resilient development in Embu County. To attain the latter, this policy focuses on appropriate mechanisms to enhance climate resilience and adaptive capacity, and the transition to low carbon growth, the main objectives of Embu County Climate Change Action plan.

Policy Statements

The legal framework is guided by the following policy statements that ensure proper contextualization of the regulations.

(a) Climate change Response measures and actions in Embu county

- i. Promote solid waste management practices.
- ii. Formulate and enact County regulations on pollution, waste management together with a clear enforcement framework of the regulations.
- iii. Establish a countywide coordination framework and partnership structure involving all actors and regulators of natural resources in the County.
- iv. Enact and enforce regulations on natural resource management .in the county.
- v. Establish woodlots for production of trees as source of fuel.
- vi. Mainstream low carbon growth options into the planning processes and functions of the county governments.
- vii. Consider participating in voluntary emission reduction programmes when they support the county's development agenda
- viii. Put in place mechanisms to develop and promote clean technologies in all county sectors of economic development.
- ix. Promote the creation of green jobs by establishing an enabling county policy framework for investment and creating business friendly regulatory environments.
- x. Identifying and implementing fiscal, taxation and other policy options in priority areas with high GHG emissions so as to enhance low carbon development.
- xi. Put in place mechanisms to identify and develop a riparian zones inventory as well an inventory of rivers and wetlands in the county together with the enactment and enforcement of regulations that will facilitate an efficient and effective protection, sharing and utilisation of these natural resources.
- xii. Promote tree planting along the wetland areas for conservation as well agroforestry economic activities.
- xiii. Support the establishment of water harvesting infra-structure.
- xiv. Promote Smart Water Solutions (SWS) in agriculture and improving water resource management in-field soil moisture conservation, mulching and water harvesting to hi-tech precision irrigation systems.
- xv. Promote soil conservation measures.
- xvi. Promote and make Ecosystem based Adaptation and agro-ecology techniques available and affordable, to smallholder farmers, enhance farmer outreach & extension, accelerate value addition and establish viable and inclusive market access strategies.
- xvii. Formulate and enact County regulations on extractive mining
- xviii. Regulate and ensure sustainable conservation and utilization of sand and shared natural resources.

(b) Mainstreaming climate change in development initiatives within Embu county

- i. Mainstream climate change into county planning processes, including County development policies and plans, County Integrated Development Plans, Performance Contracts, and the short to medium term budget making process.
- ii. Develop a framework and tools for mainstreaming climate change responses into county government planning and budget procedures.
- iii. Ensure that county planning processes and publication account for climate risk analyses and vulnerability assessments and identify opportunities to build climate resilience and achieve low carbon development.

- iv. Establish the institutional framework and build capacity to coordinate and enhance mainstreaming at the sectoral level.

(c) Public education, awareness creation and active participation by all

- i. Put in place plans for identifying, refining and disseminating climate change knowledge from and to the public and other stakeholders within the county in user-friendly formats.
- ii. In coordination with the National Government, mainstream climate change in basic, secondary and tertiary level education curricula.
- iii. Incorporate climate change knowledge into county government implemented public awareness initiatives including civic education, outreach and extension programmes.
- iv. Collaborate with, and support, private sector and civil society in incorporating climate change knowledge into advocacy and public awareness raising programmes within the county.
- v. Strengthen the capacity and ensure sufficient technical and financial resourcing of institutions, the public and groups engaged in climate change public awareness.

(d) Knowledge management and access to information

- i. Put in place mechanisms for and undertake climate change knowledge and communication needs assessment to develop appropriate systems and processes for climate related data observation and collection.
- ii. Develop a comprehensive communication strategy to enhance dissemination of timely, credible and reliable climate change information and research findings to the public.
- iii. Facilitate setting up of climate change information hubs (at the wards, sub-county and county levels) to collect primary information and act as dissemination points for knowledge and information.
- iv. Put in place mechanisms to gather, document and promote application of indigenous knowledge and practices on climate change.

(e) Climate change policy coordination and Governance/ Creating an enabling regulatory framework in Embu County

- i. Put in place overarching climate change legislation to provide the framework for coordinated implementation of climate change responses and action plans at county level in alignment with national and international initiatives.
- ii. Put in place a County Executive Committee level climate change organ to coordinate the mainstreaming of climate change into county development processes.
- iii. Put in place an appropriate institutional coordination mechanism with high-level convening power to enhance inter-sectoral responses to climate change.
- iv. Put in place a technical institutional framework to guide policy and functional implementation of climate change legal obligations of the county government.
- v. Put in place and regularly review subsidiary legislation as may be necessary to support implementation of various interventions through the county climate change legislation.

- vi. Regularly review and amend relevant sectoral laws and policies to integrate climate change policy considerations and implement priority actions in respective sectors.
- vii. Put in place mechanisms for public consultation and participation in climate change governance in all sectors.
- viii. Strengthen coordination and capacity for county, inter county, national and international climate change negotiations.

(f) Financial provisions and other resources

- i. Adopt a climate finance strategy and establish an appropriate fund mechanism that enables implementation of priority actions for climate resilience and adaptive capacity.
- ii. Explore possible avenues to attract internal and external climate finance, including through foreign direct investment and other multilateral or bilateral funding.
- iii. Put in place a mechanism and criteria for balance in the allocation of mobilised climate finance to adaptation and mitigation actions.
- iv. Develop policies and strategies to enhance the county's capacity to engage in carbon asset activities, strengthen the viability of domestic carbon asset production and increase access to international carbon markets.
- v. Promote private sector involvement in climate finance opportunities through the introduction of incentives, removal of investment barriers, creation of a conducive investment climate and facilitation of access to finance.
- vi. Adopt and implement sector specific anti-corruption, transparency, accountability and integrity mechanisms to safeguard prudent management of climate finance.
- vii. Promote Public-Private Partnerships in the climate change response.
- viii. Put in place a framework for coordination and monitoring and tracking sources, application and impacts of climate finance.

(g) Mainstreaming issues of Gender, Youth and special needs groups in Climate change actions in the County.

- i. Ensure that its climate change response is equally beneficial to both women and men and enhances gender equality and equity.
- ii. Undertake systematic gender analysis of its climate change response, through the collection and utilisation of gender-disaggregated data, including in relation to budgetary processes.
- iii. Ensure that marginalisation and vulnerability arising from gender disparities are addressed at all stages of climate change response.
- iv. Adopt a gender mainstreaming approach at all stages of the climate change policy cycle from research, to analysis, to the design and implementation of actions.
- v. Put in place mechanism to ensure and enhance the participation of the youth in climate change governance and position them to take advantage of opportunities.
- vi. Undertake a systemic analysis of the various special needs and ensure that planning and climate change responses mainstream participation and protection to persons with special needs.

(h) The implementation framework and costs

- i. Prepare and implement comprehensive, fully costed and periodically reviewed Climate Change Action Plans under the framework of this Policy.
- ii. Ensure that Climate Change Action Plans for implementation of this Policy are aligned with the regular CIDPs.
- iii. Facilitate continuous consultations and public awareness across all sectors, interest groups and the public.

(i) Resource Mobilization

- i. Allocate resources for climate change actions in the county budgetary processes.
- ii. Build capacity to mobilise and enhance absorption of resources for climate change interventions.
- iii. Mobilise substantial levels of climate finance to fund implementation of this Policy and the associated Climate Change Action Plans in CIDPs from internal and external sources.
- iv. Put in place mechanisms to attract and leverage PPPs as a vehicle to mobilise resources and enhance private sector participation in climate change resilient development activities.

(j) Collaboration and stakeholders' participation

- i. Put in place and operationalise a climate change public participation strategy.
- ii. Ensure that public participation enhances consultation and awareness of citizens, including facilitating equitable roles for women and men, persons with special needs and the youth.
- iii. Establish and sustain partnerships with various categories of climate change stakeholders including development partners and sectoral departments.

(k) Monitoring and evaluation of policy implementation

- i. Put in place mechanisms to utilize actions plans and performance contracts as tools for review and evaluation of inputs and results under this Policy.
- ii. Collaborate with county government structures in setting up M&E procedures for this climate change policy.
- iii. Incorporate climate change indicators into the Monitoring and Evaluation System.
- iv. Set up a coordination mechanism involving relevant stakeholders to undertake M&E of this Policy over five-year intervals in line with the CIDPs.
- v. Disseminate the outcomes of reviews and evaluations for public and stakeholder discussion, and for county assembly debate and oversight.

(l) Research and Technology on Climate Change in Embu County

- i. Identify research and technology needs within the county; and promote strategic and systematic climate change-related research, impact and vulnerability assessments, and technology development and diffusion.
- ii. Put in place mechanisms to encourage and facilitate locally appropriate climate change technological development, including strategies to enhance and maintain human capacity, especially amongst the youth.

- iii. Enhance the capacity of the public and private sectors, civil society and research institutions to develop and utilise technological innovations.
- iv. Identify and implement incentives for the private sector and institutions of higher learning to undertake R&D and develop affordable and locally appropriate adaptation and mitigation technologies.
- v. Enhance linkages between county government, academia, private sector, civil society and global climate change innovation institutions.
- vi. Put in place mechanisms to facilitate the integration of indigenous, indigenous and local knowledge into R&D and technology development.
- vii. Put in place mechanisms to enhance resource mobilisation for climate change R&D and technology development.

CHAPTER THREE

Priority Climate Change Actions

3.1 Introduction

At the ward level, and through the Ward Climate Change Planning Committees (WCCPCs), community members identified quite a number of climate change actions that are key to addressing the effects of climate change on their lives and livelihoods. However, they also pointed out some climate actions that are critical in addressing these challenges in the most immediate future. These actions are in all the sectors and their implementation would directly enhance on the capacity of the communities to deal with the impacts of climate change.

3.2 Identification of strategic climate action priorities in the PCRA

The strategic climate action priorities were identified from the PCRA process, and followed those identified at the ward level by the (WCCPCs). These actions were grouped in every sector and represents the immediate issues of concern for communities in regard to climate change. The main action priorities identified for individual sectors include:

Agricultural sector: Improve crop productivity through the implementation of CSA (Climate Smart Agriculture) interventions; Increase crop productivity through improved irrigation; Improve productivity in the livestock; Improve productivity in the fisheries; Diversification of livelihoods to adjust to a changing climate.

Water sector: Domestic Water provision services; Sanitation Services; Irrigation Services

Environment and forestry sector: Sustainable natural resources management; Solid waste management; Reforestation; Greening programs

Climate proofing infrastructure: Improve the ability of people to cope with climate change by having infrastructure that withstand risks related to climate change; To improve county road network condition and provide quality and safe roads for accessibility; Increase the number of households and entities benefiting from devolved adaptive services.

Energy: Increase use of renewable energy; Use of green energy e.g. solar to provide lighting and security to communities

3.3 Priority County Climate Change Actions

Agriculture

The main strategic objective for addressing climate change issues in the agriculture sector is to increase food and nutrition security by enhancing productivity and resilience of the sector in as low-carbon manner as possible. Climate change is negatively affecting agricultural productivity and the resilience of value chain actors, including households. An increase in the severity and frequency of climate change-related disasters, such as droughts and floods pose threats to food security, and negatively impacts small-scale and large-scale farmers. Table 7 below shows the priority climate actions in this sector and the expected results of such actions.

Table 7: Priority actions for the agriculture sector identified by the community, and the expected results from implementation of the actions

Priority Actions	Expected results
Improve crop productivity through the implementation of CSA interventions	<ol style="list-style-type: none"> 1. Number of institutions/value chain actors and households harvesting water for agricultural use/ production increased.; 2. Agricultural pre- and post-harvest losses reduced from 40% to 15%; 3. Number of beneficiaries accessing climate-oriented crop insurance increased 4. Number of farmers accessing affordable appropriate agricultural inputs increased 5. Number of households and acreage under sustainable land management (SLM) increased for agricultural production: 6. Support for the reclamation of degraded land 7. Area under integrated soil nutrient management increased 8. Farm area under conservation agriculture increased 9. Total area under agroforestry at farm level increased
Increase crop productivity through improved irrigation	<ol style="list-style-type: none"> 1. Acreage under irrigation increased 2. Production efficiency from irrigated fields increased
Improve productivity in the livestock sector through the Implementation of CSA interventions	<ol style="list-style-type: none"> 1. Improved productivity of pastoralists by re-seedeing rangelands in the Lower Side of the County 2. Annual ASAL's water harvesting and storage increased small dams, water pans, and large multipurpose dams 3. Animal disease control and surveillance improved 4. Number of customers/beneficiary farmers accessing climate-oriented livestock insurance increased. 5. Efficiency in dairy management improved for households. 6. Manure management improved through the adoption of biogas technology by households, and abattoirs.
Improve productivity in the fisheries through Implementation CSA interventions	<ol style="list-style-type: none"> 1. Insurance packages piloted and developed for the Adaptation. 2. Fisheries sub-sector and Aquaculture production increased 3. Number of cages for fish farming increased 4. Number of fish ponds increased 5. Number of farmers using low-carbon (recirculating) aquaculture systems increased

Diversify livelihoods to adjust to a changing climate	<ol style="list-style-type: none"> 1. Households supported to adopt diversified adaptive enterprises/value chains for sustained livelihoods and nutrition security 2. Small-scale famers, pastoralists, and fisher communities supported to transition to specialized and market-oriented output in priority value chains, including drought-tolerant values chains.
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Climate proofing infrastructure

The main strategic objective of this climate intervention is to reduce risks to communities and infrastructure resulting from climate-related disasters, such as droughts and floods. Floods and erratic rains have significant negative economic consequences across the County with serious and extensive socio-economic effects at the household and community levels, especially for vulnerable groups such as women, the elderly, persons with disabilities, children, youth, and members of marginalized and minority communities. The current responses to these effects are reactive rather than proactive, and are impeded by inadequate early warning systems, lack of disaster management coordination, and limited support to build disaster preparedness. Table 8 below shows the community priority actions to reduce the negative effects of climate change on infrastructure, and the expected results of such interventions

Table 8: Community priority actions to reduce the effects of climate change on infrastructure and the expected results of those actions

Priority actions	Expected results
To improve county road network condition and provide quality and safe roads.	<ol style="list-style-type: none"> 1. Opening of new access roads 2. Maintenance of earth and gravel roads
Increase the number of households and entities benefiting from devolved adaptive services	<ol style="list-style-type: none"> 1. Local adaptation priorities addressed that are identified and monitored by community committees comprised of women, men and youth
Improve the ability of people to cope with, and infrastructure to withstand, floods	<ol style="list-style-type: none"> 1. Water and flood control, including dams/dykes, drainage systems, and water storage 2. Flood early warning systems improved, taking advantage of widespread access to mobile technology that provides avenues of dissemination of information 3. Integrated flood management plans, for example, water storage, drainage networks and reforestation 4. Improved accessibility of roads by grading and murraming all-weather drifts and bridges

Improve the coordination and delivery of disaster risk management	<ol style="list-style-type: none"> 1. Improved coordination of disaster risk management including floods, droughts, disease outbreaks, landslides, and other disasters by enacting and implementing the <i>Disaster Risk Management Act</i> that includes the establishment of a County Disaster Risk Management Authority to coordinate disaster response 2. Engendered County Disaster Risk Management Committees to coordinate disaster response at county Level 3. An established County Disaster Risk Management Fund to provide funds for disaster preparedness, mitigation of disaster impacts, and disaster recovery measures particularly for vulnerable groups.
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Water

The water sector comprises of various subsectors including: Domestic Water provision, Sanitation and Irrigation subsectors. The key function of these subsectors are: to ensure access to adequate, reliable and affordable quality water; provision sewerage systems in the urban centres; provision of improved sanitation facilities in the market centres and creation of awareness on importance of safe sanitation to households.

The NCCAP of 2018-2022 seeks to increase annual per capita water availability from 647 M³ to 1000 M³. To help achieve this target, the Embu County Climate Action Plan proposes concrete actions to enhance the resilience of the water sector by ensuring adequate access to, and efficient use of water for agriculture, manufacturing, domestic use, wildlife, and other uses. The planned county water-related climate change actions involve women who help to reduce water wastage at the household level, and to some extent, also supports water agencies to reduce wastage. Table 9 below shows the community prioritized climate action in the water sectors that would enhance provision of clean and adequate water and its efficient and sustainable use

Table 9: Priority climate actions in the water sector to enhance its availability and sustainable use for domestic, irrigation and industrial purposes

Priority actions	Expected output
<ol style="list-style-type: none"> 1. Construction of treatment plant to provide safe, clean drinking water. 2. Construction of Water storage tanks 3. Drilling of boreholes 4. Protection of water sources and catchment areas 	Improved access to adequate, reliable, and affordable quality water

5. Expansion of Water distribution networks	
6. Improve sanitation and drainage systems to harness and manage storm water in urban areas.	1. Availability of quality and adequate sewerage systems in urban centres
7. Construction of sewerage systems in major towns	2. Availability of sewerage treatment facilities In upcoming market places
8. Construction of decentralized treatment facilities for growing markets places	
9. Construction of irrigation distribution networks	1. Increased area under irrigation
10. Sensitize and train farmers on irrigation water harvesting.	2. Increased capacity and knowledge on irrigation amongst farmers
11. Support farmer led irrigation projects.	3. Better protected catchment areas and river banks
12. Protect catchments areas and riverbanks.	

Environment and natural resources

The sector comprises of two main subsectors namely natural resources and solid waste management which are mandated to implement environmental policies and practices. These policies and practices aim to protect the environment and other natural resources by: ensuring compliance with environmental legislation; rehabilitation of hills, water catchment, wetlands; protection of river line and riparian land; promotion of green energy; sustainable natural resources management and conservation; forestry extension services; increasing forests and tree cover; awareness creation on forest values and products; implementations of government and world related agenda on natural resources

Actions to increase forest cover and prevent deforestation and forest degradation have important benefits, including improved livelihoods of majority of Embu county residents, while enhancing the county climate resilience. Forests provide ecosystem services that contribute to reduction in the vulnerability of people and wildlife. Forests also provide hydrological ecosystem services, such as regulation of storm waters. Upper watersheds could increase infiltration of rainwater, reduce surface run-off, and control soil loss. Increasing forest cover can also mitigate the harmful effects of GHG emissions by acting as “sinks” through carbon sequestration. Table 10 below shows the climate actions that communities in Embu County have prioritized in the environment and natural resources sector so as to reduce the effects of climate change

Table 10: Priority climate actions identified by the communities in Embu County to protect the environment and natural resource sector from the adverse effects of climate change and the expected outputs of those interventions

Priority actions	Expected output
<ol style="list-style-type: none"> 1. Undertake public education and environmental awareness campaigns. 2. Protect catchment areas, riverbank and riparian land. 3. Promotion of environmentally friendly practices and technologies 4. Prepare and disseminate advisories and information. 5. Develop legislative framework. 6. Rehabilitation and conservation of forests, hills, swamps, wetlands, springs areas 	Sustainable utilization and management of county natural resources and landscapes
<ol style="list-style-type: none"> 1. Acquisition of integrated solid waste management infrastructure 2. Adoption of circular economy principles (Reduce, Re-use, Re-cycle). 3. Establish material recovery facilities. 4. Establish transfer stations. 5. Waste to energy facilities 	Sustainable solid waste management
<ol style="list-style-type: none"> 1. Mainstreaming of climate change policy and legal framework into county laws 2. Promoting partnership in addressing climate change issues 3. Implementation of climate change policies 4. Clean energy transition initiatives 	Climate change mitigation and adaptation actions

Energy

This sector seeks to give focus on provision of renewable energy, security and lighting. The three subsectors are expected to advocate for affordable/alternative sources of energy, curb vandalism and destruction of the existing streetlights and floodlights whilst Increasing lighting coverage in the county. Table 11 below shows the priority actions identified by the community which could reduce the negative adverse effects on the energy sector.

Table 11: Priority actions to reduce the effects of climate change on the energy sector and the expected outputs of the intervention

Priority actions	Expected outputs
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1. Formulation and implementation of policy and legal framework for adaption of green energy 2. Involve public private partnership in developing green energy power farms i.e., wind, solar, hydropower	Affordable/alternative sources of energy
3. Lighting of public spaces such as bus parks, markets, and junctions 4. To Support lighting up poor local communities 5. To Support distribution of electricity to unreached areas within the county	Increase lighting coverage in the county

CHAPTER FOUR

Delivery Mechanisms for CCAP

4.1 Introduction

The Embu County Climate Change Action Plan (ECCCCAP) will rely on a number of institutions, stakeholders and structures for effective implementation. Having been developed through a participatory process, the successful implementation of ECCCCAP will similarly require a participatory approach that involves a number of actors and stakeholders. Besides the stakeholders a number of mechanisms and community structures will be key enablers of the implementation process.

4.2 Enabling Factors

The Climate Change Unit (CCU), in consultation with relevant stakeholders in the County has identified several factors that will be critical in implementation of the ECCCCAP. These will provide an enabling environment for achieving the objectives set out in the CCCAP.

4.2.1 Enabling Policy and Regulation

A critical enabling policy and regulatory environment is key for effective implementation of the CCCAP. Some of the factors that are key for this process include:

1. A robust legal and regulatory framework that encourages mainstreaming of climate change in all the county actions
2. Adequate engagement with the community. This ensures views and perspectives of different stakeholders are well accounted for, including those expressed by community reps and marginalized groups.
3. Effective coordination mechanism for all climate action. This will be achieved by the CCU, steering committee and the ward climate change committee.
4. Adequate consultation – the CCCAP being a crosscutting document impacts on all sectors and thus the need to engage and consult with a wide range of stakeholders. This ensures that the views and perspectives of all stakeholders are captured.
5. An appropriate measurement, reporting and verification system. This will ensure that all climate actions can be measurable with a baseline ie. SMART indicators

Some of the identified enablers are as follows:

The legal framework

Existence of a comprehensive policy and regulatory framework for climate change at the national and county levels is critical to enable the effective implementation of CCCAP. Such frameworks articulate the process, regulations and reporting requirements. At the county level, support will be needed to develop appropriate regulations and also to cascade some of the laws of at the national government.

Embu county already has a developed a climate change fund act as well as the climate change draft policy. This legal and policy framework will provide a guide in development and utilization

of county climate change funds and enable climate finances to address county specific issues. Besides the existing legal and policy framework, the county will prioritize:

1. Development and implementation of the needed regulations to effectively cascade to the national climate change act 2016.
2. Support alignment of county legislation to the national climate change act 2016
3. Review the climate change fund regulations and bill

Other legal frameworks that will guide the implementation of ECCCCAP include:

- Environmental Management and Coordination Act
- The Kenya Vision 2030
- The National Climate Change Response Strategy
- National Climate Change Action Plan
- The National Adaptation Plan (2015-2030)
- Kenya Climate Smart Agriculture Strategy (2017-2026)
- Disaster Management Policy (County Draft 2022)
- National Climate Change Framework policy (2018)

Socio-economic factors

The success of the CCCAP will need a strong social and economic framework e.g. Supporting subsidies like clean energy. A social and economically stable community is more able to embrace adaptation and mitigation actions to combat climate change and reduce poverty.

Environmental framework

For a successful implementation of CCCAP there will be need to invest in the environment around the community. This will include reducing environmental hazards that make it difficult to for the community to adapt to climate change. An investment in environmental conservation and protection is key in supporting the implementation of CCCAP e.g. Restoration of water towers and enforcement of laws that govern environmental conservation

Technological framework.

Actions relating to technological innovations should be embraced in addressing climate change. Such actions are enablers of successful adaptation and mitigation actions such as: water harvesting technologies, clean lighting and cooking technologies, waste recycling and climate information systems.

Political framework.

Effective delivery of CCCAP (2023-2027) will require a supportive political environment. This is because political leadership is a strong component of the community leadership, and without their support, little can be achieved in implementing the CCCAP. The current political leadership is highly supportive of climate change actions, and this is evidenced by the timely approval of climate change budget.

4.2.2 Mainstreaming in the CIDP

The just concluded 3rd generation CIDP 2023-2027 ensured that all sectors were mainstreamed in the climate change actions and their priority projects. This mainstreaming was done to ensure that all sectors work towards the supporting the county's efforts of fighting the adverse effects of

climate shocks. Table 12 below shows some of the climate actions that were budgeted for under various sectors in the CIDP.

Table 12: Climate change actions in different sectors that were mainstreamed and budgeted for by the county under the CIDP

Sector	Climate action mainstreamed
Agriculture, Livestock & Fisheries	<ul style="list-style-type: none"> • Conservation agriculture • Promotion of Fodder Production • Promotion of Fish Farming as Alternative Income Generation (AIG) Projects • Including Fish Preservation and Cooling • Adoption of Drip Irrigation • Climate Smart Agriculture-Multilevel Gardening • Urban gardening
Tourism & Trade	<ul style="list-style-type: none"> • Investing in Ecotourist Structure • One Village One Product • Planting Fruit Trees in Mwea national Park to prevent animals from roaming on croplands
Land & Physical Planning	<ul style="list-style-type: none"> • Storm Water Drainage • Green spaces in Town • Automation • Housing Development for the elderly
Finance and Planning	<ul style="list-style-type: none"> • Automation of Services to reduce Paper Work • Data and Information statistical support (Integration)
Gender Culture and Social Children Servicers	<ul style="list-style-type: none"> • Children Support Programs • Projects for Vulnerable – Cottages Industries • Support for PWDs – Kitchen gardens • Culture Enhancement programs e.g. traditional Conservation and Propagation
Water Sector	<ul style="list-style-type: none"> • Water Storage and Flood control • Expansion of Water Treatment Plants • Expansion of water Distribution services • Construction of Mega dams ground water abstraction • Development of Irrigation schemes
Environment & Forestry	<ul style="list-style-type: none"> • Investments in tree seedlings nurseries • Distribution of Cook Stoves and solar Lamps • Waste Management Infrastructure • Biogas Systems
Infrastructure, Energy,	<ul style="list-style-type: none"> • Investment in solar firms

Housing & transport	<ul style="list-style-type: none"> • Clean cooking energy • Solarization Of Buildings • Climate proofed bridges, drifts, Murram roads , Culverts
Disaster Management Sector	<ul style="list-style-type: none"> • Invest in Early warning Systems • Collaboration with the metrological department in the climate information systems • Conducting drills regularly • Climate Proofing Related infrastructure
Health Sector	<ul style="list-style-type: none"> • Greening of Health institutions • Installation of biogas systems • Solarization of health facilities
Education sector	<ul style="list-style-type: none"> • School Greening Projects • Revival of environmental clubs • Green Innovations and Competitions

4.2.3 Multi-stakeholder participation processes

A multi-stakeholder workshop was held to consolidate the views of different stakeholders and also validate the climate action plans from the various wards across the county. The workshop provided a platform for the stakeholder to bring up their views, inputs and perspectives for the purpose of preparing the Embu County Climate Change Action Plan (CCCAP)

The workshop followed the following key steps:

Data compilation for the preparation of the multi stakeholder workshop

This was the first step which involved preparation for the workshop. Various community representatives, committee members and local administration were invited in their wards to compile the data relating to the priority projects highlighted during the community engagement process that had taken place at the ward level.

Selection and invitation of stakeholders

Identification of stakeholders was based on the needs and the interests the various stakeholders have in various sectors. The stakeholders included Water Resource User Associations (WRUAs), Community Forest Associations (CFAs), Faith based organizations (FBOs), Community Based Organizations (CBOs), Civil societies, Critical departments of the county government, County assembly, Academia and also development partners. All special interest groups including youth, women, and PWDs were facilitated to attend the meeting.

Identification and appointment of workshop facilitators

These were drawn from the various technical fields in the academia, research organizations and government departments. Their role was to lead stakeholders' task teams during the group discussions

Overview of CCCAP and PCRA presentations

The stakeholders were taken through a presentation on the process of PCRA and how the community engagements took place. They were also taken through the critical risks and hazards that were identified during the community engagements process. They were also taken through the various components expected in CCCAP.

Presentation of climate and weather scenarios

Stakeholders were taken through the various climate and outlooks for Embu County expected under different climate change scenarios based on scientific climate projections. They were also taken through different traditional ways of predicting weather conditions. Scientific projections were done by the meteorological department while the traditional weather predictions methods were presented by a community member working with Information Technology and Indigenous Knowledge with Intelligence (ITIKI) organization.

Multi stakeholder task teams

The stakeholder task teams were done on the basis of the sector interests. Those with an interest in a specific sector participated in consultative discussions and analysis of the sector priority projects. They incorporated their inputs, views and perspectives on the actions listed.

Plenary discussions

The task teams selected the lead presenter in the concluded discussions. This allowed plenary contributions to the group presentations.

4.2.4 Finance - County Climate Change Fund

Embu County has established a County Climate Change Fund finance, facilitate and coordinate financing Climate Change Adaption and Mitigation projects. Some of the operationalized institutions from this legislation include the county climate change unit, ward climate change planning committee and the Embu county climate change steering committee. The fund establishes the Embu County Climate Change Fund Planning Committee that manages the fund by developing, identifying and managing projects that will be supported by the fund. The functions of the County Climate Change Fund Planning Committee are:

- To develop projects eligibility criteria
- To receive, compile, evaluate and approve the projects submitted by the Ward Planning Committee based on the agreed criteria, and prepare the County Climate Finance Budget;
- Based on criteria, ensure equitable allocation of the moneys available in the Fund with regard to the projects received from the Ward Planning Committee;
- To provide monitoring and evaluation for projects financed by the Fund;
- To provide the essential linkages between the Steering Committee and the County Assembly with regard to management of the Fund;
- To coordinate capacity building for Climate Change Awareness and Climate Finance in the County;
- To coordinate research and development for Climate Change Finance in the County;
- To mobilize funds for Climate Change Finance in the County;
- To design a climate change awareness strategy for the county;
- To develop a climate finance research priority needs list for the county;

- To assign and coordinate technical assistance from County departments to projects funded under this Act; and
- To assist the Steering Committee in developing the Climate Finance Framework

The Act also establishes the Ward Planning Committees to coordinate public participation in the implementation. The functions of these committees are:

- To consult with the community on the relevant climate finance activities;
- To facilitate public participation at the ward level;
- To receive project proposals from the community at the ward level;
- To develop technical components of project proposals;
- To procure goods and services for projects, including development of procurement plans for each project at ward level;
- To monitor implementation of projects at the ward level
- To prepare the budget at the ward level;
- To prepare the ward level project reports;

4.2.5 Governance - County Government Structures

The CCCAP implementation will be done in two levels:

1. At the community level

This will be coordinated by the local administration composed of ward administrators and subcounty administrators. Critical departments have representation at ward and sub-county levels such as ward agricultural officers, water and environment ward and subcounty officers. The key role at this level is implementation and monitoring.

2. At the county level

The implementation at the county level occurs through:

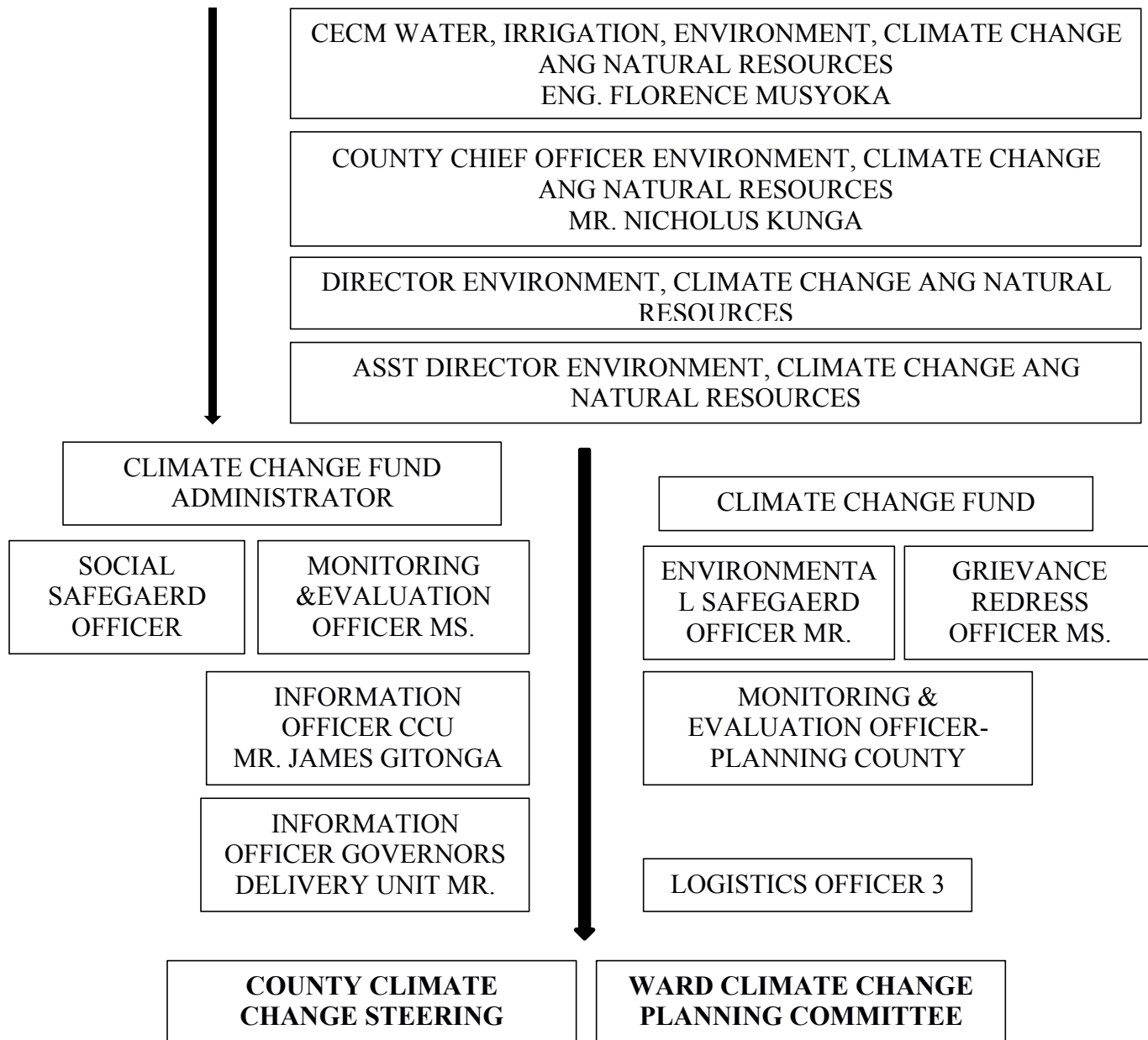
- The executive: which deals with coordination and implementation
- The county assembly: which deals with legislation and budgetary approvals.

The executive comprises of:

1. The Office of the Governor which offers the overall coordination/climate setting
2. The office of the CEC which deals with policy matters
3. The office of the Chief Officer which plays the technical/supervisory role
4. The office of the Director which is the Implementation arm
5. The office of the Support staff which offers support in clerical, ICT matters/ implementation

4.2.6 Hierarchy of Administration Climate Change Unit

CLIMATE CHANGE UNIT ORGANOGRAM



4.2.7 Governance - Climate Change Planning Committees

The governance structure of management of climate change issues in the county has the Climate Change Planning Committees as the basic units of management within the County. In Embu County, the Climate change Committees have been established by the Climate Change Fund Act,

2019 at two levels. At the County level, the Act establishes the County Climate Change Planning Committee while at the ward level, it establishes the Ward Planning Committees. The membership of the County Climate Change Committee is as follows:

- One person, not being a public officer, appointed by the Executive Member, who shall be the chairperson
- The Chief Officer in charge of Environment, Natural resources and Climate Change
- The Chief Officer in charge of water and irrigation
- The Chief Officer in charge of Finance and Economic Planning;
- The Chief Officer in charge of Agriculture;
- The Chief Officer in charge of Public Health;
- The Chief Officer in charge of Energy
- The County Drought Coordinator;
- The County Director of the National Environment Management Authority in the County;
- The County Director of the Meteorological Department in the County;
- One person from a Fund Participating Institutions;
- One person representing of Public Benefit Organizations operating in the County;
- A representative of Ward Planning Committees nominated by all the Ward Planning Committees on rotational basis
- A representative of women;
- A representative of youth;
- A representative of persons with disability and
- A representative of faith-based organization

The membership of the Ward Climate Change Committee is as follows:

- Community representatives appointed as follows:
 - One person nominated by youth in the ward;
 - One person nominated by women in the ward;
 - One person nominated by persons with disability in the ward;
- One person representing Ward based Public Benefit Organizations/CBOs;
- One person representing faith-based organizations in the ward
- The Ward Administrator, shall be an ex official of the committee to provide advisory services, establish interlink ages and provide necessary co-ordination;
- Four representatives nominated by communities representing various locations in the ward;
- A Secretary elected by the ward planning committee members for the respective Ward.
- One person, elected by the Ward Planning Committee members who shall be chairperson and who shall meet following minimum qualifications:
 - Must be a resident of the respective ward;
 - Must at least be able to read and write in English;
 - Good leadership and trusted by the ward community.
 - Proven track record of community services engagement in ward development initiatives;
 - Be a member of a Ward Planning Committee.

- One person, elected by the Ward Planning Committee members who shall be treasurer and who shall meet following minimum qualifications:
 - Must be a resident of the respective ward;
 - Must at least be able to read and write in English;
 - Good leadership and trusted by the ward community.
 - Proven track record of community services engagement in ward development initiatives;
 - Be a member of a Ward Planning Committee.


4.2.8 Climate Information Services & Climate Data Access

The ECCCAP identifies several key findings regarding the climate risks Embu County is facing, including temperature changes, rainfall patterns, and extreme weather events. These risks threaten agriculture, water resources, infrastructure, public health, biodiversity, and vulnerable communities. Further the projected future climate scenario indicates a considerable variation of climate patterns, severe weather events varying in intensity, distribution and frequency. The CCCAP recommends strategic adaptation investments and actions to address these risks and enhance resilience.


Currently, most of the community does not have a direct access to sufficient weather information services, seasonal forecasts and early warning of extreme weather events. This lowers their adaptive capacity to climate hazards. The weather advisories produced at county level give a generalized advisory for the whole county which may not directly address the need of a particular community. Priority areas for investment and action identified include providing climate information services through a participatory scenario planning meeting which will be carried out at the ward level to increase effectiveness of the forecast and also increase accessibility of advisory information.


Participatory scenario planning

This involve downscaling of the national seasonal forecasts down to the ward level to define the expected seasonal outlook of the weather conditions during the rainy seasons, March-April-May (MAM) and October-November-December (OND). The seasonal forecast downscaling is followed by a 2-day stakeholders meeting involving officers from county Meteorological office, Ministry of Agriculture, Ministries of Water and Public Health, Agriculture Sector Development Support Programme (ASDSP), stakeholders from NGOs, local administration, health sector, energy sector, farmers, scientists from Kenya Agriculture and Livestock Research organization (KALRO), county officer among others. These stakeholders give their expertise inputs while putting into consideration the outcome of the downscaled forecast scenario to generate a climate advisory (Figures 4.1 and 4.2).




KENYA METEOROLOGICAL DEPARTMENT
P.O. Box 30259-00100, NAIROBI





Investing in rural people




COUNTY METEOROLOGICAL SERVICES OFFICE, EMBU
P.O. BOX 171 - 60100, EMBU

Kenya Cereal Enhancement Programme Climate Resilient Agricultural Livelihoods Window (KCEP-CRAL)
in Collaboration with County Government of Embu and County Meteorological Services, Embu

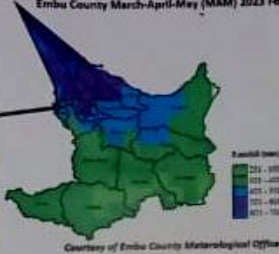
**PARTICIPATORY SCENARIO PLANNING ADVISORY BULLETIN BASED ON WEATHER
FORECAST FOR MARCH-APRIL-MAY (MAM) 2023 FORECAST – ("LONG" RAINS)**

Fodder conservation (Silage making)

National MAM 2023 Weather Forecast





County MAM 2023 Weather Forecast



EMBU COUNTY WEATHER FORECAST HIGHLIGHTS


The March- April- May (MAM) 2023 weather forecast for Embu County indicates that the county is expected to experience near normal with a tendency to below normal rains. Rainfall distribution is expected to be fair to poor.

The following wards are expected to receive near normal rains Kyeni North, Kagaari North, Gatari North, Runyenjes Central, Gatari South, Ruguru Ngandori and Nginda. The rest of the wards will receive below normal rainfall, with Makima, Mavuria and Kiambere wards receiving highly depressed amounts (< 300mm).

AGRICULTURAL ADVISORIES

NORMAL RAINS
Kyeni North, Kagaari North, Gatari North, Runyenjes Central, Gatari South, Ruguru Ngandori & Nginda







RUNYENJES SUB-COUNTY: Kyeni North, Kianjokoma, Kagaari North

Maize	Farmers are advised to plant early maturing crop varieties e.g:-Maize (Hybrid-5 series, Pannar 15, Pioneer 30 G19).
Beans	Beans (KAT (B1) B9, B69 & 858), Nyota and Angaza.

RUNYENJES SUB-COUNTY: Kathanjuri, Kigumo, Mbiruri, Ugweri, Ndurari

Maize	Farmers are advised to plant the following varieties: -Maize -Duma 41, Duma 43, DH04, KDV4 and KDV6, Pannar 3M-05 & 4m-13), Pioneer 2848, Simba 61, WS403)
Beans	Beans (KAT(B1) KAT B9, KAT X69, KAT X56).

Agronomic activities

Farmers are advised to do proper management of tea and coffee crops. Fodder crops/trees:- Napier (Bana grass & Kakamega varieties) under Tumbukiza method, Bracharia, Rhodes grass, Calliandra, Desmodium, Mulberry. Farmers should also manage banana, Mangoes, Yellow passion crops, plant vegetables (cow peas, amaranthus, black night shade), Cassava varieties (Ndolo, Mucierici), Sweet potato varieties KSP 004, KEMB 10 and Bungoma. Weather related diseases (Foot and mouth, pneumonia, worms, tick borne diseases, mastitis, lumpy skin disease, anthrax, new castle disease, fowl typhoid and coccidiosis) are expected to increase. Farmers are therefore advised to observe routine livestock management practices (deworming, tick control, hoof trimming, clean animal environment, vaccination). Agrovets are advised to stock vaccines and drugs for vaccination and treatment in case of an outbreak.

Post-Harvest Management

Ensure early harvesting to avoid losses such as shattering, Do proper drying and storage, monitor aflatoxin incidences. Use tarpaulin for threshing and drying to the right moisture content (11-12%), Use hermetic bags e.g. PIC and A-Z, Clean and dust the stores before storage.

Marketing

Ensure proper storage to sell later, Encourage aggregation of cereals in KCEP certified warehouses to fetch better prices.

Flash Floods

Avoid planting in river banks and swampy areas to avoid crops being swept away or submerged, Plant along the contours, Inaccessible rural roads and bridges

Land/Mud slides

Planting indigenous and fruit trees in hilly areas to control possible landslides

Figure 8: Agricultural weather planning advisory brochure for Runyenjes sub-County for the March–April–May 2023 long rains

Timely dissemination of the CIS at the ward level will reduce vulnerability emanating from climate hazards.

4.2.9 Resilience Planning Tools

Embu county climate change action plan will depend on participatory scenario planning to be held at ward levels as explained by figure 4.1 and 4.2 in building resilience to effects of climate change as this reduces the shocks before the hazards occur.

The existence of indigenous traditional knowledge in Embu County is also very instrumental to building resilience. This knowledge will be tapped, coordinated and disseminated across the wards in the county

Resilience is the capacity of social, economic and environmental systems to cope with a hazardous event, trend, or disturbance. It is manifested through responding or reorganizing in ways that assert the essential function, identity, and structure of the system, while also maintaining the capacity for adaptation, learning and transformation. The preparation of ECCCCPA has considered a number of tools that would help build the resilience capacity of the community. These resilience tools include;

- Adaptive capacity
- Transformative capacity
- Coping capacity
- Absorptive capacity
- Threshold capacity
- Recovery capacity

Adaptive capacity: Is the ability of systems, institutions, humans, and biological organisms to adjust to potential damage, take advantage of opportunities, or respond to consequences.

Transformative capacity: Refers to the ability to transform, in terms of structure and function. It involves systemic changes that enable anticipatory, absorptive and adaptive capacities. The ability to absorb the stresses and shocks of the negative impacts of hazardous events

Coping capacity: Is the ability of people, organizations or systems to use their available skills and resources to manage adverse impacts. This requires constant awareness creation and availing of resources for the same.

Absorptive capacity: This is capacity of a biological system to recover from a hazardous event

Threshold capacity: This refers to the ability of a system, organism, or an individual to withstand adverse effects without their breaking point (threshold).

Recovery capacity: This refers to the ability of an individual, organism or a system to bounce back after being decimated or destroyed by climate change impacts

Implementation of this CCCAP will use all the above tools to mitigate against the effects of climatic hazards in Embu County

4.2.10 Measurement, Reporting and Verification

The Paris Agreement under UNFCCC sets out an enhanced transparency framework for climate change action and support. The Climate Change Unit will provide information on mitigation, adaptation and the support received such as;

- County climate inventory to enable tracking of the progress on achieving the NDCs within the county
- All information related to climate change impacts, vulnerability and adaptation
- Information on financial technology development and capacity building needs as necessary

The county's transparency framework is based on Measurement, Reporting and verification plus (MRV+) defined in NCCAP as the integrated framework for measuring, monitoring, evaluating, verifying and reporting results of mitigation, adaptation actions and synergies between them. The county will comply with the integrated system of reporting and verification by ensuring:

- Upscaling on transparency and accountability during the implementation of all climate actions including procurement and financial management
- Provision of information to all including:
 - The funding received from development partners
 - Announcements inviting communities to participate in engagements, project proposals and procurement opportunities
 - Ensure the vulnerable groups and PLWDs get the information they need to participate
 - Information of various mitigation and adaptation actions being implemented and the associated budgets
- Operate a publicly accessible county climate change resource center that will have a robust and up to date climate change knowledge management system and in updated climate change information portal with platforms for children, youth, women, marginalized and minority communities.
- Use knowledge harvesting techniques to capture and share information including a climate change based informational knowledge especially from elderly.
- Update the Embu County website to ensure that all climate information is uploaded for access by all.
- Ensure all departments reports on their progress achievement regarding CCCAP implementation.
- Ensure efficient reporting processes for county governments and where possible draw an established reporting procedure which will be integrated to National Integrated Monitoring and Evaluation system.
- Report on all climate change finance that supports the delivery of CCCAP.
- Use gender disaggregated data where possible and prioritize the collection of this data if not available.
- Invest on mechanisms that addresses timely delivery of climate information, early warning system and disaster warning reporting.

4.2.11 Institutional Roles and Responsibilities

Table 13 below shows the roles to be played by the various institutions that will be involved in implementing ECCCCAP. Every institution will play a unique role in enabling various climate actions, and will take specific responsibilities in achieving those actions

Table 13: Roles expected to be played by various institutions in implementing the ECCCCAP. The table also shows the actions that will be enabled by each institution and their responsibilities

Enabling Actions	Institutions & Relevant Partners	Responsibilities
Political goodwill and support	Office of the Governor	<ul style="list-style-type: none"> • Political support to the implementers • Coordination and donors contracting • Nomination of the CEC Climate Change • Mainstreaming climate change actions in the relevant county actions • Generation of best practices
Legislation resource allocation	The County Assembly	<ul style="list-style-type: none"> • Legislation of key laws • Budgetary allocation to climate action
Standards and Regulations and compliance enforcement	NEMA	<ul style="list-style-type: none"> • Providing approvals, environmental guidelines for projects • Capacity building • Monitoring and enforcing compliance of climate change interventions • Integrating climate risks and vulnerability assessment into all forms of assessment
Develop and operationalize	Climate Change Unit	<ul style="list-style-type: none"> • Coordination • Vulnerability assessment • Capacity building-public awareness • Action planning • Laying policy framework

		<ul style="list-style-type: none"> • Coordination of implementation for CCCAP
Integrate climate change to schools	KICD	<ul style="list-style-type: none"> • Program support • Knowledge management
Funds flow Regulation	National Treasury & Climate Change Department	<ul style="list-style-type: none"> • Timely release of funding • Financial monitoring • Project coordination • Developing strategy and making regulations that set out financial compliance procedures
Timely climate information systems	Meteorological Department	<ul style="list-style-type: none"> • Early warning systems • Managing stations and climate data provision
Data analysis	County Department of Planning and Economic development	<ul style="list-style-type: none"> • Provision and validation of critical data and validation • Data providers for county climate change action plan
Disaster management and response	National Disaster Management Authority	<ul style="list-style-type: none"> • Provide early warning on disaster mitigation
Research (Agricultural)	Kenya Agriculture and Livestock Research Organization	<ul style="list-style-type: none"> • Provision of critical data and validation
Research and knowledge transfer	University of Embu	<ul style="list-style-type: none"> • Dissemination of critical knowledge • Support in key research • Help to provide evidence and science for knowledge-based decision making by wards • Conduct research on critical aspects of climate change within the project • Provide Guidance of various possible ways of reducing emissions
Coordination and mobilization	Local Administration	<ul style="list-style-type: none"> • Community mobilization
Financing	World Bank	<ul style="list-style-type: none"> • Provision of funds for implementation of ECCCCAP
Advocacy	Civil Society	<ul style="list-style-type: none"> • Public outreach • Sensitization • Monitoring
Technical support	Government Agencies (TARDA, KENGEN)	<ul style="list-style-type: none"> • Support with technical capacity
Financial support	Financial Institutions	<ul style="list-style-type: none"> • Financing critical climate actions

Liaison with community	Ward Climate Change Planning Committee	<ul style="list-style-type: none"> • Coordination of community projects • Monitoring and evaluation of projects
Technical support on water projects	Department of Water	<ul style="list-style-type: none"> • Support in identification of implementation of water projects
Technical support on agriculture project	Department of Agriculture	<ul style="list-style-type: none"> • Support in identification and implementation of Agricultural projects
Tree nursery establishment support	KFS	<ul style="list-style-type: none"> • Provision of seedlings • Capacity building • Provide support on climate change to county government • Provide technical assistance based on needs identified • Knowledge and information management center • Coordination • Develop strategies for building resilience • Guide towards 10% forest cover achievement
Involvement and Integration of Media	<ul style="list-style-type: none"> • Mainstream Media • Social media 	<ul style="list-style-type: none"> • Disseminate Timely information especially in times of Disaster and Calamity e.g. warnings • Provide Critical information relating to Resilience and relevant climate Action
Mainstream Climate Change actions to special interest groups	Youth Organizations, Women Groups, Marginalized, & PWD Organizations	<ul style="list-style-type: none"> • Will be Engaged in Planning, Implementation and Monitoring Climate Change Interventions • Women and youth PWD will help in Review progress. • Youth will Engage in Tech-Innovations

4.3 Implementation and Coordination Mechanisms

4.3.1 Climate Change Unit (CCU)

The priority of the climate change unit will be to operationalize climate fund and embark on immediate allocation of budgets to prioritize mitigation and adaptation. These actions will include review and establishment of key regulations, management and oversight of function. The climate change unit will be responsible of the implementation of the County Climate Change Action Plan (CCCAP) by undertaking the following activities:

- Sensitization and capacity building of all the stakeholders.
- Equipping the CCU staff to enable them function.
- Undertake the review of key laws that will govern its operation.
- Establish other laws and policies required.
- Ensure compliance with FLOCCA World Bank requirements for counties funding.
- Comply with fund regulations especially the Fund Accounting and reporting deadlines.
- Prepare and maintain all correspondences to and from the unit.
- Serves as the coordinating unit for all the climate change actions.
- Monitor the mainstreaming and implementation of climate actions in all sectors in the county.

Composition of the Climate Change Unit

The climate change unit is made up of the following officials:

- 1) The CECM Climate change appointed by the governor
- 2) The Chief Officer environment and climate change
- 3) The Director in charge of climate change unit
- 4) The fund administrator
- 5) The focal persons for:
 - a. Environmental safeguards (1 person)
 - b. Social safeguards person (1 person)
 - c. Grievances and redress mechanisms (1 person)
 - d. The accountant (program Accountant)
 - e. Monitoring and evaluation (1 person)

The department operates through the support of the county climate steering committee made of technical officers from the line ministries.

4.3.2 County Climate Change Planning Committee

The County Climate Change Planning Committee for Embu County was established by the Embu County Climate Change Fund Act, 2019. The functions of the County Climate Change Fund Planning Committee are:

- To develop projects eligibility criteria
- To receive, compile, evaluate and approve the projects submitted by the Ward Planning Committee based on the agreed criteria, and prepare the County Climate Finance Budget;
- Based on criteria, ensure equitable allocation of the moneys available in the Fund with regard to the projects received from the Ward Planning Committee;
- To provide monitoring and evaluation for projects financed by the Fund;
- To provide the essential linkages between the Steering Committee and the County Assembly with regard to management of the Fund;

- To coordinate capacity building for Climate Change Awareness and Climate Finance in the County;
- To coordinate research and development for Climate Change Finance in the County;
- To mobilize funds for Climate Change Finance in the County;
- To design a climate change awareness strategy for the county;
- To develop a climate finance research priority needs list for the county;
- To assign and coordinate technical assistance from County departments to projects funded under this Act; and
- To assist the Steering Committee in developing the Climate Finance Framework

The membership of the County Climate Change Committee is as follows:

- One person, not being a public officer, appointed by the Executive Member, who shall be the chairperson
- The Chief Officer in charge of Environment, Natural resources and Climate Change
- The Chief Officer in charge of water and irrigation
- The Chief Officer in charge of Finance and Economic Planning;
- The Chief Officer in charge of Agriculture;
- The Chief Officer in charge of Public Health;
- The Chief Officer in charge of Energy
- The County Drought Coordinator;
- The County Director of the National Environment Management Authority in the County;
- The County Director of the Meteorological Department in the County;
- One person from a Fund Participating Institutions;
- One person representing of Public Benefit Organizations operating in the County;
- A representative of Ward Planning Committees nominated by all the Ward Planning Committees on rotational basis
- A representative of women;
- A representative of youth;
- A representative of persons with disability and
- A representative of faith-based organization

4.3.3 Challenges of the implementation of CCCAP

Developing and implementing a County Climate Change Action Plan is a complex process with its own inherent challenges and constraints. It is similarly expected that the process of implementation of the action plan cannot be devoid of challenges. Table 14 below highlights some of the probable challenges that may arise during the implementation of the CCCAP.

Table 14: Some of the possible challenges that may arise in implementing CCCAP, their overall impact on the implementation process and proposed solutions for handling them

Challenge	Effects on implementation	Suggested Solution
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Delayed disbursement of funds	Delays implementations of critical project components	Proper planning and budgeting to minimize the delay
Climatic and non-climatic risks	Leads to unexpected occurrences but increases the vulnerabilities	Vulnerability assessment and risk assessment to create awareness on impacts
Highly and fragile ecosystems	<ul style="list-style-type: none"> • Increased vulnerability to climate hazards • High cost of interventions 	<ul style="list-style-type: none"> • Promote climate smart agricultural practices • Embrace sustainable degraded land conservation and restoration (FOLAREB)
Emergence of pests and diseases	<ul style="list-style-type: none"> • Interrupts the budgets due to unexpected occurrences • Affects productivity • Increases cost of mitigation 	<ul style="list-style-type: none"> • Research on knowledge sharing • Promote climate smart agriculture
Emerging wastes	Difficulties in disposing e.g electronic wastes	Invest in an integrated solid waste management
Inadequate funding	Slows down implementation process Scales down the implementation of selected projects	<ul style="list-style-type: none"> • Resource mobilization through the department of Resource Mobilization • Establish phasing projects if necessary
Human Resource Challenges	<ul style="list-style-type: none"> • Reduces the implementation capacities • Delays the timelines for effective delivery 	<ul style="list-style-type: none"> • Capacity assessment and capacity building • Do recruitments on need basis
Inadequate legal and policy framework	Hinders and limits the implementation of key actions	<ul style="list-style-type: none"> • Invests in a robust policy framework • Prioritize development and review of policies law • Counties to seek technical support from national government
Prioritization of projects	If not followed, there is possibility of ignoring critical projects e.g. those targeting vulnerable groups	<ul style="list-style-type: none"> • Strict adherence to priority actions • Monitoring and evaluation
Unprecedented climatic events	Interrupt the budget flows and effect the implementation of plans	<ul style="list-style-type: none"> • Policy intervention measure • Provide for policies and legal framework

4.4 Implementation Matrix

The detailed matrix on the process of implementing the ECCCAP is shown in the Table 15

Table 15: Implementation matrix for ECCCAP

Strategic Objectives	Priority Actions	Expected Outputs/Outcomes	Key Performance Indicators	Responsible Institutions	Targeted Groups	Time-Frame	Source of Funds	Indicative Budget (KES millions)				
								Total	23/24	24/25	25/26	26/27
Environment and forestry	Tree nursery establishment for indigenous AF species	Indigenous trees species being used in afforestation programmes	No. of indigenous tree seedlings raised	CG, KFS, KEFRI	Farmer groups, CBOs	2023-27	GOK	40				
	Afforestation and greening programs	Reclamation of degraded lands Riparian lands vegetated Agroforestry systems	No. of Ha planted or reclaimed	CG, KFS, KEFRI	Farmer groups, CBOs	2023-27	GOK	50				
	Climate information services	Climate information available in near real time.	No. of climate information centres operational	CG, Met Dept, Uni. of Embu	Farmer groups	2023-27	GOK	50				
	Establishment and review of CFAs and PFMP	CFAs established PFMP developed	No. of CFA established & Plans developed	CG, univ. og Embu	Farmer groups	2023-27	GOK	10				
	Market-level sorting centres Recycling facility (county-wide)	Increased management of solid waste Byproducts	Tonnage of waste recycled	CG,	Market centres	2023-27	GOK	700				
	Enhance good health and promote diversity of plants	Enhanced human health	No. and types of plants used Trainings held for herbal medicine Health data over time	Univ. of Embu, KALRO, Env and Natural resources	Farmer groups	2023-27	GOK	5				
Energy	Provision of energy saving jikos Biogas construction	Enhanced use of clean energy stoves and Biogas	No. of households using clean energy	CG, NGOs, CBOs	Vulnerable groups	2023-27	GOK	100				
Agriculture and Livestock	Adoption of drought tolerant crops/ varieties	Drought resistant varieties/technologies	No. of varieties/technologies adopted Increased crop yields	CG, MoALF&Co-p; KALRO, Univ. Of Embu	Smallholder farmers, CBOs	2023-27	GOK	35.9				

	Minimum tillage and conservation agriculture technologies	Increased soil moisture conservation	Number of farms practicing conservation agriculture	MoALF&Co -p; En & Natural resources, University of Embu	Smallholder farmers, CBOs	2023-27	GOK	50				
	Protect land from degradation and improve water availability for plant growth	Increased production per unit area	No. of terraces dug Area conserved in Ha	MoALF&Co -p; En & Natural resources, University of Embu	Farmer groups	2023-27	GOK	27				
	Improved fruit tree seedlings	Enhance fruit production through agroforestry practises	Ha of agroforestry fruit trees planted	MoALF&Co -p;	Farmer groups	2023-27	GOK	2				
	Greenhouse farming for increased crop production & protection	Increased production of horticultural crops	No. of greenhouses established and used	CG, NGOs	Farmer groups	2023-27	GOK	119				
	Dairy goat production	Increased production of goat milk	No. of goats distributed to farmers	MoALF&Co -p; NGOs	Vulnerable groups	2023-27	GOK	867.5				
	Dairy Animal production	Increased production of dairy animal milk	No. of heifers distributed to farmers	MoALF&Co -p; NGOs	Vulnerable groups	2023-27	GOK	600				
	Poultry	Increased production of eggs and poultry	Volume of eggs and and poultry produced and marketed	MoALF&Co -p; KALRO	Vulnerable groups	2023-27	GOK	343				
	Apiculture Beekeeping	Increased rearing of bees	Increased % of farmers rearing bees	CG, MoALF&Co -p;	Farmer groups	2023-27	GOK	216.65				
	Fodder improvement and feed formulations	Increased quality fodder and feeds	Ha put under improved pasture Varieties of improved pasture grown	MoALF&Co -p;	Farmer groups	2023-27	GOK	68				

	Animal breed improvement	Increased animal production	No. of improved animal breeds disaggregated in species	MoALF&Co -p;	Farmer groups	2023-27	GOK	20				
	Milk processing to avoid wastage	Increased milk production & marketing	No of processing units established Volume of milk processed	CG, MoALF&Co -p;	Farmer groups, Dairy co-op societies	2023-27	GOK	747				
	Mango processing to enhance shelf-life	Increased mango products being marketed	Number of processing units established No. of processed mango products in the market	MoALF&Co -p; MoTrade	Farmer groups	2023-27	GOK	155				
	Revamping coffee processing factories	Enhanced coffee processing	No. of coffee factories revamped	MoALF&Co -p; Coffee factories & groups	Farmer groups & Co-op	2023-27	GOK	250				
	Macadamia processing	Increased production and processing of macadamia nuts	No of processing units established Volume of nuts processed	MoALF&Co -p; MoTrade	Farmer groups	2023-27	GOK	300				
	Banana value addition	Increased production and processing of banana	No of processing units established Volume of banana processed	MoALF&Co -p; MoTrade	Farmer groups	2023-27	GOK	50				
	Green grams threshing machine	Increased production and processing of clean green grams	No. of machines bought Volume of grams threshed	MoALF&Co -p; MoTrade	Farmer groups	2023-27	GOK	173				
	Value addition of Traditional High Value Crops	Increased production and processing of THVCs	No of processing units established Volume of THVC processed	MoALF&Co -p; MoTrade	Farmer groups	2023-27	GOK	6.5				
	Sunflower processing	Increased production and processing of sunflower seed	No. of sunflower processing units	MoALF&Co -p;	Farmer groups	2023-27	GOK	100				

	Honey processing	Increased production and processing of honey	No of processing units established Volume of honey processed	MoALF&Co -p; MoTrade	Farmer groups	2023-27	GOK	45				
	Avocado processing	Increased production and processing of avocados	No of processing units established Volume of avocado processed	MoALF&Co -p; MoTrade	Farmer groups	2023-27	GOK	105				
	Cereal stores	Increased storage to reduce post-harvest loses.	No. of stores constructed	CG, MoALF&Co -p; MoTrade	Farmer groups	2023-27	GOK	250				
	Provision of hybrid rabbits	Increased and diversified source of animal protein	No of rabbits supplied disaggregated by breed	MoALF&Co -p; MoTrade	CBOs, NGOs,	2023-27	GOK	15				
	Leather tanning	Increased leather production and marketing	Volume of hides & skins tanned & marketed	MoALF&Co -p; MoTrade	CBOs, NGOs,	2023-27	GOK	5				
	Modern Abattoirs	Construction of modern abattoirs	No. of modern abattoirs constructed	CG, MoALF&Co -p; MoTrade	CBOs, NGOs,	2023-27	GOK	150				
	Cottage industry	Fabrication of local products	Number of cottage industries registered	CG, MoALF&Co -p; MoTrade	CBOs, NGOs,	2023-27	GOK	100				
	Kitchen gardens using hydroponics	Diversify and enhance production using non soil methods in townships of Embu	No. of townships practising No. of farmers involved in this practise	MoALF&Co -p; University of Embu, KALRO	Farmer groups	2023-27	GOK	55				
	Enhanced skills in different livelihood strategies	Increased technical efficiency in application of various technologies	No. of trained persons in application of different technologies	CG, Univ. of Embu, KALRO	Farmer groups	2023-27	GOK	130				
	Enhance efficiency and efficacy in the use of pesticides and environmental protection	Increased agricultural production	No. of trainings held Letters sent to workshop venues	CG, Univ. of Embu, KALRO	Farmer groups	2023-27	GOK	71				

	Improve animal breeds hence enhanced animal production	Increased animal potential	AI centres established Equipment procured	MoALF&Co -p;	Farmer groups	2023-27	GOK	13				
	Cattle dips	Improved control vector-borne diseases	No. of cattle dips constructed	CG, MoALF&Co -p;	Farmer groups	2023-27	GOK	90				
	Enhance soil quality, crop & livestock production Crop protection	Soil test/nutrient recommendations, Improved varieties and breeds Enhanced crop protection	No. of wards with soil input recommendations No. of improved varieties	Univ. of Embu, KALRO, CG	Farmer groups	2023-27	GOK	200				
Water, Irrigation and blue economy	Aquaculture: Rearing of fingerings and fish farming	Increased fish production and marketing	Volume of fish marketed	MoALF&Co -p; MoTrade	CBOs, NGOs,	2023-27	GOK	272.5				
	Dam construction	Increased retention of water for irrigation	No. of dams constructed	Water and Irrigation	Target communities	2023-27	GOK	180				
	Sinking, Rehabilitation and Solarisation of Boreholes	Increased availability of potable water in communities	No. of boreholes constructed	CG, NGOs	Farmer groups	2023-27	GOK	300				
	Establishment of irrigation schemes	Increased irrigated crop production	No. of irrigation schemes established Acreage under irrigated agriculture	Water and Irrigation	Target communities	2023-27	GOK	1440				
	Water harvesting	Increased water storage	Volumes of water stored	CG, Water and Irrigation	Farmer groups,	2023-27	GOK	60				
	Drip irrigation	Increased Water use efficiency	No. of drip systems operational	CG, Water and Irrigation	Farmer groups,	2023-27	GOK	50				
	Piped water for domestic use	Increased hygiene	No. of households supplied with piped water	Water and Irrigation	Local communities	2023-27	GOK	20				

REFERENCES

Government of Kenya (2018). National Climate Change Action Plan (Kenya) 2018-2022. Ministry of Environment and Forestry, Nairobi, Kenya.

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APPENDICES

Appendix 1: Scanned copies of the attendance sheet for the validation workshop held to validate the Participatory Climate Change Risk Assessment which formed the basis for the Embu County Climate Change Action Plan held on 23rd May 2023 and 24th May 2023, Embu County Headquarters Conference Hall, Kangaru.

COMMUNITY

Embu County Climate Change Action Plans Participatory Meeting Attendance List

County Embu
Sub County _____
Ward _____
Date 23/05/2023

**PCRA / ACTION PLAN STAKEHOLDERS
CONSULTATION MEETING — 23-24 May 2023**

S/NO	Name	ID NO.	Mobile NO	Gender		Category and/or position (Chairman, Sec, People Living with Disability etc.)	Age (Tick)			SIGN		
				Male(M)	Female(F)		18-35 Yrs	35-60 Yrs	Above 60	DAY 1	DAY 2	
1.	Edith Mburu	5573442	0729809442		✓	Chairwoman					DAY 1	DAY 2
2.	Juliet Wanjira	13571519	0719689447		-	Chairman		✓			DAY 1	DAY 2
3.	HARRIET KIVUTI	0235536	0713548752		✓					✓	DAY 1	DAY 2
4.	FATH WANJA	2437941	0704460372		✓			✓			DAY 1	DAY 2
5.	Lucy Mwangi	13572360	0718435744		✓			✓			DAY 1	DAY 2
6.	CHRISTOPHER MUKU	07226453	0722645382	✓				✓			DAY 1	DAY 2

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
67.											
68.	BRACEY NTUKI	38208973	0741051224		✓	COMMUNITY.	✓				
69.	IMEDA THADORA	37004174	0705044696		✓	KITHINU YOUTH REP	✓				
70.	MAIDALENE NIVENDE	251711666	0737636076		✓	Community	✓				
71.	ENRIKE NJALU MUGEST	22291216	071932296	✓	✓	PLWDS MEMBER, TREASURER	✓	✓			
72.	CATHINE WACHIBIA	26424301	0711362534			Chairperson	✓				
73.	CEAUCIE GICUKE KINTUO	35156694	0720117368		✓	KITHINU C. Member		✓			
74.	PAULINE KAGUMBA	125722667	0715061289		✓	Member		✓			
75.	PULIT W. NGETU	24154888	0725896286		✓	SEC		✓			
76.	ALBERT MUNDYI	13339404	0720289136	✓		Chairperson		✓			
77.	JUSTUS NYERU	9820343	072730049		✓	CHAIRMAN		✓			
78.	EDMAN GITAHU	11482106	0722716985	✓		YOUTH REP	✓				

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
55.	JOSEPH IREBI	26474451	0728147298	✓		MUNICIPAL COMMITTEE MEMBER	✓				
56.	LAABASEL KIN-YUA	10933314	0724985825	✓		GATUL SOUTH COMMUNITY COUNCIL		✓			
57.	ASHA GITRI	5096258	07245973914		✓	GATUL SOUTH CLUBHOUSE		✓			
58.	MANANE WANDARI	23466553	0724396619		✓	COMMUNITY		✓			
59.	MERELI NYERA	29716477	0703631038	✓		EUROPE FUTILL RD	✓				
60.	Florence Karu	22510660	072596510		✓	EUROPE WOMEN RD		✓			
61.	Irene Wanjira	26242991	0723965498		✓	Community	✓				
62.	DAVID KURUYU	10460723	0724412458	✓		Community		✓			
63.	Catherine mungi	31498156	0705201249		✓	Community	✓				
64.	MERITIK ISINYUA	10640793	0725220455	✓		Community		✓			
65.	Nico de mas kiaraba	10402229	0711138881	✓		WBA					
66.	MURITHI GITHAIGI WYUZA	39534952	0790874666		✓	Community	✓				

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
43.	JANE MADIA	12773517	0715099119		✓	MTATHA KIDVEN REP.		✓		Signature	
44.	JACKLINE MUNEE	13424638	0712289652		✓	CENRAL RURAL CHAIRPERSON		✓		Signature	
45.	KEA KIMBUL	11975931	0701991186		✓	GATURI NORTH youth rep	✓			Signature	
46.	DICKSON NJINGI	05890502	0705080802	✓		community	✓			Signature	
47.	Felix Muriuki	39282029	079991398	✓		communication dept. community	✓			Signature	
48.	Kiva Mutha	39236182	0746178990	✓		community	✓			Signature	
49.	Brian Mwaniki	41520820	0740670963	✓		community	✓			Signature	
50.	Siun Mwangi	39031525	0114578958		✓	community	✓			Signature	
51.	SILVERIO MUKUGA	20875234	0745493417	✓		MTATHA youth rep	✓			Signature	
52.	LAFAT MUKORIDI	26347283	0714838372	✓		community	✓			Signature	
53.	AGNES WAMUKEY	29910258	0710937672	✓		community	✓			Signature	
54.	MARION NJUGA	25539157	0725316074	✓		GATURI SOUTH community	✓			Signature	

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
31.	FRANCIS NTHAKUTHU-M.	27303421	0716105698	F.	✓	WAGNER NDIRI -DIRTH	35	✓			
32.	GUCKINE WAMBA MBO	3067764	0716482066		✓	Community	✓				
33.	DONATO NGAGA	9679141	071505890	-		PLWD					
34.	MUCHEKE NJELU	10222964	0722223169	✓		WAGNER		✓			
35.	EDITHA M. ALAAL	13571421	0722899352	✓		Community		✓			
36.	TIGUS MUCHEKE	33241187	0724873927	✓		NAVIRA SECRETARY		✓			
37.	JOHNSON WAMBEKE	29401200	0724147341	✓		Community	✓				
38.	ANKEN MUKIMI	28460124	0722782470	✓		Community	✓				
39.	FATHI GAKU	95722489	0720217787		✓	Community		✓			
40.	EDITHA M. ALAAL	9522489	0720217783		✓	Community		✓			
41.	EVINCE M. MURIA	13262439	0721275999		✓	Community		✓			
42.	Henry Kithiga KECOKOS	072504824		✓		PLWD		✓			

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
19.	CHRISTIANE KUVU	96523050	0713740718	M		YOUTH REP MYEHI SOUTH	✓			<i>[Signature]</i>	
20.	SARON MUGENDI	35138007	0745109060	F	F	Community	✓			<i>[Signature]</i>	
21.	MIRIAM WAMUN	27277416	0722222159	M		MEETOR delegation		✓		<i>[Signature]</i>	
22.	ANTONY KARUKU NDEU	21727742	0729547191	M		MEN/KAGAME HEALTH GROUP		✓		<i>[Signature]</i>	
23.	MERCI KONGORWA HOSHA	25630481	0714767383	F	F		✓			<i>[Signature]</i>	
24.	LENNY MUGAMBI NJIRU	37855981	0716410741	M		Community	✓			<i>[Signature]</i>	
25.	GEORGE RUKHUNA NDEU	23691965	0722280259	F	F	Committee WATERBURYA		✓		<i>[Signature]</i>	
26.	DAVID KIMATHI, GAKOPE	30945053	0742249344	M		Community	✓			<i>[Signature]</i>	
27.	KIMICATE NYUKAATI	29554112	0727441575	F	F	E.C. G Youth Rep Kang'ara	✓			<i>[Signature]</i>	
28.	BRIAN MUNDENE	34349282	0700543629	M			✓			<i>[Signature]</i>	
29.	BENSON NYAKA	30661745	0708614550	M		EC4	✓			<i>[Signature]</i>	
30.	ROBERT NYUKU	30014446	0717036022	M		EC4	✓			<i>[Signature]</i>	

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
7.	Peter Nwagwu	1332 632	072491688	M		PWD		✓		R	
8.	Daniel Nwagwu	21511485	071570882	M		Treasurer		✓			
9.	Michael Nwagwu	5083098	0721328297	✓					✓		
10.	Daniel Nwagwu	35540438	0769945734	✓	✓		✓				
11.	Chimerine Nwagwu	37971779	0769933542		✓		✓				
12.	Agnes Nwagwu	27072085	072896265		✓		✓				
13.	Ann M. Muriithi	5096391	0725219179	F	✓	CEA/Chairperson		✓			
14.	James Nwagwu	11241806	0710136992	M		Met REP		✓			
15.	NELSON NYAGA	24977812	0729851016	✓		Chairman		✓			
16.	John Mwangi Njiru	7034283	0705381431	M		PLWD		✓			
17.	Joseph Githika	13619993	0720756005	✓		Chairman		✓			
18.	Silas Kinehi	21937497	0720982044			Chairman		✓			

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and for position (Chairperson, Sec, PLWDS)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
79.	Climate Pal Ltd	22044799	0781229599 0925 111 283		F	Co-ordinator		✓			
80.	Millicent Kengele	26645573	0716757447		F	CHV	✓				
81.	Edne Mwakani	34315694	0791539838		F	CHV	✓				
82.	Dicason NAWAOTERA	7805551	072629862	M	M	Comm. Tte		✓			
83.	ELIZABETH WANJIR	22150580	072629862		F			✓			
84.	LENE NGEI	27286477	072629862		F			✓			
85.	ANTONY MUSAHA	23778183	078477149	M		Committee		✓			
86.	Moses MUNETE	09002402	071707914	M		Committee	✓				
87.	LUCY WAMERITHA	22402753	0712340277		F	Committee			✓		
88.	Anthony MUKITA	28417426	0719706725	M		PLWDS	✓				
89.	PETER MWANIKI	13572304	0729288818	M		Committee		✓			
90.	ROSELINE WAMUKA	35137099	0798793623	F		JOINT REP.					

STAKEHOLDER
Embu County Climate Change Action Plans Participatory Meeting Attendance List

County Embu
 Sub County _____
 Ward _____

Date 23/05/2023 - 24/05/2023

S/NO	Name	ID NO.	Mobile NO	Gender		Category and/or position (Chairman, Sec, People Living with Disability etc.)	Age (Tick)			SIGN	
				Male(M)	Female(F)		18-35 Yrs	35-60 Yrs	Above 60	DAY 1	DAY 2
1.	JOHARI THERITA	28430019	0769309484	✓		PECA	✓				
2.	Caroline Muri	26485010	0724935810		✓	ECG	✓				
3.	Newton W. Njoroge	11022643	0724324421	✓		ECG	✓				
4.	Charles N. Ombui	8533423	0721782254	✓		ECG	✓				
5.	David Mwangi	21788942	0722161870	✓		ECG	✓				
6.	Wilfred Patrick Nyeri	13339650	0757699719	✓		ECG	✓				

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
43.	Dorothy Karimi	27651229	0710369P59		✓	Community		✓	OK		
44.	Nathan Njira	2074264	0723223308		✓	Community		✓	L.N		
45.	Joseph Kinyua	10729559	072332569	✓		Community		✓	OK		
46.	LILIAN WANGISHI	29002702	0717079164		✓	Community	✓		OK		
47.	Jane W. Mwangi	2920081	0721513412		✓	Community		✓	OK		
48.	Lewis Mwangi	3685752	07205873760	✓		Community	✓		OK		
49.											
50.											
51.											
52.											
53.											
54.											

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
91.	Joshua Murene	38866690	0794248038	✓		Community	✓			<i>[Signature]</i>	
92.	THOMAS N. NUNGA	0293449	072450442	✓		Community			✓	<i>[Signature]</i>	
93.	Kelvin K. Ntanga	11460134	0726541313		✓	Kivuliro Committee M.		✓		<i>[Signature]</i>	
94.	Jerry Nduvira	11023078	071030278	✓		Ag. 12 Secretary		✓		<i>[Signature]</i>	
95.	Wilfred Patrick Nyir	13339650	0757699719	✓		Community		✓		<i>[Signature]</i>	
96.	Sammy Ntanga	96171184	0700201170	✓		Community		✓		<i>[Signature]</i>	
97.	Caroline Nduvira	22579252	072764076		✓	Community Member	✓			<i>[Signature]</i>	
98.	MURRAY M. NUNGA	04873996	0724830596		✓	Community			✓	<i>[Signature]</i>	
99.	JULIET NDUVIRA NUNGA	33264043	0759925363		✓	Community member	✓			<i>[Signature]</i>	
100.	CHRISTINE NUNGA NDU	37025140	0704577946		✓	Community Member	✓			<i>[Signature]</i>	
101.	Edwin Ntanga	33244109	0740336498	✓		Community Member	✓			<i>[Signature]</i>	
102.	MARTIN MURUTHI	033244563	0721642059	✓		Community		✓		<i>[Signature]</i>	

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
79.	JUSTIN GITONYEN	25410730	0795553737	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				
80.	BONIFACE NIMENDA	29317509	0704966078	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				
81.	SHUB MUKHAI	7451357	0720032235	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				
82.	PETER MURTHI	37088200	0794790681	<input checked="" type="checkbox"/>		Community	<input checked="" type="checkbox"/>				
83.	JOSEPH KIMUNA	22609221	0720014785	<input checked="" type="checkbox"/>		Sec Regional		<input checked="" type="checkbox"/>			
84.	KIRIENGE GICUNDU	22246624	0724171838	<input checked="" type="checkbox"/>		CDMURTV		<input checked="" type="checkbox"/>			
85.	Joyce Wadhwa	27810252	0718279022			Community	<input checked="" type="checkbox"/>				
86.	EZEKIEL MUGAMBI	27815823	0703683306	<input checked="" type="checkbox"/>		Community	<input checked="" type="checkbox"/>				
87.	Augustine Njiru	3305080	0712703723	<input checked="" type="checkbox"/>		Community			<input checked="" type="checkbox"/>		
88.	JOSECK NYAHIA	21989768	0712705445	<input checked="" type="checkbox"/>		Community		<input checked="" type="checkbox"/>			
89.	BEN RICE SINDIGA	1292003	0725197269		<input checked="" type="checkbox"/>	Community			<input checked="" type="checkbox"/>		
90.	BRAID LADU	23324463	0725447997		<input checked="" type="checkbox"/>	Community		<input checked="" type="checkbox"/>			

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
67.	Sila Mwanika	5755725	0715801153	✓				✓	✓	<i>[Signature]</i>	
68.	Joseph mwarithi	13644646	0727817198	✓				✓		<i>[Signature]</i>	
69.	Grace Mwanika	11794643	0723641387		✓			✓		<i>[Signature]</i>	
70.	Esperanza Mwangi	2913205	0702685779	✓				✓	✓	<i>[Signature]</i>	
71.	Lulise MURINI	9412635	0723958236		✓			✓		<i>[Signature]</i>	
72.	Githuwa Wanjiru	40120901	0754531602		✓		✓			<i>[Signature]</i>	
73.	Agnes W. NGAZI	22015042	0721200356		✓			✓		<i>[Signature]</i>	
74.	Kevin M. Wanjiru	22669835	0729513960	✓				✓		<i>[Signature]</i>	
75.	Kevin MURINI NYAGA	40163192	0701150248	✓			✓			<i>[Signature]</i>	
76.	ETHEL NYAGA	2009330	0721325304	✓				✓		<i>[Signature]</i>	
77.	CAITHERINE Mwangi	1319414	0703938358		✓	Community		✓		<i>[Signature]</i>	
78.	JOHN KIKUYU	13263856	0113662334	✓		Community		✓		<i>[Signature]</i>	

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and for position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
55.	JAYLE WANDAKI	13111301	0739528887	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N.D.M.A	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
56.	JOSEPH MURUGA	11023424	0757106031	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WARA Admin-M/S	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
57.	GENTREY NIOKI	0284093	0721582296	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
58.	ELIAS GACIOGID	3736900	0714538180	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
59.	NIRKUN MUKUM	30050452	013662186	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Community YOUTH	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
60.	GRACE MURUGI	01616931	0710772621	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
61.	CHAS			<input type="checkbox"/>	<input type="checkbox"/>	Youth	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
62.	Dennis M. Muriu	35107423	0778933806	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SPECIAL Men Rep.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
63.	ELIZABETH NJAGI	0297424	0719458862	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
64.	JOSEPH KITHAKA	7035999	0791192026	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WARA Youth Rep	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
65.	NOTES KATHUN	3758445	0729312800	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
66.	Philemon Ngunjiri	24492131	0735161231	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
43.											
44.	MART MUTHOMI	13855072	0720105622		<input checked="" type="checkbox"/>	KITHIMUS Executive		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
45.	PERLESON NIKRU	226006487	0722232677	<input checked="" type="checkbox"/>		Kaavume member		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
46.	PAULINE MUTHOMI	6207624	07229858435	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	member Kaagan's W member Kaagan's W		59		<input checked="" type="checkbox"/>	
47.	ACEVINA NITOM	22222108	0746888646		<input checked="" type="checkbox"/>	member Kaagan's W		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
48.	GABRIEL NYAGA	3510019	071222945	<input checked="" type="checkbox"/>		KITHIMUS		70		<input checked="" type="checkbox"/>	
49.	MULICENI WANDA	25915334	0710725779		<input checked="" type="checkbox"/>	KIRINGA	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
50.	ANSON MUTHOMI	28327203	0716244086		<input checked="" type="checkbox"/>	KITHIMUS	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
51.	VIRGINIA WANDU	24116749	070867585			E.C.G member KITHIMUS		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
52.	SHINE MUTHOMI	0268698	0723147935	<input checked="" type="checkbox"/>		member KITHIMUS		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
53.	ROSE MUTHOMI	24949344	0721728306		<input checked="" type="checkbox"/>	PLWD		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
54.	MAGDAIS NYOKI	20243985	0725924445		<input checked="" type="checkbox"/>	WRN		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
54.	ELIJAH KATHOMI	1298127	0712823978	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
31.	BONFACE KIETI	22016981	0724777646	✓		WCCPC making		✓		✓	
32.	MICHAEL GIDUNYA	232205610	0721683115	✓		Chairperson		✓		✓	
33.	NICHASAS M. NBOGOT	20576782	0723780734	✓		COMM/TEC MEMBER		✓		✓	
34.	Gladys Njen	32295574	0112152406		✓			✓			
35.	Silas A. Mufona	36875829	070797360	✓		Community member	✓			✓	
36.	LUCY WAMUKA KATANDU	22790566	0703981353		✓			✓		✓	
37.	IGNATIUS MTHAKA KOKA	13723780	0723997335	✓		COMM/TEC MEMBER		✓		✓	
38.	Gladys Kigeni	35298574	0112752406	✓	✓	Community	✓			✓	
39.	Grace Kavunga	30365548	0768266633		✓	Community	✓			✓	
40.	Charles M. Nunge	21943860	0721659516	✓		Community				✓	
41.	Evangelin Muthoni Wanjau	33065207	075978498	✓	✓	Community	✓			✓	
42.											

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
19.	CICELY KANINI NIEQU	28024340	0198825251		✓	YOUTH REP NTHAWA	✓				
20.	JOSITHINE NTHAWA	05034451	072506803		✓	YOUTH REP NTHAWA	✓				
21.	LOISE WADIMI NYGA	26936587	0717562081		✓	YOUTH REP NTHAWA	✓				
22.	CITY GICAVI NTHAWA	69000000	0707054909	✓		30 GICAVI NTHAWA		58			
23.	SEKILA Kagerlo	29050014	0708145282		✓	YOUTH REP NTHAWA	31				
24.	FATHI MUEKA	11353072	0715091195		✓	MUEKA	35				
25.	CHARLES K-KABO	4953618	0722444775			MUEKA	55				
26.	ELIANDU NTHAWA	13571977	0713619133		✓	US DEER MUEKA	51				
27.	DOMINIC N. NGARA	4251362	0728160702	✓		PLWD	68		✓		
28.	SIMONE KAGARLO										
29.	AMBROSE NYGA	8600769	07214497294	✓		Community		✓			
30.	JATILE KUKUMI	27319667	0719213260		✓	SECRETARY NTHAWA	✓				

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDS)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
7.	PATRICIA MURRAY	340974287	0790488166	✓		Member as MEMBER NORTH MEMBER	✓				
8.	PATRICK MURRAY	2769531	071534921	✓		MEMBER PLWD MALAYA	✓				
9.	BERTSON MURRAY	29379100	0701878225	✓		PLWD MALAYA	✓				
10.	Dominic Njau	20071731	0723827252	✓		Member Kafunin		✓			
11.	RICHARD STEPHEN	219372363	072455485		✓	MEMBER SOUTH WOMAN REP		✓			
12.	EMILIE KACIMBA	12882392	0728978839		✓	MEMBER NORTH PLWD REP		✓			
13.	DONICA KANANO	20962031	0716696612		✓	MEMBER SOUTH					
14.	Melny Cichahi	3443181	0705245425		✓	Member South	✓				
15.	CAROLINE KERI	24935914	0712226499		✓	Member as MEMBER NORTH MEMBER		✓			
16.	Charles Njau	20272204	0714539649	✓		Member as MEMBER NORTH MEMBER		✓			
17.	Lincoln KIRIA	4554020	0721692887	✓		Member as MEMBER NORTH MEMBER		✓			
18.	Emily N. Mahana	35807649	0704284546		✓	Member as MEMBER NORTH MEMBER	✓				

Embu County Climate Change Action Plans Participatory Meeting Attendance List

County Embu

Sub County _____

Ward _____

Date 23/05/2023- 24/05/2023

S/NO	Name	ID NO.	Mobile NO	Gender		Category and/ or position (Chairman, Sec, People Living with Disability etc.)	Age (Trick)			SIGN	
				Male(M)	Female(F)		18-35 Yrs	35- 60Yrs	Above 60	DAY 1	DAY 2
1.	Chirwa Njagi	83457228	070593643	✓		Secretary Community	27			Chirwa	
2.	James Kariuki	1386442	072351744	✓		Secretary Ntithua		✓		James	
3.	Wend Kariuki	21924984	072505038		✓	Secretary Ntithua		✓		Wend	
4.	Joseph Ngethe	11352438	072398886	✓				✓		Joseph	
5.	Felix Ngethe	10221720	072258175		✓			✓		Felix	
6.	Lucy A. Njagi	23166971	072858572		✓	Community Ntithua		✓		Lucy	

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
19.											
20.	Mary Mwangi	34263384	0792612900		✓	Community	✓				
21.	Shela Wawira	33056421	0702100620		✓	Community	✓				
22.	Sarah Wanga M	31431553	0704840973		✓	Community	✓				
23.	DENNIS FLINDI	2765497	0700262814	✓		Community	✓				
24.	Anthony Rutere	13573121	07816404	✓		Community	✓				
25.	Antonia Mwangi	32865147	0702046925	✓	✓	Community	✓				
26.	Musin Mugo Rutere	354494305	0719446958	✓	✓	Community	✓				
27.	Onaeta Mwangi	29695101	0753332159D		✓	Community	✓				
28.	Joern Titem	2925530	0727689519			Community	✓				
29.											
30.											

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
7.	Jane Mutitu Ndungu	7450891	0721813402		✓	Community		✓			
8.	IREKI GATHUNGI	0718129	0724104762	✓		CHAIRMAN		✓			
9.	baigy mungu	23621394	0735922915		✓	Chairperson		✓			
10.	STEPHEN KARIUKI	241155555	0722729894	✓		Community	✓				
11.	GODFREY Mgoni	33832561	0795104496	✓		Community	✓				
12.	MONICA MUKAMU	32930114	0103315796	✓	✓	Community	✓				
13.	Chushie Mumbi	22273500	0721914462	✓	✓	Community	✓				
14.	JULIUS WARIKONA	32436719	0790851514	✓		Community					
15.	Eunice Mburu	6243297	0700190031		✓	Community		✓			
16.	LUCY KIRAKA	2013376	0724393459		✓	Community		✓			
17.	Lucy Wanyu	24267037	0777427601		✓	Community	✓				
18.	Kenneth Githonga	31495076	0710764445	✓		Community	✓				

Community

Embu County Climate Change Action Plans Participatory Meeting Attendance List

County Embu

Sub County _____

Ward _____

Date 23/05/2023- 24/05/2023

S/NO	Name	ID NO.	Mobile NO	Gender		Category and/ or position (Chairman, Sec, People Living with Disability etc.)	Age (Trick)			SIGN	
				Male(M)	Female(F)		18-35 Yrs	35- 60Yrs	Above 60	DAY 1	DAY 2
1.	PHILIP MURUKU	7957357									
2.	NELICHASIO OJIEOKI	9284925	0712137912	M		C		✓		✓	✓
3.	FRASIA-N. MBOGO	27208421	0713694479		✓	C	✓				
4.	Silvester Mwachia Mwa	34783946	0746657182	M		C	✓				
5.	Jane Kyege	10796670	0720250769		✓	C		✓			
6.	PEREGRON MTHIGAHI	34209289	0791423671	M		C	✓				

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (Tick)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
91.	John Ngevu	25848322	0726577411	Male		Committee		✓			
92.	Evans N. N. N. N.	33540861	0700854411	Male							
93.	ROSE WANGAARI	222980914	0707213760	Female				✓			
94.	FAITH JULIA IROKI	33965410	0712351848		✓	Committee		✓			
95.	CHARLES KAPILUKU	257869248	0726159446	Male		Committee	✓				
96.	ANITA N. N. N.	10728739	071654444	Female	✓	Committee	✓				
97.	Patrick Njiru	21204832	0713483564		✓	PLWD	✓				
98.	John					PLWD	✓				
99.	Godwin Mwangi	10461244	07247443								
100.	Polycarp Muchanwa	37980306	079733391			Community	✓				
101.	Joseph Gichungu	2229044	072117120		✓	Community	✓				
102.	James Mwangi	22024860	072296060		✓	Community	✓				

S/NO	NAME	ID NUMBER	MOBILE NO	GENDER		Category and /or position (Chairperson, Sec, PLWDs)	AGE (TICK)			SIGN	
				MALE	FEMALE		18-35 Yrs	35-60 Yrs	Above 60 Yrs	DAY 1	DAY 2
7.	JOSSES KILIA MUNCHO-MB	11258849	3721889419	✓		THIRD A		✓			✓
8.	JATHUS MUKUNDA	11025078	0710384936	✓		SECRETARY		✓			✓
9.	MILAVEL KAMU	27474786	072222259	✓		METROLOGY		✓			✓
10.	JAMES N. NJOKA	20884913	0707834050	✓		WATER ADMIN		✓			✓
11.	GODFREY NJOKI	9284073	0724582096	✓		WATER ADMIN		✓			✓
12.	MICHAEL NJOKI	10729187	070948635	✓		WATER ADMIN		✓			✓
13.	MICHAEL NJOKI	1181258	0722394967	✓		WATER ADMIN		✓			✓
14.	ALBERU										
15.	C. HABILES N. NJOKI	23944198	072611461	✓		W.A. OFFICER/PLWD		✓			✓
16.	MICHAEL NJOKI	10222864	0722333189	✓		WATER ADMIN		✓			✓
17.	JANEET LEKESI	25184676	0724220370	✓		TARDA MUKUNDA		✓			✓
18.	SERENA MUKUNDA	27677778	0724705609	✓		TARDA MUKUNDA		✓			✓

Appendix 2: Minutes of the Embu County PCRA validation workshop, held at Embu County Headquarters, Kangaru Hall, between 23rd and 24th May 2023.

MINUTES OF THE EMBU COUNTY CLIMATE CHANGE MULTISTAKEHOLDERS WORKSHOP HELD AT THE KANGARU UPPER TANA HALL ON 23RD AND 24TH MAY 2023

Members Present (*List attached*)

AGENDA OF THE WORKSHOP

Day 1.

1. Call to order
2. Setting of Workshop Rules
3. Objectives of the meeting
4. Introductions
5. Remarks by the chief officer department of Environment, Climate Change & Natural Resources
6. Training session 1 on Policies governing FLLOCA
7. Training session 2 on Embu county key climate hazards analysis
8. Tea break
9. Presentation on changes in climate and weather patterns over the years from meteorology department
10. Information technology and Indigenous knowledge with intelligence (ITIKI) Weather & Climate presentation
11. Remarks by the CECM department of Environment, climate change and natural resources
12. Reading of the Embu county governor's speech and official opening of the workshop
13. Group work division and allocation
14. Group work discussions
15. Announcements and closing of the meeting

Day 2.

1. **Recap of Day 1 Activities**
2. **Group work wards climate action plans presentation on the women, youth and vulnerable**
3. **Tea break**
4. **Presentation by Karlo on seed multiplication**
5. **Presentation by Karlo on plant biotechnology**
6. **Group work presentation on the wards Agriculture action plans**
7. **Group work presentation on the water sector ward action plans**
8. **Lunch break**
9. **Group work presentation on forestry, environment and energy wards climate action plans**
10. **Group work presentation on wards trade, tourism and infrastructure climate action plans**
11. **Announcements and closing of the meeting**

DAY I MINUTES ON 23RD MAY 2023

MIN 1/01: Call to order

The meeting was facilitated by the Embu county department of Environment and climate change under the FLLOCA project and it involved stakeholders at the national, county and ward levels. The meeting started at 9:35 am and Mr. Patrick Nyaga a sub county environment officer from the department of Climate change called the meeting to order. The opening prayers were done by Mr. Augustine Njeru a community member.

MIN 2/01: Setting of Workshop Rules

The members and stakeholders present in the workshop agreed on some ground rules to govern the meeting conduct and enable maximum input which included members putting their phones on silent mode, avoiding unnecessary movements and respecting every person's opinion in the meeting discussions.

MIN 3/01: Objectives of the meeting

A brief overview and introduction of the objective of the meeting remarks was done by the Embu county director of climate change madam Mercy Mongo. The members were made aware of the FLLOCA climate change project and the Participatory climate risk assessment process that had been conducted in all the 20 wards of Embu County. The members were also informed that the purpose of the meeting was to have their contributions and any additions or amendments to the wards climate action plans.

MIN 4/01: Introductions

The members present from the 20 wards climate change committees and other stakeholders present in the workshop introduced themselves. The list copies of the members in attendance will be attached in this minutes report.

MIN 5/01: Remarks by the chief officer department of Environment, Climate Change & Natural Resources

The chief officer of the Embu county department of Environment, Climate Change & Natural Resources addressed the members present in the workshop and emphasized on the importance of the FLLOCA project with the overview of the climate friendly projects to be funded under this project.

MIN 6/01: Training session 1 on Policies governing FLLOCA

This training session was handled by Madam Mercy Mongo the director of the climate change department Embu County. The members were defined to terms like weather, climate and climate change. The Members were also enlightened on the national and the sub national levels of climate policies that exist. Some of the national level climate policies include; national climate change response strategy, climate finance policy 2018, climate change Act 2016 and the national climate change action plan. The climate change fund was noted as a sub national level climate policy that has been established in the counties in Kenya.

It was mentioned that the Embu county climate change priority action plans were categorized mainly into sectors of Environment & Forestry, climate smart agriculture, water, climate proofing infrastructure & disaster risk management, clean & renewable energy and projects of the vulnerable and marginalized groups.

Members were made aware that the FLLOCA project implementation was in 3 levels i.e. National level, county level and community level. It was also noted that the grants levels were in

2 type's i.e. the county climate institutional support grant and the county climate resilience investment grant.

The members were also enlightened on the criteria for stakeholder's selection in the ward climate change action plans, the overview of the wards PCRA reports and the action plans formulation. This first training session ended at 11.00 am.

MIN 7/01: Training session 2 on Embu county key climate hazards analysis

This training session was handled by Mr. Patrick Nyaga the sub county environment officer from the department of environment and climate change. It was mentioned that Embu County has 2 distinct ecological zones i.e. the cold & wet upper zones and the hot & dry lower zones.

The hazards were put into 2 categories; climatic hazards and non-climatic hazards. The climatic hazards include drought, flash floods, whirl winds, floods, human wildlife conflicts & deforestation and the non-climatic hazards e.g. poverty, poor governance, poor agriculture practices etc.

MIN 8/01: Tea break

The meeting took a break for members to take tea and refreshments at 11:35 Am.

MIN 9/01: Presentation on changes in climate and weather patterns over the years from meteorology department

The meeting resumed from tea break at 12:15 pm and this presentation on the monthly rainfall climatology history changes over the years experienced in Embu County was done by Mr. Migwi Kamau from department of meteorology Embu town station. It was noted from the presentation that the climate change effects have caused the distribution, onset and cessation of rainfall within the county to vary significantly

MIN 10/01: Information technology and Indigenous knowledge with intelligence (ITIKI) Weather & Climate presentation

This presentation was done by Mr. Peter Ngoci the ITIKI project country manager. Members were informed that ITIKI uses the traditional knowledge to observe and predict weather and climate patterns with the following categories; animal behavior, insects behavior, trees behavior, human behavior, astronomical behavior, plants behavior, birds behavior and beliefs.

MIN 11/01 Remarks by the CECM department of Environment, climate change and natural resources

The CECM department of Environment, climate change and natural resources in Embu county government Madam Florence Ndinda Musyoka addressed the members present and emphasized on the importance of tree planting in every ward and environment conservation to improve the water flow from the natural forests water sources.

MIN 12/01 Reading of the Embu county governor's speech and official opening of the workshop

The CECM department of trade and tourism Embu county government Mr. Jamal Runyenje gave the apologies of the absence of H.E Governor Cecily Mbarire and read her speech on her behalf declaring the workshop officially opened.

MIN 13/01: Group work division and allocation

The director of climate change department madam Mercy Mongo assigned 5 groups to go into group discussions in the afternoon session after the lunch break to discuss the various action

plans in the 20 wards in Embu County. The 5 groups were categorized into the following sectors;

- Water
- Environment, forestry & Energy
- Agriculture & livestock
- Women-youth & PLWD'S
- Infrastructure, trade, tourism and disaster management

MIN 14/01: Lunch Break

The meeting to a break for attendees to take lunch refreshments at 1:30 Pm and the prayers for breaking for lunch were led by Mr. Ethan Kinyua the ward administrator Kirimari ward.

MIN 15/01: Group work discussions

At 2.00 pm to 5.00 pm members present went to the groups allocated for intensive discussions of the ward actions plans with the aim of making amendments, contributions, rectifications and additions in order to have the final action plans for the 20 wards of Embu County.

MIN 16/01: Announcements and closing of the meeting

The chief officer Mr. Nicholas Kunga department of Environment, climate change and natural resources made announcements of the following days meeting time from 9.00 am whereby the secretaries to the 5 groups would each make a presentation of the group work findings. There being no A.O.B's the meeting ended at 5.00 pm.

DAY 2 MEETING MINUTES

MIN 1/02: Recap of Day 1 Activities

The meeting started at 9:30 Am and was called to order by the director of climate change department Madam Mercy Mongo. Mr. Joseph Muriithi a community member led the opening prayers.

MIN 2/02: Group work wards climate action plans presentation on the women, youth and vulnerable

- This was the first group to present was the discussions collected from the previous day group work and the presentation was done Mr. Moses Muriithi.

Plenaries from the marginalized, women and youths climate action plan

1. In Kyeni south ward it was noted that provision of energy saving jikos to women and people living with disabilities had been left out and should be included in their climate action plan.
2. It was suggested that an apiary aggregation center construction in a central place that would serve all the 20 wards would be effective to help the youths with bee keeping, harvesting and value addition knowledge and skills.
3. It was noted that recycling of second generation bottles and diapers would be a viable project to be included in the youths and marginalized group's climate action plan as a mechanism strategy to improve effective solid waste management systems in Embu county wards while providing a source of income for them.

4. Madam Fiata Marigu director of Ewasco Kyeni south noted that women in this ward can be supported with trainings for making wool carpets and bead baskets that they can sell and make an income.
5. It was suggested that women in Kyeni south can also be supported with koko gas for cooking
6. Mr. Ambrose Nyaga from Kirimari ward proposed the inclusion of constructing a fish aggregation center in Kirimari ward to provide a common central market for fish farmers across all the 20 wards of Embu County.
7. It was suggested by Mr. Wanyoike from Mwea ward that the youths, women and PLWD'S should be supported with business management trainings in order to ensure the sustainability and effective management of the climate action plan projects for this sector group.
8. Mr. Gichovi Njuki a ward climate committee member from kagaari south representing the PLWD'S mentioned that he is a successful sweet potato farmer reaping a good income from it and proposed that the PLWD'S across the 20 wards in Embu county should be supported with sweet potato farming project since the market for them is readily available

Successful projects noted that have been done by some of the stakeholders present in the workshop

1. Mr. Elijah Kamau the project manager of I.C.E Kenya highlighted that they did a successful project for supporting youths in Kiambu County whereby youths were trained on strawberry farming and were provided with a yoghurt cooling machine to add value to milk by making strawberry yoghurt from the strawberries they were farming and selling the yoghurt in the local market.
In Murang'a county I.C.E Kenya supported youth with liners for fish ponds to support them in fish farming project and a vegetable growing project whereby the youths made an income by selling the fish and vegetables produce.
I.C.E Kenya also provided dairy cows and goats to Plwd's in Murang'a and Kiambu counties.
2. Madam Winnie Muriithi from Aspan Kenya N.G.O mentioned that their organization had successfully recruited and trained youths in Embu County on producing and harvesting avocados for export standards and youths earned an income from the project. The Aspan N.G.O also is supporting youths with promotion of herbs planting that will be sold and used in extracting oils. The herbs they are concentrating on are lemon grass, rosemary and geranium
3. Mr. John a stakeholder from GIZ proposed that he can be able to offer trainings to youths on energy saving jikos making
4. Mr. Joses k. Mugambi a stake holder from TARDA mentioned that they can train youth groups in Embu county on honey production in order to increase the honey supply to Kiambere honey processing factory.

MIN 3/02: Tea break

The members went for a tea break at 10:50 am

MIN 4/02: Presentation by Karlo on seed multiplication

The members resumed from the tea break at 11:25 am to listen to a presentation from Karlo which was done by Dr. Susan Wanderi. Karlo is an important stakeholder that can assist in the ward climate smart agriculture action plans.

The Karlo Embu office is involved with seed multiplication and production of certified seeds e.g. improved maize hybrids, bean varieties, cassava varieties that can be value added to produce cassava flour and crisps, sweet potato varieties and varieties of Irish potatoes.

They also produce fodder for livestock e.g. Napier grass, Bungoma sweet potato variety for fodder, bracharia, yellow maize and Luciana. The office has tree seedlings nurseries for avocado, macadamia, mango and passion that they sell to farmers at reduced prices.

The members present were informed that Karlo contracts farmers who are involved in multiplying seeds for them after being trained and these farmers earn an income from seed multiplication farming.

MIN 5/02: Presentation by Karlo on plant biotechnology

This presentation was done by Dr. Irene Njagi from Karlo Embu office. The members were informed that the biotechnology tools used by Karlo are; tissue culture, marker assisted selection and genetic modification in crops like coffee, bananas, pineapple, cassava etc.

MIN 6/02: Group work presentation on the wards Agriculture action plans

This presentation was done by Mr. Benson from Gaturi north ward who was also representing farm Africa stakeholders.

Plenaries from the wards agriculture action plans

The Embu county Kirimari requested to be supplied with coffee seedlings to farmers in their Agriculture action plan.

The Mbeti south ward made additions to their agriculture action plan which include; Extraction of Alternative traditional medicine production from herbs at Kianjiru hill, bee keeping project, Muguka value addition, fruit trees like avocado value addition and establishment of a fish aggregation center at Rwika market.

The Kagaari south ward requested the provision of dairy cows as an addition to their agriculture action plan.

The members present requested to have provision for soil testing services and advisory services by Karlo across all the wards in Embu County in order to improve their farming techniques.

MIN 7/02: Group work presentation on the water sector ward action plans

This presentation was done by Mr. Nichodemus Musyoka the Mwea ward administrator.

Plenaries from the wards water sector action plans

It was proposed to have construction of water kiosks on the lower zones of wards in Mbeere North and Mbeere South sub counties whereby community members can access clean water at reduced prices.

MIN 8/02: Lunch break

The meeting took a break for the members to take lunch refreshments at 2:45 pm. The prayers for lunch break were led by Mr. Jamal Runyenje the CECM of trade & tourism department in Embu County.

MIN 9/02: Group work presentation on forestry, environment and energy wards climate action plans

This presentation was done by Mr. Simon Wambua the chairman of Njukiiri CFA

Plenaries from the wards forestry, environment and energy climate action plans

It was proposed that afforestation programs in forests across the wards in Embu County should incorporate planting of more fruit trees to create food for the wild animals therefore minimizing the human wildlife conflicts when animals break into community farms damaging planted crops. Mr. Taratisio ireri who is a bamboo farmer emphasized to the members present on the need to have projects of planting saddle wood in their farms in the 20 wards of Embu County.

It was noted that in Ruguru-ngandori ward one of the schools i.e. Kiriari day secondary school that had been proposed to be supplied with a biogas system already has a bio digester.

MIN 10/02: Group work presentation on wards trade, tourism and infrastructure climate action plans

This was the last group to present from the 5 groups that had been formed the previous day and the presentation was done by Madam Catherine Njiru a community member from Mbeti south ward.

Plenaries from the wards trade, tourism and infrastructure climate action plans

Mr. Simon Wambua the chairman of Njukiiri CFA proposed on the need to have intensive marketing and creation of awareness of the camp ndunda falls which is a big tourist attraction in Embu County.

It was proposed that there should be construction of sanitation facilities near the water fetching sources for community members in the lower zones of wards in Mbeere north and Mbeere south sub-counties to curb the poor sanitation experienced in this places and contamination of the water sources by human wastes.

Construction of a fish processing facility was proposed to serve fish farmers across the 20 wards Establishment of camp sites for tourist's attraction and rock water catchment to provide water for community was proposed at Kianjiru hill.

The mbeti north ward proposed the opening of access to the Embu airstrip for school children to be going for educative trips there.

In Kyeni south ward it was noted that there are caves that can be tapped and used as tourists attraction sites in Embu County.

Maranga hills was suggested as a tourist attraction site since it has caves and wild animals

Establishment of recreation parks with trees planted across the 20 wards was proposed

It was also proposed that there should be establishment of access roads to Kirimiri forest to enable tourist's attraction

MIN 12/02: Announcements and closing of the meeting

The members present who belonged to registered groups were requested to register their contacts with Tarda organization so that they would be supplied with seeds to plant. There being no any A.O.Bs the meeting ended at 3:50 pm with closing prayers by Madam Mercy Mongo the director of Embu county climate change department.

Minutes confirmed by: -

Chairperson: James Gathura

Signature:

Date:

24/5/23

Secretary: Nicholas Kunga

Signature:

Date:

24/5/23

Appendix 3: Photos of Community members Mapping Climate Hazards



Break away sessions of the PCRA facilitators training in Kitui



Director Agriculture making presentations at Kitui workshop



Facilitating a training session in Mwea ward



Group photo of the community and facilitators at Nthawa ward

Appendix 4: Summary extracts of priority climate actions identified by the stakeholders in the various wards of Embu County

a. Kithimu Ward Summary Proposed projects

KITHIMU	Project	Area of Coverage	Amount KES – (Estimated)
	Milk Processing Plant (for value addition)	Entire ward	500
	Bamboo Processing <ul style="list-style-type: none"> • Sensitization • Community nurseries • Training of groups 	Entire ward	20
	Fish Farming <ul style="list-style-type: none"> • Construct fish pods, procure fingerings • Solve cases of malnutrition,;L • Alternative protein food source, 	500 households in Kithimu Ward @200,000 per fish pond	20
	Greenhouse Farming <ul style="list-style-type: none"> • Installation/construction 	200 households across	20

<ul style="list-style-type: none"> • Training of farmers • Water tanks for irrigation water 	Kithimu Ward (Smart farming, roof water harvesting) @KES 200,000 per greenhouse	
Biogas Digesters	200 households in Kithimu Ward	3
Slaughter House (with associated economic activities such as leather tanning and use of horns and hoofs – button making)	Entire ward	10
Revamping Coffee Factories (3 factories) [Coffee improvement (3 No.); Coffee farming extension; Coffee nurseries; Revive Coffee Co-op Society; Modernize the old coffee equipment; Solarize energy supply (or use sludge to produce biogas); Compost coffee sludge to Bio-solid fertilizer (manure)]	Entire ward	100
Dam for irrigation	Ndatu	100
Completion of Kithimu Irrigation Scheme	Entire ward	50
Solar powered Boreholes (5 No.)	Entire ward	5
Extension of piped water for domestic use	Entire ward	5
Climate proofed roads and other Infrastructure	Kivue-Kithimu-Ena Road	500
	Kithimu-Kimangaru Road	132
	Kithimu-Karurina Road	165
	1 Kindu bridge – Kirubu)	10
	Kamuthatha-Ndatu road	5
	Completion of Kithimu Cereals Store	10
	Brick making, Energy saving plant	10
Greening all Kithimu markets, schools and health facilities; tree nurseries; solar panels; sensitization on preservation of environment	Entire ward	10
Installation of solar panels in homes	Kithimu Ward (800 vulnerable households) @ 30,000 per HH	10
Construction of soil conservation structures (gabions, Fanya Juu and Fanya Jini, and Planting of bamboo to prevent further gully erosion)	Entire ward	5
Roof water harvesting in 1000HH		20
Upgrade of kithimu kithegi water project		100
Expansion of Kiruki kiende irrigation water		80
Storm water drainage in Kithimu kithegi and Ndatu		20
Plastic shredder for youth		5
Toothpick processing machine		10

	Matchbox making machine	10
	Dairy and Goat meat value chain promotion	20
	Environment climate information hub and centre	3
TOTAL		1958

b. Evurori Ward Summary proposed projects report

EVURORE	Project	Area of Coverage	Amount KES – (Estimated, Millions)
	Solar Powered Mango Processing Unit (Construction, Installation of Solar Panels and Machinery and Equipment) and Capacity Building	nyuambora	50
	Goats breeds improvement project for marginalised and vulnerable households (plwhiv, pwd, fhh)-Galla goats purchase and distribution	itune marandi location urumori location	60
	Pasture and fodder establishment and conservation in 5 locations	ing'ombe location ringari location uthi location nyuambora lira location	10
	Bee keeping component-purchase and distribution of improved log hives (youths and other marginalized categories) and establishment of a fully equipped mini honey refinery center.	itune location marandi location Ndurumori location Ishiara location	10
	Fish farming enhancement for special groups (youth,women ,plwd) capacity building,liners fingerlings and feeds) provisions	Identified members existing irrigation groups (Kathiga Gaceru, Kiambindu, Kangai,Kamarandi,Mlachaki, Genesis	40
	Promotion of high value vegetables and crops and kitchen gardens for the marginalized households (capacity building and inputs provision)	Targeted women groups in 8 locations (HHs representatives)	5
	Construction and equipping of cereal aggregation centers for collective marketing initiative at locational level (to reduce on post-harvest losses of locally produced crops)	At the 8 location centers	80
	Excavation of new earth dams and installation on of solar pumping and piping system	Ngoce sub-location-Matendera dam Iriatune sub location-Gekarira dam Kiangombe location-Gachuriri dam	45
	Desilting and rehabilitation of	Ciikori earth dam	6

	existing earth dams and installation of solar pumping and piping system	Karumba earth dam	
	Capacity building and provision of inputs for tree nursery establishment and management to self-help groups, irrigation CBOs and CFA's	Kiang'ombe CFA-Ibutuka CBO Kamarandi CBO Kiambindu CBO Kangai CBO other SHG (green belt movement for youth, Kianthenge SHG, rainbow SHG among others)	16
	Agro-forestry and woodlot establishment at house hold level (capacity building and distribution of tree seedlings (Mukau-Melia Volkensii))	Targeted households in the 8 locations	50
	Clean energy adoption (training and financial support to local fabricators/artisans) for mass energy jikos fabrication and distribution	All 8 locations (1 group per location)	5
	Sand harvesting control (check dams construction, river bank protection and capacity building)	3 licensed sand harvesting groups (Marivwe, Mururii and Kieramba)	9
	Climate information services enhancement –participatory scenario planning at ward level and county level for the two seasons (OND and MAM)	Entire ward	1
	Construction of drifts/bridges	Kyangi bridge in Kanyuambora location Muringari drift in Muringari location	8
Total			395

c. Mbeti North Summary proposed projects

MBETI NORTH	Project	Area of Coverage	Amount KES – (Estimated, Millions)
	Establishment of solar powered boreholes	Ithata – Kimangaru Kambo Mwanwagiti Njumbiri	100
	Completion of Itabua-Muthatari Irrigation Project	Itabua location 1000 households	350
	Upgrading of Kamiu-Kavanga Irrigation project	Kamiu location 300-600HH	100
	Upgrading of Kiaga Irrigation water project	Gatituri Sub-location 400-1000hh	100
	Installation of Biogas	100HH in the larger Mbeti North	40

	Installation of green houses	500HH in the larger Mbeti North	50
	Greening programs	All 9 primary schools, 8 secondary schools, TVET and CBOs	30
	Installation of a sewerage system	Kamiu-Majimbo	100
	Plastic waste recycling machine	Kagonga area	300
	Water harvesting tanks (3000ltrs) 1000hh annually	Entire ward	30
	Poultry keeping Dairy goat rearing	Entire ward	2
	Climate information service	Entire ward	1
TOTAL			1203

d. Makima Ward Summary proposed projects

MAKIMA WARD	Area of Coverage	Amount KES – (Estimated, Millions)
	Solarization and upgrading of boreholes	3.5 3 3.5 4.5
	Masinga dam-ndune hills water project	70 50
	Upgrading of Kanyonga footbridge	20
	Drift construction	10.5
	Establishment of community nurseries	5
	Mukau and Muvesi promotion	2
	Masinga -spillway-Mbondoni- kitoloni- mbonzuki rd	18
	Cultivation of drought resistant crops	2
	Procurement of KTBH	1.5
	Livestock value chain promotion	5
	Green gram threshing machine	3
	Construction of sanddams	30
	Distribution of water from Mbondoni Nthunthiruro, Kamwea, and Kwa nduta boreholes	40
	Clean energy promotion	30
	Riparian Land rehabilitation	
	Hills rehabilitation	20
	Sunflower value chain promotion Through UWEZO CBO Target 1000hh with Apiary establishment	20
	Green Gram value chain promotion	20
	Dairy goats value chain promotion	20

	Pasture bulking and aggregation	10
	Construction of drifts and culverts	
	Soil conservation measures..building gabions and Embankments	
	Establish a Disaster Response team at Masinga Dam	10
TOTAL		401.5

Appendix 5: Minutes of one of the meetings held in the Wards during the PCRA process.

**MINUTES OF THE KITHIMU WARD PCRA TRAINING HELD ON THE 19 TH AND
20 TH APRIL 2023 AT FULL
GOSPEL CHURCH HALL KITHIIMU**

MIN/01/2023 PRAYERS AND INTRODUCTIONS

The Meeting began with a Word of prayer followed by brief introduction of the participants and the sub locations they come from. The Kithimu Ward Climate Change Planning committee was fully represented with all members present.

It is noteworthy that all the representatives of the Committee were present representing the youth, men, women, people who are abled differently and the religious bodies in the ward. The Chair of the committee is a youth a notable feat that points to a great interest of Youth in climate change matters.

MIN/02/2023 OPENING REMARKS

The ward Administrator and the Local chief had mobilized key opinion leaders from all the five sub locations of kithimu which was commended by Director mercy who gave the opening speech. The area MCA Hon. Julius karuri alias Kithimu-1 joined the meeting and officially opened the session.

The MCA was impressed by The PCRA process which was participatory, inclusive and transparent. He

Thanked the World bank and the County of Embu for involving the community in the process of identifying climate action to mitigate the impacts of Climate change. This was a good boost to the PCRA

process as it showed lots of political goodwill from the MCA who promised to lobby his colleagues in the

County assembly to pass the any legislation on climate matters to ameliorate climate change impacts.

MIN/03/2023 FLLoCA OVERVIEW

Director Mercy of the CCU took the participants through common terms that are used in Climate change

matters and asked participants to give the names in Kiambu as they understood them which showed

that they understood climate change matters.

Director mercy also took the participants through the Stakeholder Analysis and institutional analysis with the participants identifying stakeholders and their role in kithimu. She also explained the interplay

of Influence and Interest among stakeholders.

The University of Embu – a major institutional stakeholder in Embu-were represented by Dr. Nyambane

who was aiding the facilitators of the day.

MIN 04/2023 PCRA TRAINING OBJECTIVES AND TOOLS USED

The PCRA tools Objective included: To equip participants with knowledge on Participatory Vulnerability

and Capacity

assessment skills and to equip participants with practical skills on undertaking PCRA

We used various tools to get information from the community members such as:

- The resource/hazard map for the ward.

- Seasonal calendar, daily clock and household decision making pile

- historical timeline

- Identification of key hazard, Hazard analysis/vulnerability matrix, Impact chains, adaptation pathway

and came up with community projects thereafter which formed the Kithimu ward climate action plan.

The rainfall pattern is bi-modal with two distinct rain seasons. Long rains occur between March and June

while the short rains fall between October and December. Rainfall quantity received varies with altitude

averaging to about 1,067.5 mm annually and ranging from 640 mm in some areas to as high as 1,495

mm per annum. Temperatures range from a minimum of 12oC in July to a maximum of 30oC in March

with a mean average of 21oC. July is usually the coldest month with an average monthly temperature of

15oC while September is the warmest month with an average monthly temperature rising to 27.10C

HAZARD/ RESOUCCE MAP for KITHIMU WARD.

The objective of drawing a hazard map in the PCRA process was to become familiar with the community

and to see how the place is perceived by different groups within the community. The community members first drew key resources after they were in agreement and having understood the role of the

map in highlighting the hazards affecting the different areas in the ward

OBJECTIVES.

- To become familiar with the community and to see how the ward is perceived by different groups within the community

- To identify important livelihood resources in and around the community

- To initiate the identification of hazards affecting the community (both climate-related and other)
- Understand neighborhood and threats
- To identify important livelihood resources in and around the community

Historical Timeline:

Seasonal Calendar

Objectives;

- To analyze seasonal changes in activities and periods of stress or scarcity
- To identify important livelihood activities
- To document community observations of changing trends in seasonal patterns

Daily clock

Objectives

- To illustrate the inequality in workloads within the household and how this can undermine resilience and affect the ability to implement the adaptation options,
- To show the value of women's work.
- To understand how daily tasks and the division of responsibilities shift when a climate-related shock occurs.
- To identify key resilience initiatives that can be undertaken during free time and how to reduce some burdens from the burdened category.

It can be deduced that men and women have various roles and this may change if the household is

headed by a woman mostly single mothers and widows. The men wake up later than the women but

have a late breakfast though they break early. Women are busier than men in household activities.

Household Decision Making Pile Sorting

Objective.

- To explore who in the household has the authority to make important decisions
- To discuss how decision-making could be more equal as a means to increase resilience

Identification of Key hazards

Impact Chains

Objective -To analyse direct and indirect impacts of climate change in Kithimu ward as a basis for

identifying options for adaptation an whilst Referring back to the hazard/resource map drawn e

Vulnerability Matrix

Objectives

- To identify the highest-priority livelihood assets and hazards
- To analyse the degree of impact of hazards and changes on priority livelihood assets

Venn Diagram

Objectives

- To understand which institutions are most important to communities
- To assess access to services and availability of social safety nets
- Understand gaps that exist in implementation of resilience projects

Household Decision Making Pile Sorting

Objective.

- To explore who in the household has the authority to make important decisions
- To discuss how decision-making could be more equal as a means to increase resilience

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Vulnerability Matrix

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- To identify the highest-priority livelihood assets and hazards
- To analyze the degree of impact of hazards and changes on priority livelihood assets

Venn Diagram

Objectives

- To understand which institutions are most important to communities
- To assess access to services and availability of social safety nets
- Understand gaps that exist in implementation of resilience projects

MIN/05/2023 VOTES OF THANKS AND CLOSING REMARKS

The ward Administrator took over the program and requested one member to give votes of thanks and prayed. The meeting was adjourned at 17.00hours.


Minutes confirmed by: -

Chairperson: Edward Muriithi

Signature: 

Date: 19/4/23

Secretary: Wilfred Patrick

Signature: 

Date: 19th/4/23

Appendix 6 Selected Ward Attendance List Disaggregated Into Youth, Gender, PLWD and Vulnerable Groups

PCRA Consultative Meeting Attendance Form

- County EMBU
- Sub County Matithira
- Ward KITHIRU
- Date 17th 20th April 2023

S/No	Name	ID	Mobile number	Gender	People living with disability (yes/ no)	Age			SIGN	
						18-35Yrs	35-60Yrs	Above 60Yrs		
1.	Dickson Kinuthia Gironi	37610479	0759319461	Male		✓			DAY1	DAY2
2.	WELIDA N'JANUA NIKI	37004174	0705044696	Female	✓	✓			DAY1	DAY2
3.	JOSEPH FUND NJIRU	250 92296	0725163519	✓			✓		DAY1	DAY2
4.	GLADYS NYAKIO IREI	10670879	0729434633	✓	✓			✓	DAY1	DAY2
5.	JOSEPH Muthi Mwangi	22651664	070324815	✓		✓			DAY1	DAY2
6.	JOSEPH NTERU KURINDA MWA	02336668	0722351117	✓				✓	DAY1	DAY2
7.	Njiru Wanne Wanjira	39079641	0198604213	✓		✓			DAY1	DAY2
8.	David E. Livingston	20122312	0726344169	✓		✓			DAY1	DAY2
9.	DAVID NISUE	25998181	0726746721	✓			✓		DAY1	DAY2
10.	STELLA N. KINYUA	28705865	078635955	✓	✓	✓			DAY1	DAY2
11.	KEVIN MUKANGI	243397798	0714054440	✓		✓			DAY1	DAY2
12.	JOSEPH MUTIGI NJICKA	30440756	0114400767	✓		✓			DAY1	DAY2
13.	MARY MUKU IKENI	7034729	0714645700	✓	✓			✓	DAY1	DAY2
14.	GHORGO Ivy Gakii	41264750	0714488943	✓		✓			DAY1	DAY2
15.	N. MUGO NKARUGUTI	5091628	0725689645	✓			✓		DAY1	DAY2
16.	KENNEDY MURITHI N	30680646	0702365314	✓		✓			DAY1	DAY2
17.	MWAGA JAMES KIMUNTHU	54212921	0712646939	✓		✓			DAY1	DAY2

PCRA Consultative Meeting Attendance Form

- County EMBU
- Sub County MIANATTA
- Ward KITHIMU
- Date 17TH 20TH APRIL 2023

S/No	Name	ID	Mobile number	Gender		People living with disability (yes/ no)		Age		
								18-35Yrs	35-60 Yrs	Above 60Yrs
18	PAUL NYAGA	28788362	0711760335	Male	Female	Yes	No			
19	Grace Igandu njagi	21090462	0714110942		✓					
20	Paul Nyaga	28788362	0711760335	✓	✓			✓		
21	Caroline Njoki Gachagua	27436809	0712053932		✓					
22	JANE WANJIUKI NJUGU	13263652	0713268301		✓				✓	
23	Dorey MURUGU	36059988	0758989911		✓					
24	Eusta MURUGU	38249352	0112102133		✓					
25	KELVIN MURINI	33616324	0705319354	✓				✓		
26	PURITY KAWIRA MURU	22348260	0725225820		✓					
27	ANNA NTHOKI NZISA	41795877	0793466776		✓			✓		
28	ORINDA KAWIRA KURIA	7450057	0926170297		✓					
29	Dickson Kangi	16025052	0722227741	✓					✓	
30	Joyce Wawira Njiru	26732709	0710857410		✓					
31	ALEX FUNDI	33724611	0711928181	✓				✓		
32	Antony MURUGU NJUGU	26420133	0715255844	✓					✓	
33	IAN MACHARIA MUTHEE	37241927	0702365070	✓				✓		
34	ALI KATHAN MURANGI	319446406	0799567075	✓				✓		

- County Emery

- Sub County MANYATA

- Date 19TH - 20TH APRIL 2003.

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PCRA Consultative Meeting Attendance Form

- County EMBU
- Sub County RUMUKEI
- Ward RUMUKEI CENTRAL
- Date 12TH - 14TH APRIL 2023

S/No	Name	ID	Mobile number	Gender		People living with disability (yes/ no)		Age	
				Male	Female	Yes	No	18-35Yrs	35-60 Yrs
1	John Gunga Nwanku	25420188	0795555937	✓			✓	✓	
2	Elijah Mwaniki N.	24639707	0727000222	✓				✓	
3	Stella Ndoro Ndoro	26280160	0712607488		✓			✓	
4	Doris H. Kariuki	13672213	0721713713		✓				✓
5	ERIC MUNENE NTERU	36709256	0759830519	✓				✓	
6	Stephen Kamau	44090482	0710530141	✓		✓		✓	
7	Joseph Muriuki	22218485	0723364854	✓					
8	Henry Munene Muriuki	21873256	0727519961	✓					✓
9	IRERI SINDON KARIUKI	22076603	0721693379	✓				✓	
10	EMILIA MUTHANI	11211642	0721666983		✓				✓
11	Sarah N. Kariuki	56705256	0769830619		✓				✓
12	Julet Karimi Kithinji	13572470	0727691228		✓				
13	Caroline Ndoro Muriuki	23801838	0720547169	✓	✓				✓
14	Consolata MARIU	3305964	0721171085		✓			✓	
15	BENEFICE MWENDA NTERU	27817509	0704866078	✓					✓
16	Robin Munene	34285404	0727041935	✓					

PCRA Consultative Meeting Attendance Form

- County EMBU
- Sub County RUMENGE
- Ward RUMENGE CENTRAL
- Date 13TH MARCH APRIL 2023

S//No	Name	ID	Mobile number	Gender		People living with disability (yes/no)		Age			SIGN	
				Male	Female	Yes	No	18-35Yrs	35-60 Yrs	Above 60Yrs	DAY1	DAY2
17	LAMECK MUTHI NYAGA	20527123	0769058926	✓					✓		<i>[Signature]</i>	<i>[Signature]</i>
18	Josian Nyaga Ngando	11211150	0710676710	✓							<i>[Signature]</i>	<i>[Signature]</i>
19	CAROLINE IRE R	04726444	0712306499		✓				✓		<i>[Signature]</i>	<i>[Signature]</i>
20	Benard FREDERICK KENYA	24040812	0216053966	✓							<i>[Signature]</i>	<i>[Signature]</i>
21	Nancy Muthoni NJERI	10058005	0714217737		✓				✓		<i>[Signature]</i>	<i>[Signature]</i>
22	JANE WAMBURA NDIRA	11810901	0758311728		✓				✓		<i>[Signature]</i>	<i>[Signature]</i>
23	NANCY KAMBURA	13571508	0715454047		✓					✓	<i>[Signature]</i>	<i>[Signature]</i>
24	John Nyaga Iyeri	7678402	0720128512	✓							<i>[Signature]</i>	<i>[Signature]</i>
25	CECIL RUSANGA	21663067	0201144939		✓						<i>[Signature]</i>	<i>[Signature]</i>
26	ELIJAH NAMU	20652980	0715542050	✓					✓		<i>[Signature]</i>	<i>[Signature]</i>
27	EMILIO MBOGO W	80660136	0722100048	✓							<i>[Signature]</i>	<i>[Signature]</i>
28	ERIC MUMIRI K	25715729	0760295564	✓					✓		<i>[Signature]</i>	<i>[Signature]</i>
29	ANGELITA BURMAN	3034460	0725660842		✓						<i>[Signature]</i>	<i>[Signature]</i>
30	Maria Nyeri	21698397	0285743195	✓				✓			<i>[Signature]</i>	<i>[Signature]</i>
31	LUCY WANJA NIAGA	20619076	0781003720		✓				✓		<i>[Signature]</i>	<i>[Signature]</i>
32	WILFRED P.M NYAGA	13379650	0757699719	✓					✓		<i>[Signature]</i>	<i>[Signature]</i>

- County EMERY
- Sub County RUNTEGEE
- Ward RUNTEGEE (CENTRAL
- Date 13th - 14th April 2023

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PCRA Consultative Meeting Attendance Form

- County ENGBU
- Sub County MAGEERE NORTH
- Ward ENUGORE
- Date 17th 12th APRIL 2023

S/No	Name	ID	Mobile number	Gender		People living with disability (yes/ no)		Age			SIGN	
				Male	Female	Yes	No	18-35yrs	35-60 yrs	Above 60yrs	DAY1	DAY2
1	IBERI NELSON MUGAMBI	28211555	0717732912	✓				✓				
2	NEPAKI JACKLINE WAWIRA	29883219	0790199220		✓			✓				
3	EUSTACE MUTEMBEI NYAGA	22122180	0708469238	✓				✓				
4	NORMAN NDURU NTSUE	4401471	0715807504	✓				✓				
5	RODOLPH MURINDA NDERA	13249628	0706706594		✓				✓			
6	JOHNPAUL KITHINTI	28524153	0704576332	✓				✓				
7	MAAMU WAGYON NYGA	25593554	0720915829		✓				✓			
8	Kingfred Muthoni Njagi	22932231	0725697942		✓							
9	John Nyagada Njiru	10222207	0728714704	✓					✓			
10	Begeman Mugo Njuri	132633419	0719493832	✓				✓				
11	AUSILIA MUKAMI NGU	24415580	0708066752		✓			✓				
12	LUGYON MURU NYIKA	13834064	0720530033		✓			✓				
13	Pharusa Mure Njue	32640551	0792333742		✓				✓			
14	Lucyrene mbura njoma	138540640	0724530033		✓				✓			
15	SOSHAAT NYAGA MACARA	7035999	0791190026	✓					✓			
16	Begeman Nyagat Nyika	22532461	0111824824	✓								

PCRA Consultative Meeting Attendance Form

- County EMBU
- Sub County MBERE NOA
- Ward ENTURU
- Date 17th-18th APRIL 2023

S/No	Name	ID	Mobile number	Gender		People living with disability (yes/ no)		Age			SIGN	
				Male	Female	Yes	No	18-35Yrs	35-60 Yrs	Above 60Yrs	DAY1	DAY2
17	ELIJAH WABU NGUGI	07974224	0719458862	✓		✓				✓	<i>[Signature]</i>	<i>[Signature]</i>
18	JOSPEH KIMATHI KIRUI	23422130	0724876940	✓							<i>[Signature]</i>	<i>[Signature]</i>
19	ISAAC KAKUKE NIERU	1156430	0724465038	✓					✓		<i>[Signature]</i>	<i>[Signature]</i>
20	BENJAMIN MWUA KISUKU	13263419	0719492832								<i>[Signature]</i>	<i>[Signature]</i>
21	IBERI NELSON MUGIMBI	25211555	082115550813914	✓							<i>[Signature]</i>	<i>[Signature]</i>
22	JUDITH KAGENDO NDAI	23419830	0721439431		✓						<i>[Signature]</i>	<i>[Signature]</i>
23	MARGARET MURUGU MURUGU	2011203	08266845		✓						<i>[Signature]</i>	<i>[Signature]</i>
24	FLORENCE KAPINI HARI	22561060	0728955160		✓						<i>[Signature]</i>	<i>[Signature]</i>
25	ISRAELI JACQUE WAWIRA	29883219	0790199220		✓						<i>[Signature]</i>	<i>[Signature]</i>
26	TERESA G. NGARA	10461160	0711964965		✓						<i>[Signature]</i>	<i>[Signature]</i>
27	WINIFRED MUKER NJUGI	2245231	0725893942		✓						<i>[Signature]</i>	<i>[Signature]</i>
28	VERONICA W. NYANGA	0987654	0708034295		✓					✓	<i>[Signature]</i>	<i>[Signature]</i>
29	JOSCELYN MURUGA	29872461	0742570579	✓							<i>[Signature]</i>	<i>[Signature]</i>
30	KENEDY MURUTHI NYAGA	2910178	0743832473	✓							<i>[Signature]</i>	<i>[Signature]</i>
31	NATHEL NATAH GITENGA	28249842	070605106	✓				✓			<i>[Signature]</i>	<i>[Signature]</i>
32	ANNE NYAGA MURUGA	24979357	0706106551	✓				✓			<i>[Signature]</i>	<i>[Signature]</i>

- County EMBU
- Sub County MBERE NORTH
- Ward EYUADRE
- Date 17th-18th APRIL 2023

- County EMBU
- Sub County MBERE NORTH
- Ward EYURDE
- Date 17th - 18th APRIL 2023

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PCRA Consultative Meeting Attendance Form

- County EMBU
- Sub County NANTATTA
- Ward KURUMBA
- Date 13TH - 14TH APRIL 2023

S/No	Name	ID	Mobile number	Gender		People living with disability (yes/ no)		Age		
				Male	Female	Yes	No	18-35Yrs	35-60 Yrs	Above 60Yrs
1	CAROLINE MURUGI NDAGA	29494617	0702623697		✓		✓	✓		
2	Evalyn Murugi kariuki	31027202	0704116544		✓					
3	Shabun Abdul Kamothe	31752212	0746221634	✓				✓		
4	BETH KARIMI KARIUKI	22435417	0717062692		✓				✓	
5	SILVIA WANJAGA	39031625	0114678958		✓			✓		
6	Josephine Mwangi	9523887	0726431223	✓						
7	Joyce Mariage Muringo	25267943	0701689386		✓					
8	Amira Abdul Karim	20042319	0715413459		✓		✓		✓	
9	IBRIS MUGAMBI	31944738	0797459908	✓				✓		
10	John Mderitu	25430019	0769309484	✓				✓		
11	Esther King'et	21826868	0721342542		✓			✓		
12	Josephine NJOKI KURIA	11152714	0723308932		✓				✓	
13	Florence Wanjau	13449056	0721631410		✓				✓	
14	Tatuma Asuma	6660575	0722813576		✓					✓
15	Abst Patrick Mwendu	0424595	0726929485	✓						✓
16	Wilson Njiru Kariuki	0595884	0722444550	✓						

[illegible]

Runyenjes Central ward Map (not drawn to scale) as given by community members



KEY



BAT COMPANY

--- Location Boundary



Quarry



church



primary & secondary school



Dry area



Miraa zone



Police post



Hospital



Hills



Market - Markle



Sub county headquarters



Water tanks (Matinjili)



Road class B tarmac



Road class D -murrum



River (Ena)



Three seasonal river

Safaricom Booth

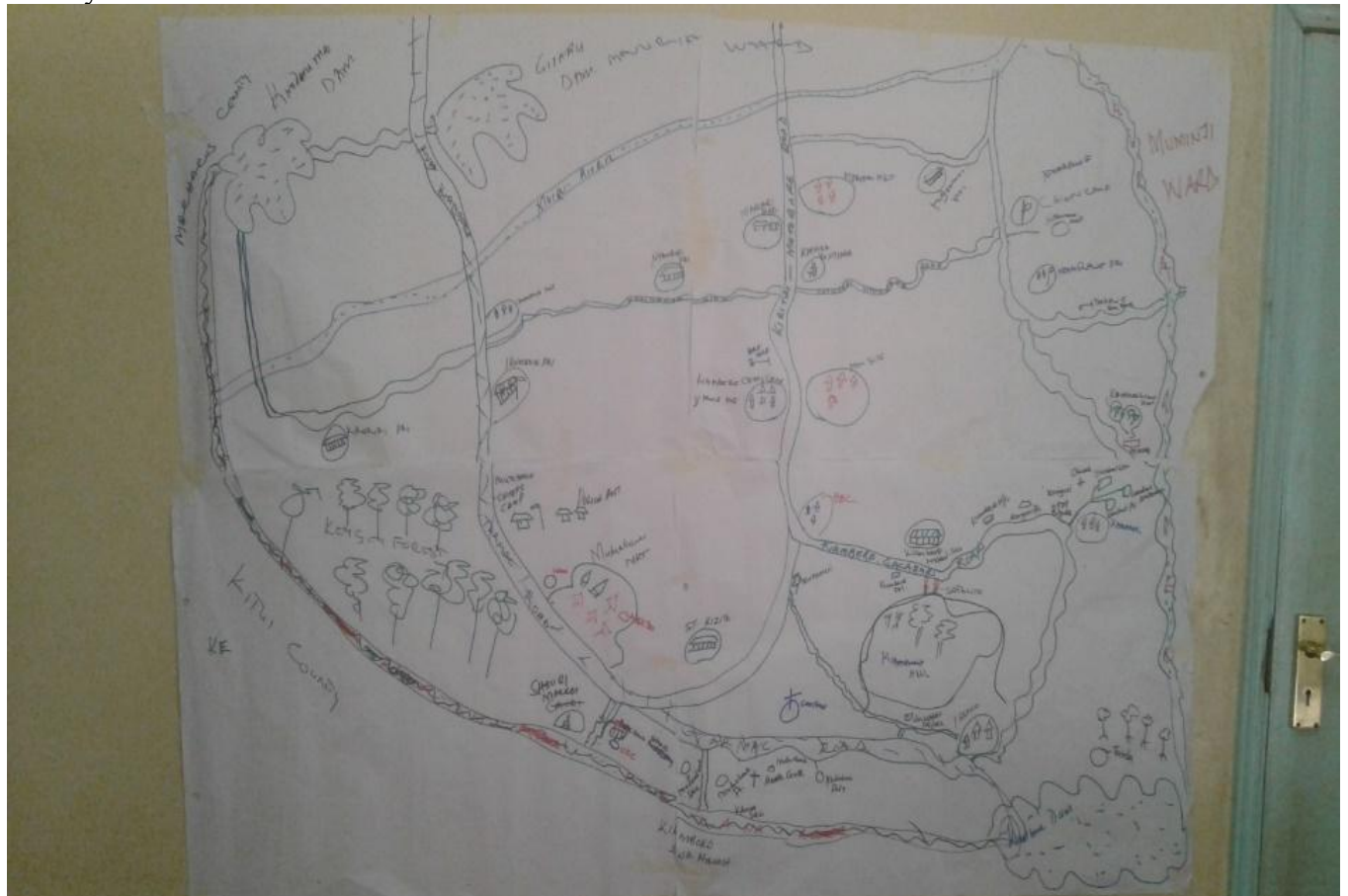
Irrigation sprinkler

Spring source

Nthawa ward resource map in Mbeere North Sub



County



Kiambere Resource Map in Mbeere North subcounty



Kyeni North Ward in Runyenjes sub county