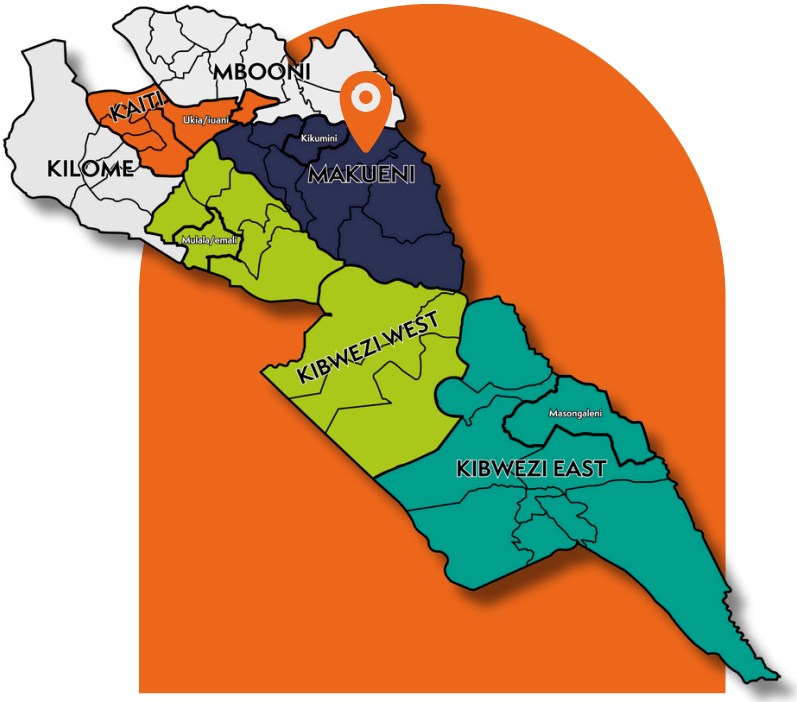
MAY 2024

CLIMATE ACTION IMPLEMENTATION SCHEME

Makueni County - Kenya



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WHY THE IMPLEMENTATION SCHEME?

Recognizing the importance of bridging the gap between scientific research, policy formulation, and practical implementation, Clim-Eat, a Dutch-based NGO, conducted a study in Makueni County, Kenya, aimed at identifying challenges in implementing climate actions.

The findings of this study are available for reference here. In the subsequent phase of the project, Clim-Eat facilitated a stakeholder dialogue with the objective of devising a practical and actionable implementation scheme to be executed by the end of the year 2025. This implementation scheme serves as a concrete manifestation of priority climate actions within Makueni County's food system, pointing out specific actions to be taken, identifying key stakeholders involved, and providing estimated costs associated with implementation.

By translating research insights into tangible strategies and enhancing collaboration among stakeholders, the implementation scheme aims to drive meaningful progress towards climate resilience and sustainable development in Makueni County.

Furthermore, the implementation scheme outlined in **Table 1** details the comprehensive plan formulated to address the identified challenges and maximize impact. **Table 1** highlights key aspects of the implementation strategy, including priority climate actions, indicators for success, estimated costs, lead and supporting stakeholders, the estimated number of farmer households to be impacted, achievements over the past five years, and targets to be achieved by the end of 2025.

This structured approach ensures clarity and accountability in the execution of climate actions, fostering a pathway towards a more resilient and sustainable future for Makueni County

INTRODUCTION

Makueni County, located in the Eastern region of Kenya, faces significant challenges related to water scarcity and agricultural sustainability.

The adverse impacts of climate change, coupled with declining water levels and unsustainable agricultural practices, threaten the livelihoods of its residents. To address these pressing issues and create a sustainable future for agriculture and water management, we propose a demand-driven list of priority actions to be implemented by the end of the year 2025 rolling to 2026.

WHAT CONSTITUTES THE CHALLENGE?

Makueni county lies in the arid and semi-arid zones of Kenya. The agricultural sector is vital for the county's population but it faces numerous challenges associated with climate change.

These challenges include water scarcity, declining river water levels, unsustainable water management, and inadequate agricultural infrastructure.

This scarcity hampers irrigation efforts and threatens the sustainability of farming activities. Unregulated sand harvesting exacerbates the situation, leading to environmental degradation and compromising water availability. In parallel, the agricultural sector faces challenges in adopting sustainable practices and accessing relevant resources.

Limited access to climate-smart technologies, market infrastructure, and coordination among stakeholders hinder efforts to enhance agricultural productivity and resilience to climate change. The absence of localized advisory services and training programs tailored to the needs of local farmers contributes to the slow adoption of sustainable farming practices and innovative technologies.

In response to these challenges, comprehensive interventions are urgently required to address water scarcity and agricultural sustainability in Makueni. Efforts should prioritize enhancing water availability through sustainable water structures and promoting efficient water management practices.

Similarly, initiatives should focus on improving agricultural productivity and resilience by disseminating climate-advisory services, adopting sustainable farming practices, and enhancing market accessibility.

To achieve progress, it is essential to establish collaborative partnerships among key stakeholders, including the Makueni County Government, NGOs, agricultural cooperatives, and research institutions. By working together and leveraging expertise and resources, developing and implementing tailored solutions to address challenges in the county's food systems.

WHAT IS THE AIM OF THE IMPLEMENTATION SCHEME IN MAKUENI COUNTY?

The primary aim of the implementation scheme to narrow the divide between climate change policies and their practical implementation in Makueni County's food system.

To be more specific, the implementation scheme aims to:

- Enhance water security and governance;
- Enhance agricultural productivity and market access;
- Upscale value addition infrastructure for major agricultural value chains;
- Boost Livestock production and food safety;
- Facilitate access to financial credit and insurance and green Energy solutions;
- Implement robust monitoring and evaluation mechanisms to track the progress and effectiveness of climate actions in the county.

TABLE 1. DEMAND DRIVEN IMPLEMENTATION SCHEME FOR MAKUENI COUNTY

Thematic area		**Water**
Climate actions		Construct fifteen (15) sand dams /weirs with sumps along rivers for small-scale irrigation and household use, enhancing water availability
Indicator for success	**Achievements of the past 5 years**	Constructed 40 sand dams/Sumps and 25 Weirs.
	End-of-2025 Goals	Completion of 15 sand dams/weirs with sumps.
Cost Estimates (USD)		450.000
Lead stakeholder		1. Africa Sand Dam Foundation (ASDF) - *Construction and maintenance of the sand dam dam* 2. County-government, Department of Water, Sanitation, Environment and Natural Resources- Overall coordination, Regulatory oversight, Assistance in land acquisition, environmental impact assessments, facilitation of community engagements
Supporting stakeholder(s)		1. Makueni County Sand Conservation and Utilization Authority – *Supervise and coordinate all matters relating to sand conservation* 2. County Department of Agriculture, Livestock, Fisheries, Irrigation and Cooperatives- *Advise on irrigation systems design, Offer training and support to local communities on sustainable agricultural practices* 3. Community/Farmers- *Provision of Labor, Maintenance of the dams, Utilization of the dams*
Estimated Impacted Households* ***An average household in Makueni comprises of 4 people.**		18000

Thematic area		**Water**
Climate actions		Establish five (5) rock catchments to harvest rainwater, providing smallholder farmers in Makueni with reliable water sources for small scale irrigation
Indicator for success	**Achievements of the past 5 years**	Developed and distributed 3 rock catchment areas
	End-of-2025 Goals	Fully constructed 5 rock catchments with storage points
Cost Estimates (USD)		200.000
Lead stakeholder		1. Africa Sand Dam Foundation (ASDF) - *Construction and maintenance of the rock catchments* 2. County-government, Department of Water, Sanitation, Environment and Natural Resources-*Overall coordination, Regulatory oversight, Assistance in land acquisition, environmental impact assessments, facilitation of community engagements*
Supporting stakeholder(s)		1. County Department of Agriculture, Livestock, Fisheries, Irrigation and Cooperatives-*Advise on irrigation systems design, Offer training and support to local communities on sustainable agricultural practices* 2. Community/Farmers-*Provision of Labor, Maintenance of the rock catchments, Utilization of the rock catchments*
Estimated Impacted Households* ***An average household in Makueni comprises of 4 people.**		6000

Thematic area		**Water**
Climate actions		Drill thirty-five (35) boreholes to provide essential access to groundwater for irrigation and domestic use, ensuring consistent water supply.
Indicator for success	**Achievements of the past 5 years**	119 Drilled and Equipped Boreholes
	End-of-2025 Goals	35 fully drilled and equipped boreholes
Cost Estimates (USD)		1.300.000
Lead stakeholder		1. County government, Department of Water, Sanitation, Environment and Natural Resources-*Overall coordination, Regulatory oversight, Assistance in land acquisition, environmental impact assessments, facilitation of community engagements* 2. Borehole drilling companies e.g. Davis & Shirtliff, ewak etc-*Provision of borehole drilling services and maintenance*
Supporting stakeholder(s)		1. Community-*Provision of Labor, Maintenance of the boreholes, , Utilization of the boreholes* 2. County Department of Agriculture, Livestock, Fisheries, Irrigation and Cooperatives-*Advise on irrigation systems design, Offer training and support to local communities on sustainable agricultural practices*
Estimated Impacted Households* ***An average household in Makueni comprises of 4 people.**		35.000

Thematic area		**Water**
Climate actions		Promote roof water harvesting and storage at household level through subsidizing installation of at least one water storage tank of 10,000 liters to each household by providing 50% cost incentive to 1000 households to adopt water tanks.
Indicator for success	**Achievements of the past 5 years**	90 roof catchment water harvesting plastic tanks were distributed to public institutions and organized community women farmer groups under the “Nzangule ya Matangi” program.
	End-of-2025 Goals	1000 households owning a 10,000-litre tank
Cost Estimates (USD)		350.000
Lead stakeholder		1. Water tank suppliers/vendors-*Supply of tanks* 2. County government, Department of Water, Sanitation, Environment and Natural Resources-*Training on water harvesting and management* **assisted by: County Department of Agriculture, Livestock, Fisheries, Irrigation and Cooperatives - Offer training and support to local on sustainable agricultural practices*
Supporting stakeholder(s)		Farmer community – *Installation of tanks, utilization of the harvested water for domestic and agricultural use*
Estimated Impacted Households* ***An average household in Makueni comprises of 4 people.**		1.000

Thematic area		**Agriculture**
Climate actions		Develop one comprehensive digital climate information system, delivering real-time climate insights, empowering Makueni farmers with actionable data for informed decisions
Indicator for success	**Achievements of the past 5 years**	No climate information system developed
	End-of-2025 Goals	A fully functional climate information system in place
Cost Estimates (USD)		40.000
Lead stakeholder		County government- Department of Agriculture, Livestock, Fisheries, Irrigation and Cooperatives – *Management of the platform, information on GAPs and good livestock practices*
Supporting stakeholder(s)		1. Kenya Meteorological Department – Provision of data on weather forecast and early warnings to be disseminated through the platform 2. Cereal Growers Association (CGA) – Support with information on GAPs
Estimated Impacted Households* ***An average household in Makueni comprises of 4 people.**		190.000

Thematic area		**Agriculture**
Climate actions		Strengthen capacity-building through extension services, fostering collaboration between public and private sectors to enhance agricultural knowledge and skills. This will involve incentivizing the current Village Based Advisors (VBAs) who are the support system of government extension officers by providing monthly stipends of KES 15,000 per VBA. There currently are 190 VBAs, with a ratio of VBA to farmer at 1:150. By 2025, the aim is to Increase the number of VBAs from 190 to 200.
Indicator for success	**Achievements of the past 5 years**	The government extension staff to farmer ratio improved from 1:1416 in 2018 to 1:1357 by the end of 2021. Moreover, 11.3% of farming households in the county are now part of organized agricultural groups and producer organizations. These improvements were facilitated by the recruitment of 32 Agricultural Field Extension Officers and 240 Community Extension Volunteers.
	End-of-2025 Goals	• A fully functional system where VBAs receive a monthly stipend of KES 15,000. • Recruitment of 10 more VBAs to support the government extension officers
Cost Estimates (USD)		460.000
Lead stakeholder		1. Cereal Growers Association- *Management of Village Based Advisors (VBAs)* *in partnership with: 2. County government- Department of Agriculture, Livestock, Fisheries, Irrigation and Cooperatives – *Overall oversight of extension work in the county*
Supporting stakeholder(s)		AGRA- Support with VBA work *(AGRA initiated the VBA model)*
Estimated Impacted Households* ***An average household in Makueni comprises of 4 people.**		40.000

Thematic area		**Agriculture**
Climate actions		Conduct 5 sensitization forums on climate-smart technologies and 5 forums on climate actions targeting 200,000 farmers who will be expected to put what they have learnt into practice by adopting at least one new CSA method. Additionally, Five (5) community climate actions to be implemented by the end of 2025. This is aimed at enhancing the adoption of sustainable, climate smart farming practices such as regenerative agriculture, conservation agriculture, agroecology, and agroforestry, hence promoting ecological balance and soil health.
Indicator for success	**Achievements of the past 5 years**	No data available
	End-of-2025 Goals	1. A combination of 10 forums on CSA fully executed to at least 200,000 farmers. 2. 60% of the farmers implementing at least one of the CSA practices
Cost Estimates (USD)		150.000
Lead stakeholder		County government- Department of Agriculture, Livestock, Fisheries, Irrigation and Cooperatives- *Coordinate and conduct trainings through extension officers in liaison with VBAs*
Supporting stakeholder(s)		Cereal Growers Association (CGA)- Support the department in trainings through the VBAs
Estimated Impacted Households* ***An average household in Makueni comprises of 4 people.**		200.000

Thematic area		**Agriculture**
Climate actions		Upscale value addition infrastructure for key agricultural value chains like fruits and vegetables by producing 800,000,000 litres of ready to drink fruit juice, and 800,000kg of puree valued at USD 500,000
Indicator for success	**Achievements of the past 5 years**	2,255,530 kg of puree worth USD 1,250,000 produced
	End-of-2025 Goals	Produce over 800 thousand kgs of puree and 800 million litres of fruit juice
Cost Estimates (USD)		1.900.000
Lead stakeholder		County government- Department of Agriculture, Livestock, Fisheries, Irrigation and Cooperatives through Kalamba fruit Processing Plant – *Processing of fruits to puree and juices*
Supporting stakeholder(s)		Farmer communities – *Supply of fruits to Kalamba factory for processing*
Estimated Impacted Households* ***An average household in Makueni comprises of 4 people.**		30.000

Thematic area		**Agriculture**
Climate actions		Facilitate access to agricultural financing through credit as well as insurance schemes for at least 10,000 farmers, providing financial protection against agricultural risks.
Indicator for success	**Achievements of the past 5 years**	No data available
	End-of-2025 Goals	At least 10,000 farmer groups accessing the credit facilities and insurance schemes
Cost Estimates (USD)		100.000
Lead stakeholder		1. SACCOs- *Provision of loans* 2. Banks- *Provision of loans* 3. Pula- *Administering of agricultural insurance* 4. Acre Africa- *Administering of agricultural insurance*
Supporting stakeholder(s)		County government- Department of Agriculture, Livestock, Fisheries, Irrigation and Cooperatives- *Support with farmer profiling and advocacy*
Estimated Impacted Households* ***An average household in Makueni comprises of 4 people.**		10.000

Thematic area		**Agriculture**
Climate actions		Promote the adoption of green energy solutions through subsidized clean cooking stoves and installation of biogas at the household level to reduce reliance on non-renewable energy sources. The aim is to ensure 30% of households to have adopted a green energy solution
Indicator for success	**Achievements of the past 5 years**	No data available
	End-of-2025 Goals	Success will be determined by the number of households who will have adopted the green energy solutions
Cost Estimates (USD)		760.000
Lead stakeholder		1. Sistema Bio- *Installation of biogas* 2. Burn- *Supply of cooking stoves* 3. Davis and Shirtliff- *Supply and installation solar pumps*
Supporting stakeholder(s)		1. County-government, Department of Water, Sanitation, Environment and Natural Resources - *Regulatory oversight, environmental impact assessments, facilitation of community engagements* 2. County government- Department of Agriculture, Livestock, Fisheries, Irrigation and Cooperatives
Estimated Impacted Households* ***An average household in Makueni comprises of 4 people.**		50.000

Thematic area		**Agriculture**
Climate actions		Increase livestock feed production and preservation methods to support livestock farming and ensure adequate animal nutrition, through the provision of farm equipment, distribution of pasture seeds and linkages to market and building fodder stores
Indicator for success	**Achievements of the past 5 years**	2,200 acres of improved fodder were established and 2 hay stores constructed
	End-of-2025 Goals	• Increase in acreage under fodder from 2,200 acres to 3200 acres • Number of farmers growing fodder for livestock and practicing feed preservation increase by at least 3000
Cost Estimates (USD)		200.000
Lead stakeholder		County government- Department of Agriculture, Livestock, Fisheries, Irrigation and Cooperatives – *Involved in Implementation and farmer profiling and training*
Supporting stakeholder(s)		1. Mastercard Foundation – *Involved in funding* 2. FAO – *Involved in implementation*
Estimated Impacted Households* ***An average household in Makueni comprises of 4 people.**		3.000

ANNEX 1 - PROPOSED WORK PLAN

How is the Implementation scheme developed?

Stakeholder meetings with government officials, community leaders, farmers, NGOs, and other stakeholders were organized in which priority actions, project objectives, roles, and responsibilities were determined.

How do we propose the Implementation to be executed?

Stakeholder meetings with government officials, community leaders, farmers, NGOs, and other stakeholders were organized in which priority actions, project objectives, roles, and responsibilities were determined.

1. Project Initiation Phase:
- Identify specific priority projects to be implemented from the implementation scheme.
- Establish Project Team: In liaison with the lead partner, assign roles and responsibilities to team members.
- Kick-off Meeting: Convene a meeting with lead and supporting partners to discuss project objectives, timelines, and deliverables.
- Develop Project Charter: Document project scope, objectives, stakeholders, and challenges.

2. Monitoring and Evaluation of Existing Projects:
- Review previous projects: Evaluate the effectiveness of past initiatives related to water and agriculture.
- Identify Key Learnings: Review successes, challenges, and lessons learned from previous projects.

3. Mapping and Identification Phase:
- Geographic Mapping: Identify and map areas in Makueni where actions will be implemented.
- Household Identification: Collaborate with local authorities to identify farmers and households in target areas.

4. Procurement Phase:
- Develop Bid Documents: Prepare documents outlining project requirements, scope of work, and evaluation criteria.
- Call for Bidders: Issue requests for proposals (RFPs) to potential vendors and contractors in coordination with partners
- Bid Evaluation: Evaluate bids received and select vendors based on criteria including expertise, cost, and capacity.

5. Project Execution:
- Partner Collaboration: Work closely with lead and supporting partners to implement project activities.
- Capacity Building: Provide training and support to farmers and households in water management and agricultural practices.
- Infrastructure Development: Implement water conservation measures and agricultural interventions in targeted areas.

6. Monitoring and Evaluation Phase:

- Progress Tracking: Regularly monitor project activities and milestones to ensure alignment with objectives.
- Impact Assessment: Evaluate the efficacy of implemented measures on water conservation and agricultural productivity.
- Stakeholder Feedback: Solicit feedback from farmers, households, and partners to identify areas for improvement.

7. Reporting and Documentation:

- Progress Reports: Compile regular progress reports detailing project activities, achievements, and challenges.
- Lessons Learned: Document key insights and recommendations for future project implementation.
- Final Evaluation: Conduct a comprehensive evaluation of project outcomes and impact.

8. Knowledge Sharing and Dissemination:

- Best Practices Sharing: Share success stories and best practices with stakeholders and the wider community.
- Sustainability Planning: Develop strategies for sustaining project interventions beyond the implementation period.

9. Project Closure:

- Final Review: Conduct a final review of project deliverables and outcomes.
- Stakeholder Engagement: Engage stakeholders in a discussion on project achievements and next steps.
- Closure Report: Prepare a comprehensive closure report summarizing project activities, outcomes, and recommendations.

10. Follow-up and Continuous Improvement:

- Follow-up Actions: Address any outstanding issues or follow-up actions identified during project closure.
- Continuous Learning: Continuously learn from project experiences and adapt strategies for future projects.
- Feedback Mechanism: Establish a feedback mechanism to gather input from stakeholders for ongoing improvement.

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