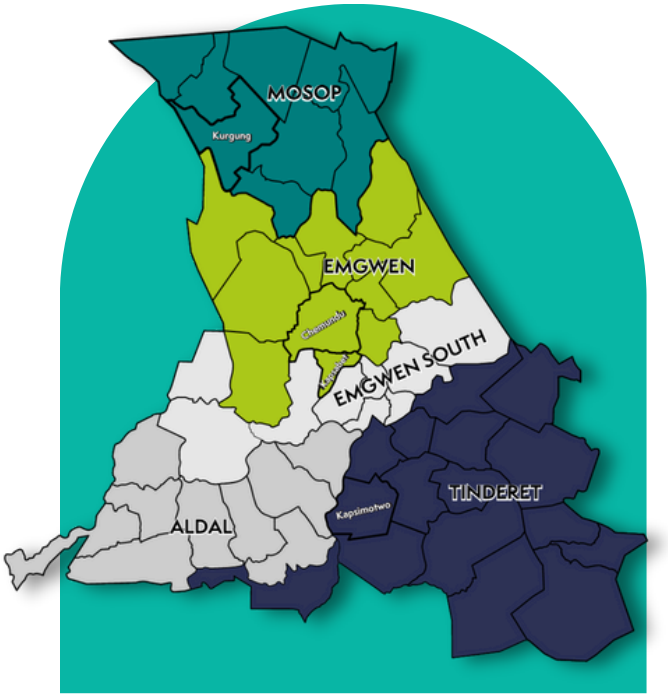
JUNE 2024

CLIMATE ACTION IMPLEMENTATION SCHEME

Nandi 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 Nandi County, Kenya, aimed at identifying challenges in implementing climate actions.

The findings of this study are available 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. The Climate Action Implementation Scheme in Nandi County is a strategic response to the pressing challenges posed by climate change and its impact on agriculture, the environment, and livelihoods. As a county heavily reliant on agriculture, with 75% of households engaged in farming (Gitau Ng'ang'a K & Smit W, 2024), Nandi faces significant risks from climate variability, including floods from excess rainfall, frost, hailstorms, prolonged dry periods and erratic weather patterns that threaten food security and economic stability (MoALFC,2019).

This implementation scheme aims to mitigate these risks by promoting sustainable agricultural practices, enhancing water management practices, and improving resilience through diversified income sources and environmental conservation efforts. By addressing the vulnerabilities of the farming community and ensuring the sustainable use of natural resources, the scheme seeks to secure the livelihoods of the residents in Nandi County and promote long-term ecological balance.

INTRODUCTION

Nandi County, situated in Kenya's North Rift Region, is an agricultural hub where farming is the backbone of the local economy.

Recognizing the critical need for climate resilience in this sector, Clim-Eat facilitated the development of a comprehensive Climate Action Implementation Scheme as shown in Table 1. This initiative is informed by extensive stakeholder consultations and aims to bolster agricultural productivity, enhance environmental sustainability, and support the socio-economic well-being of the community.

The scheme outlines targeted interventions across various thematic areas, focusing on innovative agricultural practices, resource conservation, and green energy adoption to combat the adverse effects of climate change **(Table 1).**

WHAT CONSTITUTES THE CHALLENGE?

The primary challenge facing Nandi County is the multifaceted impact of climate change on its agriculture-dominated economy. Erratic weather patterns, including unpredictable rainfall and prolonged dry periods, have led to decreased crop yields, increased post-harvest losses, and reduced livestock productivity.

Soil erosion and land degradation further exacerbate these issues, threatening food security and livelihoods. Additionally, there is a lack of access to sustainable farming technologies and inadequate infrastructure for water storage and irrigation. These challenges necessitate a coordinated and comprehensive approach to climate action, involving both governmental and non-governmental stakeholders, to safeguard the county's agricultural future and promote sustainable development.

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

Key Objective:

- To enhance climate resilience and sustainable agricultural development in Nandi County by implementing targeted climate actions.

Specific Objectives:

- To enhance agricultural resilience through establishment of bulking sites for fodder planting materials across to support livestock nutrition and ensure sustainable agricultural practices.
- To promote sustainable tree cover and food security by setting up 90 nurseries for fruit and forest trees
- To reduce post-harvest losses and support diversification
- To improve water management and support green energy initiatives

TABLE 1. DEMAND DRIVEN IMPLEMENTATION SCHEME FOR NANDI COUNTY

Priority Thematic Area	**Agriculture**
Priority Climate actions	Establish 120 bulking sites for fodder planting materials. Each of the 30 wards in Nandi County will have 4 dedicated bulking sites. These sites will serve as centralized locations for cultivating, storing, and distributing fodder planting materials, thereby supporting the agricultural needs of the community and enhancing livestock nutrition across the county.
Indicator for success (End-of-2025 Goals)	1. Successful establishment and operational readiness of 120 bulking sites, with each of the 30 wards in Nandi County having 4 fully functional sites dedicated to cultivating, storing, and distributing fodder planting materials. 2. Adequate distribution and accessibility of fodder planting materials, ensuring that each of the 120 bulking sites effectively supports the agricultural needs of the community and enhances livestock nutrition across all 30 wards in Nandi County.
Cost Estimates (USD)	300,000
Lead stakeholder(s) and Roles	Department of Agriculture, Livestock and Fisheries - *Oversee the establishment, management, and operational efficiency of the 120 bulking sites, ensuring proper cultivation, storage, and distribution of fodder planting materials to support agricultural and livestock nutrition needs in Nandi County*
Supporting stakeholder(s) and Roles	FAO, KALRO, ILRI - *Support with research and development, mobilization of funds and capacity building*
Resources Needed	1. Land for bulking sites 2. Fodder planting materials 3. Irrigation systems 4. Storage facilities 5. Transportation for distribution 6. Agricultural tools and equipment 7. Skilled labor and workforce 8. Training programs for site managers 9. Funding and financial support 10. Monitoring and evaluation systems
Estimated Number of Farmer Households to be Impacted*	100,000

*There are 199,024 households in Nandi county, where 75% (148,660) are farming households and 25% (50,364) are non-farming households

Priority Thematic Area	**Agriculture and Environment**
Priority Climate actions	Establish 90 nurseries for fruit and forest trees, with 3 nurseries per ward across the 30 wards, to enhance household food security and strengthen climate resilience. Emphasize the planting of macadamia and avocado fruit trees, which are promoted in the county, to boost household nutrition and income. Additionally, increase tree cover by planting 1 million tree seedlings across the 30 wards by 2025.
Indicator for success (End-of-2025 Goals)	1. Successful establishment of 90 tree nursery, with each ward having 3 tree nurseries. 2. 80% of the seedlings surviving and being planted by households or the community. 3. Plant 1 million tree seedlings across the 30 wards.
Cost Estimates (USD)	210,000
Lead stakeholder(s) and Roles	1. Department of Environment, Climate Change and Natural Resources – *Implementation, Coordination* 2. KFS – *Regulation, Permits, capacity building on the best tree varieties, oversight, Planning for planting of forest trees*
Supporting stakeholder(s) and Roles	1. Department of Agriculture, Livestock and Fisheries 2. FAO, KEPHIS, Trust Fund, and CBOs - *Facilitate extension services, advocacy and resource mobilization*
Resources Needed	1. Land for nurseries 2. Fruit and forest tree seeds/seedlings 3. Irrigation systems 4. Fertilizers and soil amendments 5. Agricultural tools and equipment 6. Skilled labor and workforce 7. Training programs for nursery management 8. Funding and financial support 9. Monitoring and evaluation systems 10. Community awareness and engagement programs
Estimated Number of Farmer Households to be Impacted*	140,000

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Priority Thematic Area	**Agriculture**
Priority Climate actions	Reduce post-harvest losses of grains and pulses by supplying farmer groups with 25 tarpaulins per ward and providing 150,000 hermetic bags to a selected 15,000 farmers across the 30 wards, each farmer receiving 10 bags. These essential resources will facilitate proper drying and secure storage of grains, thereby preserving their quality and extending their shelf life.
Indicator for success (End-of-2025 Goals)	1. Distribution and utilization of 750 tarpaulins across the 30 wards, ensuring that farmer groups in each ward receive and effectively use tarpaulins for proper drying of grains and pulses to reduce post-harvest losses. 2. Successful allocation and use of 150,000 hermetic bags by 15,000 selected farmers across the 30 wards, with each farmer receiving 10 bags for secure storage, thereby preserving the quality and extending the shelf life of grains and pulses.
Cost Estimates (USD)	350,000
Lead stakeholder(s) and Roles	Department of Agriculture, Livestock and Fisheries – *Overall coordination, Capacity building and farmer identification*
Supporting stakeholder(s) and Roles	1. Mavuno/Bell Industries/Agrozet/Zerfly-*Supply of Hermetic bags.* 2. EAGC-*Regulation of Quality* 3. Community/Farmers-*Beneficiaries,ownership and adoption*
Resources Needed	1. 750 tarpaulins 2. 150,000 hermetic bags 3. Training programs for farmers on the proper use of tarpaulins and hermetic bags 4. Extension services to support farmers in implementation 5. Monitoring and evaluation systems to track usage and effectiveness 6. Financial support and funding
Estimated Number of Farmer Households to be Impacted*	15,000

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Priority Thematic Area	**Agriculture and Environment**
Priority Climate actions	Promote apiculture by equipping 100 farmers in each ward with 2 beehives each. This initiative will not only support sustainable honey production but also improve pollination, thereby benefiting overall crop yields and biodiversity within the county.
Indicator for success (End-of-2025 Goals)	1. Equipping 3,000 farmers across the 30 wards with 2 beehives each, resulting in a total distribution of 6,000 beehives to support sustainable honey production. 2. Observable improvement in crop yields and biodiversity within the county due to enhanced pollination from the newly established beehives managed by 3,000 farmers.
Cost Estimates (USD)	231,000
Lead stakeholder(s) and Roles	Department of Agriculture, Livestock and Fisheries – *Farmer identification, capacity building overall coordination*
Supporting stakeholder(s) and Roles	Savannah Honey, Chris Bee Ent Ltd, Bee care Ltd, Koibasis bee hives – *Supply of bee hives*
Resources Needed	1. 6,000 beehives 2. Beekeeping tools and equipment (smokers, hive tools, bee brushes) 3. tarter bee colonies 4. Extension services to support farmers in beekeeping 5. Monitoring and evaluation systems to track progress and impact 6. Financial support and funding
Estimated Number of Farmer Households to be Impacted*	3,000

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Priority Thematic Area	**Agriculture and Environment**
Priority Climate actions	Promote green energy technology by providing a 40% subsidy for the installation of 900 biogas systems (30 per ward), 300 solar irrigation systems (10 farmers per ward), and distribution of 3,000 clean cooking jikos (100 per ward). This initiative involves assessing and selecting eligible farmers, coordinating the procurement and installation of biogas systems and solar systems, and distributing clean cooking jikos. Additionally, provide training and support to farmers on using and maintaining these technologies to ensure successful adoption and long-term benefits
Indicator for success (End-of-2025 Goals)	1. Success is indicated by reaching 900 biogas systems, 300 solar irrigation systems installed and in use, and distribution of 3,000 clean cooking jikos. 2. At least 80% of the farmers demonstrating proper usage and maintenance of the biogas systems, solar panels, and clean cooking jikos within the first year.
Cost Estimates (USD)	460,000
Lead stakeholder(s) and Roles	1. Sistema.Bio – *Installation and maintenance of biogas* 2. Solar companies e.g Sunculture – *Installation of solar irrigation systems* 3. Burn, Akili holdings– *Supply of cooking stoves*
Supporting stakeholder(s) and Roles	1. Department of Environment, Climate Change and Natural Resources – *Capacity building on renewable energy* 2. Department of Agriculture, Livestock and Fisheries – *Capacity building on the use of bio-slurry fertilizer from biogas*
Resources Needed	1. Funding for subsidies 2. 900 biogas systems 3. 300 solar irrigation systems 4. 3,000 clean cooking jikos 5. Transportation for delivery and installation 6. Training materials and programs 7. Technical support staff 8. Monitoring and evaluation mechanism
Estimated Number of Farmer Households to be Impacted*	4,000

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Priority Thematic Area	**Agriculture and Environment**
Priority Climate actions	Establish 150 farm ponds across the 30 wards, with each ward receiving 5 farm ponds. The ponds will be crucial for enhancing water storage capacity on farms, improving irrigation for crops, and supporting aquaculture by providing suitable environments for fish farming. This initiative will boost agricultural productivity, promote sustainable water management, and diversify income sources for farmers through fish production.
Indicator for success (End-of-2025 Goals)	1. Successful construction and operational readiness of 150 farm ponds across the 30 wards, with each ward receiving 5 ponds to enhance water storage capacity, improve crop irrigation, and support fish farming 2. Increased agricultural productivity, improved water management, and diversified income sources for farmers, evidenced by the effective use of the 150 farm ponds for irrigation and aquaculture.
Cost Estimates (USD)	577,000
Lead stakeholder(s) and Roles	1. Department of Agriculture, Livestock and Fisheries – *Oversight, Capacity building on irrigation and aquaculture* 2. Department of Environment, Climate Change and Natural Resources – *Help with implementation and regulation*
Supporting stakeholder(s) and Roles	1. FAO and Trust fund – Support with rsource mobilization 2. CBOs – Provision of labour and local construction material, provide fingerling
Resources Needed	1. Land for pond construction 2. Excavation equipment and machinery 3. Construction materials (liners, pipes, concrete) 4. Water supply systems 5. · Fish stock for aquaculture 6. Training programs for farmers 7. Skilled labor for pond construction 8. Technical support for maintenance 9. Funding
Estimated Number of Farmer Households to be Impacted*	100,000

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Priority Thematic Area	**Environment**
Priority Climate actions	Protect 2 water springs in each of the 30 wards in Nandi County. This initiative is essential for ensuring a reliable and clean water supply for communities, preserving natural water sources, and promoting environmental sustainability. Spring protection will enhance water quality, reduce waterborne diseases, and support the overall health and well-being of residents.
Indicator for success (End-of-2025 Goals)	1. Successful protection and sustainable management of 60 water springs across the 30 wards in Nandi County, ensuring reliable and clean water supply for local communities. 2. Measurable improvement in water quality and reduction in waterborne diseases, demonstrating the positive impact of spring protection on community health and environmental sustainability.
Cost Estimates (USD)	460,000
Lead stakeholder(s) and Roles	Department of Environment, Climate Change and Natural Resources – *Oversight in the implementation and maintenance, capacity building*
Supporting stakeholder(s) and Roles	1. Department of Agriculture, Livestock and Fisheries – Capacity building on potential irrigation opportunities 2. Water Regulatory Authority – Regulation 3. Trust Fund – Resource mobilization
Resources Needed	1. Protective barriers and fencing materials 2. Construction materials for spring protection (concrete, pipes, gravel) 3. Water filtration and purification systems 4. Tools and equipment for construction and maintenance 5. Skilled labor for construction and maintenance 6. Training programs for local communities on spring protection 7. Monitoring and evaluation systems 8. Financial support and funding 9. Technical support staff 10. Community engagement and awareness programs
Estimated Number of Farmer Households to be Impacted*	60,000

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Priority Thematic Area	**Agriculture and Environment**
Priority Climate actions	Construct 12 km of terraces on degraded lands to combat soil erosion, improve water retention, and restore soil fertility. This initiative is crucial for enhancing agricultural productivity, preventing land degradation, and promoting sustainable land management practices. Terracing will help stabilize the landscape, support crop growth, and contribute to the long-term sustainability of farming in the region.
Indicator for success (End-of-2025 Goals)	1. Completion and effective implementation of 12 km of terraces on degraded lands, resulting in noticeable reduction of soil erosion and improved water retention. 2. Enhanced agricultural productivity and restored soil fertility on terraced lands, evidenced by increased crop yields and sustainable land management practices.
Cost Estimates (USD)	100,000
Lead stakeholder(s) and Roles	Department of Agriculture, Livestock and Fisheries - *oversee the planning, construction, and maintenance of the terraces, provide technical support, training, and some of the resources*
Supporting stakeholder(s) and Roles	FAO, ADS, Trust Fund – *Resource mobilization and capacity building*
Resources Needed	1. Tools and equipment for terrace building 2. Skilled labor and workforce 3. Technical support and expertise 4. Training programs for farmers and workers 5. Transportation for materials and personnel 6. Monitoring and evaluation systems 7. Financial support and funding 8. Community engagement and awareness programs 9. Maintenance and repair tools and materials
Estimated Number of Farmer Households to be Impacted*	50,000

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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?

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 Nandi 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 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.

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- 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 for ongoing improvement.

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ACRONYMS

AFAO – Food and Agriculture Organization
KALRO – Kenya Agricultural and Livestock Research Organization
ILRI – International Livestock Research Institute
KFS – Kenya Forest Services
KEPHIS- Kenya Plant Health Inspectorate Services
ADS – Anglican Development Services
CBOs – Community Based Organizations
EAGC – East Africa Grain Council