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The Makueni Story



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Building Resilience in the Face of Climate Change: The Makueni Story

Scars of climate change run deep in Makueni County, but so does the resolve of its people. Once plagued by relentless droughts, water scarcity, and environmental degradation, the county is now rewriting its future.

Through innovative, locally-led climate action programs, the county is rolling back the devastating effects of climate change, steadily building resilience, and securing a sustainable future for its population of more than a million.

But how did Makueni turn the tide? The answer lies in a bold, inclusive approach to financing locally-led climate action—one that prioritizes local solutions, strong leadership, and a commitment to mainstreaming climate resilience across all sectors of development.

Under Governor Mutula Kilonzo Jr.'s leadership, Makueni became one of the first counties in Kenya to fully mainstream climate change into its development agenda. A robust policy framework now ensures that climate action is not an afterthought but a core part of every department's budget and planning.

From sand dams, water pans, apiculture, climate-smart agriculture to agroforestry programs that restore degraded lands, Makueni's climate investments are driven by local needs, through a robust participatory climate risk assessment.

Education and awareness are key. Schools, farmer groups, and local leaders are all part of a growing movement to embed climate resilience in everyday life.

The results speak for themselves—increased food security, restored ecosystems, and communities better prepared for climate shocks.

The lessons from Makueni are clear: Climate action works best when it is locally owned, properly funded, and woven into the fabric of development. And if a county once on the frontlines of climate disaster can turn the tide, perhaps the rest of the world can too.

This publication provides a detailed, step-by-step analysis of Makueni's pioneering climate investments—showcasing innovative strategies, measurable outcomes, and transformative impact on communities and ecosystems.



FY 2023/2024 Climate Change Resilience Investments

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Editorial Team

Dr. Geoffrey Muthoka – Executive Producer

Onesmus Nzioka – Producer

Katua Nzile – Revise Editor

Jackline Kamusa – Ag Director
Climate Change Unit

Brian Muendo – Environment Officer

Gideon Muoki – Photographer

Message from the Governor

The story of the real impact of the Financing Locally-Led Climate Action (FLLoCA) program in Makueni is best told through the life of 100-year-old Michael Kimuli.

Over two decades ago, Mzee Kimuli generously donated a piece of land at Wautu Hill to the government for the construction of a water point to serve his community. For many years, his dream remained unfulfilled.



H.E Mutula Kilonzo Jr, CBS
Governor, Makueni County

“Time for locally-led climate action”

However, when the FLLoCA program was launched, Ilima Ward his home was among the 12 wards selected for the first phase. A sand dam was constructed along Wautu River, and water was pumped to a masonry tank built on the very piece of land he had donated. During a routine inspection visit to the project, I found Mzee Kimuli overjoyed to see his lifelong vision of having clean tap water in his compound finally realized. Sadly, he passed away eight months later, in June 2025—but not before witnessing the fruits of his selflessness.

Makueni is a proud and significant beneficiary of the FLLoCA program. The immediate impact at the grassroots level is remarkable. Where residents once walked tens of kilometers in search of water, they now access it just a stone's throw away—or even right at their doorsteps. Communities that previously battled chronic food insecurity are embracing climate-smart agriculture and transforming their livelihoods. Additionally, we are seeing the restoration of our environment and ecosystems, particularly through investments like sand dams.

Beyond these tangible benefits, the FLLoCA program has offered us invaluable lessons on people-centered development. From conceptualization, costing, to implementation, the community is at the heart of every project. Previously, projects were labeled as “government initiatives,” with minimal community ownership. But through FLLoCA, citizens have taken full ownership of the projects—an essential ingredient for sustainability.

The integrated development model employed by FLLoCA promotes holistic progress—environmental, social, and economic. As we near the end of the first phase in 2026, we are confident in the direction we are headed. We now have a clear roadmap—a handbook, even—on how to carry forward our climate change action agenda.

As the current financing cycle winds down, there is a critical need for dialogue at both national and county levels. We must come together to reflect, strategize, and reconfigure our development budgeting frameworks to ensure continued climate resilience and community empowerment.

Let us build on this momentum and chart a bold, sustainable future for our people and our planet.

Message from the Executive Committee Member

From the outset, I firmly believe that Financing Locally-Led Climate Action (FLLoCA) is the most effective way to build adaptation and resilience. In fact, this approach should serve as a model for "Locally-Led Development Implementation" across all sectors. My conviction stems from witnessing its tangible impact, where communities take full ownership of projects, ensuring their sustainability and success.

Under the FLLoCA model, communities are



Mr. Japheth Mang'oka

*CECM Lands,
Urban Planning & Development,
Environment and Climate Change*

empowered to decide which projects to prioritize, while the government provides technical support. This shift has transformed public perception where projects are no longer vandalized after completion but are instead valued and maintained by the people they serve. The community acts as the first line of defense against vandalism.

In Makueni, FLLoCA has enabled us to address our three key climate risks: prolonged droughts; flash floods; and degraded landscapes. This has been achieved by investing in water pans (like the Kwa Nzoongo project) to harvest and store run-off water for domestic and irrigation use. Through riparian ecosystem restoration, sustainable land management, climate-smart agriculture and water conservation, we are progressively rolling back the devastating effects of the above climate risks.

To ensure long-term resilience, Makueni County has operationalized critical climate change frameworks, including 30 Ward Climate Change Planning Committees, the County Climate Change Planning Committee, and the County Climate Change Steering Committee. These structures drive local climate plans, with the government providing technical support and resource mobilization.

Additionally, we have drafted three key bills to strengthen environmental governance: the Solid Waste Management Bill, the Forests Bill, and the County Environment Bill. These are currently before the County Assembly and will provide a robust legal foundation for climate adaptation and environmental protection.

Before FLLoCA came, Makueni allocated less than 1.5% of its development budget to climate change. Today, we have doubled that to 3.3%, equivalent to Sh 110M, marking steady progress toward mainstreaming climate resilience in county planning.

Beyond financing for the hard projects, we've built the capacity of all key stakeholders, ensuring climate action is institutionalized and sustainable. Communities are now equipped with skills like proposal writing, enabling them to seek alternative funding and drive their own climate solutions.

Thanks to FLLoCA, Makueni is not just talking about climate change but acting decisively. Even as we march towards the end of the first phase of FLLoCA funding in December 2026, our people and systems are now prepared to sustain this momentum.

Message from the Chief Officer

During the 2023/2024 Financial Year, we successfully implemented 12 integrated climate resilience projects across 12 wards, selected from all six sub-counties under the Financing Locally-Led Climate Action (FLLoCA) Program.

These initiatives combine water, agriculture, and environmental restoration to address interconnected community needs and build long-term resilience to climate change.



Dr. Geoffrey Ngovi Muthoka

*Chief Officer
Environment,
Natural Resources,
Mining and
Climate Change*

Key among the achievements is the boost in water infrastructure through the construction of 3 new sand dams, enhancement of 7 existing sand dams and sump tanks, development of 1 new earth dam, and the upgrade of 2 others. One borehole was also improved with treatment and distribution systems. Ten of the 12 projects feature robust water distribution systems that connect over 22 communal water points, 16 kiosks, 7 schools, and 1 health facility—vastly improving water access.

Sustainability is further promoted through the use of green energy, with 11 projects using solar-powered water pumping and one relying on gravity-based distribution. Water treatment systems, including reverse osmosis and chlorination, ensure safe clean water access.

The programme has established 10 Climate Smart Agriculture demonstration farms, complete with drip irrigation, and distributed over 1,000 vertical and conical gardens to promote household food production. In livestock production, communities have benefited from improved breeding through the distribution of Gala goat bucks and pasture support through grass seeds and Brachiaria splits.

Environmental conservation has been prioritized through agroforestry, with over 9,000 fruit tree seedlings distributed and 800 riparian trees planted. Four groups received tree nursery support to ensure sustainability. Additional interventions include apiculture, aquaculture and extensive community sensitization. All projects comply with environmental and safety regulations, ensuring ethical implementation. In Wote town, skip bins were provided to enhance solid waste management.

FLLoCA in Makueni exemplifies a grassroots-led model for climate adaptation—building local capacity, improving livelihoods, and securing natural resources for future generations.

FINANCING LOCALLY-LED CLIMATE ACTION PROGRAM IN MAKUENI



1. Clean Water and Climate Resilience Bring New Hope to Mukaange, Masongaleni Ward

After years of enduring severe water scarcity—trekking over 7 km to the nearest water point—residents of Mukaange location, Masongaleni Ward, finally have a reason to smile.

For years, the people of this area knew only hardship when it came to water access. Women and children trekked over seven kilometers under the blazing sun, their jerricans heavy with the weight of necessity. The nearest water point offered only bitter, salty borehole water, and the only other alternative was the crocodile-infested Athi River.

Then, in 2022, hope arrived in the form of a new borehole drilled by the Government of Makueni County at Kiambani. The celebration was however short-lived as the water, though plentiful, was too saline to fit human consumption. Once again, the community found itself trapped in the same weary cycle.

In 2024, during a Participatory Climate Risk Assessment forum under the Financing Locally-Led Climate Action (FLLoCA) program, the people of Mukaange made their voices heard. They needed more than just water—they needed safe water. The

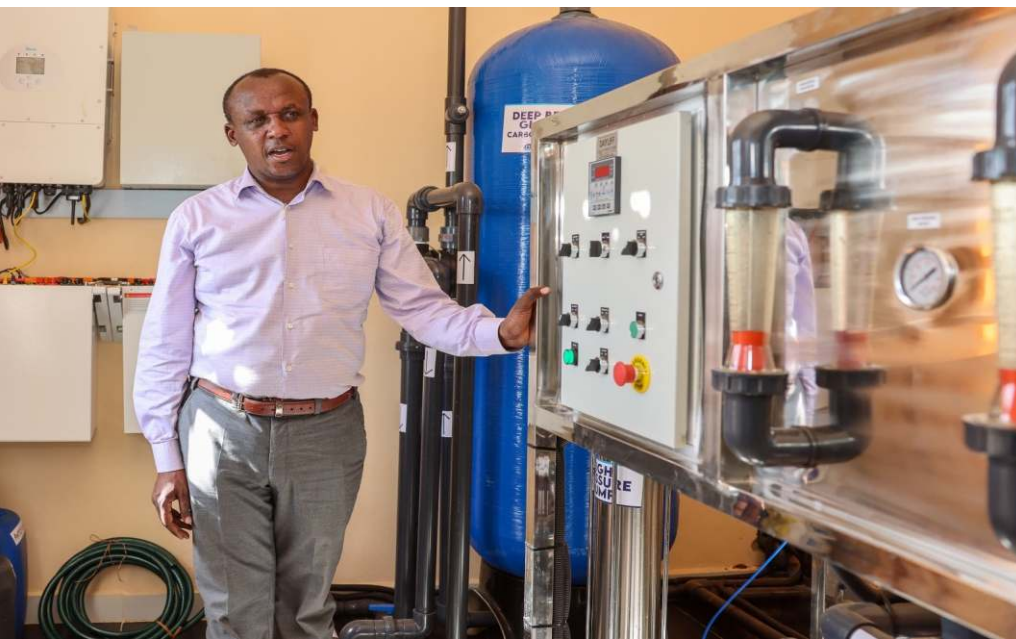
solution? A purification reverse osmosis plant.

The project was successfully implemented in the 2023/2024 budget phase and residents are now enjoying purified water. Muliluni-Kiambani Water and Livelihood Enhancement project has eliminated the long treks for water and reduced the occasional crocodile attacks along River Athi.

A 50-hive apiary project, part of the livelihood enhancement components, has created alternative sources of income for the residents while building resilience against drought. This project has as well enhanced restoration of the community forest through Farmer Managed Natural Regeneration.

A quarter-acre Climate Smart Agriculture demonstration farm, part of the project's components has enhanced the community's resilience against food insecurity;

Over 1,480 residents are beneficiaries of this project.





Project Impact

- ❖ *Reduced cases of water borne diseases.*
- ❖ *Reduced cases of teeth fluorosis.*
- ❖ *Increased agricultural production and pasture production.*
- ❖ *Reduced cases of Human wildlife conflicts through crocodile attacks along River Athi.*
- ❖ *Alternative sources of livelihoods (Nature Based Solutions) – apiculture.*
- ❖ *Reduced operational costs on water pumping.*
- ❖ *Reduced distance to water points.*
- ❖ *Reduced emission of Green House Gases*

2. Kiangini Water Project Quenches a Community's Thirst

Before February 2025, Kiangini Primary School, with a population of 383 learners, faced one of the harshest water crisis in Kathonzweni Ward. With no dependable water source, the school relied on tractors to supply water. When tractors were unavailable, donkeys became the only alternative.

Deputy Headteacher Pauline Mutunga recalls how dependence on water vendors strained the school's finances, limiting its ability to grow. "We spent so much money on water. It was not sustainable. On top of that, poor sanitation exposed our pupils to skin rashes and waterborne diseases," she says.

Today, that reality has changed. The school now enjoys access to clean and safe water, thanks to the Kiangini-Kikuu Water Enhancement Project, funded under the Financing Locally-Led Climate Action (FLLoCA) program.

Kiangini Primary is among several institutions in Kathonzweni Ward benefiting from this project, including Kiangini Community Information Centre, St. Bakhita Kiangini Secondary School, Muthwani Secondary School, and Kiangini Health Centre.

The project began with the desilting of a 225-cubic-meter sump tank at the Kikuu River to restore its water storage capacity. A distribution pipeline was developed to connect the institutions and extend water supply to Kiangini Market and 12 surrounding villages.

To promote environmental conservation and support livelihoods, a group of widows was assisted to establish a tree nursery and provided with essential nursery supplies.

Additionally, a quarter-acre Climate Smart Agriculture (CSA) demonstration farm was set up to showcase resilient farming practices. To strengthen food security at the household level, 50 vertical sacks and 75 conical gardens were distributed to families, encouraging efficient small-scale food production.

With 3,295 direct beneficiaries, the Kiangini-Kikuu project has greatly improved water security, strengthened climate resilience in agriculture, and empowered the local community across multiple levels.





Project Impact

- ❖ *Increased tree cover.*
- ❖ *Increased income to the nursery group.*
- ❖ *Environmental conservation.*
- ❖ *Reduced incidences of water borne disease.*
- ❖ *Reduced emission of Green House Gases*
- ❖ *Reduced distance to water points and continuous supply of potable water all year round.*

3. Wautu/Kyangaati Sand Dam Brings Hope and Life Back to Ilima's Barren Lands

Nestled against the rugged slopes of Kilungu Hills, Ilima Ward has long endured nature's cruel paradox, where torrential floods and persistent droughts conspire to strip the land of its vitality.

During the harshest dry seasons, the landscape turns so barren that residents sadly liken it to the Sahara Desert. Trees stand as skeletal reminders of greener days, their bare branches reaching skyward in silent plea, a stark reminder of the distressing effects of climate change.

Through the Financing Locally-Led Climate Action program, hope is now in sight with the construction of Wautu/Kyangati Sand Dam along Wautu River.

The sand dam, comprising a 100 cubic meters sump tank and a solar-powered pumping system has ensured sustainable supply of safe clean water.

A 100,000-litre masonry reservoir tank was constructed at Kwa Chief, along with a communal water point to provide residents with reliable access to clean water. A gravity-fed pipeline was also installed, supplying water to two additional communal water points for wider distribution.

As part of environmental conservation efforts, 5,000 high-value tree seedlings—including avocado and citrus—were distributed to the community to support agroforestry and improve livelihoods. Additionally, 400 assorted riparian tree species were planted along the riverbanks to prevent soil erosion and enhance ecosystem stability.

To promote security of the solar system installation, a solar powered and Wi-Fi enabled CCTV camera was installed at the solar site which can be monitored remotely.

This project has significantly improved water availability, promoted sustainable energy use, and contributed to long-term landscape restoration in Kaiti Sub-county, benefiting over 8,773 residents.





Project Impact

- ❖ Sustainable access to potable water short distances away.
- ❖ Sand conservation, leading to environmental restoration.
- ❖ Increased tree cover and riparian conservation.
- ❖ Reduced erosion.
- ❖ Expected to enhance income generation and nutrition improvement from fruits production.
- ❖ Reduced emission of Green House Gases
- ❖ Minimal operational costs in water supply

4. Kwa Nzoongo Earth Dam Transforms Ivingoni/Nzambani Ward into a Climate Resilience Hub for 830 Residents

In the sunbaked expanse of Ivingoni/Nzambani Ward, where cracked earth tells the story of harsh drought, life has for long been defined by water and pasture scarcity. Not-long-after rain seasons, water sources vanish almost immediately, pastures wither to dust, and crops falter under the blistering sun. To compound these hardships, the occasional raid by marauding elephants leaves not just destroyed fields, but sometimes shattered lives in its wake—a cruel intersection of climate stress and human-wildlife conflict.

Thanks to the development of Kwa Nzoongo earth dam, constructed through the Financing Locally-Led Climate Action (FLLoCA) program, the community has begun to

build resilience against the vagaries of climate change.

The initiative involved development and construction of a dam reservoir to harvest and store surface run-off water, along with erecting protective fencing and constructing a communal water point and cattle trough to improve water accessibility for both domestic, agricultural and livestock use.

To enhance agricultural production and food security, a quarter-acre Climate Smart Agriculture demonstration farm was developed, where farmers are taught innovative techniques of farming such as conservation agriculture. 70 vertical garden sacks and 70 conical gardens were also distributed to the community enabling efficient crop production in limited spaces using little amounts of water.

The project also focused on livestock and environmental improvements by:

- Providing 300 kg of high-quality grass seeds to enhance pasture production
- Distributing 6 male gala goat bucks to upgrade local livestock breed/genetics
- Supporting a community tree nursery with assorted seeds and shade netting to boost seedling production

To ensure long-term impact, beneficiaries received comprehensive training in:

- Climate-smart agricultural techniques
- Sustainable pasture management
- Livestock breed improvement strategies
- Agroforestry and landscape restoration





Project Impact

- ❖ *Improved water access*
- ❖ *Increased agricultural production and pasture production*
- ❖ *Reduced operational costs on water pumping and supply*
- ❖ *Reduced distance to water points*
- ❖ *Improvement of the local goat breed, enhancing income generation*
- ❖ *Increased production of quality planting seedlings*
- ❖ *Reduced emission of Green House Gases*

5. Grassroots Climate Solutions Rejuvenate Life in Kithungo Ward

On a sunny Friday evening in June 2025, a team from the County Climate Change Unit visited Pauline Ngelesi in Kithungo/Kitundu Ward as part of a project monitoring and evaluation exercise.

We find her busy watering her kitchen garden, which is made up of two conical bags. Next to them is a small garden plot teeming with leafy kales, spinach, and onions—part of a Climate Smart Agriculture demonstration garden that Pauline has generously donated to the community.

Pauline pauses the kitchen tending to share her story, hands still damp from nurturing the plants that have become her pride. "You should have seen this place

before," she says, her voice carrying the weight of hard memories. "Our land was tired, our soil washing away with every rain. We spent more time searching for water than tending our farms." Her words painted a picture of a village locked in struggle, where each day began with the question of whether there would be enough! enough water, enough food, enough hope.

That struggle is now receding into memory, thanks to the Isuuni-Kwa Kisela Pumping and Water Distribution Project, implemented by the County Government of Makueni under the Financing Locally-Led Climate Action program.

The project involved desilting a clogged sump tank at a sand dam along Isuuni River, a once-upon-a-time reliable water source that had fallen dry exposing the community to untold suffering.

To enhance water distribution, nine 10,000-litre water tanks were installed at the peak of Itulu hill ensuring water reaches every corner of the area by gravity. A new water kiosk was built at Kavumbu Market with two communal water points along the line, as well as a connection to Kavumbu Primary School. The water is pumped using solar energy.

Bonface Mutuku a youth representative says the rehabilitated sand dam has brought a new lease of life for young people in the area, who have now embarked on agribusiness and tree nursery propagation to enhance environmental restoration while also creating jobs for themselves.

A total number of 1,865 are beneficiaries of the project.





Project Impact

- ❖ *Reduced water borne diseases.*
- ❖ *Increased agricultural production.*
- ❖ *Reduced operational costs on water pumping and supply.*
- ❖ *Reduced distance to water points.*
- ❖ *Reduced emission of greenhouse gases to the environment.*
- ❖ *Enhanced community awareness on climate risks and adaptation strategies*

6. Kisau/Kiteta Youth Tipped to Reap Big from Kinze Aquaculture FLLoCA Project

Young people in Kisau/Kiteta Ward are counting on an innovative aquaculture initiative at Kinze Earth Dam to create self-employment opportunities and turn around their fortunes.

Among them are Urbanus Kioko and Maingi Mukolya, youth representatives serving in the Project Management Committee (PMC) of the Kinze Earth Dam Water Enhancement Project, funded under the Financing Locally-Led Climate Action (FLLoCA) Program. The duo is optimistic that the 6,000 Tilapia fingerlings recently stocked in the dam will soon mature—ushering in a new stream of income through fishing and fish sales.

The fish stocking component is designed as a nature-based solution to enhance community resilience against food and nutrition insecurity, while also creating decent employment for the youth in the area.

According to Christopher Mutunga, the Mbooni Sub-county Environment Officer, a group of youth from the area has already undergone training in modern fish farming, handling, and marketing techniques, preparing them for the upcoming harvest.

The Integrated Kinze Dam Project is a multi-faceted intervention aimed at improving water access, agricultural productivity, and livelihood diversification.

Other key components of the project include:

- Installation of a solar-powered pumping system to ensure sustainable and reliable water supply.
- Construction of a new water kiosk and installation of

two elevated 10,000-litre water tanks at Namba Nyanya Market, significantly improving access to clean water.

According to Titus Mutwii, Managing Director of Mbooni Water and Sanitation Company, the solar component has led to substantial operational cost savings. These savings are being reinvested to rehabilitate aging distribution infrastructure with the aim of connecting even more households to the water system.

The project has also brought inclusive impact. Monicah Mutunga, a representative of persons living with disabilities (PWDs), notes that easier access to water has greatly improved the quality of life for those with mobility challenges. “We used to spend a lot on water vendors. Now, clean water is just a stone's throw away,” she says.

To support climate-resilient agriculture and food security, the project has implemented several additional measures:

- Distribution of 20,000 brachiaria grass splits to enhance livestock fodder availability.
- Establishment of a quarter-acre Climate Smart Agriculture demonstration farm.
- Provision of 120 vertical garden sacks and 120 conical gardens for efficient, high-yield household food production.

Over 5,397 residents are direct beneficiaries of this project





Project Impact

- ❖ Sustainable and continuous water supply all year round.
- ❖ Reduced incidences of water borne diseases.
- ❖ Increased agricultural production.
- ❖ Reduced operational costs on water pumping and supply.
- ❖ Reduced distance to water points.
- ❖ Increased pasture production.
- ❖ Increased fish production and value addition.
- ❖ Reduced emission of Green House Gases

7. Rehabilitation of Kwa Kakui Earthdam (Mukaa Ward, Kilome Sub-county)

The project involved desilting to increase the reservoir capacity by 7,200 cubic meters. The spillway was also widened and reinforced with stone pitching to improve durability. To ensure security and prevent unauthorized access, a perimeter fencing was installed.

Two solar systems were set up to provide sustainable energy, while a water treatment system—including a flocculation unit, sedimentation tanks, filtration, and chlorination—was implemented to ensure clean and safe water. A community water kiosk was constructed for easy water access, and a cattle trough was built to improve water quality.

To control siltation, two silt traps were constructed, and

grass splits were planted along the dam embankment to stabilize the soil and prevent erosion. Additionally, 2,500 high-value agro-forestry seedlings including citrus and avocado—were distributed to community members around the dam to promote environmental conservation and boost local livelihoods.

The project has benefitted over 5,190 people





Project Impact

- ❖ *Availability of sustainable safe and potable water for the community all-year-round.*
- ❖ *Reduced cases of water borne diseases.*
- ❖ *Increased tree cover expected to reduce erosion and silting of the dam.*
- ❖ *Reduced operational costs in water supply by use of solar power.*
- ❖ *Use of green energy expected to reduce the carbon emissions.*

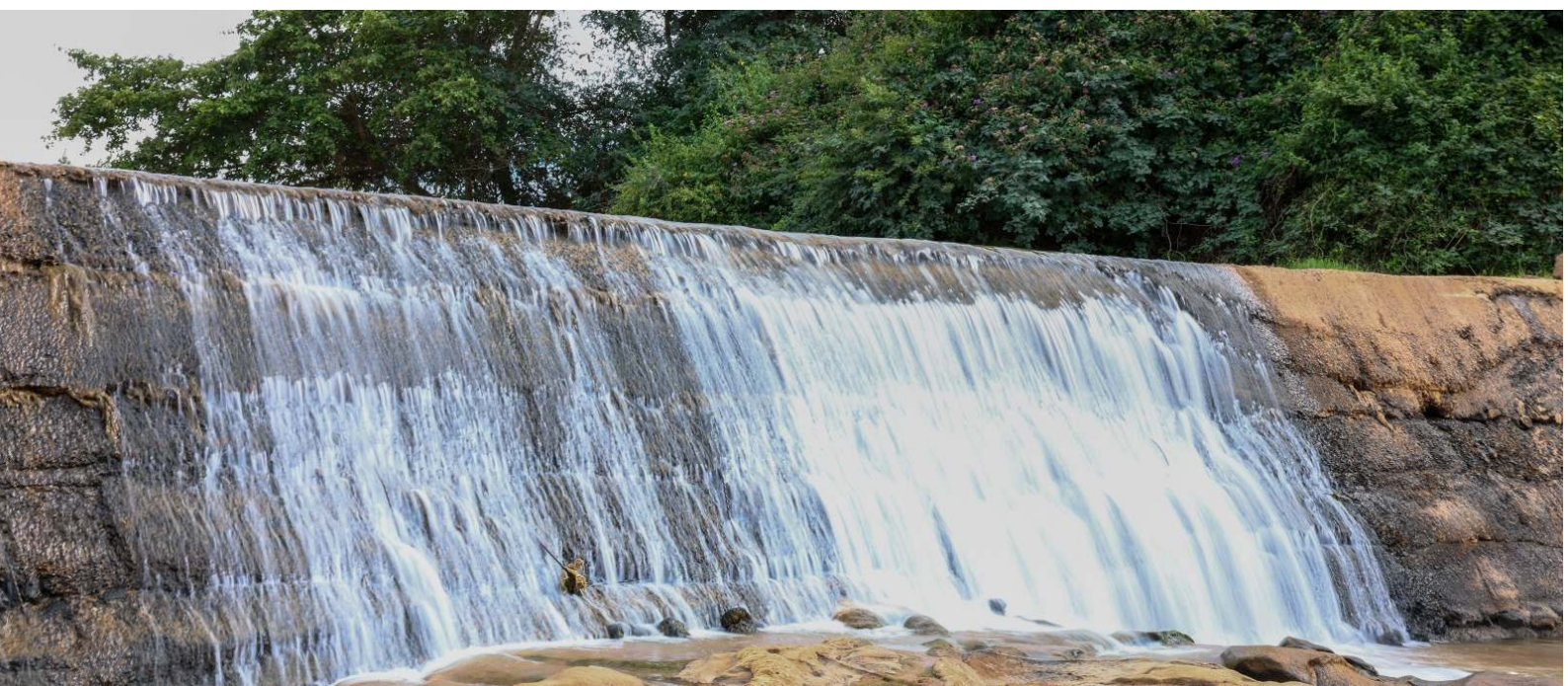
8. Enhancement of Miting'ani - Kaiti Water Project-Ukia Ward

The Miting'ani-Kaiti Water Project was enhanced through a series of sustainable interventions to improve water access, promote climate-smart agriculture, and strengthen environmental conservation. A solar-powered pumping system was installed to ensure reliable and eco-friendly water supply. Solar powered and wifi enabled CCTV camera was installed to increase security of the solar system.

Three communal water points were established at Iviani, Kwa Mumbika, and Kwa Musuvali, while three standard water kiosks were constructed in Miting'ani, Kwa Nyamai, and Kaseveni to expand clean water access for the community. Connection was done to existing water kiosk at Ukia Junction market centre.

To support agricultural resilience, two climate-smart agriculture demonstration farms were set up to showcase sustainable farming techniques. Additionally, 600 assorted agroforestry tree seedlings, primarily citrus, were distributed to farmers, and 200 riparian conservation trees were planted to protect water sources and prevent soil erosion. The project also provided 60 vertical sacks and 60 conical gardens to community members, enabling efficient small-scale farming in limited spaces.

To ensure long-term sustainability, farmers were trained in climate-smart agricultural practices, agro-forestry and adaption to climate risks equipping them with the knowledge to adapt to changing environmental conditions. 3, 290 community members were reached through this Project.





Project Impact

- ❖ *Increased tree cover.*
- ❖ *Sand and riparian conservation.*
- ❖ *Reduced distance to water points.*
- ❖ *Reduced operational costs and carbon emissions through use of solar power.*
- ❖ *Increased resilience to climate risks.*
- ❖ *Reduced emission of green house gases*

9. Ilovoto water project (Kilungu ward , Kaiti sub county)

The Ilovoto Water Project was implemented to improve water access, enhance agricultural productivity, and promote environmental conservation for the local community. Two conservation weirs/sand dams were constructed to increase water retention and recharge groundwater supplies, while the existing Ilovoto water weir was reinforced to improve its efficiency.

A gravity-fed distribution system was installed, supplying water to seven communal water points across the area, ensuring reliable and equitable access for residents. The seven water points are Domino market, Ngilani market, Kithangathini market, Kituiyuni, Mbuini village, Mutanda market, Mutanda – Ridge junction and Ridge 2 area.

To support sustainable climate smart farming, 50 vertical sacks and 50 conical gardens were distributed, enabling households to practice high-yield, space-efficient agriculture. Additionally, 600 high-value avocado seedlings were supplied to farmers, boosting agroforestry and long-term food security. The project also strengthened local capacity by supporting two agroforestry tree nursery groups (Rolling Youth SHG and Mbuini Community health workers support group) with essential tree nursery management materials, ensuring sustainable seedling production.

With 3,357 direct beneficiaries, the Ilovoto Water Project has significantly enhanced water availability, agricultural resilience, and environmental conservation, contributing to improved livelihoods in the community.





Project Impact

- ❖ *Last mile water connectivity.*
- ❖ *Increased tree cover and landscape restoration.*
- ❖ *Increase uptake agro-forestry initiatives.*
- ❖ *Increased income to the two nursery groups.*
- ❖ *Environmental conservation.*
- ❖ *Training of farmers on climate smart technologies, tree nursery establishment and management and agro-forestry*

10. Kaiti II Water Enhancement Project (Wote/Nziu ward, Makueni sub county)

The Kaiti II Water Enhancement Project successfully improved water access and promoted sustainable agricultural practices in Wote and environs. The project extended the water distribution pipeline from Kaiti II sand dam to Kaseve Market (Malivani) and another one to the Camarel reservoir and distribution tanks in Wote Town, ensuring reliable water supply for domestic and commercial use.

To support resilient farming, two Climate-Smart Agriculture (CSA) demonstration farms each measuring ½ acre were established in Kaseve and Sarova, showcasing innovative Climate technologies to local farmers. Agroforestry was promoted through the distribution of 600 assorted high-value tree seedlings to community members and the planting of 200 riparian tree species to protect water sources and enhance biodiversity.

Additionally, 50 vertical bags and 50 conical gardens were distributed to households, enabling efficient, space-saving crop production.

Due to the proximity of the project to Wote town, and to improve sanitation, four skip bins were provided for waste collection in Wote Municipality, helping to maintain a cleaner environment. Farmers also received training in Climate-Smart Agriculture and adaptation to climate risks equipping them with skills to adapt to climate challenges and improve productivity.

With over 10,000 direct beneficiaries, the Kaiti II Water Enhancement Project has significantly boosted water security, agricultural sustainability, and environmental conservation.





Project Impact

- ❖ *Increased supply of water to Wote town.*
- ❖ *Reduced operational cost in supply of water.*
- ❖ *Reduced emission of green house gases*
- ❖ *Increased tree cover and environmental conservation.*
- ❖ *Sustainable waste management.*
- ❖ *Reduced incidences of water borne diseases.*
- ❖ *Improved nutrition and income generation*

11. Enhancement of Athi- Mavindini Water Project (Mavindini ward, Makueni sub county)

The Athi-Mavindini Water Project Enhancement expanded water access and livelihood opportunities for the local community. A 100-cubic-meter sump tank was constructed to harvest clean water from River Athi and a solar-powered pumping system installed to ensure sustainable and cost-effective water supply. Additionally, a new water kiosk was built at Kwa Nthokoi to provide convenient access to clean water for domestic use.

Rehabilitation of an existing water treatment facility at Miangeni was done to ensure quality water for domestic use.

Solar powered and WiFi enabled CCTV cameras were installed at the solar installation and pumping site and the

water treatment facility at Miangeni to ward-off vandalism. To support agricultural activities, a 4-kilometer return pipeline from the treatment point was laid, with 40 access points (tees) to facilitate irrigation and livestock watering.

Beyond water infrastructure, the project enhanced economic diversification through apiculture (beekeeping), supplying 20 Langstroth beehives to farmers. Beneficiaries also received training in beekeeping practices, enhancing their skills in honey production, hive management and value addition) 6,802 residents have directly benefitted from this project.



Project Impact

- ❖ *Increase water quantity and quality.*
- ❖ *Reduced distance to water points.*
- ❖ *Reduced cases of water borne diseases.*
- ❖ *Increased agricultural production.*
- ❖ *Reduced cases of crocodile attacks along River Athi.*
- ❖ *Alternative sources of livelihoods (Nature Based Solutions) – apiculture.*
- ❖ *Reduced operational costs on water pumping.*
- ❖ *Reduced emission of green house gases*

12. Yandia Water Project (Emali/Mulala ward, Kibwezi West Sub-county)

The Yandia Water Project successfully enhanced water security and livelihood opportunities for the local community through multiple interventions. A 100,000-litre masonry water tank was constructed at Maatha hill to boost water storage capacity, complemented by three new water kiosks at Kwa Soo, Kwa Mbindo, and Kwa Mutie, as well as a connection to an existing kiosk at Muselele to expand clean water access.

To diversify income sources, the project established an apiary house and supplied 10 Langstroth beehives, complete with harvesting gear and a honey extractor to support value-added production.

Agricultural resilience was strengthened through:

- Distribution of 100kg of high-yield pasture grass seeds for livestock fodder
- Creation of a quarter-acre Climate Smart Agriculture (CSA) demonstration farm
- Provision and distribution of 50 vertical garden sacks and 50 conical gardens for space-efficient crop cultivation.

Farmers received training on Climate Smart Agriculture, pasture development and management, and apiculture to improve productivity and sustainability. Sensitization on Climate change mitigation and adaptation was done to all community members surrounding the project.

The project benefits 3,006 residents





Project Impact

- ❖ *Reduced cases of water borne diseases.*
- ❖ *Increased agricultural production and quality pasture production*
- ❖ *Alternative sources of livelihoods (Nature Based Solutions) – apiculture*
- ❖ *Reduced operational costs on water pumping and supply*
- ❖ *Reduced distance to water points*

13. Digital Technology at the Heart of Makueni's Water Resilience

As the world races to build resilience against climate risks, Makueni County has turned to digital technology to shield its communities from the growing threat of water scarcity.

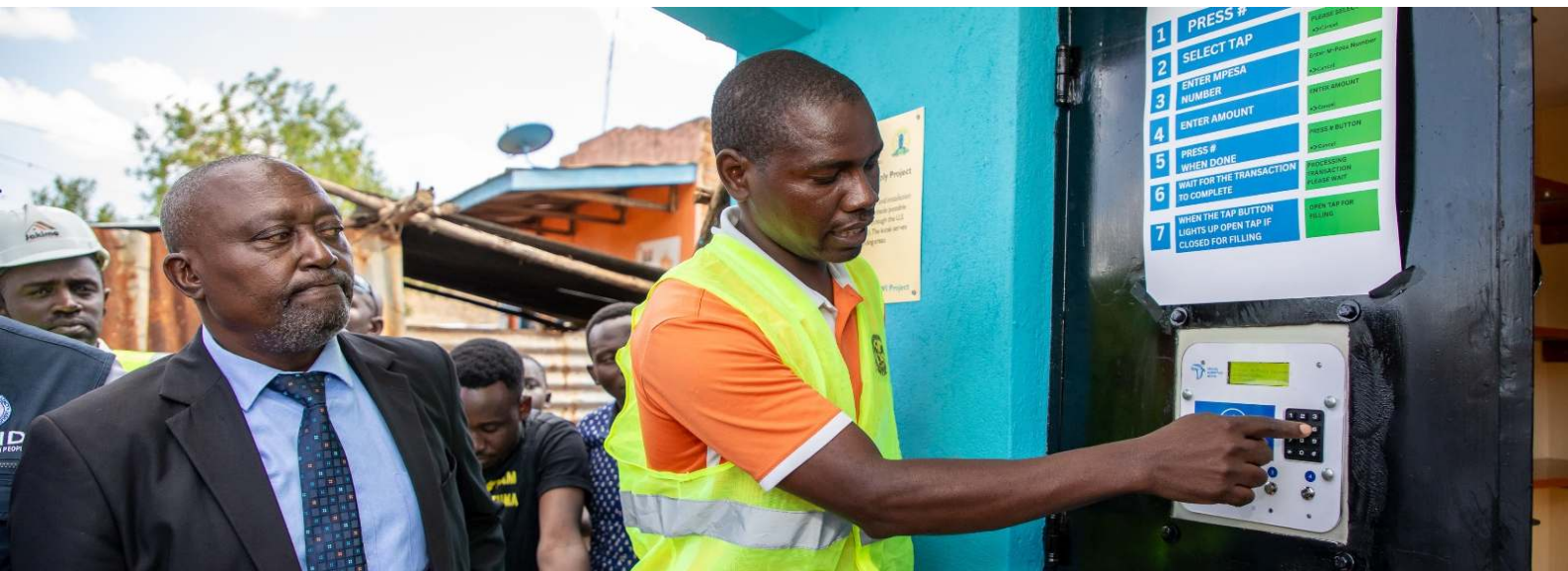
While water shortages are often attributed to dwindling resources, a significant portion of Makueni's crisis stems from mismanagement in the form of wastage at the point of use, leakages, and non-revenue water losses. Under Governor Mutula Kilonzo Jr.'s leadership, the county is leveraging digital solutions to tackle these inefficiencies and build community resilience against water scarcity.

With support from development partners, Makueni has deployed smart water meters at communal kiosks. These

devices ensure users only draw the exact amount of water they pay for via token systems or mobile money, eliminating overuse and encouraging conservation.

Water service providers, previously losing up to 50% of their supply to unmetered usage and leaks, have been mandated to install smart bulk meters. This move improves accountability across distribution networks, ensuring every drop is tracked and billed.

To further stem losses, the county is collaborating with partners to install automated leak detectors along pipelines. This technology alerts technicians to breaches in real time, preventing millions of liters from vanishing unnoticed



A kiosk attendant at Sarova, Wote, demonstrates to County Executive Committee Member for Water John Kieti how the smart water meters work.

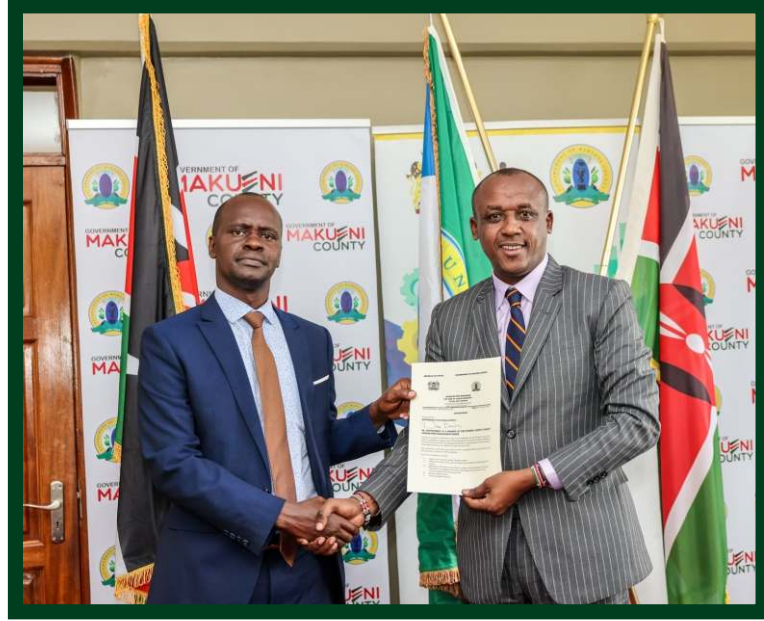


Governor Mutula Kilonzo Jr. and a delegation of development partners testing a newly installed smart-metered water kiosk in Wote.

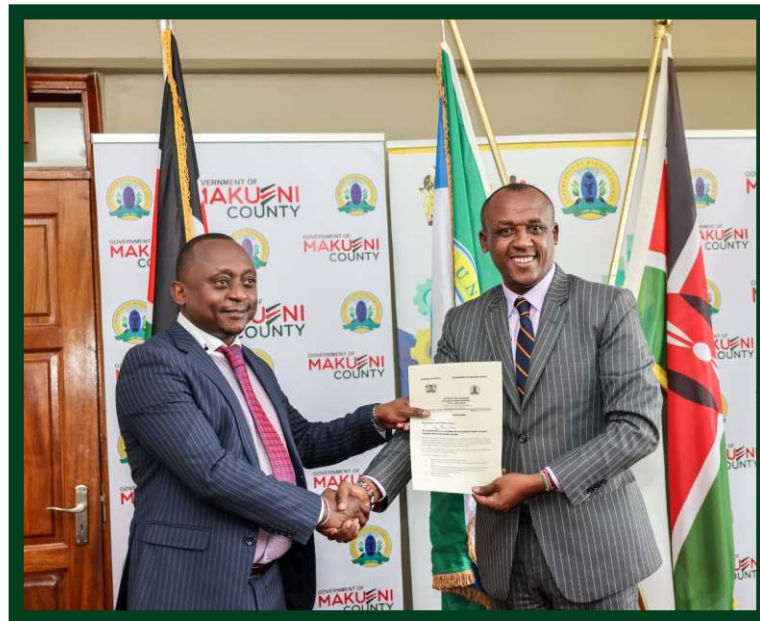
Members of the Makueni County Climate Change Fund Board Sworn into Office



Dr. Stanlus Kivai



Dominic Kioko



Hamilton Tene





"Time for climate action"