Restoration of Makueni's Degraded Forests and Landscapes for a Healthy Ecosystem and Enhanced Community Well-being

County:	**Makueni**		
Sector/s:	**Environment**	**Sub-sector/Theme:**	**Climate Change**
Keywords: (for search in the online platform)	**Makueni County, forest restoration, landscape restoration, ecosystem recovery, community engagement, World Resources Institute, Green Belt Movement, Maarifa Centre, climate resilience, sustainable land management**		
Target Audience:	**County Governments, environmental NGOs, government agencies, community organizations, donors, conservationists, policy makers**		
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Introduction:

Makueni County, in Kenya's lower eastern region, has long faced environmental challenges that threaten both ecosystems and livelihoods. Decades of deforestation for fuelwood, charcoal production, and farmland expansion, coupled with unsustainable farming and overgrazing, have caused significant soil degradation, loss of biodiversity, and declining water availability.

The Makuli and Nzaui landscapes are particularly critical, as they serve as water catchments for rivers like Kaiti, Thwake, Kikuu, and Mwilu, supplying water to thousands of residents and supporting agricultural activities. The degradation of these landscapes has reduced soil fertility, constrained food production, and heightened the community's vulnerability to climate change, including recurring droughts and floods.

Local communities, especially farmers and pastoralists, have felt the impact most acutely. Reduced crop yields, limited water supply, and declining natural resources have increased poverty and food insecurity. Recognizing the urgent need to address these interconnected challenges, the Makueni County Government embarked on a holistic restoration initiative aimed at rehabilitating degraded forests, restoring ecological balance, and improving community resilience and livelihoods.

This initiative was conceived with the understanding that sustainable environmental restoration is most effective when communities are actively involved, resources are mobilized strategically, and ecological and social benefits are pursued together. The stage was thus set for a coordinated, multi-stakeholder effort to restore degraded landscapes and protect vital natural resources for current and future generations.

Implementation of the practice (*Solution Path*):

Starting in 2018, Makueni County, in collaboration with the World Resources Institute (WRI) and other partners, launched targeted restoration interventions in the Makuli and Nzaui landscapes, covering 75 hectares. These areas were prioritized for their role as critical water catchments and their high levels of degradation.

Figure 1Community members engaged in a tree planting exercise at Nzaui Forest, Makueni County

The County established a multi-stakeholder coordination platform that included local government departments, national agencies such as the Kenya Forest Service and Kenya Water Towers Agency, NGOs, and community representatives. Together, they developed a Landscape Restoration Action Plan to guide activities over the following years.

Key activities under this initiative included:

- Assessment and planning**:** Conducting a county-wide survey to assess deforestation and land degradation, leading to the development of a Landscape Restoration Action Plan in 2019.
- Coordination and stakeholder engagement: Establishing a multi-stakeholder platform comprising County Government departments, national agencies like the Kenya Forest Service and Kenya Water Towers Agency, local NGOs, and community representatives to oversee and implement restoration activities.
- Resource mobilization: Securing funding from the Priceless Planet Coalition, with technical support from the Green Belt Movement and WRI, to facilitate large-scale tree planting and infrastructure development.

Figure 2Local nursery groups cultivating indigenous trees, which have particularly benefited women and youth

- Tree planting and management: Planting over 890,000 trees, including 800,000 indigenous species in forests and 400,000 high-value trees on farms, with active community participation in nursery management and post-planting care.
- Community involvement and livelihood enhancement: Engaging local groups such as the Kyeni Kya Nthonzweni Self Help Group in nursery operations and infrastructure projects like sand dams, reinvesting profits to address local water scarcity issues.

The initiative is ongoing, with a target of planting 1.2 million trees by November 2026.

Results of the practice (*outputs and outcomes*)-

Environmental Impact:

- Reforestation of 260 hectares with indigenous tree species, enhancing biodiversity and soil fertility.
- Improved water retention and reduced soil erosion in the Makuli Nzaui landscape, stabilizing ecosystems and supporting the return of native plant and animal species.

Figure 3One of three sand dams constructed to provide reliable water sources for over 500 farms and households

Economic Impact:

- Creation of new income streams for local nursery groups, particularly benefiting women and youth.
- Construction of three sand dams providing reliable water sources for over 500 farms and households, leading to more consistent crop production and improved food security.

Social Impact:

- Empowerment of marginalized groups through active participation in nursery management and tree planting activities.
- Strengthened community cohesion and resilience through collaborative efforts in environmental restoration.

Lessons learnt and Sustainability:

- Involving local communities, especially women and youth, in decision-making and implementation fosters ownership, strengthens local stewardship, and ensures that restoration efforts are maintained beyond the project period.
- Engaging diverse stakeholders, including government agencies, NGOs, and community organizations, not only improves resource mobilization and technical support but also builds institutional commitment that supports long-term sustainability.
- Integrating traditional knowledge with scientific approaches in land and water management promotes long-term ecological balance and resilience, making restoration efforts more adaptable to environmental changes.
- Regular monitoring, flexible planning, and responsiveness to challenges such as low rainfall or pest attacks are critical for sustaining restored landscapes over time.
- Linking restoration activities to income-generating opportunities (e.g., nursery management, sand dam maintenance) helps communities see tangible benefits, creating incentives to protect and maintain restored areas.

Challenges

- Ongoing activities like charcoal burning and livestock grazing continue to threaten forest regeneration.
- Low rainfall and unpredictable weather patterns affect seedling survival and growth.
- Limited funding and logistical challenges hinder the scaling up of restoration activities.
- Difficult terrain and inadequate infrastructure impede access to restoration sites and maintenance efforts.

Recommendations:

- Counties should involve local communities from project inception, ensuring their voices shape priorities and solutions. Training and capacity building in sustainable land management foster ownership and long-term stewardship of restored areas.
- Building strong partnerships with government agencies, NGOs, research institutions, and the private sector enhances technical expertise, resource mobilization, and innovation. Multi-stakeholder collaboration ensures restoration efforts are well-coordinated and impactful.
- Encouraging practices such as agroforestry, terracing, and erosion control helps rehabilitate degraded landscapes while improving livelihoods. Integrating indigenous knowledge with scientific methods enhances resilience to climate change.
- Counties should explore multiple funding avenues, including public-private partnerships, donor programs, and community-led financing, to sustain restoration activities beyond initial project phases and ensure long-term environmental gains.

Relevance to the Sustainable Development Goals (SDGs):

SDG 1 - No Poverty & SDG 5 - Gender Equality:

By actively engaging communities, particularly women and youth in nursery management, tree planting, and other restoration activities, the initiative creates green jobs, strengthens livelihoods, and promotes inclusive decision-making. This approach enhances socio-economic resilience while fostering equity and empowerment.

SDG 6 - Clean Water and Sanitation:

Protecting critical water sources, including the Kaiti, Thwake, Kikuu, and Mwilu rivers, ensures sustained water availability for domestic and agricultural use. Reforestation and catchment management reduce soil erosion and improve water retention in the landscape.

SDG 13 - Climate Action:

The initiative strengthens local resilience to climate-induced challenges such as droughts and floods. Through reforestation, soil conservation, and sustainable land management, communities are better equipped to adapt to changing climate conditions.

SDG 15 - Life on Land:

Restoration of degraded forests and water catchments enhances biodiversity, rehabilitates ecosystems, and safeguards natural resources for future generations. By planting indigenous tree species and managing forests sustainably, the initiative contributes to long-term ecological balance.

Photo Gallery

Figure 4Restoration of the Makuli–Nzaui landscape

Figure 5Sand dam providing reliable water for farms and households