RESTORING KENYA'S RANGELANDS: THE WAY FORWARD

WEBINAR SUMMARY REPORT

November 17, 2022

WEBINAR PARTNERS

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1.0 INTRODUCTION

Rangelands cover over 83% of Kenya's land mass, supporting over 70% of the country's livestock and 85% of the wildlife population. They are not only severely degraded but also face many challenges.

Restoring Kenya's Rangelands: the way forward was organized by the Kenya Rangelands Restoration and Conservation Action group. The purpose of the action group:

- Identify and prioritize key issues to support action in Kenyan rangelands.
- Clarify each of these issues in a dedicated session in view of promoting actions supporting rangelands conservation and restoration. Invite members to prepare contributions/inputs to share and discuss (see list of key issues). Share some solutions/experiences of some actors in overcoming these issues/bottlenecks and using opportunities.

The action group successfully identified eleven key Issues/ topics affecting rangelands restoration and conservation and discussed eight in its meetings. These are:

(1) Documentation and sharing of experiences/knowledge on good rangeland management practices and their impacts.

(2) Assessing and monitoring rangeland health for multiple targets and commitments, e.g., the Land Degradation Neutrality (LDN) and UN Decade on Ecosystem Restoration.

(3) How to enhance resilience to changing climate, markets, and interests.

(4) Identifying and addressing the drivers of rangeland degradation.

(5) How to achieve large-scale change (with respect to restoration) at the landscape level?

(6) Exploring the role of the youth and women and how to strengthen their involvement and capacity.

(7) The current and future threat of invasive species and how to address it.

(8) Supporting national and county policies/ commitments/targets/plans for advancing

rangeland restoration.

(9) The viability of carbon credit schemes, renewable energy options, tourism, and biodiversity conservation as alternative livelihood sources to livestock production.

(10) Identifying and exploring financing mechanisms for Rangelands Restoration.

(11) Private sector engagement in rangeland restoration and conservation.

1.1 Webinar Objectives

The webinar had the following objectives:

- To present the outcomes of discussions on the key issues/challenges to rangeland restoration identified and the way forward.
- To discuss challenges and opportunities in grazing management and conservation efforts in rangelands such as conservancies.

The next section will summarize the experiences, challenges, key lessons and way forward from selected key issues presented during the webinar.

2.0 PRESENTATIONS

2.1 Supporting national and county policies/ commitments /targets/ plans for advancing rangeland restoration

Dr. Petronilla Nduthu, Range Resource Development Division, State Department of Livestock

Background

Kenya has two levels of government responsible for policies, commitments, and targets for advancing rangeland restoration, i.e., the county and national levels. As such, there is a need to support the various levels of government. Non-state actors in restoration (CSOs, NGOs, Development partners, Research organizations, etc.) support state actors and county and national governments by contributing to drafting the rangeland policies, reviewing existing ones and mainstreaming restoration targets into the County Integrated Development Plans (CIDPs).

Challenges

1. Low technical capacity and awareness on restoration among county directors, officials and administrators, e.g., awareness of low-cost restoration approaches suitable for rangelands due to the misconception that restoration is tree planting that results in the lack of political goodwill for restoration.
2. Lack of county spatial/land-use plans with clear regulations & the lack of enforcement of spatial plans in place.
3. Limited funding at both county & national levels for:
    - Disseminating national-level policies and strategies at the county level, e.g., for printing copies of the policies and strategies, etc.
    - Implementing rangeland restoration initiatives, e.g., the lack of proper financing mechanisms, especially for trust lands that are held in trust for the communities by the county government and communal lands.
4. Lack of adoption of rangeland management/restoration policies, plans and strategies due to the lack of sensitization linked to the lack of extension services.
5. Lack of synergy among stakeholders involved in rangeland management and restoration required for upscaling restoration.

How actors are supporting national and county policies/ commitments / targets / plans for advancing rangeland restoration

Organization	*Contribution*
State department of Livestock	Mandated to develop range management policies, regulations, strategies, and plans; develop capacity and research; pastoralism and value chain development; plan and rehabilitate rangeland and develop and conserve rangeland genetic and feed

	resources.
Nature Kenya	● Promotes policy formulation processes at national and county levels and support county policy processes to integrate restoration e.g., Tana River County Forest and Landscape Restoration (FLR) Action Plan, Forest and Landscape Restoration Implementation Action Plan (FOLAREP); Lamu County FLR Action Plan, etc. ● Supports counties to integrate restoration targets into County Integrated Development Plans (CIDPs). ● Supports local policy implementation processes by building the capacity of local community institutions in sustainable land management and restoration.
International Livestock Research Institute (ILRI)	Supported the development of County Rangelands Management Bills designed to be compatible with the Community Land Act in Wajir, Isiolo, Marsabit, and Garissa counties.
Ministry of Water, Sanitation & Irrigation	Has developed a Land Reclamation Policy that cuts across all ecosystems and landscapes including rangelands
Northern Rangelands Trust (NRT)	Has worked with the Samburu & Isiolo County

	governments to develop the county range management policies.
Grevy Zebra Trust	Has worked with the NRT to support the development of Range Management policies.
Centre for Agriculture and Bioscience International (CABI)	Has supported the development of the National Prosopis Strategy for Kenya aimed at the sustainable management of the *Prosopis juliflora*.
Enonkishu Conservancy	Collects data for rangeland management (developing grazing plans), for scientists, carbon credits and policy and decision making.

Lessons learnt

A variety of approaches can be used to support the integration of rangeland restoration into the county and national level policies/plans/targets, i.e.:

- Supporting the development of national rangeland management and restoration policies, plans, strategies, etc.
- Supporting the development of county range management plans, county spatial plans/Land use plans.
- Supporting counties to mainstream restoration targets into County Integrated Development Plans (CIDPs).
- Support local community Institutions set up/strengthened to enhance sustainable land management, e.g., Community Forest Associations (CFAs), Water Resource Users Associations (WRUAs), Beach Management Units (BMUs), Village Natural Resources and Land Use Committees (VNRLUCs).

- Implementing large-scale rangeland restoration projects such as TWENDE involving multiple stakeholders, including county and national level governments, for better coordination and learning.
- Creating awareness of the need for rangeland restoration and capacity building on the restoration approaches suitable for rangelands at the county level is vital for creating political goodwill for it.
- Funding is required to support the dissemination of national-level range management or restoration policies/plans/strategies & support their development at the county level.

2.2 Exploring the role of the youth and women and how to strengthen their involvement and capacity

Ms. Amina A. Maalim, Research Scientist, Kenya Forestry Research Institute-KEFRI

Background

The youth and women are *critical actors* in the dryland restoration process, and their engagement in restoration activities could accelerate/speed up success. In the action group, the young people are between 18 and 40 years old, while the women are 18 and above. However, the most challenging aspect of engaging young women is that they have faced difficulties meeting their daily basic needs, making decisions, and working in groups with many men involved in activities. Early marriages and pregnancies hinder their engagement. Most young women apply community-based approaches that use climate-smart approaches.

Aims of the restoration initiatives by the various youth-led restoration NGOs and initiatives

- Food security and nutrition to the households that they are undertaking their activities to undertake their restoration activities.
- Promotion of climate-smart technologies to enhance the community resilience.
- Reducing land under the alien invasive species
- Advocating for sustainable use of the environment and natural resources, goods, and services.
- Provision of shade from the scorching sun.

- Enhancing biodiversity conservation-Bee keeping and birds.
- Additional household income i.e., Honey, hay selling.
- Improved soil fertility.
- Accelerating the engagement & leadership of young women and men in restoration work.

Addressing the key issue

The youth and women mostly apply a community-based approach (climate-smart approach) by engaging the community directly in land restoration activities and using traditional indigenous knowledge from the community to inform restoration approaches, species, and sites to use for restoration. The main trees planted include indigenous, neem, fruit (pawpaw, lemon), fodder, and other vegetable crops, i.e., chillies.

Lessons learnt

- Youth-led organizations engaged in restoration work are increasing and contributing to 10% forest cover achievement & climate resilience of the communities and landscapes they work in.
- To enhance the sustainability of their restoration work-establishing tree and fruit tree nurseries managed by young men and women, social media presence and more picnic conversations.
- Youth are very innovative but need a platform to share ideas-i.e., Maarifa Kona-Garissa, a land accelerator program which has supported 500 youth from Africa under AFR 100-giving 7000 USD as a financial incentive to develop their proposals very well. Once they have exhausted, they continue to be given 10,000 USD to finalize. All these projects were geared towards benefiting the community and getting more impact towards SDGs, restoration, and climate issues.
- The areas to be restored are vast but have limitations in terms of capacity, funding and human resource to restore.

- Have great success stories (planted thousands of trees), but recurrent drought and unreliable rainfall patterns challenge restoration projects.
- There is a need to engage the private sector investment and enhance financial access to young women and women.
- PRM is used for community land management to monitor land governance and restoration success.

The way forward: Opportunities

- Access to funding opportunities and provision of more youth in restoration-centric funding.
- Training/mentorship on sustainable range restoration technologies.
- Enhanced management and control of invasive species.
- Increased community livelihood and socio-ecological benefits.
- Contribution to local, regional, and global restoration targets whilst connecting & exchanging with other youth from the rest of the world.
- Partnerships with organizations/programmes such as CIFOR, ICRAF, and Regreening Africa to upscale our projects in terms of reach.
- Partnership with relevant organizations.
- Youth and women capacity building on dryland restoration technologies.
- Private sector engagement.
- Community household income boost through income-generating activities, i.e. Beekeeping, hay stacking.

The way forward: actions required

- Creating more youth and women-centric restoration programs like Maarifa Kona and land accelerator by the AFR100 initiative.
- County engagement of youth in their development discussions and allocate resources to implement and prioritize them according to the County Integrated Development Plans.
- Engagement in local climate solution platforms both locally and internationally.

- Enhanced representation and participation in COP and restoration-centric conferences.
- Having multiple picnic conversations-young, people open up about landscape restoration. Making conversation on nature conservation fun.
- Creating awareness of successful youth-led restoration work for mindset and perception change of the community people.

The way forward: support required

- Funding for their restoration activities/initiatives/projects by NGOs and Counties-(Close collaboration with county government (Allocation of a certain % in county budget).
- Partnership with institutions/programmes funding restoration activities/initiatives, i.e., regreening Africa to scale up restoration efforts for sustainability of projects.
- Training and mentorship on best restoration approaches and management of invasive species.
- Invitation and participation in dryland restoration workshops to learn and network-both domestic and international.
- More youth with traditional knowledge to use for developing systems and tools to monitor restoration projects.
- Capacity building on Invasive alien species management.
- Promotion of continuous use of social media platforms to advocate for more youth engagement.

Key messages

- Young men and women are actively engaged in restoring critical ecosystems and, in doing so, are demanding to be accommodated in platforms for more opportunities and networks (Competing for interests-White collar Jobs Vs restoration).
- Climate change scope of land to restore slowing down the restoration successes.
- Their restoration initiatives include planting thousands of trees in farms, rangelands, and schools and establishing nurseries that contribute to the national commitment of 10% tree cover and SDG.

- Young people have brilliant landscape restoration ideas but require technical, financial, and networking support at the county, national and international levels.
- More funding is to be made available for supporting youth in restoration work.
- The provision of technical training to the youth-led the organization to boost its capacity.
- Private sector investment for youth in restoration work.
- Power dynamics still affect the governance structure, especially regarding young women's land use, access, and ownership.

2.3 How to achieve large-scale change (with respect to restoration) at the landscape level

Dr.Stephen Mureithi Researcher and Country Coordinator, @DrylandsTransform

University of Nairobi

Background

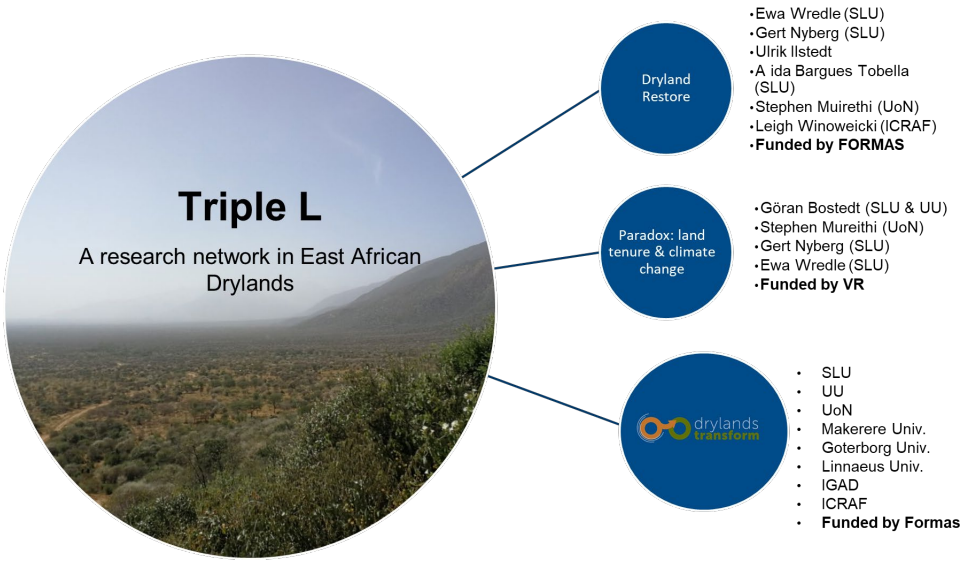


Photo: Research Network in East African Drylands

"Triple L" stands for landscape, livestock, and livelihoods in the East African Drylands. This is mainly research composed of scientists from various institutions. The network is currently undertaking several projects that all focus on developing options for rangeland restoration and management options together with the communities. One is dryland restore which FORMAS funds in Sweden. The other is the pastoralist paradox, which focuses on land tenure and climate

change. Dryland Transform is the biggest, with many partners coordinated by the Swedish University of Agricultural Sciences.

This research draws on qualitative research (individual, household, group interviews, interviews with different actors (county government officers, CBOs, NGOs) since 2016 within three separate but often related projects that all address aspects of the restoration of degraded rangelands, pastoralist land tenure and land rights.

Dryland transform is a multidisciplinary project titled "Achieving the SDGs in East African Drylands Pathways and Challenges Towards a Social Ecological Transformation of Landscapes, Livestock and Livelihoods." Drylands Transform aims to contribute to: (i) Knowledge for implementing and achieving the SDGs in the East African drylands. (ii) Optimize synergies and minimize trade-offs between the SDGs by co-developing transformative pathways through policy and practice.

Specific Objectives of Drylands Transform

1. Assess land health at the landscape scale and explore the links with human well-being.
2. Test options to restore rangelands under grazing by engaging local communities and develop platforms to share knowledge and scale livestock interventions that promote resilience and productivity (livestock cafés).
3. Understand the impact of climate variability on livelihood strategies and resilience.
4. Identify innovative land governance mechanisms and practices that effectively address the pastoralist production system's dependence on flexible and secure land rights.
5. Synthesize and scale up key research findings to develop future scenarios in policy and practice.

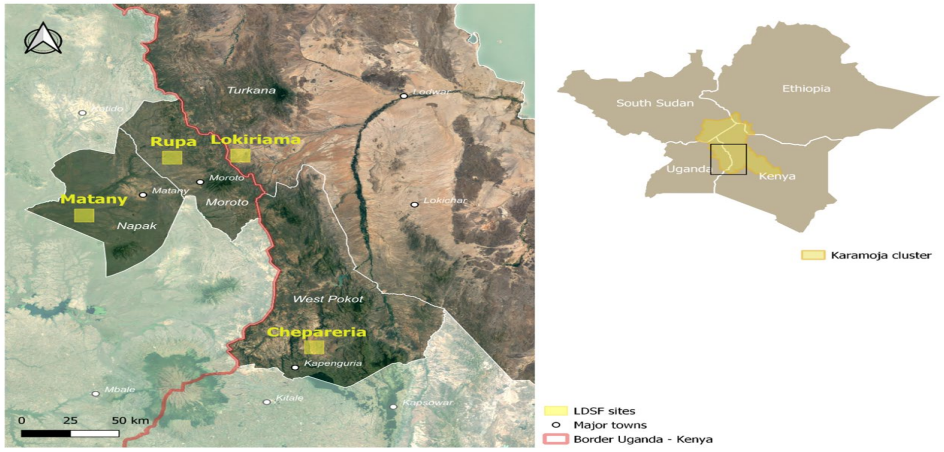


Photo: Project area

The project area for Dryland Transform is in two agro-pastoral areas that are Chepareria in West Pokot County and Karamoja region of Kenya and Uganda (Matanyi in Napak District), and the pure pastoral areas one is in Lokiriama near the border in Turkana County, and the other one is in Rupa.

Approach: Livestock Cafés Model

The approach involves training livestock keepers on various technologies for restoring degraded land. Co-generation of knowledge and co-learning in the Livestock Cafés bringing together: livestock keepers, extension staff – MoALF, County/District policy makers, NGOs and private actors, and researchers.

Livestock Cafés model: Achievement so far

Practical trainings on:

1. Water harvesting for fodder production.
2. Gully rehabilitation using vetiver grass (*Chrysopogon zizanioides*).
3. Rock check dams.
4. Enriching pastures, with or without manure, with forage legumes
    a. Grasses:*Cenchrus ciliaris, Chloris roxburghiana, Eragrostis superba*

b. Legumes: *Crotalaria juncea,Clitoria ternatea, Macroptilium atropurpureum (Siratro) and Neonotonia wightii*

5. Regenerative Kitchen gardening for improved human nutrition.
6. Produce harvesting and seed saving.

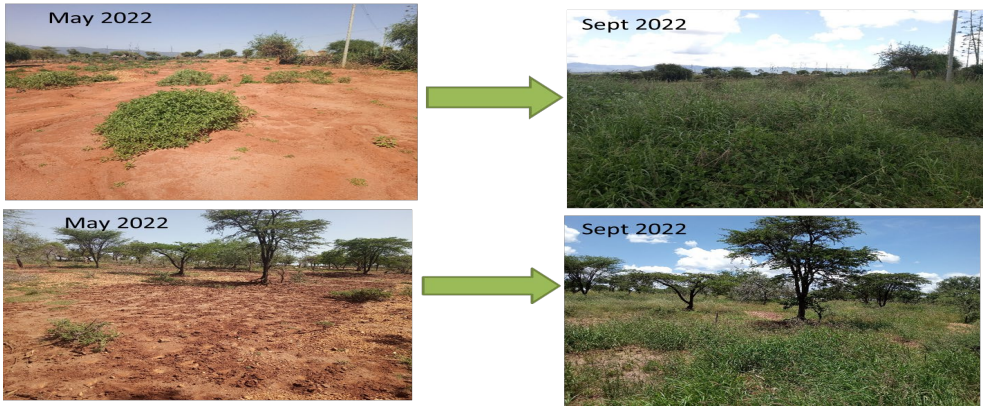


Photo: Site transformation

Lessons learned (on how to achieve large scale rangeland restoration)

When you have a bare degraded rangeland, there is often a need to exclude the livestock, which is controversial and seen as not good. Triple L regards Dryland enclosures as a way of management. Enclosures can differ from private to communal, like the one in Baringo for intensification or conservation. Laikipia has been characterized historically by enclosures and conservancies, including private ranches. Due to the high density of wildlife, they allow wildlife to move from one enclosure/ private ranch to another.

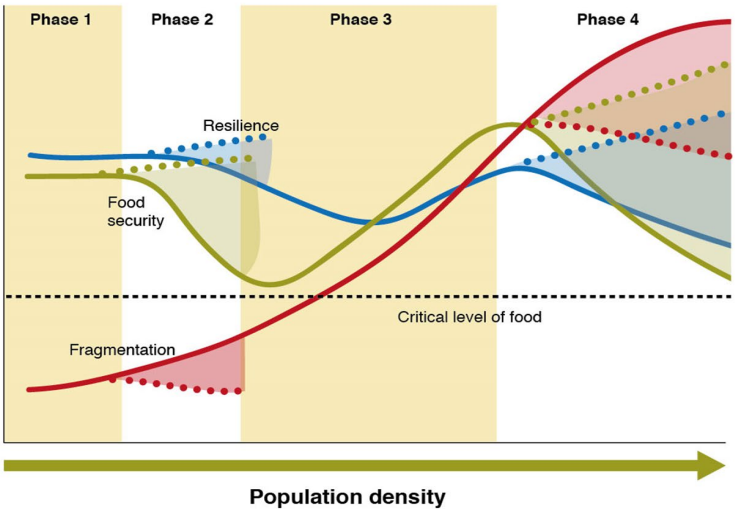


Figure 2. Conceptual diagram of the relationship between climate, food security, landscape fragmentation, resilience, and population density (adapted from Burian et al., 2019). The X-axis is of course finite, but not likely to change in the near future. Globally, population increase is expected to level off somewhere around 2100, at a global population of around 11 billion. In Sub-Saharan Africa, the population is expected to double, to over 4 billion (UN, 2017).

Conceptual diagram of the relationship between climate, food security, landscape fragmentation, resilience, and population density

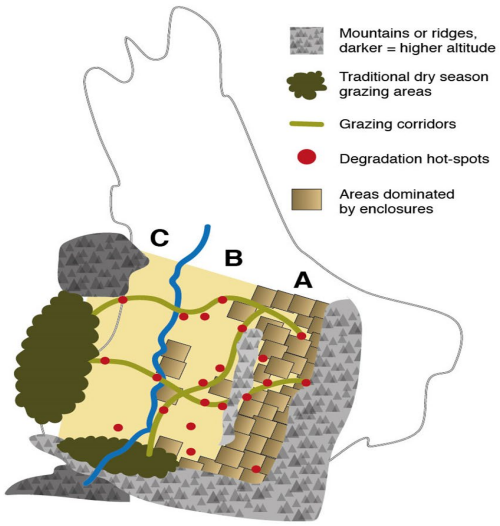


Figure 3. Conceptual figure of suggested systematic co-existence between pastoral and agro-pastoral strategies, and between different land use and land tenure systems, where: areas with small squares are dominated by enclosures; red dots are degradation hot-spots, i.e., areas where restoration efforts would start; light green lines are grazing corridors; dark green areas are traditional dry season grazing areas; and grey areas are mountains or ridges (the darker the shade, the higher the altitude). For geographical and scale reference, the contours of West Pokot County, Kenya, is inserted in the background.

(Source: Knutsson et al 2021. World Development Perspectives 23)

Conceptual figure of suggested systematic co-existence between pastoral and agro-pastoral strategies, and between different land use and land tenure systems.

Lessons learned (on how to achieve large scale rangelands restoration)

- Restoration ecology works – water harvesting, reseeding, and multi-purpose tree planting.
- Research projects, NGOs - limited budgets and time-frames.

- Layering and sequencing fodders value-chain development projects – NEEDED beyond the communities' learning curve.
- Broader management transdisciplinary and multi-stakeholder approaches - NEEDED!
- Coordination at County/District levels - working in silos is ineffective and inefficient. NDMA can take up such a role.
- Invest more in normal (good) times as opposed to only during emergencies.

The way forward: Opportunities

1. Kenya faces major forage deficits estimated at 70% of the total annual fodder requirements of about 5.5 billion bales.
2. Big opportunity for commercial fodder and fodder seed production by individuals, community groups and private enterprises.
3. Transition towards private and more commercial pastoralism and agro-pastoralism.

The way forward: actions required

1. Reposition the fodder value chain by strengthening investments and agribusiness enterprises in fodder and fodder seeds production in ASAL counties.
2. Facilitate the mapping of fodder production areas in the ASAL counties for integration within the county spatial plans/maps.
3. Review and develop supporting policy regulations and institutional framework for fodder production, conservation, and marketing at ASAL county levels.
4. Strengthen collaboration among all fodder value chain actors, including national and county governments, development partners, the private sector, farmers, and academic and research institutions to synergize efforts towards curbing the national fodder deficit.
5. Provide funding to scale up fodder commercialization for increased fodder production and pasture land restoration to ensure that the country and region have sufficient supplies of quality, safe, and affordable fodder.

Regional rangeland management strategic objectives (ICPALD - IGAD)

2.4 Restoration of Arid and Semi-Arid Lands of Kenya Through Bio-Enterprise Development and Other Incentives

Mr. Meshack Muga, FAO, National Project Coordinator

The Restoration of Arid and Semi-Arid Lands of Kenya Through Bio-Enterprise Development and Other Incentives is part of a global programme called the Restoration Initiative, which is in 10 countries and has 11 child projects. FAO, KEFRI and other partners implement two child projects in Kenya. This project is in two landscapes: Mukogodo landscape in Laikipia and Isiolo counties and Mt. Kulal landscape in Marsabit county. The restoration initiative is unique because it also tackles the development of bio-enterprises.

Introduction

The potential area for restoration in Kenya is 38.8 million hectares; for the project counties, it's 9.9 million hectares. Kenya has committed herself to restoring 5.1 million hectares by 2030. The project targets to restore 8,700 hectares directly and 55,352 hectares indirectly. The project's objective is to restore deforested and degraded lands through a forest and landscape restoration approach and enhance local communities social and economic development through the development of bio-enterprises of non-timber forest products in an arid and semi-arid land.

Project components

The project has four components:

- Component 1: Policy Development and Integration
- Component 2: Implementation of Restoration Programs and Complementary Initiatives
- Component 3: Institutions, Finance, and Upscaling
- Component 4: Knowledge, Partnerships, Monitoring and Assessment

Key Achievements

- In terms of the achievements, FAO has done a Restoration Opportunities Assessment in partnership with several other partners, and now restoration opportunities have been identified for each site using the ROAM methodology.
- In terms of the policy documents, under the leadership of the Kenya Forest Service, FAO has developed a national document on Forest and Landscape Restoration Implementation Plan, which has been finalized and is due for launch.
- Developed two Participatory Forest Management Plans, one for Mt. Kulal and another for Mukogodo. These are in the final stages.
- Supported the three counties in developing County Environment Action Plans, which are critical documents. In developing the County Environment Action Plans, FAO has requested them to include Forest and Landscape Restoration Activities. Set a policy influencing plan that can be useful to all the partners. In collaboration with NRT, FAO has developed resource maps for various conservancies in Laikipia county.
- Established eight tree nurseries and trained 120 community members (50 men and 70 females). Two nurseries have been developed in certain schools in Laikipia, which the environment clubs manage in those schools.
- Community members in Mukogodo ecosystems have been supported to prepare micro-catchments that are useful in tapping water during the rainy season. As a result, water regeneration occurs—water harvesting by the Vallerani System.
- Supporting the rehabilitation of six water infrastructures in partnership with the Laikipia Wildlife forum.

Bio-enterprise development

- Identified 13 bio-enterprises and narrowed them down to four after value analysis. Gams and raisins, honey and bee products, aloe and eco-tourism.
- Identified the gaps in best practices for production, domestication, processing and marketing documented.
- Key stakeholders identified, and their roles mapped.
- A video has been produced.

Knowledge management and sharing forum

- Twenty knowledge products have been produced.
- Several meetings have been held.
- Consultations both at the county level and national level.

Beneficiaries reached

TOTAL NUMBER REACHE	MALE	FEMALE
21,259	**11,247**	**10,012**

Co-financing

It is critical to have co-financing, synergies, and complementarities. The project, which was started in 2019, has been able to get support from World Vision (Regreening Africa and IMARA), KEFRI, CIFOR-ICRAF (UK-PACT), WWF, TRI-UNEP/ Nature Kenya, NACOFA (National Alliance of Community Forest Association).

Key Lessons Learnt

1. Consideration of Mechanized systems in the restoration of ASALs areas.
2. Sensitization of local communities on the protection of work sites.

3. The need to liaise with universities to come up with training courses and applied research on FLR and NTFPS.
4. Prioritization Land tenure/community land ownership in ASALS to be prioritized.
5. Procurement of goods and services requires early planning.

Key Messages

- Synergies and complementarities for greater impact.
- Development of Bio-enterprises as low lying fruits for FLR.
- Public-Private sector partnership critical.
- Building on local knowledge and technologies important
- Knowledge management and sharing are key to promoting FLR.

Key Opportunities

- Entrenchment of FLR activities in County Integrated Development Plans (2022-2027).
- UN Decade for Ecosystem Restoration (2021-2030).
- Collaboration with other FAO-Kenya programs and other partners, including Government agencies.
- MTR provides opportunities to refocus the project for greater impact.

2.5 Assessing and monitoring rangeland health for multiple targets and commitments e.g., the Land Degradation Neutrality (LDN) and UN Decade on Ecosystem Restoration

Bolton Onyango, Field Researcher & Range management consultant, Enonkishu conservancy

Background

- Rangelands cover 54% of global terrestrial surface (148,326,000 km^2) to a total of 79,509,421 km^2(Rangelands Atlas,2021).
- 78% (approximately 62,000,000 km^2) are classified as drylands, covering 41% of the earth's landmass.
- Supporting 1/3 of the world's population.
- Whose livelihoods are dependent on Range natural resources.

- Host to a wide range of biodiversity (KBA) and act as important carbon sinks.
- Cover 43% of the land area in Africa.
- Host 240 million agro-pastoralists and 25 million pastoralists.

Challenges

- Rangeland livelihoods, natural resources, and health, in general, are faced with a myriad of challenges, including Climate change and variability, high levels of soil and land degradation and biodiversity loss.
- Exacerbated by human activities coupled with complex socio-cultural factors, e.g. Poor rangeland management practices, breakdown in traditional decision-making systems, inconsistencies in livestock movement etc. Increasing human and livestock populations in RLs. Widespread poverty and health. Weak governance and Institutions. Remoteness, rendering decision-making and infrastructural support difficult.
- Calling for Rangeland restoration initiatives and activities to reverse rangeland degradation.
- Assess and monitor rangeland health for multiple targets, e.g., land degradation neutrality and the UN decade for ecosystem restoration.

Addressing the key issue

- The “Rangeland Health” concept. Rangeland health is the degree to which the integrity of air, water, soils and rangeland ecosystem processes are maintained and balanced for sustainability.
- Assessment and monitoring are done on the state and trend of Rangeland attributes, i.e., Soil stability- ensuring minimal loss and redistribution of solid resources. The integrity of the biotic community- fostering functional and structural communities that build the ecosystem’s resilience and ability to recover from disturbance. Hydrological function- creating a site capable of capturing, storing, and safely distributing precipitation by reducing runoffs and degradation.

Context of Enonkishu Conservancy

- Biomonitoring. Assessing and monitoring the four ecosystem processes i.e
    - Nutrient cycle-the cycle of nutrients through the physical and biotic components of the environment.
    - Water cycle-The capture, storage, and redistribution of precipitation.
    - Community dynamics- state and trend of functional and structural biotic communities.
    - Energy flow- the seamless flow of solar energy through the trophic levels and conversion to plant and animal matter.
    - Transects across the landscape are set to sample the above indicators. Landscape changes are captured with time series photos.
- Indicators: Functional composition of plant species, flow patterns on bare grounds, and rate of litter decomposition.

Context of Northern Rangeland Trust

- Monitoring of rangeland health through the following indicators
    1. Fractional live vegetation cover
    2. Rate of growth
    3. Amplitude (The amount of forage in each megapixel
    4. Bare ground (%)
    5. Gaps between plants (%)
    6. Perennial grass (%)
    7. Plant base (%)
- Transects are used to sample the key indicators 4,5,6,7. Remote sensing indices are used to monitor indicators 1 to 3.

Context of WOCAT

- Land degradation neutrality (LDN) and UNCCD report/ monitoring framework.

- Assessments monitor sub-Indicators under indicator 15.3.1: the proportion of the land degraded over the total land area, land productivity, and carbon stocks (above and below ground).

Lessons learnt

- Several institutions have different indicators and metrics to measure rangeland health.
- These indicators are assessed and monitored through ground truthing and remote sensing indices.
- Limitations
    - False positives- 'desert forest', irrigation fields reported as greening.
    - Selection of sites for monitoring, i.e., what are the representative sites for various land uses/land cover types?
    - The Vastness of rangelands makes it challenging to ground true data.

The way forward: Opportunities

- A Sustainability Index for Landscape Restoration is developed and tailored to specific sites.
- Which not only measures restoration impacts on ecological aspects of rangelands but also the social aspect of rangelands.
- The simplicity of monitoring tools, e.g., LandPKS, allows monitoring complex ecosystems in the palm of your hand.

The way forward: Actions required

- A platform or a framework to share rangeland health monitoring data between institutions needs to be developed and implemented.
- Ways of communicating results from monitoring rangeland health to the wider community need to be developed.

"We need to shift from doing conservation and rangeland restoration for the community to conservation and rangeland restoration by the community" –Dickson Kaelo, KWCA.

The way forward: Support required

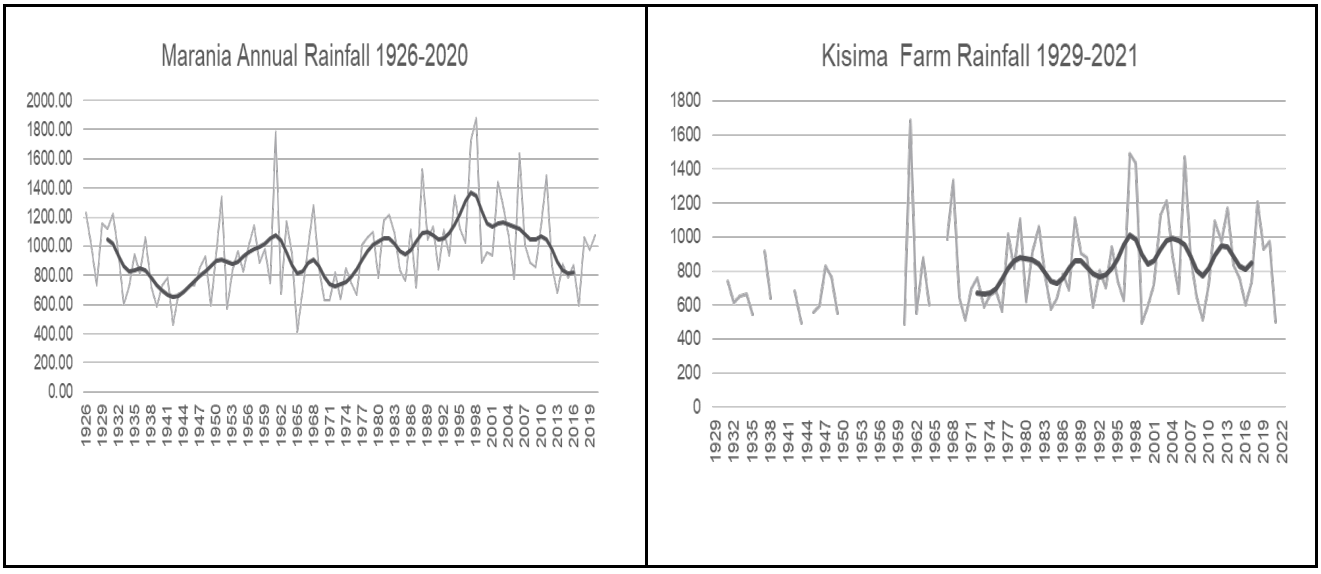
- Relevant stakeholders to build capacities of local communities to assess and monitor rangelands.
- A national initiative with an agreement of all the rangeland players with a budget for rangeland assessment and monitoring and making these results available up to date should be established.

2.6 How to enhance resilience to changing climate

Dr. Hanspeter Liniger, Former Director WOCAT, CDE University of Bern

Background on Myths and Facts of Climate Change

The temperature is increasing. Rainfall is highly variable in time and space. Perceptions are that rainfalls are declining, not based on measurements, but because rangelands are becoming less green than before. The fact is that the total amount of rainfall is not below average but rather increasing. The recent drought is severe but not part of a downward trend. Only a few good and long-term records exist to prove change.



Challenges

- Very variable in time: seasonal/annual.
- Very variable in pace: due to mountains.
- Long rains are decreasing.
- Short rains are increasing.
- Rainy days: Less but more rain per rainy day, indicating heavier storms.
- Dry spells are more variable and become longer.

All this means is that we need more resilient land.

Addressing the key issue

- Land management.
- Abstraction and land management.
- Too much followed by too little is a land degradation syndrome, and it shows a relationship between upstream and downstream land use and the land use change causing such a syndrome. This is aggravated but not caused by climate change.
- Impact of cover on surface temperature. Air temperature? Consequences?
    - Extreme soil surface temperature.
    - Destroying the living organisms of the topsoil.
    - Creating an unfavorable micro-climate for grasses and trees to establish. It also has an impact on the macro-climate.
- Surface Temperature Increase: February Mean Max and Hot spots!

Lessons learnt

Resilient land management

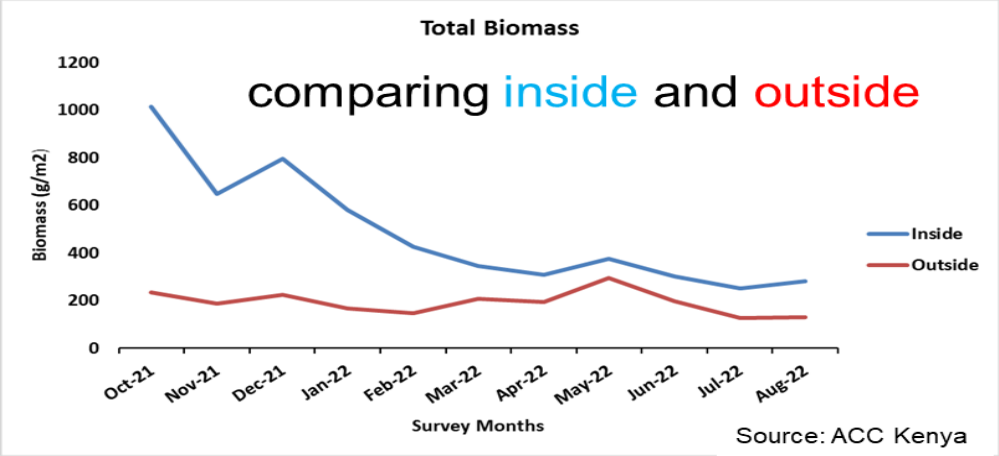
- Key principles: Enabled mobility, rotation, good grass / herbaceous cover, securing dry season/drought forage, community-based land use planning/mgt, and emerging markets.
- When compared with rainfall for various periods, the results show that there is decreasing grassland productivity even for the same amount of rainfall.

The way forward: Opportunities

- Restoring degraded areas, establishing traditional Olopololis & Grass seed banks, and Managing livestock and wildlife.
- The women's adaptive capacity has increased through selling hay & seeds.

The way forward: Actions and support required

- Documentation and sharing of resilient practices.
- Monitoring rainfall, river water & groundwater recharge - long-term data and proper analysis of change.
- Monitoring land use/cover, rangeland management and health.
- The availability of pasture is a key determinant of how severe the drought will be.



Key messages

- Let's not use climate change as a scapegoat for disasters and for loosing productivity and resilience.
- Rangeland management is the key to improving resilience to extremes: heavy rains/drought:
    - Improve cover/topsoil conditions.
    - To be proven: great impact of land management on micro and macro climate.

- Resilient land management practices need to be shared and impacts monitored.

2.7 Documentation, and sharing of experiences/ knowledge on good rangeland management practices and their impacts

Dr. Hanspeter Liniger, Former Director WOCAT, CDE University of Bern

Background and Challenges

- Knowledge is still a most important hindering as well as enabling factor for the uptake and spread of Sustainable Rangeland Management (SRM).
- Result of an internal AG survey.
- Many organizations have "their own" system for documentation and monitoring, yet in various levels of comprehensiveness and not standardized.
- Mostly used for internal reports, presentations, case studies, publications
- Access to this knowledge is difficult and not open access, mostly internal, clearly less for rangelands than for cropland!
- Continuity is not secured.
- Updating needs to be more systematic.
- WOCAT made an effort with the book on Sustainable Rangeland Management in sub-Saharan Africa and the documentation of the SRM Practices. Kenya has the highest number of documented practices.
- Yet the WOCAT platform is not widely used in Kenya for continued rangeland documentation and updating of new practices and adaptations.

Key issues for documentation and sharing

- Standardized & harmonized questionnaires for data collection.
- Easy and open access database.
- Allowing flexible search.
- Enabling easy outputs, analysis, reports, learning materials and knowledge products for various purposes.
- Used widely by extension services, practitioners, students, planners, decision-makers.

- Different languages.
- One common database but assigned ownership.

The way forward: Opportunities

- WOCAT provides a knowledge-sharing platform suitable for further rangeland documentation.
- Many projects and practitioners have experiences to share.
- Use it for multiple purposes to highlight the importance of rangelands:
    - For LDN reporting
    - Towards the IYRP 2026
    - Reporting on the initiatives of the restoration decade
    - Climate change adaptation/mitigation experiences
    - Disaster Risk Reduction Separate Module,
    - Gender module

The way forward: Actions and support required for documenting and sharing rangeland experiences

- Result from AG survey: Is there a need for joint action for documentation and sharing in order to advance rangeland restoration?
    - Yes! BIG!
    - MoUs needed for the involvement of the researcher, community of practice,
    - Need for more evidence on impact!
    - Need for a generous and specific budget line and dedicated persons, with time allocation.
    - Need for capacity building for M&E documentation.
    - Need for a coordinating organization to assist and follow up with different projects and experienced practitioners.
    - Need for a concrete action plan and funding.

Key messages

- Rangeland systems are complex and under permanent change.
- Valuable knowledge about the sustainable use of rangelands needs to be sufficiently made available.
- WOCAT offers an open-access knowledge-sharing platform: covering comprehensive documentation of rangeland management practices, including the natural and human aspects.
- Awareness of the value of documentation and building a knowledge base and its use for implementation and decision-making needs to be improved.
- There is a need for joint and concrete action to build capacity and document and share SRM knowledge.
- From a voluntary activity to a priority task with clear allocation of responsibilities, resources, and action plan.

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