

TWENDE

TOWARDS ENDING DROUGHT EMERGENCIES: ECOSYSTEM BASED ADAPTATION IN KENYA'S ARID AND SEMI-ARID RANGELANDS

REFLECTIONS FROM STAKEHOLDER ENGAGEMENT ON
RANGELAND RESTORATION FROM THE TWENDE PROJECT

December 2023



twende
towards ending drought emergencies

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ACRONYMS

TWENDE	Towards Ending Drought Emergencies
NRM	Natural Resource Management
IPCD	Integrated Participatory Community Development
M&E	Monitoring and Evaluation
SHARED	Stakeholder Approach to Risk Informed and Evidence Based Decision Making
LDSF	Land Degradation Surveillance Framework
FLR	Forest Landscape Restoration
ROAM	Restoration Opportunity Assessment Methodology
KWS	Kenya Wildlife Service
NEMA	National Environment Management Authority

CDC	County Drought Coordinator
PDRA	Participatory Disaster Risk Assessment
NDMA	National Drought Management Agency
KEFRI	Kenya Forestry Research Institute
WRA	Water Resource Restoration
SDL	State Department for Livestock
IUCN	International Union for Conservation of Nature
KWTA	Kenya Water Towers Agency
ASAL	Arid & Semi-Arid Land
DRR	Disaster Risk Reduction





TWENDE PROJECT OVERVIEW

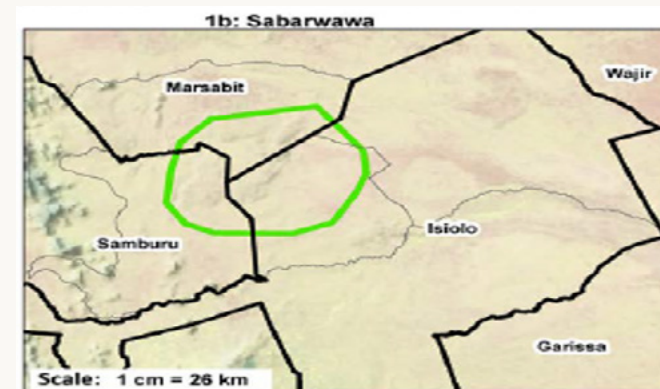
Pauline Kiamba, a senior project officer with the IUCN, gave the overview of the Twende project. In her presentation, Pauline outlined project objectives, the anticipated beneficiaries, and the restoration target.



Photo 3: Pauline Kiamba, Senior Project Officer IUCN, gives an overview of the Twende project.

TWENDE: Towards Ending Drought Emergencies: Ecosystem Based Adaptation in Kenya's Arid and Semi- Arid Rangelands is a GCF-funded project whose objective is to reduce the cost of climate change induced drought on Kenya's national economy by increasing resilience of the livestock and other land use sectors in restored and effectively governed rangeland ecosystems.

The project is implemented in 11 counties and aims to restore 550,00ha of rangelands benefiting 620,000 people in approx. 104,000 households.



STAKEHOLDER ENGAGEMENT WORKSHOP



Introduction

The National Drought Management Authority (NDMA), World Agroforestry (ICRAF) and Twende Project held a one-day cross-landscape workshop that brought together various stakeholders from the county government, NDMA and community representatives working in the three Twende project landscapes. The workshop kicked off with the facilitators welcoming participants to the workshop. Every member stood up for a brief introduction and stated the organization and /or community group they represented. The Kitui County Drought Management Coordinator Mr. Francis M. Koma followed up with opening remarks on behalf of the CEO NDMA, Mr. Hared Hassan in absentia. Mr. Francis M. Koma thanked all participants for their large attendance for the workshop.



OBJECTIVES OF THE WORKSHOP

Christine Magaju, the workshop facilitator, shared the workshop objectives and the principles of engagement (Figure 1). The workshop objectives included:

- Develop a shared understanding of the drivers of degradation and vision of a climate resilience landscape across the three landscapes and the partners and sectors involved.
- Map activities, approaches, tools, and data related to climate resilience of different actors across the three landscapes.
- Introduce the concept of landscape dashboards for collating and sharing data and evidence generated in the landscapes.

Principles of Engagement



Everyone is encouraged to share their views. Please keep your points succinct to allow others time to speak.



This is a working workshop. Be comfortable throughout.



Please keep to time.



Enjoy the interactions and the content.



Figure 1: Principles of engagement for the workshop



STAKEHOLDER APPROACH TO RISK INFORMED AND EVIDENCE BASED DECISION MAKING (SHARED)

The Stakeholder Approach to Risk Informed and Evidence Based Decision Making (SHARED) process is a tailored method for stakeholder engagement, managing relationships and brokering multi-stakeholder and cross-sectoral partnerships. The SHARED process is founded on a principle of fostering evidence-based decision making.

The SHARED approach integrates a series of structured events geared to encourage stakeholders' interaction with data and evidence to inform decision. The SHARED approach (Figure 2) was used to design and facilitate the workshop process. More information on the SHARED approach is available [here](#).

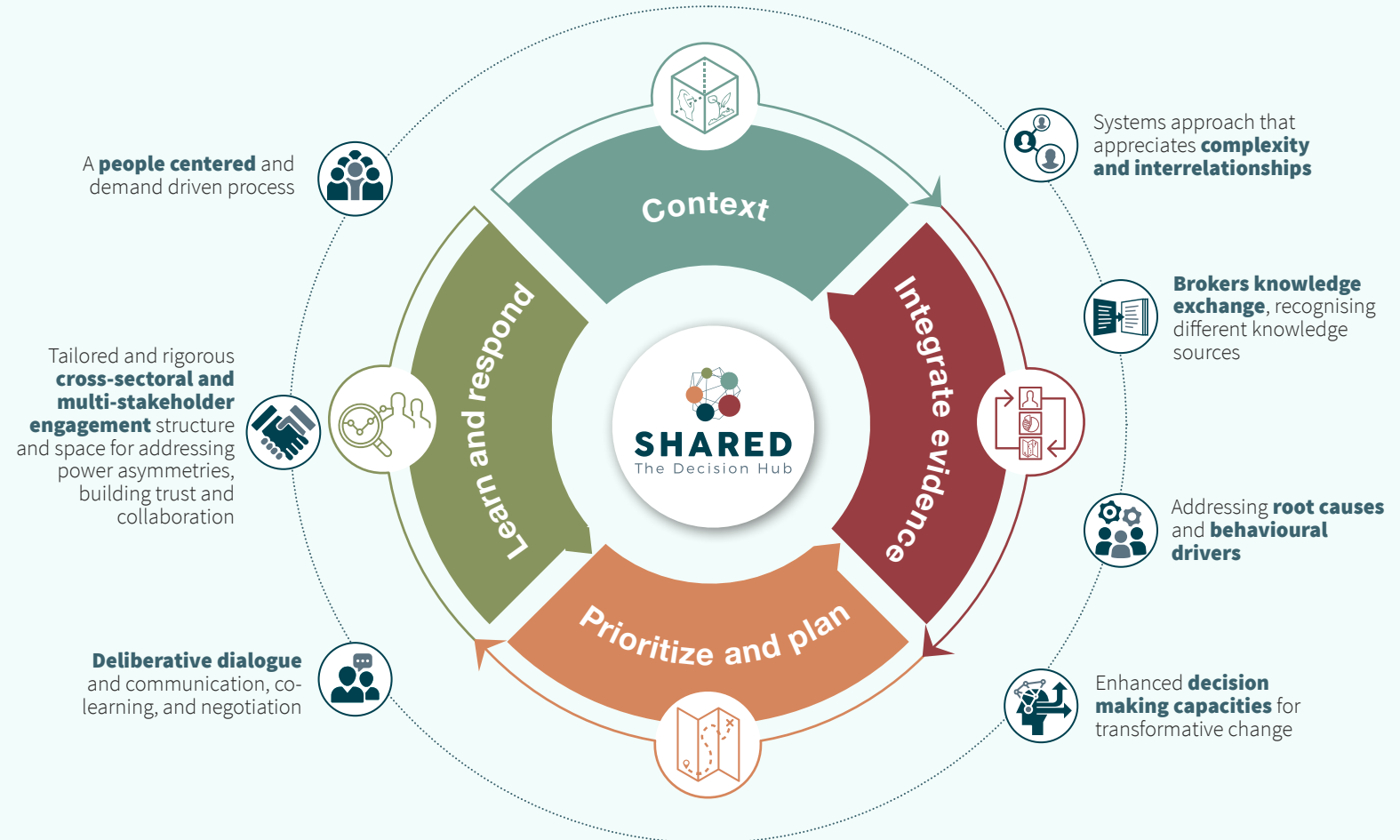


Figure 2: SHARED Conceptual framework



GATHERING PERSPECTIVES

The facilitator asked participants to respond to statements by stating whether they strongly disagree, disagree, neutral (not sure), agree and strongly agree with the statement. The participants would raise their hands to the option that best reflected their view of each statement (Figure 3). The gathering perspectives activity aimed at initiating the conversation on collaboration and coordination among stakeholders in addressing land degradation in the landscapes and making decisions on land restoration strategies.



Strongly disagree



Disagree



Neutral
(Not sure)



Agree



Strongly agree

Figure 3: Participants raised their hands in line with the card that best represented their view. The cards ranged from strongly disagree, disagree, neutral (not sure), agree and strongly agree.



Photo 2: Participants who strongly disagreed with the statement (left) and a participant giving the reasons for disagreeing with the statement (right).

STATEMENT 1

We are working collaboratively to address land degradation in the landscapes and on restoration outcomes

Majority of the participants either disagreed or strongly disagreed with the statement while others either agreed, strongly agreed, or remained of neutral opinion. Some of the reasons provided for each category are outlined below:



- Policy efforts and Design and planning of restoration plans have been done at the county level.
- Stakeholder workshops have helped in knowledge management at the grassroots- community education on conservation, restoration, landscape management.
- Partners working independently but towards the same goal of addressing land degradation and restoration initiatives.

STATEMENT 1

We have a coordinated approach to bringing a wide range of stakeholders and evidence together for taking decisions on land restoration strategies

Most of the participants either agreed with the statement or were neutral in their reaction to the statement. Below are some of the reasons:



- Good will among the communities and partners -Marsabit County working collaboratively with partners on the issue of invasive plants, Samburu County making few strides in land restoration processes.
- Progress has been made through provision of resources by partners to address land restoration strategies.



- There is no specific Coordination structure among stakeholders - stakeholders working independently mostly for their interests.
- Comprehensive scientific research is being done by partners to understand land degradation but very few plans have been implemented.



DEVELOPING A SHARED UNDERSTANDING LAND DEGRADATION USING DATA AND EXPERIENCE

Overview of the land degradation status in the three landscapes and opportunities

Tor Vagen took members through a presentation on land degradation status in the three landscapes. Maps of land health indicators generated using the data collected from Laisamis, Mbalambala and Mbirikani using the Land Degradation Surveillance Framework (LDSF) data were presented.



Photo 4: Tor Vagen presents on the land degradation status using LDSF data.



The LDSF provides a systematic and science-based assessment and monitoring of soil and ecosystem health at scale, using a robust and consistent indicator framework. The framework was designed to provide a biophysical baseline at landscape level, and a monitoring and evaluation framework for assessing processes of land degradation and the effectiveness of rehabilitation measures over time. More information on the LDSF can be accessed [here](#).

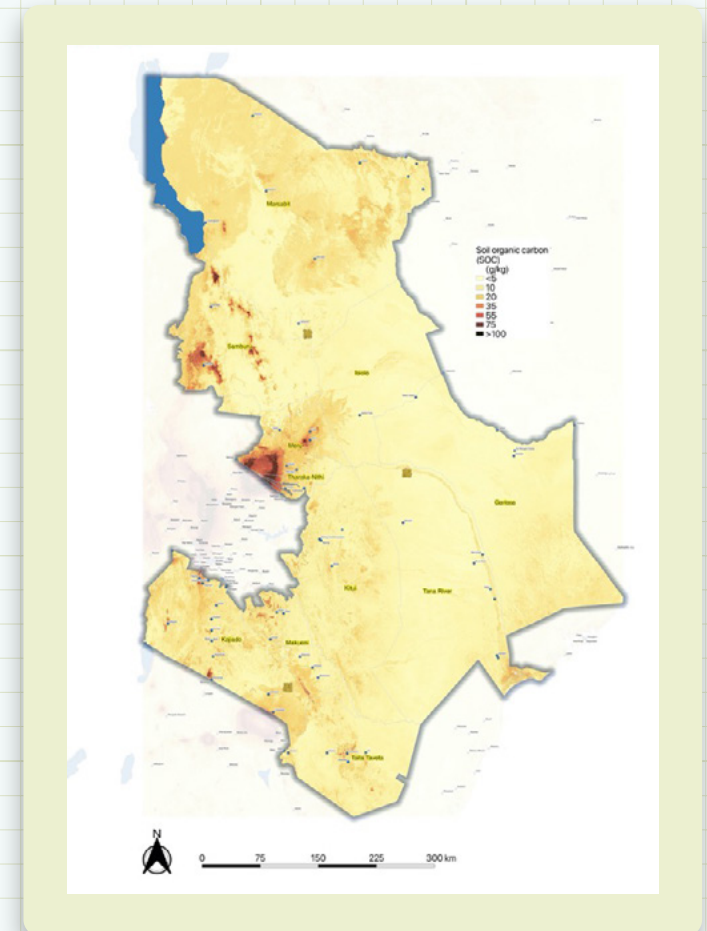


Figure 5: Soil health indicator maps in the Twende project counties presented during the workshop. Soil organic carbon content.

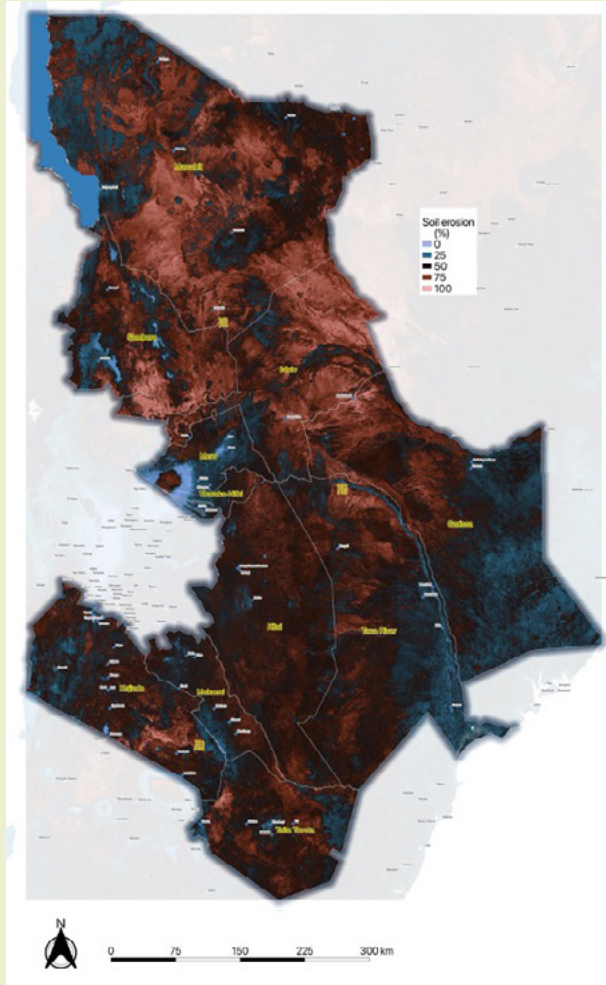


Figure 5 Cont: Soil health indicator maps in the Twende project counties presented during the workshop. Soil erosion status.



FEEDBACK FROM THE PARTICIPANTS

- Water needed to restore carbon levels in the landscapes is scarce.
- Data on variation in degradation levels needs to be adequately available.
- Specified timing of interventions.
- Integrating water towers data in the landscapes with LDSF data to be considered.
- In Marsabit, bare ground coverage is on the increase. How much rangeland according to the maps is available? What are the nitrogen levels in the areas?
 - Nitrogen correlates with carbon levels- where there is low carbon level there is low nitrogen.
- Map overlays can map the data on bare ground and occasionally grazed landscapes
- What is the relationship between climate resilience and land degradation?
 - Land degradation management builds climate resilience.



Photo 5: Participants reacting to the presentation on the status of land degradation in the three landscapes.

Community perspectives on degradation status and restoration in each landscape

What is the land like where you come from? Has it changed? How has it changed?

Table 1: Community perspectives on land degradation status and restoration.

Laisamis	- Large area of bare ground due to overgrazing - Increased carrying capacity of livestock and wildlife - Livestock migrations and low rainfall amounts leading to slow vegetation regeneration - Communities being resistant and unresponsive towards efforts of land restoration
Mbalambala	High soil erosion in farms along river lines
Chyulu	- Excessive charcoal burning - Increased human-wildlife conflicts - Water scarcity - Overgrazing and increased forest fires
Meru	- Forest encroachments due to increase in human population - Drying of rivers and khat(miraa) plantations - Increased hunger and starvation - Death of livestock and wildlife - Decreased rainfall amounts
Taita Taveta	- Carbon credits used for other purposes apart from conservation- methods of verification of carbon credits are not sufficient - Excessive charcoal burning and sand harvesting
Kitui- Kyuso & Tsiekuru (Mwingi North)	- Overgrazing by neighborhood communities - Excessive charcoal burning - Water scarcity





UNPACKING THE UNDERLYING CAUSES (DRIVERS) OF LAND DEGRADATION, OPPORTUNITIES, AND ACTIVITIES TO OVERCOME THESE ALONG WITH STAKEHOLDERS TO BE INVOLVED

Stakeholder perspectives on key drivers of land degradation



Each group selected the most important cause from their list and further identified the cause of that cause. Using flipcharts and sticky notes, groups developed root cause maps of the most important cause in their list. They placed the selected cause in the center of the flipchart and discussed the underlying causes, taking into consideration socio-economic, environmental, cultural, and institutional causes. Once the causal maps were developed, they identified the stakeholders that must work together to overcome the root causes and reported back on any interesting findings.



Photo 6: Participant build a root cause analysis for one identified cause of degradation (left) and examples of root cause analysis developed by the participants (right).

Identified root causes, stakeholders who must be involved, and discussion points from each group are outlined below:

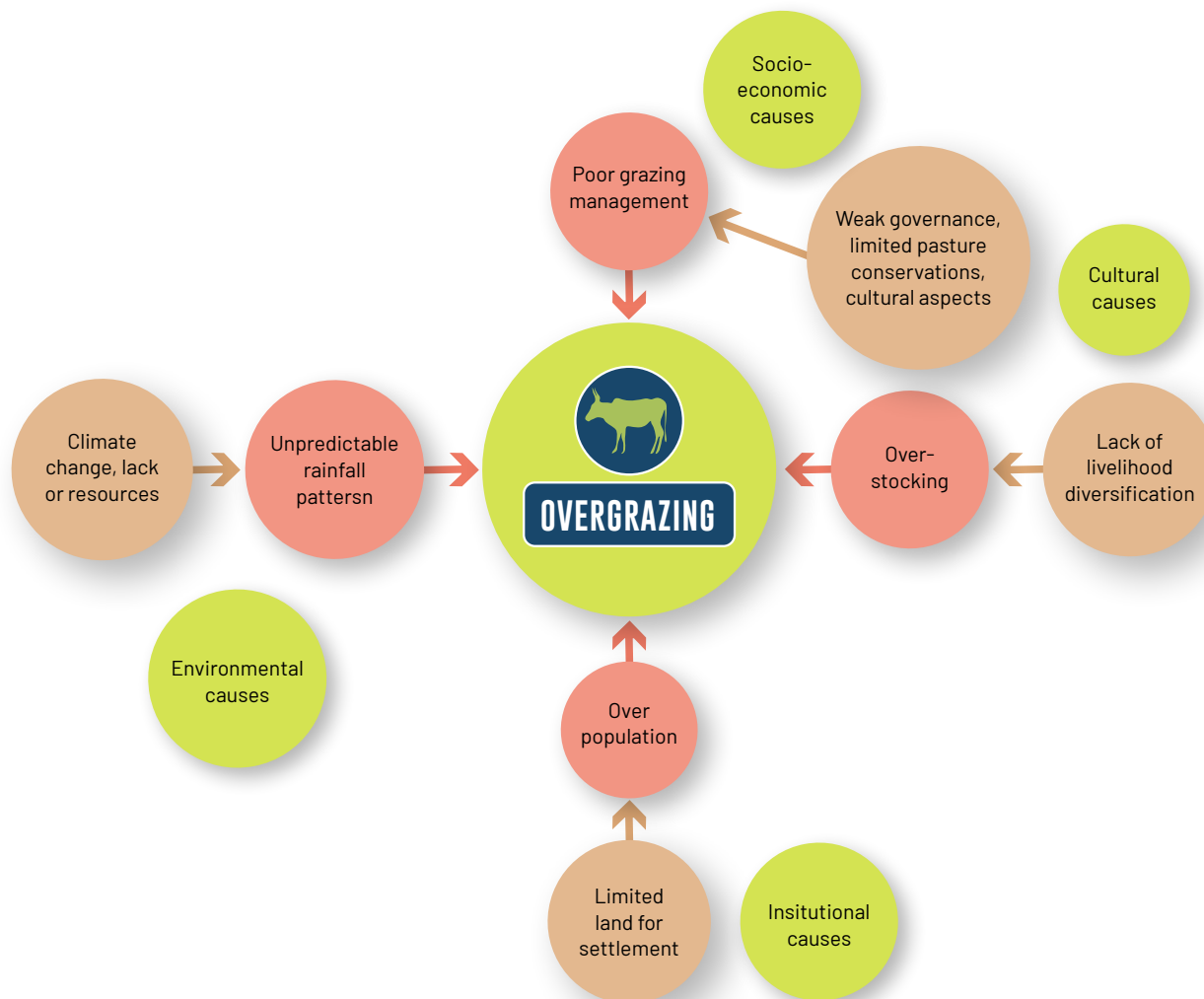


Figure 6: Root cause analysis of overgrazing as a driver of land degradation.



**What came out that you hadn't thought of before?
Was there an underlying cause that surprised you?**

- Overpopulation
- Lack of proper dissemination of climate change information
- Causes of land degradation are cyclic
- Uncontrolled grazing

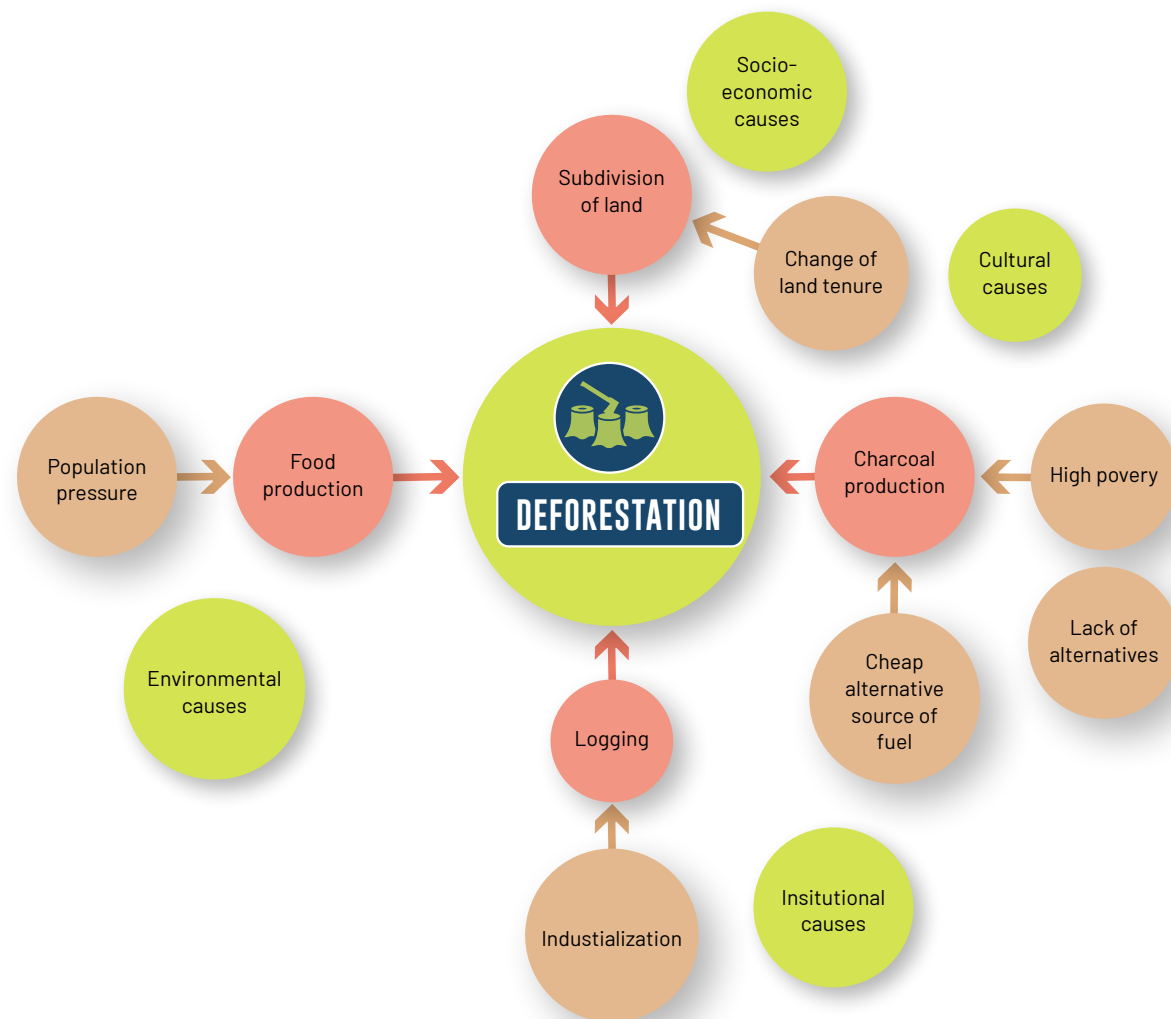


Figure 7: Root cause analysis of deforestation as a driver of land degradation.



Who needs to be involved to address the root causes of deforestation?

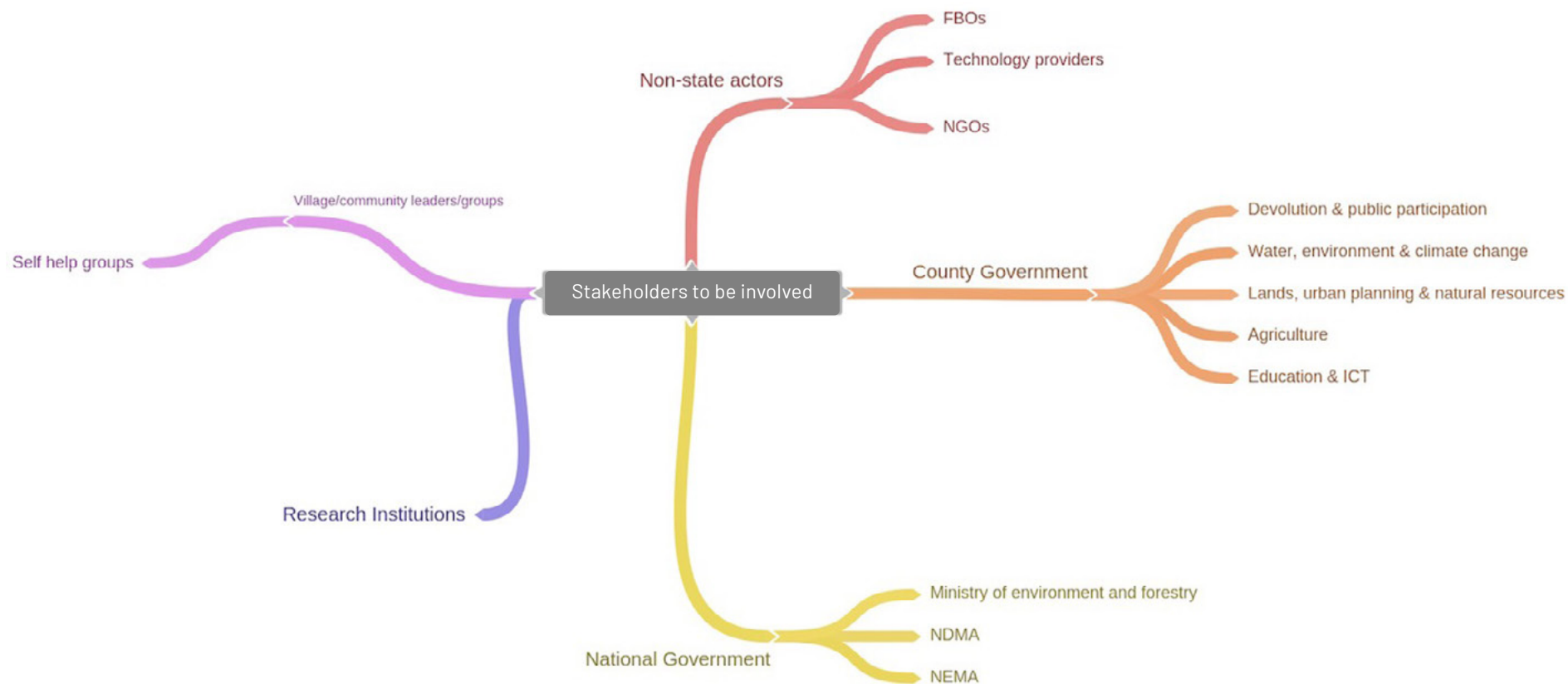


Figure 8: Stakeholders that need to be involved to address the root causes of deforestation.



What came out that you hadn't thought of before Was there an underlying cause that surprised you?

- Land tenure and land use
- Lack of alternative livelihood support programmes
- Limited sources of fuel
- Increase human activities
- High poverty levels
- Over-reliance on timber for construction

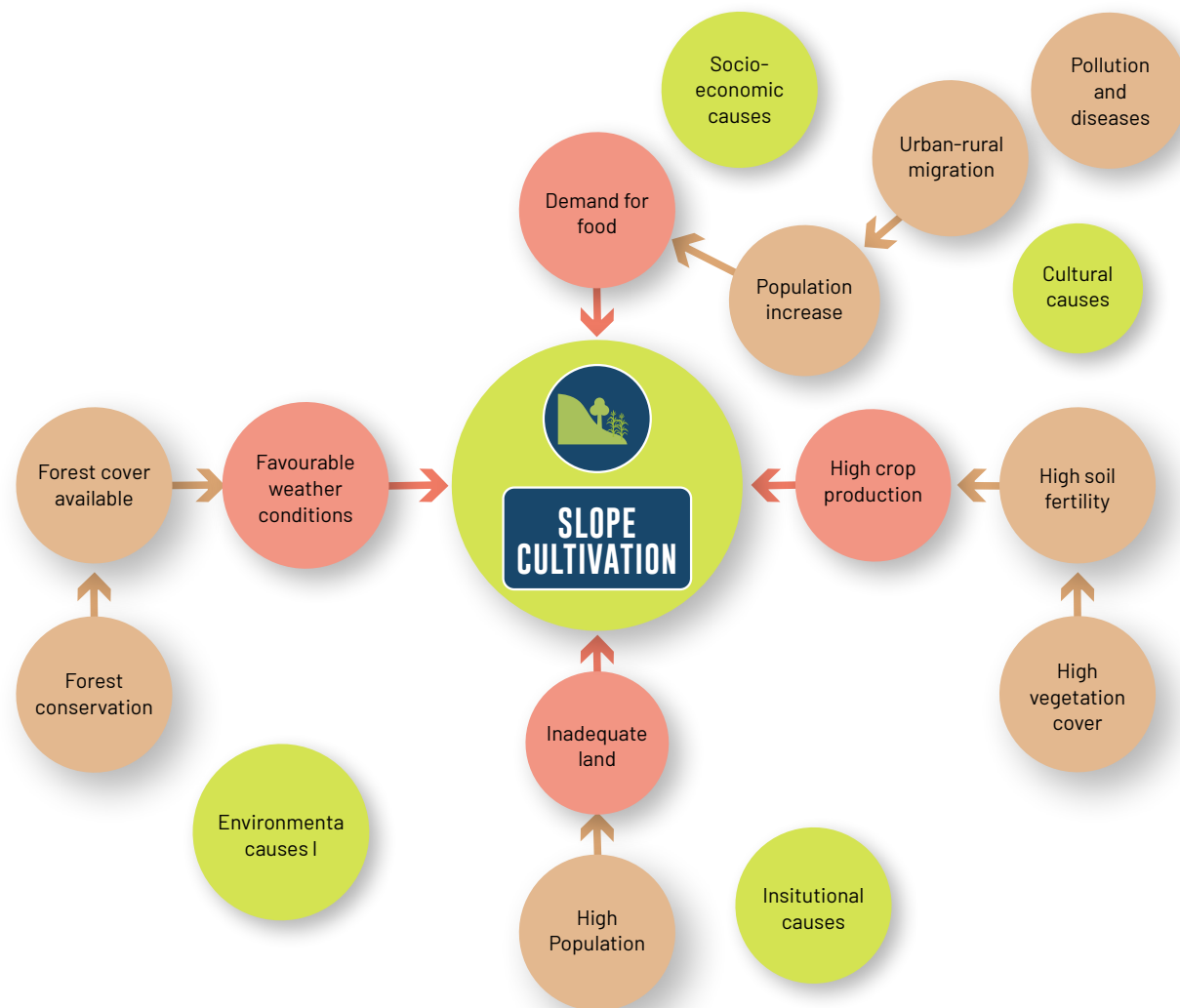


Figure 9: Root cause analysis of slope cultivation as a driver of land degradation.



Who needs to be involved to address the root causes of slope cultivation?

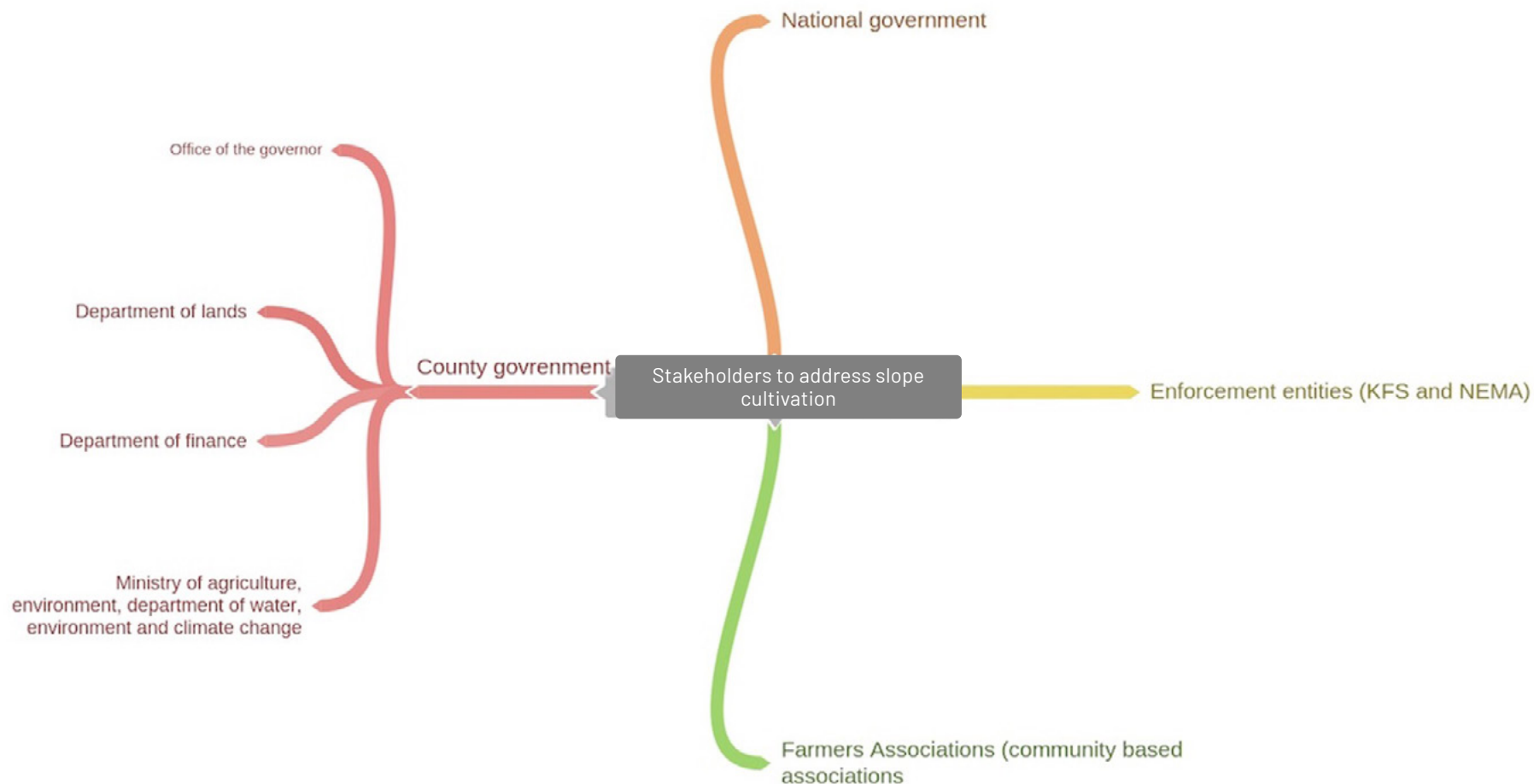


Figure 10: Who needs to be involved to address the root causes of slope cultivation.



What came out that you hadn't thought of before? Was there an underlying cause that surprised you?

- Increased demand for food
- Increased human population contributed by urban-rural migrations
- Inadequate land for cultivation

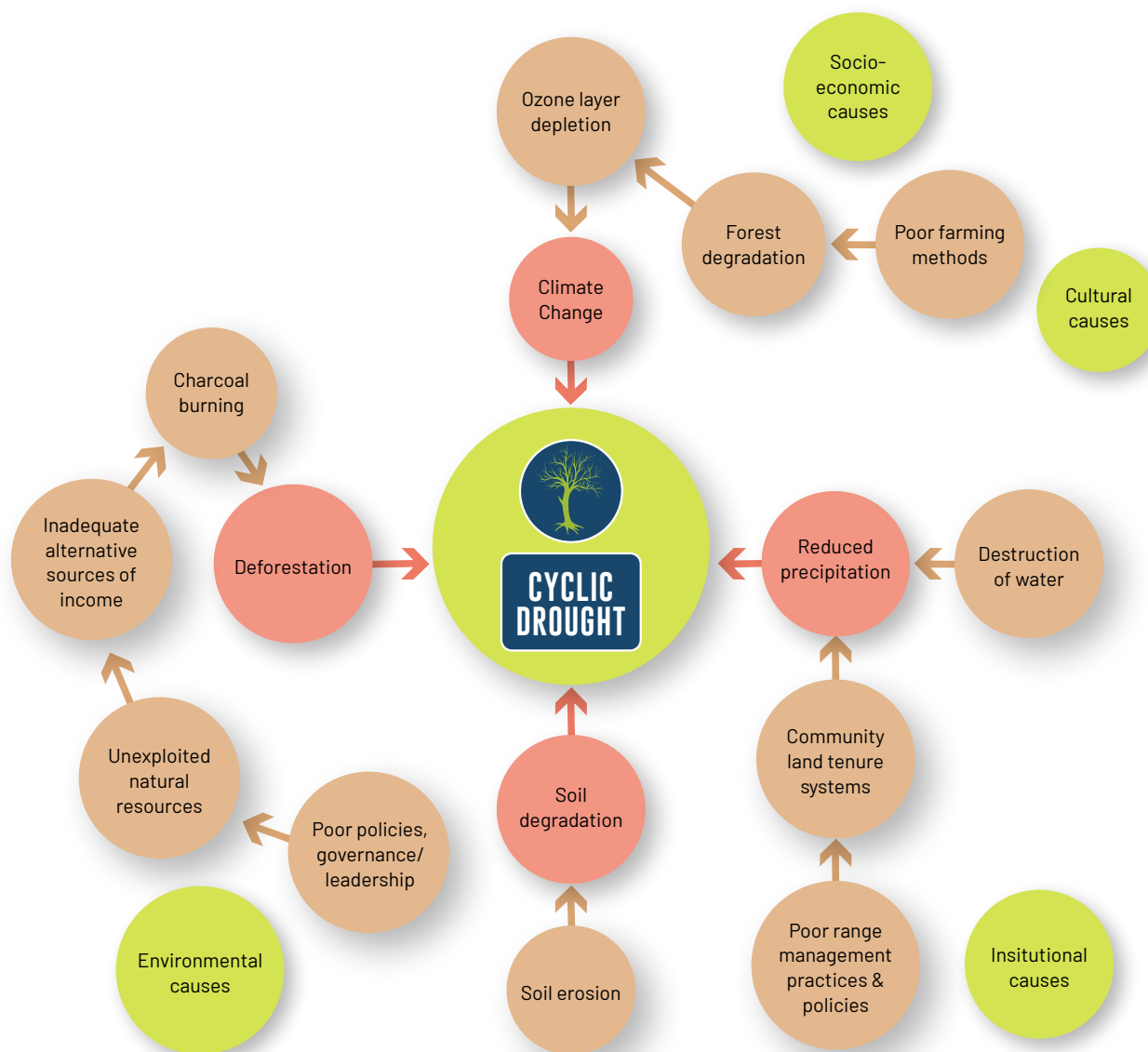


Figure 11: Root cause analysis of cyclic drought as a driver of land degradation.





Who needs to be involved to address the root causes of cyclic drought?

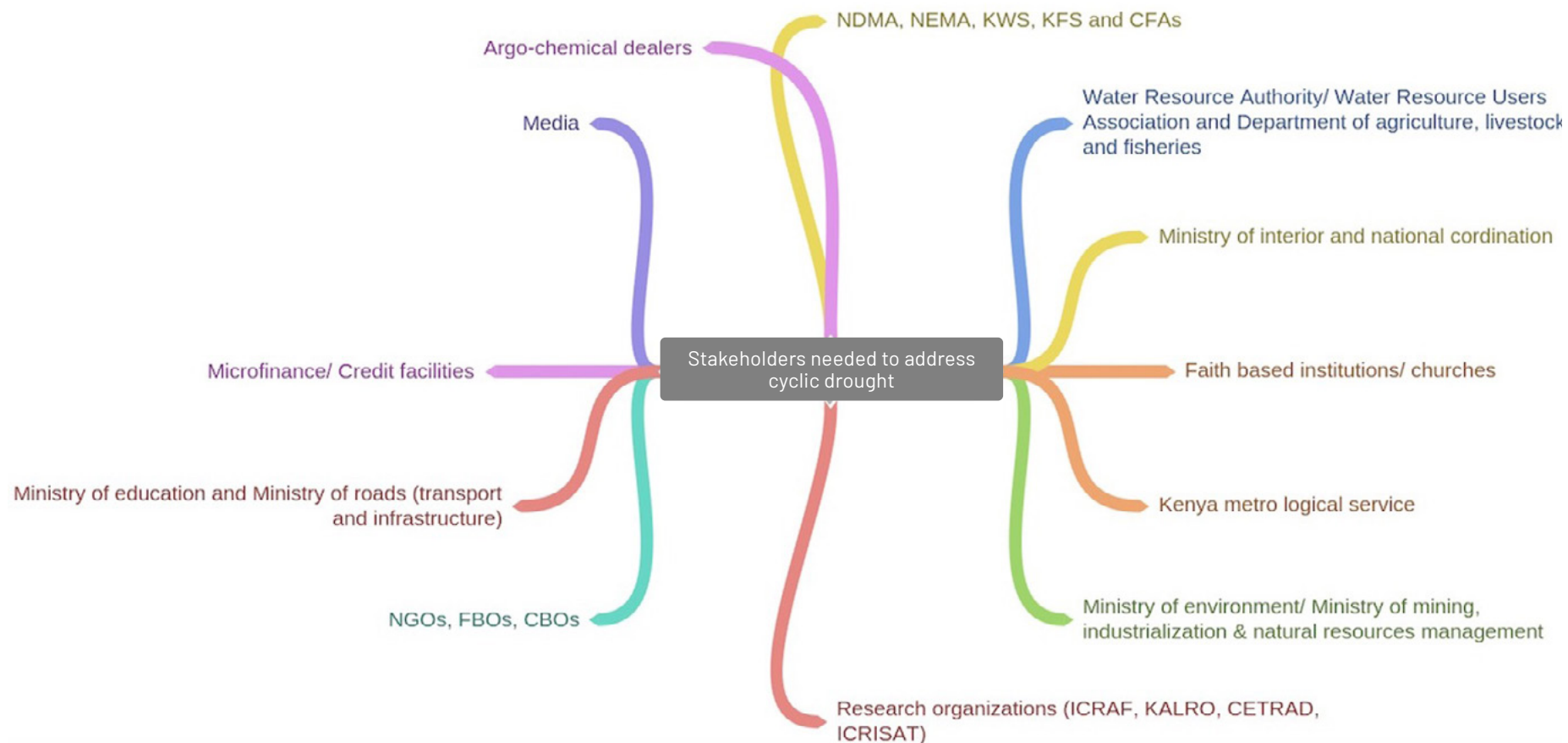


Figure 12: Stakeholders that need to be involved to address the root causes of cyclic drought.



What came out that you hadn't thought of before? Was there an underlying cause that surprised you?

- Poor political leadership/governance
- Climate change
- Inadequate soil and water conservation practices

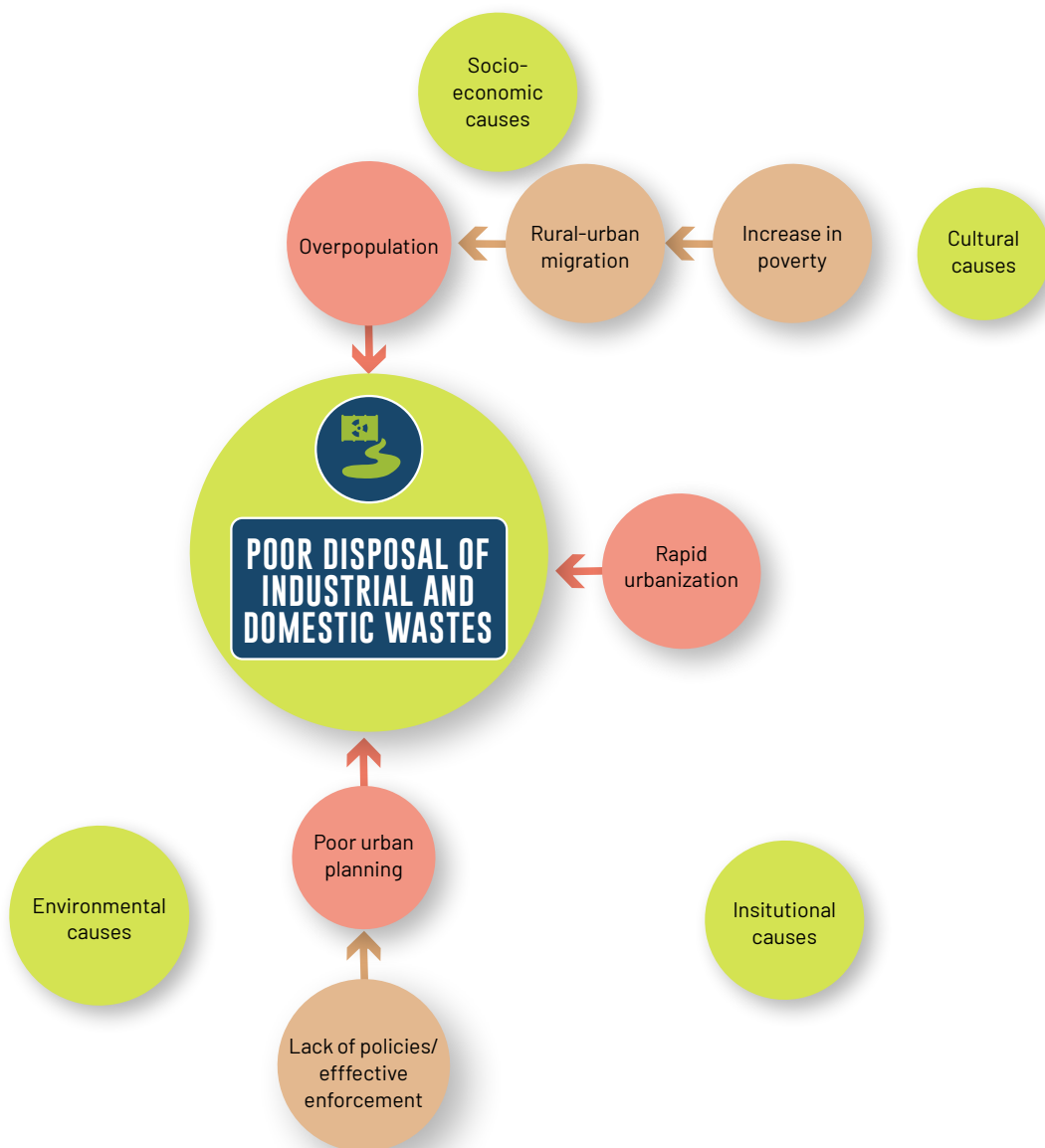


Figure 13: Root cause analysis of poor disposal of industrial and domestic waste as a driver of land degradation.



What came out that you hadn't thought of before?
Was there an underlying cause that surprised you?

- Lack of public education on proper disposal specific type of wastes
- Normalizing beliefs/ practices of poor waste disposal



DEVELOPING A COMMON VISION FOR A RESTORED LANDSCAPE

In this session, participants discussed what they would like their landscapes to look like in 20 years. This included thinking about how they would like the people living in the landscapes, the environment, and policies/institutions to be. Most groups envisaged their landscapes to have well-established government structures, increased tree and vegetation cover, reduced carbon emissions and climate change adaptability, community sensitization and empowerment, and prevention of human-human and human-wildlife conflicts.



What was different across the developed visions?

- Level of collaboration and coordination among community, government, and stakeholders
- Unequal distribution of resources
- Limited and varied alternative livelihood sources
- Varying levels of population migrations either Rural-Urban, or Urban-rural
- Ministries in different counties having different budgetary allocations for conservation and management of natural resources.

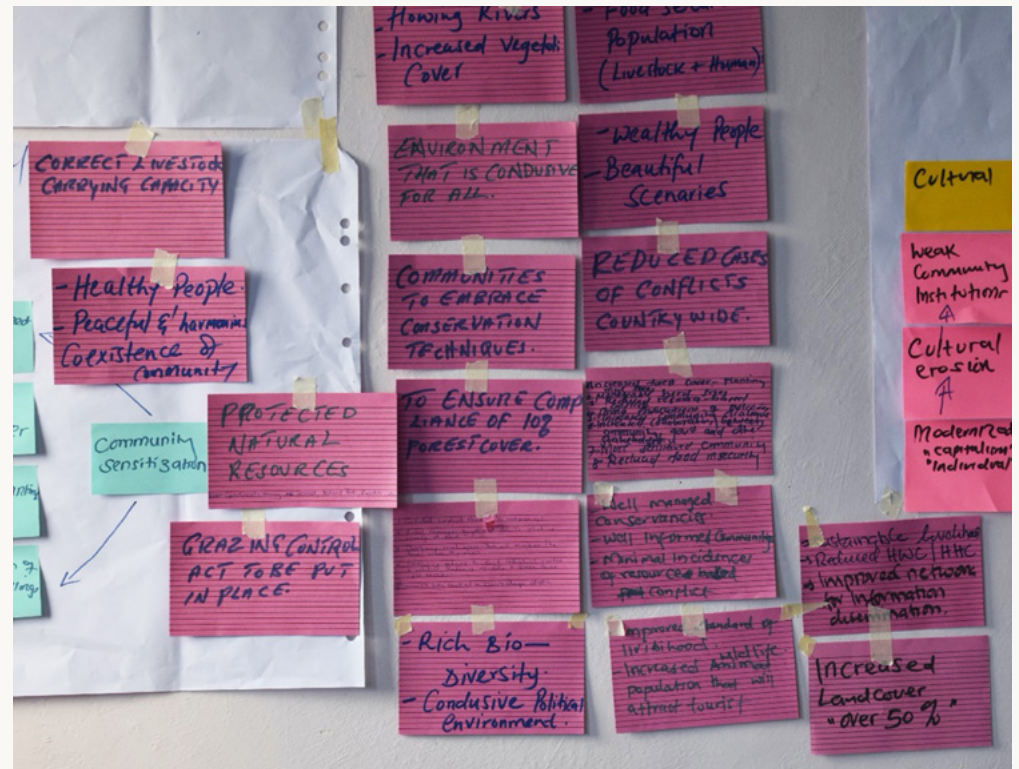


Photo 7: Components of a restored landscape envisaged by the participants.

The complete list of the visions is available in annex 1.

Common vision for a restored landscape



Well-established government structures

- An operational/fully functional legal framework and well-established government structures with adequate budgetary allocation.
- Establishment /strict enforcement of policies and conducive political environment
- Strengthening of communities through provision of adequate resources
- Increased community dialogue and collaboration with the government and other stakeholders
- Proper spatial planning to reduce encroachments/mushrooming settlements.



Increased tree and vegetation cover

- Well organized and functional rangelands – range reseeding
- Establishment of more indigenous trees and vegetation cover
- Achieving over 20% forest cover in the country through initiatives like provision of tree seedlings
- Subsidized and affordable alternative energy sources
- Well established and regulated carbon financing



Market linkages and livelihoods

- Access to micro-credit financial services and well-established market linkages
- Sustainable alternative livelihood options
- Total transformation of livelihoods including social and economic aspects
- Increased use of technology and innovation
- Provision of ready markets for livestock
- Improvement of rural livelihoods to reduce Rural-Urban migration



Enhanced natural functioning environment

- Clean streams and flowing rivers and increased natural water sources
- Controlled mining and other human activities on land
- Landscapes with minimal soil erosion and protected water towers
- Restored forests, water sources, vegetation cover and rich biodiversity
- An environment that is sustainably managed and conserved
- Increased land productivity and proper land management practices



Reduced carbon emissions and climate change adaptability

- Predictable rainfall patterns/seasons
- Development of policies to curb improper disposal of industrial wastes, pollution and emission of CO₂ and other Green House Gases.
- Proper sensitization of communities on climate change adaptation
- Promotion of nature-based solutions to drought risk management



Community sensitization and empowerment

- Eco friendly and **conducive environment** for all
- Ecologically civilized/ **environmentally sensitive communities**
- Improved networks for **information dissemination**
- Strong **neighborhood associations**
- Embracing of **sustainable conservation techniques** in the community
- Increased **capacity building of communities** and institutions



Prevention of human-human and human-wildlife conflicts

- Healthy, peaceful, and harmonious coexistence of the community and the environment
- Protected natural resources i.e., water catchments, mining and forest resources, national parks, ranches etc.
- Adequate livestock carrying capacity and manageable herd sizes
- Reduction of resource-based conflicts through community sensitization and strengthening of peace initiatives
- Enhanced food security in the community for both livestock and people



PRACTICAL INTRODUCTION TO LANDSCAPE LEVEL MONITORING TOOLS

In this session, participants were introduced to various tools and frameworks that can be used to track and monitor land restoration interventions. These included tools such as the Land Degradation Surveillance Framework (LDSF), The Regreening App, the Participatory Disaster Risk Assessment (PDRA) and Restoration Opportunity Assessment Methodology (ROAM). The tools are described in detail below.

Combining multiple methodologies to assess land degradation and target restoration interventions

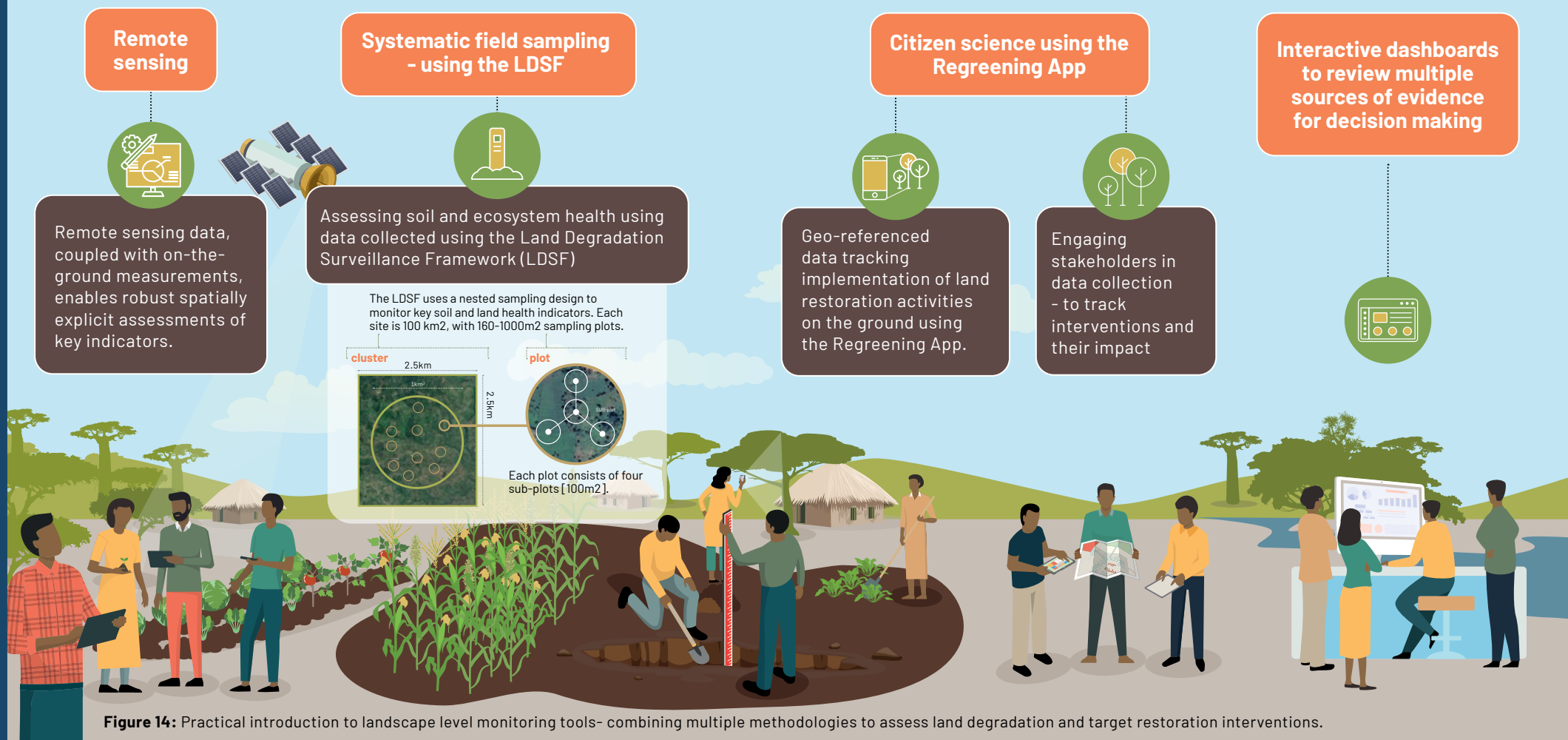


Figure 14: Practical introduction to landscape level monitoring tools- combining multiple methodologies to assess land degradation and target restoration interventions.

Land Degradation Surveillance Framework (LDSF)

Robin Chacha, soil Scientist from ICRAF, took members through a practical session of the LDSF methodology including how to collect soil samples for analysis of soil health variables. He begun by first showing participants the tools/instruments required for collection of soil samples, and a brief description on how to operate and maintain the equipment. He further demonstrated the process of collecting soil samples from different georeferenced points on a plot, how the soils samples are gathered carefully ensuring minimum cross-contamination, proper soil sample labeling and packaging of collected soil samples for detailed analysis in the Lab. In addition to soil samples, data on the vegetation (trees, shrubs, forbs, grasses etc.) present in the plot, indicators of land degradation such as erosion, and the land management are also collected.

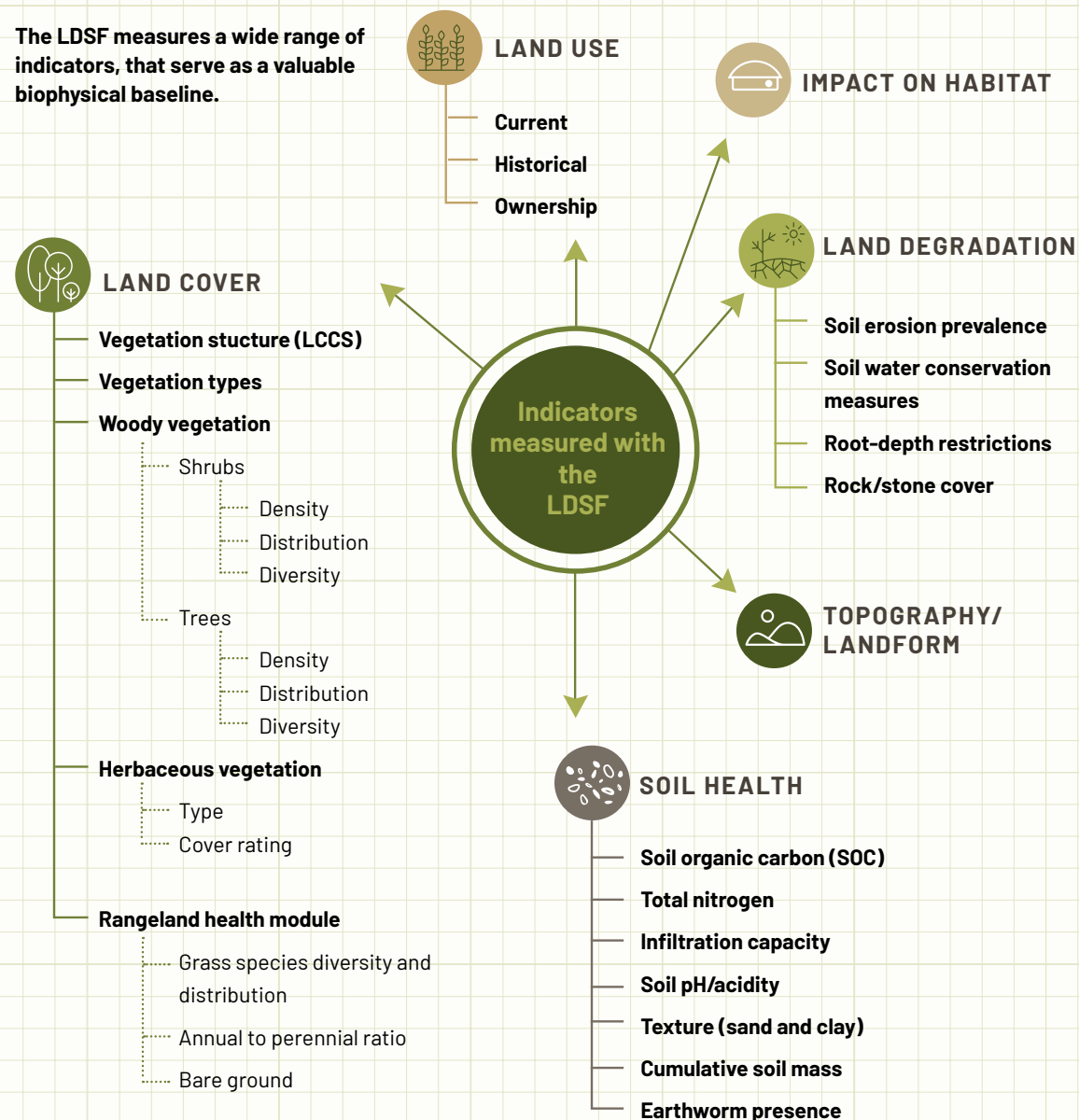


Figure 15: Land health indicators measured using the LDSF. More information on the LDSF can be accessed [here](#).

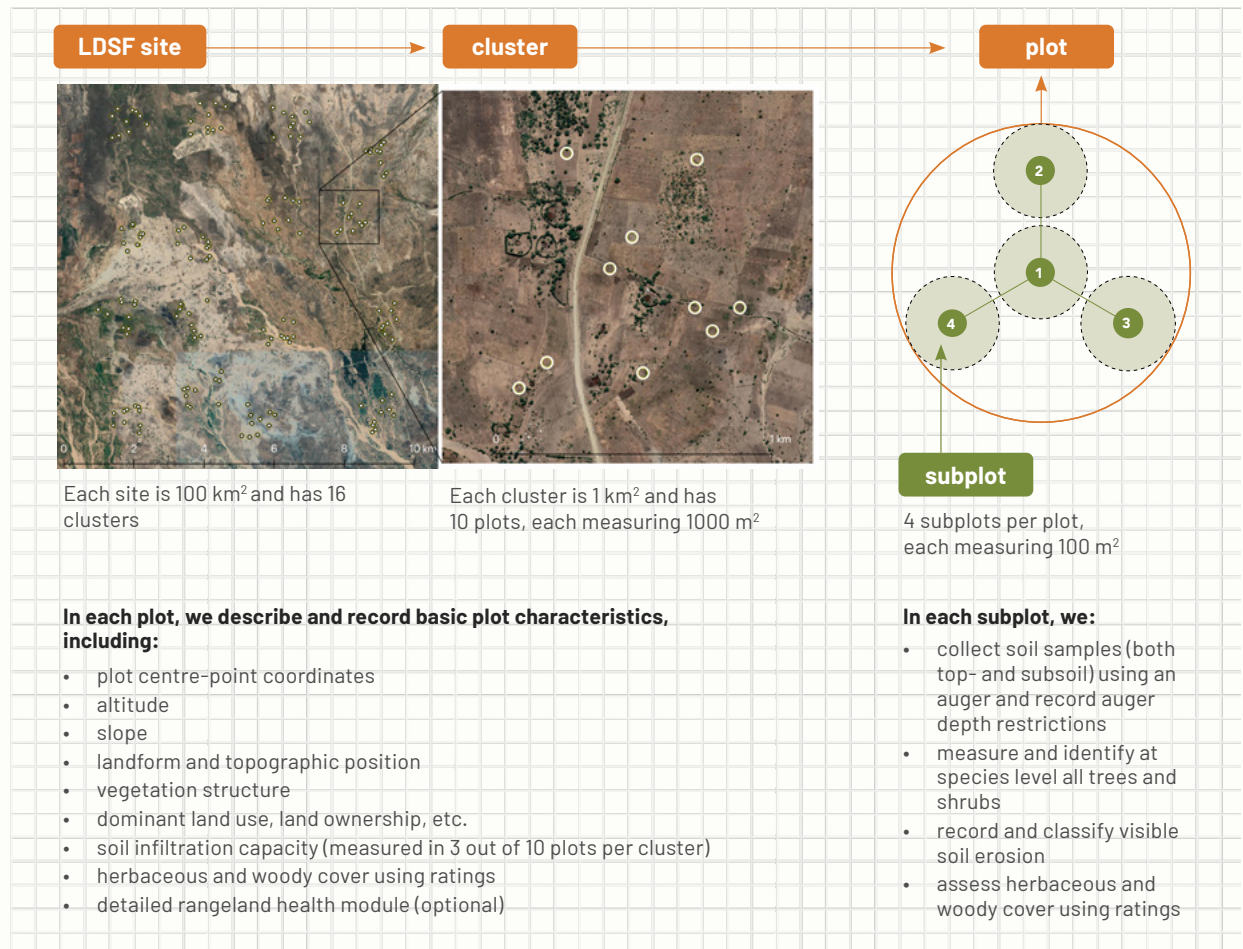
LDSF process

- 1  Data is collected in the field at multiple spatial scales in a nested hierarchical sampling design, enabling robust spatial statistics that are important for setting baselines and tracking changes over time.
- 2  All georeferenced LDSF data are stored in the ICRAF LDSF Database for efficient and safe storage, fast retrieval and to facilitate analysis. Data quality is checked.
- 3  All data are subjected to advanced data analytics and robust statistical analysis. Soil samples are analysed using soil spectroscopy to predict key soil properties.
- 4  Outputs: The LDSF measures multiple key indicators of soil and land health at the same geo-referenced location. Data from multiple locations are used to develop predictive maps of the various indicators, at scales relevant to stakeholders.
- 5  Capacity development and engagement is central to the LDSF, from field surveys to data analysis and dashboard development.
- 6  Data generated with the LDSF provides valuable input into co-designed, online dashboards to enhance evidence-based decision making.

The LDSF sampling procedure

The LDSF is built around a hierarchical field survey and sampling protocol using **sites** that are 100 km² (10 x 10 km). LDSF sites may be selected at random across a region or watershed, or they may represent areas of planned activities (interventions) or special interest.

Each site is stratified into 16 (2.5 x 2.5 km) tiles. Within each tile, a 1km² cluster is generated. Each cluster consists of 10 sampling plots, each plot is 1000 m². Each plot consists of 4 sub-plots, each 100 m². Randomising the plots is important to minimise biases that may arise from convenience sampling. Randomisation procedures are normally implemented using customised programs or scripts, but can also be conducted in any spreadsheet program.



Regreening Africa App

Tor Vagen and Mieke Bourne took participants through practical demonstrations of the Regreening Africa App. The Regreening Africa App is a free mobile-based application designed to help partners and users collect information on how farmers are managing and protecting trees on their farms. The App facilitates the collection, reporting and verification of the households reached, and hectares restored allowing for tracking of restoration practices on the ground through assisted citizen science.



Photo 8: Tor and Mieke giving a demo on how to collect data using the Regreening App.

More information on the Regreening App can be accessed [here](#).



Features of the Regreening Africa App



Tree planting module

- Record details of farmers and regreened plot
- Track tree growth
- Date(s) planted
- Characterise species composition and assess tree planting practices
- Field boundary recorded
- Location of trees planted
- Number of trees planted
- Survival of trees



Farmer Managed Natural Regeneration (FMNR) module

- Record details of farmers and regreened plots
- Characterise dominant species composition
- Assess FMNR practices



Nursery module

- Ensuring that farmers have access to quality planting materials and a wide range of species for tree planting
- Record nursery information and location
- Record nursery practices
- Record nursery production

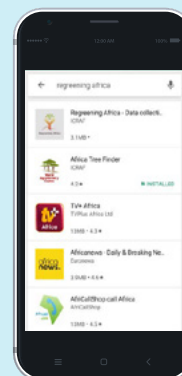


Training module

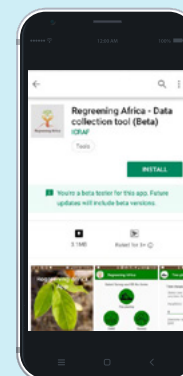
- Record training details
- Record gender participation in training sessions

The App is available for download on the google play store [here](#).

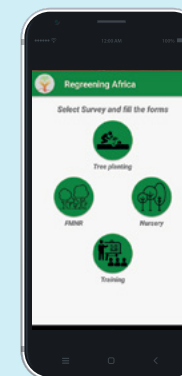
Locate App



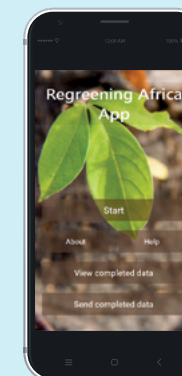
Install App



Start up App



Open survey forms



Participatory Disaster Risk Assessment (PDRA)

Mary Wangui, Assistant Director Drought Resilience NDMA, Isiolo County, presented the **Participatory Disaster Risk Assessment (PDRA)** tool to the participants. The PDRA is the process of gathering all relevant data about the community such as physical characteristics (location, natural resources, climate etc.), demographic features, economic and sociopolitical aspects and environmental problems and being able to determine the nature and extent of risk by analyzing the characteristics of hazard, degree of vulnerability and capacity of the community.



Photo 9: Mary Wangui, Assistant Director Drought Resilience NDMA, Isiolo County, giving a presentation on PDRA

PDRA involves the following steps:

- **Hazard assessment:**
Identifies the most likely natural or human-made hazard or threat to the community and seeks to understand the nature and behavior of the hazard
- **Vulnerability assessment:**
Identifies what elements are at risk because of the exposure of their location to the hazard
- **Capacity assessment:**
Identifies the status of people's coping strategies which refer to the resources available for preparedness, mitigation, and emergency response as well as to who has access and control over these resources.
- **Disaster risk analysis:**
Consolidates the findings from hazard, vulnerability and capacity assessments and draws conclusion and recommendations for disaster risk reduction.



Restoration Opportunity Assessment Methodology (ROAM)

Joseph Njue, Geospatial Information and ROAM Officer with IUCN gave a presentation on the ROAM tool via zoom call. The ROAM process includes Preparation and planning for FLR- stakeholder coordination and support; Data

collection and analysis- spatial analysis and mapping, benefit and cost appraisal, carbon abatement costs and accrual, restoration diagnostic; Results and recommendations- validation of results, identification of restoration and investment options.

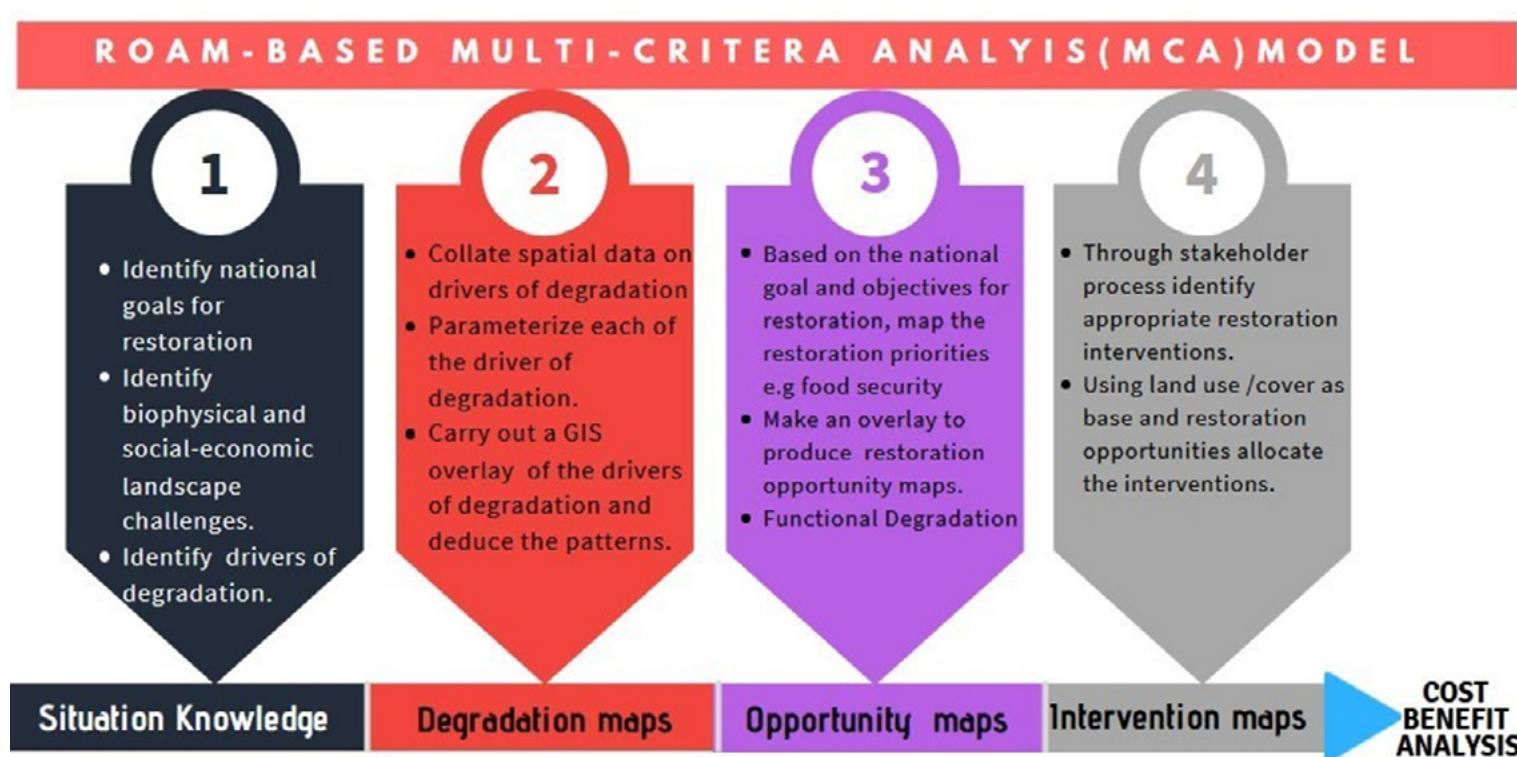


Figure 16: ROAM-based Multi-Criteria Analysis (MCA) model.



MAPPING ACTIVITIES, APPROACHES, TOOLS, AND DATA THAT PARTNERS USE OR PLAN TO USE TO ADDRESS DRIVERS OF DEGRADATION

Participants broke out into various groups; partners, community, counties to discuss approaches, tools, and data they use or plan to use to address the drivers of degradation. Each group wrote the activities in different colored sticky notes and stuck them up on the map. One color (yellow) represented what they are doing and the other color (green) for what they are planning to do (see Figure 11). Details of the projects outlined in Table 7.

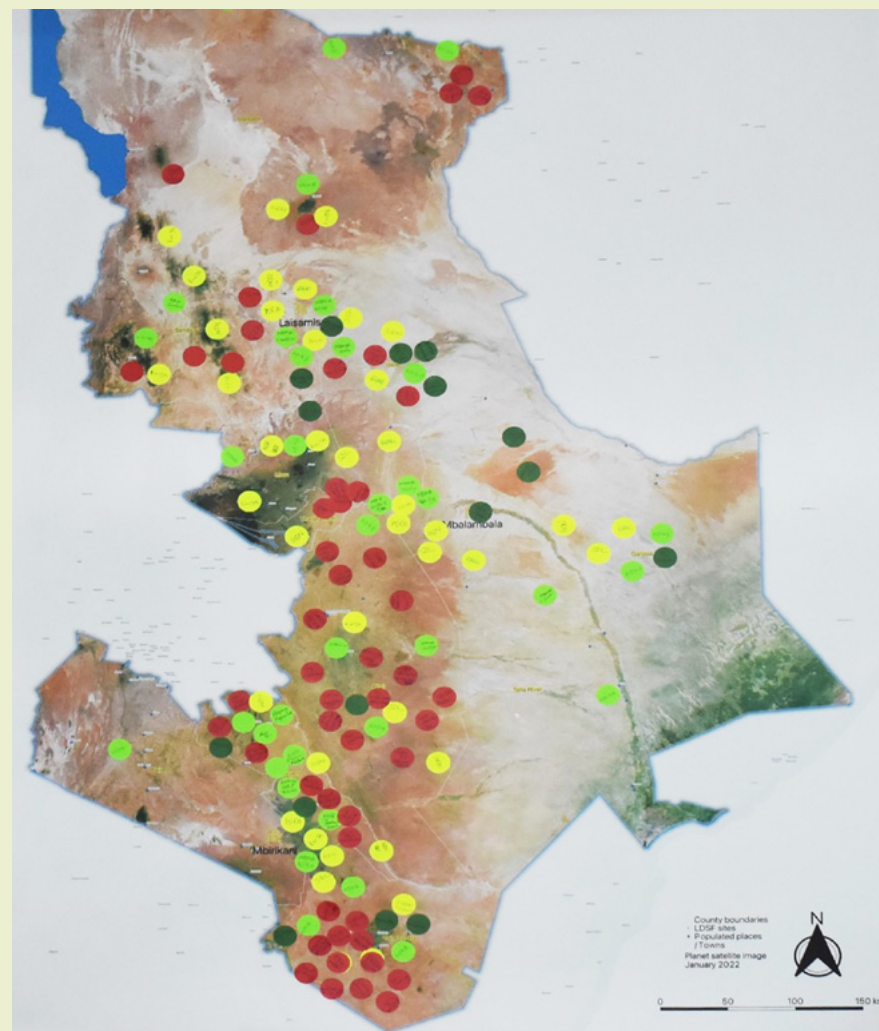


Figure 18: Map showing activities implemented in the Twende project counties. From the map, red represents activities implemented by the County government, dark green represents activities implemented by the community, yellow represents activities implemented by NGO partners and bright green represents activities implemented by NDMA.

Table 3: Activities, approaches, tools, and data that partners use or plan to use to address drivers of degradation.

COMMUNITY		COUNTIES – Makueni, Taita – Taveta, Kitui, Tharaka Nithi, Marsabit		
What we are doing	What we are planning to do	What we are doing	What we are planning to do	
• Tree planting and reseedling • Nursery planting • Hay planting • Land preparation and drilling of boreholes • Construction of water troughs • Herd management • Irrigation- lining of feeder canals • Women empowerment through formation of groups • Development of alternative sources of firewood e.g., Mathenge tree • Making of charcoal bricks • Development of grazing committees • Advocating for conservation agriculture • Kitchen gardening and bee keeping, Soil conservation and water harvesting practices • Beadwork • Community policing to enhance peace	• Increase forest cover to 20% and above • Sustainable agricultural practices • Alternative livelihoods • Embrace a saving culture and support entrepreneurship • Tree planting and reseedling • Table banking • Making of charcoal bricks • Poultry keeping • Sourcing of funds from different stakeholders for projects e.g., nursery establishment • Public awareness and education of the community on land restoration and conservation • Development of conflict management committees/teams • Adoption of sustainable land policies • Recruitment of forest associate/ scout • Reduction of herds to control overgrazing • Education on gabion construction and benefits • Drought preparedness activities e.g., storage of enough hay for livestock	• Capacity building-PRA • Range reseedling • Pasture improvement • Bee keeping and beef farming • Forests and landscapes restoration • Ecosystem management and soil conservation • Collection of indigenous tree species • Pasture seed buying and hay making • Growing of drought tolerant trees • Inter-county lands consultative forums • Programs for alternative livelihood diversification • Biofuel development • Mapping of rangelands construction of sand dams in each ward • Restoration of 10 major water towers in Makueni • Provision of climate smart extension services • Practicing conservation agriculture	• Community capacity building in areas such as rangeland management, health, climate change resilience, and forestry • Creating awareness on increase of tree cover Promotion of agro-forestry and climate smart agriculture • Range land rehabilitation through activities like fodder management structures • Development of natural resource management plans e.g., PFM, SCMPs, ecosystem management plans, conservation management plans • Development of policies, legislative and institutional framework e.g., Climate Change Act, Rangeland Management Bill • Participatory Rangeland management- control an management of invasive species TOOLS – PVCA, PRA	• Operationalization of County Climate Change Fund • Large-scale water harvesting • Taking inventory of mapped inter county landscapes- establish landscape files for long term monitoring • Finalize rangeland legal framework i.e., policies and bills • Construction of major dams in each ward within the counties • Strengthen rangeland governance • Protection of water towers • Strengthening of regional blocks to manage cross-border resources • Promotion of soil and water conservation structures • Promotion of circular economy and nature-based value chains • Sustainable management and utilization of invasive species

Reflections from Partners in Addressing Drivers of Land Degradation



National Drought Management Authority (NDMA)

What we are doing	What we are planning to do
- Establishment of Kenya Drought Early Warning monitoring system in 23 ASAL Counties TOOLS - PET, KDEWs, HH and KIA QNS, Remote sensed data - Drought response in 23 ASAL Counties - Drought management stakeholder coordination in 23 ASAL Counties - CSG meetings - Stakeholder engagement and mapping - Food security assessments in 23 ASAL Counties- sectoral checklists, briefing kit - Drought preparedness strategic investment, HSNP, preparedness projects, social protection projects TOOLS - UCT and PMT - Drought preparedness/ resilience TOOLS - PDRA, PVCA, PRA - Drought response and Contingency planning(multi-hazard) TOOLS - Trigger Indicators, Bulletins	- Engage in landscape planning and restoration programmes in 11 Counties - Upscale of HSNP Programmes in 8 more Counties - TWENDE- Sensitization of stakeholders through meetings/foras - Roll out and operationalization of NDEF - meetings and regulations - Coordination of TWENDE landscape activities - Development of community grazing plans and restoration plans in 11 counties using the ROAM tool



Kenya Forestry Research Institute (KEFRI)

What we are doing	What we are planning to do
- Supporting landscape restoration through tree planting activities in the various landscapes - Provision of high-quality tree seeds and seedlings to support restoration - Capacity building of communities on restoration technologies for landscape restoration - Supporting the gums and resins value chain through market development - Development of infrastructure to support gums and resins cooperatives/ groups - Provision of technical knowledge on tree growing TARGET AREAS- Garissa, Tana River, Isiolo, Marsabit DATA COLLECTED- baseline surveys on resource assessment, needs assessments	- Capacity building of communities on landscape restoration - Supporting communities with basic equipment for gums and resins

PARTNERS – NDMA, KEFRI, WRA, SDL, IUCN, KWTA, ICRAF



International Union for Conservation of Nature (IUCN)

What we are doing

- TWENDE PROJECT- Restoration Barometer Stock take in 11 counties (Kajiado, Taita Taveta, Makueni, Garissa, Tana River, Kitui, Samburu, Tharaka Nithi, Meru, Marsabit, Isiolo)

TOOL – Restoration Barometer (Bonn Challenge)

DATA COLLECTED- policies, strategies, instructions doing restoration

- Financial flows to restoration
- Costs for restoration
- Restoration benefits- job creations

- ROAM Assessment in 11 counties (Kajiado, Taita Taveta, Makueni, Garissa, Tana River, Kitui, Samburu, Tharaka Nithi, Meru, Marsabit, Isiolo)

TOOL – ROAM

DATA COLLECTED – Land use, land cover change

- Ecosystem functions

What we are planning to do

- Community Resilience Facility (CRF) in all the landscapes- Chyulu and Sabarwawa/Mid-tana

TOOL – Land use management plan, Business plans



Water Resource Restoration (WRA)

What we are doing

- Water resource monitoring and restoration in Chyulu and Sabarwawa/Mid-tana
- Participatory watershed management
- Monitoring of water points, water quantities and quality

What we are planning to do

- Protection of springs
- Mapping of resources in different landscapes
- Construction of sand dams
- Water quality and quantity monitoring
- Ground and surface water monitoring
- Sub-catchment management plans in different landscapes

TARGETED LANDSCAPES – Chyulu and Sabarwawa/Mid-tana

TOOLS – participatory watershed management tools

- Integrated Participatory Community Development (IPCD)



Ministry of Agriculture, State Department for Livestock (MOA- SDL)

What we are doing

- Building capacity of local institutions to implement climate sensitive Landscape management

TARGETED LANDSCAPES – Chyulu and Sabarwawa/Mid-tana

TOOLS – PRM Guideline/Plan

- Grazing plans
- Pastoral Field Schools

DATA COLLECTED – suitable plant species for restoration

- Natural Resource Management Institutions

What we are planning to do

- Exchange ideas through community success stories
- Analysis of current grazing management system
- Develop participatory M&E framework for grazing systems
- Development of 12 County Project Pastoral field schools
- Grass reseedling of 50ha or land in Garissa, Isiolo, Tana River, Tharaka Nithi and Kitui

PARTNERS – NDMA, KEFRI, WRA, SDL, IUCN, KWTA, ICRAF	
Kenya Water Towers Agency (KWTA)	
What we are doing	What we are planning to do
- Research- assessment of water towers i.e., Ngaya, Nuu, Chyulu, Nyambene. Data collected to be used in developing status reports for the water towers - Planning- development of ecosystem conservation plans for Chyulu and Nyambene water towers - Promotion of alternative livelihoods like bee keeping, hay farming, water harvesting - Rehabilitation of degraded areas within water towers TOOLS – satellite images to assess land use - Community resource assessments DATA COLLECTED – biophysical characteristics of the water sources - Land cover data - Stakeholder analysis - Socio-economic data - Challenges affecting water towers	

PARTNERS – NDMA, KEFRI, WRA, SDL, IUCN, KWTA, ICRAF	
World Agroforestry (ICRAF)	
What we are doing	What we are planning to do
- Regreening Africa- Isiolo, Marsabit - UK-PACT- Makueni - Agroecology initiative-Kiambu, Machakos - Twende - 3 landscapes - Restoration initiatives - Research - Creation of information dashboards - SHARED – Stakeholder Approach to Risk Informed and Evidence Based Decision Making Methodology - LDSF – Land Degradation Surveillance Framework	

What's coming out of the activities from different partners?

- Sustainable activities are being carried out but coordination among the groups is weak.
- Some counties are at an advantage with many activities being planned and implemented as compared to others counties which are facing challenges of limited resources and budgetary allocations.
- Many plans and designs have been done but there lacks sufficient implementation of the plans.



INTRODUCTION TO THE DECISION DASHBOARD FOR COLLATING AND SHARING DATA AND EVIDENCE GENERATED IN THE LANDSCAPES (LANDSCAPE LEVEL DATA PLATFORM)

Tor Vagen introduced decision dashboards to the participants. The objective was to showcase an example of a dashboard for participants to understand what a dashboard is and the functionality that can be achieved. He explained that data was key in decision making and is complex in nature and only the right user-friendly visualization can give it a concrete meaning. Data quantity should not be confused with quality. The Makueni decision dashboard (Makueni Resource Hub) was showcased as an example, its interactivity, modules, and data visualization. The resource hub and other dashboards can be accessed [here](#).

The dashboards are co-designed and co-developed with stakeholders. The co-design process ensures increased ownership by stakeholders and partners by the end of the development and to ensure data that is available responds to user needs. Currently several dashboards are being developed and the respective stakeholders are continually involved.

Framework for co-design of dashboards

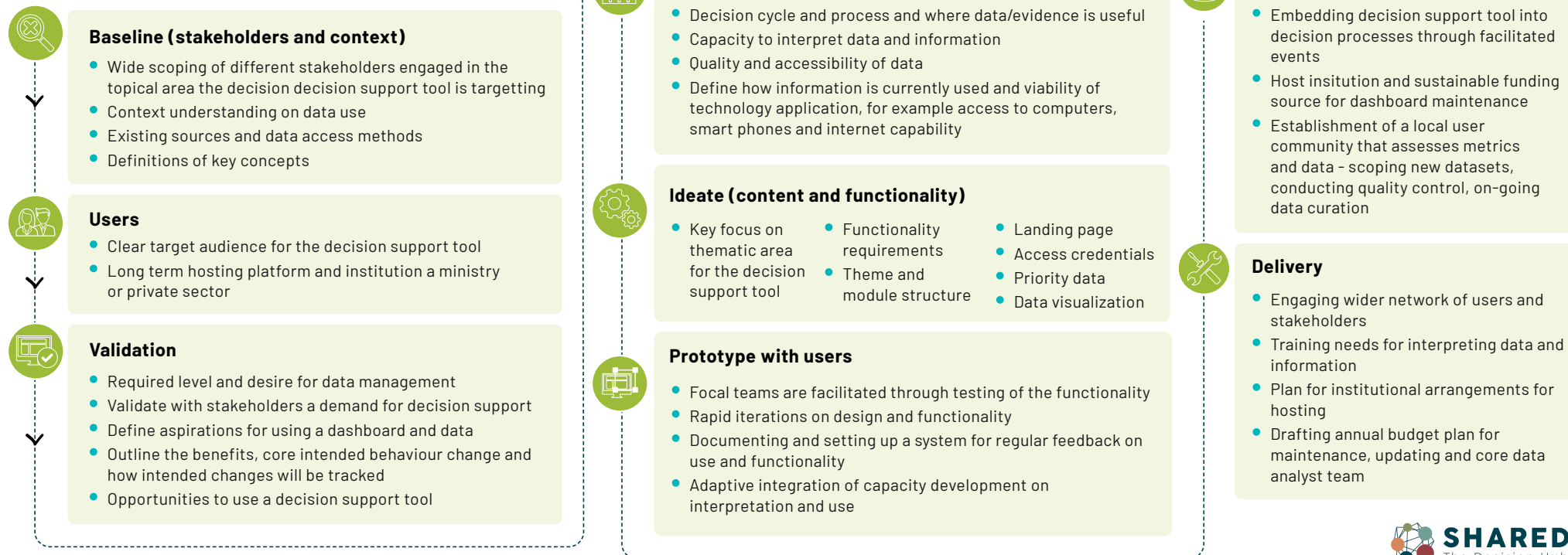


Figure 19: Co-design framework for decision dashboards.



Photo 10: Tor showcases the Makueni Resource Hub to the participants. All dashboards developed by ICRAF can be accessed [here](#).

CLOSING REMARKS



Mr. Peter Mutethia Gikundi, Chief Officer, Environment and Water, Meru County, gave the closing remarks on behalf of Saiyana Lembara, acting Technical Director, NDMA. He thanked all members for their active participation in the workshop and emphasized on the need to operationalize the

plans and opinions shared. He encouraged grassroots level participation in workshops and decision-making processes and the importance of intensive training on tools and methodologies for land restoration. Equipping community members with the right information and tools would go a long way in the fight against land degradation and efforts for land restoration.

Additionally, Mr. Peter Mutethia Gikundi also encouraged endorsement of programmes by partners and stakeholders before implementation. Finally, he reiterated that monitoring and evaluation of projects/ interventions should also be taken into keen consideration.

CONTENTS

Annex 1: Participant list for stakeholder workshop, 17th December, Kitui County

Mary MbeDaniel Mbuvi	NDMA- Makueni	Daniel Kishoyian	NDMA-Kajiado	Peter Galwersi	Marsabit County
Fred Wakaba	NDMA- Makueni	Msebiu Katheru	NDMA-Meru	Nkasipat Alyaro	Marsabit County
Nuro Godana	NDMA- Meru	Priston Fumbu	NDMA- Taita Taveta	Samson Kitheka Ndambu	Kitui County
Lolokote Sainyugu	NDMA- Meru	Pauline Gogo	NDMA-Nairobi	Mary Mwendwa	Kitui County
Godfrey Mbogo	NDMA- Meru	Michael Kabacia	NDMA-Nairobi	Edward Yiale Sitori Tauta	Kajiado County
Gabriel Mbogho	NDMA- Taita Taveta	Martin Munene	County Government of Meru	Cynthia Nemayian Mutarin	Kajiado County
Omar Abdi	NDMA - Isiolo	Peter Mutethia Gikundi	County Government of Meru	Raphael Lekiluai	Samburu County
Francis Murithi	NDMA- Isiolo	John Mlamba	County Government of Taita	Christine Namunyak	Samburu County
Mary Wangui	NDMA- Isiolo	Mohammed Yusuf	County Government of Isiolo	Geoffrey Nyaga	Tharaka Nithi County
Parkolwa, H. Mustafa	NDMA- Marsabit	Ali Wario Sarite	County Government of Isiolo	Joel Nyagah	Tharaka Nithi County
Denis Mwanzia Mung'ata	NDMA- Marsabit	Moses Lengarite	County Government of Marsabit	Zachary Amatki	Tharaka Nithi County
Abdullahi Ahmed Osman	NDMA- Marsabit	Janet Ahatho	County Government of Marsabit	Ali Adhan	Tana River County
Francis M. Koma	NDMA- Kitui	Benjamin Mukulo	County Government of Kitui	Pauline Kiamba	IUCN
Wilson Oduor	NDMA- Kitui	Dr Josephat Maluki	County Government of Kitui	Robert Bett	IUCN
Hussein Mohamed	NDMA- Kajiado	Jackline Koin	County Government of Kajiado	Ambrose Abdub	IUCN
Alfred Kathare	NDMA- Kajiado	Benson Lengalen	County Government of Samburu	Winfred Musila	KWTA
Alex Leseketeti	NDMA- Samburu	George Kase	County Government of Tana River	Jonah Kiprop	KEFRI
Salverio L. Lekolool	NDMA- Samburu	Kanutomu Gollo	County Government of Tana River	Joash Orute	WRA
Joseph Munyao	NDMA- Makueni	Nicholas Mutie	Makueni County-Nguumo	James Muriuki	MOA-SDL
Mahab Abdikarim	NDMA-Samburu	Caroline Mueni	Makueni County-Thange	Petronilla Wanjugu	MOA-SDL
Emmanuel Solim	NDMA-Tharaka Nithi	Peter kinyua	Meru County	Tor Vagen	ICRAF
Sharon Kones	NDMA-Nairobi	Agnes kanario	Meru County	Mieke Bourne	ICRAF
Anjeline Makuku	NDMA - Nairobi	Margaret Nthenya Jumanne	Taita Taveta County	Christine Magaju	ICRAF
Kennedy O Okeyo	NDMA – Tana River	Gibran Mwasi	Taita Taveta County	Robin Chacha	ICRAF
Kiragu Kariuki	NDMA – Tharaka Nithi	Abdinasir Ali Ware	Isiolo County	Diana kiilu	ICRAF
James Kibuchi	NDMA - Nairobi	Hawa Issack	Isiolo County		

Annex 2: Stakeholder engagement workshop agenda

Time	Activity	Lead
8.30 - 9.00	Registration	
9.00 - 9.20	Welcome and introductions Workshop Objectives	Hared Hassan, CEO NDMA (via Zoom)
9.30 - 10.30	Gathering perspectives Developing a shared understanding of land degradation using data and experience. - Overview of the land degradation status in the three landscapes and opportunities. - Community perspectives on degradation status and restoration in each landscape	Facilitators and participants - Tor Vagen - Community representatives
10.30 - 11.00	Tea break	
11.00 - 11.50	Unpacking the underlying causes (drivers) of land degradation, opportunities, and activities to overcome these and indicators needed to track these restoration processes	Facilitators and participants
11.50 - 12.30	Developing a common vision for a restored landscape	Facilitators and participants
13.00 - 14.00	Lunch	
14.00 - 15.00	Practical introduction to landscape level monitoring tools cont. - LDSF - Regreening App - ROAM	Entire County
15.00 - 16.00	Mapping activities, approaches, tools, and data that partners use or plan to use to address the drivers of degradation	Facilitators and participants
16.00 - 16.30	Introduction to the decision dashboard for collating and sharing data and evidence generated in the landscapes	Tor Vagen
16.30 - 16.45	Next Steps	Facilitators
16.45 - 17.00	Closing remarks	Saiyana Lembara, acting Technical Director, NDMA(via Zoom)
17.00	Closing tea	



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