IGAD

ICPALD

PARTICIPATORY RANGELAND MANAGEMENT GUIDELINES FOR PRACTITIONERS

THE PRM PROCESS

Step 1
Identifying rangeland resources and users, and assessing rangeland condition

Step 2
Defining the rangeland management unit

Step 3
Strengthening or establishing the rangeland management institution

Step 4
Undertaking a participatory rangeland resource assessment

Step 5
Developing a rangeland management plan

Step 6
Establishing a rangeland management agreement

Step 7
Implementation of the rangeland management plan

Step 8
Ongoing strengthening of rangeland management skills

Step 9
M&E and adaptive management

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PREPARATION STAGE

IMPLEMENTATION STAGE

STRENGTHENING STAGE

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FOREWORD

In the IGAD region, the term rangeland refers to "*land on which the indigenous vegetation (climax or sub-climax) is predominantly grasses, grass-like plants, forbs or shrubs that are grazed or have the potential to be grazed, and which is used as a natural ecosystem for the production of grazing livestock and wildlife.*"[1] Here rangelands support a rich diversity of flora and fauna of socio-cultural, economic and ecological importance. They provide a host of ecosystem services, including acting as watersheds and supporting important biogeochemical cycles. Rangelands also host sacred sites that are valued for spiritual and religious purposes. These sites often conserve islands of indigenous biophysical resources, including important biodiversity, as well as being linked to the cultural identity of certain ethnic groups. Rangelands, therefore, have high cultural diversity closely linked to their ecosystem diversity.

Rangelands dominate the arid and semi-arid lands of the IGAD region. Sixty to 70 percent of the region's landmass is arid and semi-arid land, where pastoralism and agropastoralism are the main livelihoods dependent on natural rangelands. These rangelands are the backbone of the livestock industry, contributing significantly to the member countries' national GDP by providing various economic and livelihood opportunities. With over 60 per cent of the livestock population in rangelands, the livestock sector contributes between 10 and 50 per cent of individual countries' agricultural GDP. About 53 per cent of the region's cattle (51 million), 71 per cent of the goats (58 million) and 68 per cent of the region's sheep (58 million) are in arid and semi-arid lands.[2]

However, rangelands in the IGAD region are facing a myriad of challenges and change dynamics that threaten productivity, livestock forage availability and ecosystem integrity. The challenges include climatic stresses; inadequate legal, institutional, and organizational frameworks; degradation and land fragmentation; and unregulated land use and access to rangeland resources. Diminishing productivity and access to rangeland resources undermines rangeland health and, as a result, undermines the livelihood sustainability of pastoral and agro-pastoral communities. In addition, control of access and management of rangeland resources by traditional institutions has been weakened over time, with an overall breakdown in governance leading to an 'open access' scenario due to the lack of mechanisms to regulate resource use.

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1 Allen, V.G., Batello, C., Beretta, E.J., Hodgson, J., Kothmann, M., Li, X., McIvor, J., Milne, J., Morris, C., Peeters, A. and Sanderson, M. (2011). An international terminology for grazing lands and grazing animals (The Forage and Grazing Terminology Committee). Grass and Forage Science. 66: 2-28

2 FAO (Food and Agriculture Organization of the United Nations). (2008). Managing East African Rangelands for Better Response to Feed Crisis. Proceedings of Sub-Regional Workshop, 9–12 November 2008, Addis Ababa, Ethiopia, FAO Sub Regional Office for East Africa (SFE).

Rangelands in arid and semi-arid lands are largely characterized by communal land rights regimes. The need has become critical for a community-owned participatory rangeland management (PRM) system that is endorsed by all stakeholders, preferably legally binding, and that can be effectively monitored. PRM pilot projects in Ethiopia, ***Kenya and Tanzania have yielded positive outcomes*** that include (i) improved rangeland management and governance; (ii) increased participation of women in decision-making processes; (iii) enhanced livestock productivity; and (iv) greater investment in rangeland restoration activities. This success is highlighted by its integration into ***Baringo County's Integrated Development Plan*** and its recent expansion into Wajir County. The PRM approach has sparked growing interest from other countries in the IGAD region to adopt similar approaches.

IGAD and ILRI have partnered to develop a practitioner's guide for the PRM process to scale up, refine, and tailor PRM to specific contexts. The draft guide was enriched during a regional workshop organized by ICPALD on the 27–28 October 2023. The workshop brought together rangeland stakeholders in the region, including government and non-state actors, representatives of CSOs and representatives from universities in the IGAD member states.

We anticipate that this finalized PRM manual will play a significant role in promoting the adoption of PRM practices throughout the IGAD region over the next five years.

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Acronyms and abbreviations

GDP	Gross Domestic Product
ICPALD	IGAD Centre for Pastoral Areas and Livestock Development
IGAD	Intergovernmental Authority on Development
ILRI	International Livestock Research Institute
LandPKS	Land Potential Knowledge System
M&E	Monitoring and evaluation
NGO	Non-governmental organization
PRM	Participatory rangeland management

INTRODUCTION

What is participatory rangeland management?

Participatory rangeland management (PRM) builds the capacity of communities to better plan, manage and govern their lands. Communities lead the process, and a rangeland management institution is strengthened or established as the responsible authority for PRM within a rangeland management unit. Other stakeholders may need to be involved in decision-making processes in relation to community lands. There may be secondary and tertiary land users who access rangeland resources at different times of the year. There may also be others with interests in the land, including government, investors and conservation organizations.

Ideally, PRM is carried out where communities have clear and secure rights to their land (e.g. a landholding certificate). This gives communities a greater incentive to invest their time and resources in the PRM process and to improve or restore land productivity. However, in pastoral areas, communities often do not have secure and clear rights to their land. In these circumstances, PRM can contribute to greater tenure security by increasing the legitimacy of community land use through mapping, documentation and use. A rangeland management agreement between the local community and government can follow. Ultimately, PRM promotes the sustainable use, management and governance of healthier rangelands, maintaining biodiversity and providing for more resilient livestock-based livelihood systems.

How to use these PRM guidelines

These guidelines are for practitioners facilitating and supporting communities implementing PRM to improve their management and governance practices. They explain in practical terms the PRM stages and steps leading to the development and implementation of a rangeland management plan and, where appropriate, a rangeland management agreement. The guidelines are useful for anyone working with communities to build their capacity to manage and govern rangelands better.

The guidelines expand on the ***Introductory Guidelines to PRM in Pastoral Areas*** compiled by Flintan and Cullis (2010).[1] They are supported by the ***Mapping Guidelines for PRM Volume I*** and ***Volume II***, a ***PRM Toolkit*** and other publications relevant to PRM presented in the final section on Further Reading. Additional supporting publications are anticipated shortly.

The three stages in the PRM process – preparing, implementing, and strengthening – are explained, together with nine steps. For each step, the guidelines set out the objective, the approach (actions and activities) for achieving the objective and the anticipated result. Tools to achieve the steps are described.

The guidelines include a set of core principles for PRM. The most important principle is that PRM is a community-led process. The practitioner, whether from the government, an NGO or some other entity, is there as a facilitator. PRM requires that facilitators (or facilitating teams) take a different approach to rangeland management where communities take the lead. For long-term sustainability, it is vital that the communities feel responsible for the PRM process, as well as the plans and any other outputs from it.

Summary of the PRM process

The PRM process is made up of three stages and nine steps, as illustrated in *Figure 1* and at the start of these guidelines. Although the steps are presented linearly, this does not mean that the exact order needs to be followed. The steps, and the order of the steps can be adapted to the local context and there may be some back-and-forth or some steps may be undertaken at the same time. Even though the order may change, it is important to carry out all the steps and to do them comprehensively; each is a valuable part of the PRM process.

STAGE ONE PREPARING FOR PRM (STEPS 1-3)

The preparation stage is the first and most comprehensive stage in the process. This stage includes *gathering information* and *developing an understanding of the extent of the rangeland management unit*. Details are collected on movement patterns across the unit, the different rangeland resources and their spatial distribution and uses at different times of the year. A *participatory mapping process* is the main tool for this. Once it is completed, the community can reach an agreement on exactly what they mean by their rangeland management unit.

Information is also gathered *on rangeland stakeholders and users*, including the institutions and groups that have a role in managing and governing the rangeland's resources. This helps to identify whether there already is a suitable rangeland management institution or one will need to be established. An *institutional capacity needs assessment* is carried out and, where necessary, capacity is strengthened.

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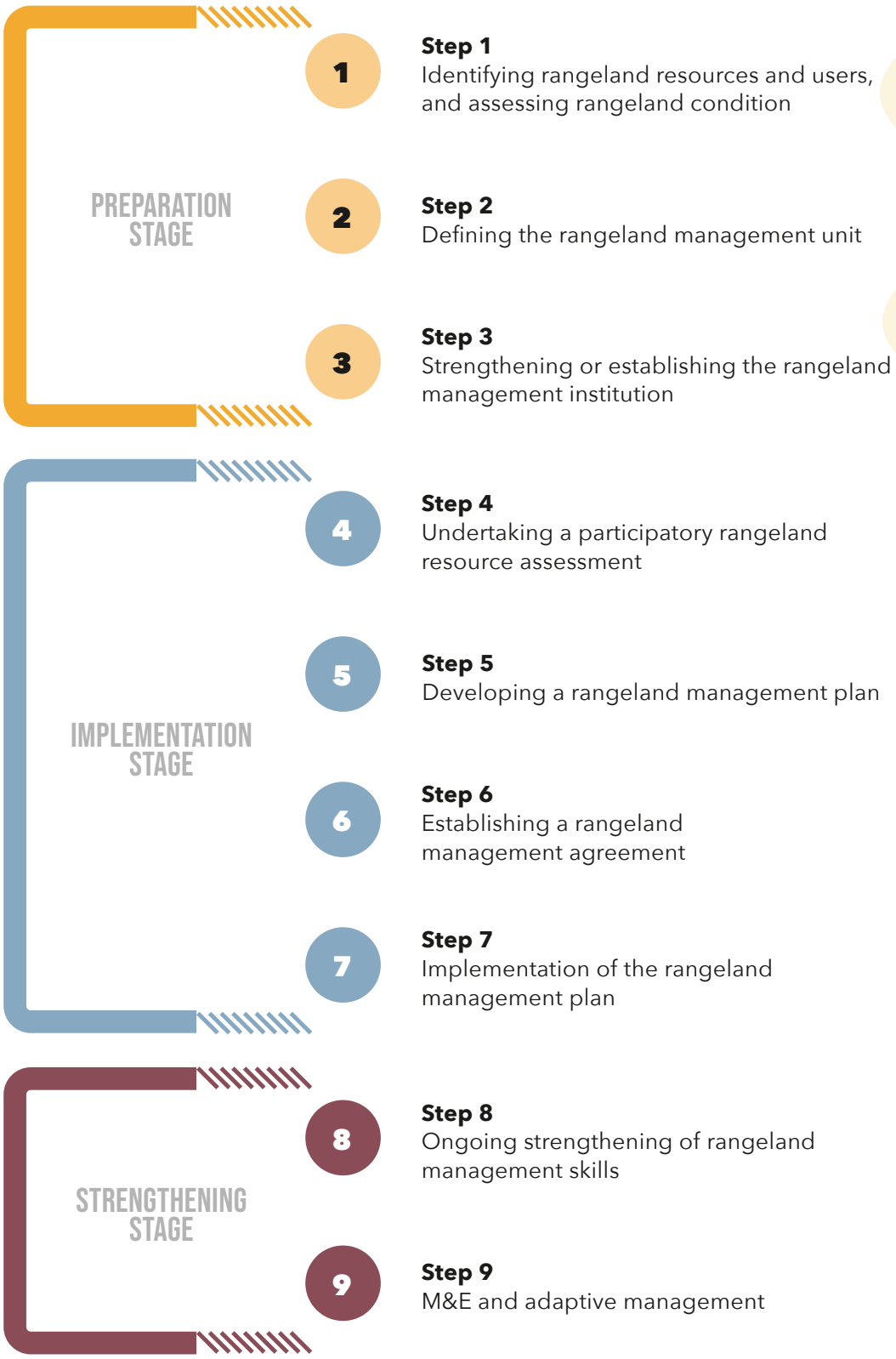
1 Flintan, F. and Cullis, A. 2010. Introductory Guidelines to PRM in Pastoral Areas. Save the Children USA. FAO and ECHO: ***https://cgspace.cgiar.org/handle/10568/99430***

Figure 1. The stages and steps of the PRM process.



STAGE TWO IMPLEMENTING PRM (STEPS 4-7)

After the preparation stage for PRM is completed, the next stage is implementation (i.e. the development of a rangeland management plan and its application). For this, the rangeland management institution organizes a detailed *rangeland resource assessment*. The assessment includes the identification of areas and resources that require protecting, raising productivity or restoration.

The next task is to draw up the management plan, specifying:

- the rangeland management unit, including information on the condition of its resources;
- actions to be taken to improve management, governance and restoration of the unit;
- the roles and responsibilities of the rangeland management institution and other subcommittees in implementing the management plan;
- the community monitoring system to measure progress of the management plan implementation; and
- a workplan and budget.

If appropriate, the management plan forms the basis of a rangeland management agreement between the management institution and the local government.

STAGE THREE STRENGTHENING PRM (STEPS 8-9)

The third stage of the PRM process is ongoing and includes monitoring and evaluation of the PRM process, together with facilitation of community adaptive management. The capacity of the community to overcome new challenges as they arise will need building. Capacity building of local government to support communities and the PRM process may also be required.

Cross-cutting issues in PRM

There are three major cross-cutting issues that run alongside the PRM process and which need to be integrated in every step. These are:

- **Gender and social equity.**
  It is important that the PRM process does no harm to relations between men and women or between different society groups. Rather, as much as possible it should contribute to more equitable relations and opportunities for all. There may be the need for specific gender and social equity expertise on the facilitating team.

- **Conflict prevention and peace building.**
  The PRM process should not cause conflicts and rather, should build peace through strengthened collective action and improved management of natural resources. Where there are conflicts between resource users, working through the PRM process can help resolve these conflicts. Specialist conflict mediation experts may be required.
- **Developing enabling policy and legislation.**
  Enabling policy and legislation is needed to provide government legitimacy to the PRM process and to encourage support for it. Without this, PRM is unlikely to be sustainable. Influencing new or improved policy and legislation may be necessary.

These issues are discussed further in the section on ***Mainstreaming PRM cross-cutting issues***.

Core principles in PRM

PRM must be community-led if it is to be successful.

Practitioners, researchers and government representatives are facilitators of the process and build the capacities of communities to take the leadership role. Communities must take responsibility for the leadership role, which will require their time, effort and resources. The facilitating team supports the community, bringing additional financial resources and expertise to address new challenges that the community faces. PRM is facilitated well when it is accompanied by reflective participatory processes that allow feedback and adaptation. PRM is a process that requires significant resources over many years if the capacity of communities to better manage and govern their lands is to be built effectively. Before embarking on PRM, sufficient resources should be in-hand.

Negotiation and mediation.

Negotiation and mediation will be needed throughout the PRM process to reach agreement on actions to improve the management and governance of the rangeland and its resources. There can be many different users and uses of a rangeland, and agreement will need to be reached on how use can be made more sustainable without conflict and supported by necessary rules and regulations. Well-mediated processes that engage all stakeholders usually result in a greater sense of ownership and higher levels of justice, trust, accountability, transparency and sustainability. A well-negotiated and mediated PRM process should be one that builds peace and does not create or fuel conflict.

PRM should facilitate greater gender equity.

Women contribute greatly to a well-functioning pastoralism system and depend on rangeland resources for food and livelihoods. However, women are often left out of decision-making processes related to these resources where rangeland management institutions are traditionally dominated by men. If management and governance is to be most effective, it needs to include the needs and perspectives of women as well as men. This is best achieved through women's more active participation in activities and decision-making processes. As such, PRM tries to influence governance structures and processes to be more gender equitable. The PRM process identifies and values women's knowledge of rangeland resources and their management, the challenges they face and their views on potential solutions. Effort is made to ensure the integration of women's needs, positions and interests with those of men. Women's capacity to better engage and even lead decision-making processes should be built prior to and during the PRM process. With the right investments of time, resources and support, PRM can be a transformative process for women, bringing significant benefits in terms of empowerment and improvement of livelihoods.

Social inclusion and collective action

Within PRM, the principles of social inclusion and collective action are foremost, ensuring that every individual in a community of diverse identities and experiences can play an active role, without discrimination based on age, disability, ethnic identity or other. As much as possible, management institutions and other decision-making bodies are established or strengthened to be fair, representative and inclusive, where no one is marginalized. Social inclusion is closely aligned to collective action, where a community works together for a particular goal or outcome. Collective action is a main characteristic of a well-functioning pastoralism system that is better able to cope with drought and other shocks and stresses. If implemented well, PRM can build social inclusion and collective action, improving the climatic resilience and security of communities and pastoral systems.

Facilitation team, training and awareness-raising for PRM

Before initiating PRM, it is necessary to establish a facilitation team. The key points are:

- The team is led by a practitioner who is experienced in working with communities and applying the core principles of PRM.
- At least one team member has good knowledge of pastoral and agro-pastoral systems.
- At least one member is a woman to be better placed to engage and support women and encourage their participation.

- Team members from different sectors and agencies help bring valuable individual expertise to the PRM process.
- People with a good rapport with the community undertaking the PRM process are ideal.
- The facilitation team includes a note-taker whose role is to document all the community dialogue during the implementation of the PRM activities.

Details on the specific skills needed, including for resource mapping, are given in the ***Mapping Guidelines for PRM***.

If the team members are not experienced in facilitating a PRM process, they should receive in depth preparatory training beforehand so they understand the whole process, the principles and what can be expected. Additional external expertise and support on such as gender equity and peacebuilding may be required.

Before undertaking the PRM process, the facilitation team meets with the participating community members several times over weeks or months to build trust, rapport and explain the purpose of the process. It is critical to ensure the community is willing to take the lead and fully understand the investment of time (often several years), effort and resources required. Preparatory meetings that spread awareness about the PRM process and resolve any confusion or misunderstandings help ensure the process is undertaken smoothly once it starts.

Specific preparatory meetings held with women in the community strengthens their capacity for more positive participation in the PRM process. Women are less likely to speak out during joint activities, such as mapping, and improving their confidence in advance helps ensure their important knowledge and experience is included.

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STAGE ONE
PREPARING FOR PRM

Step 1
Identifying rangeland resources and rangeland users

To identify the rangeland management unit for the rangeland management plan, a **map of rangeland resources** *is required. The* **identification of who uses or has interests in these resources** *is also needed. In Step 1, several tools are used to achieve this, including rangeland resource mapping and a rangeland stakeholder analysis. Community members lead this process, "holding the pen" with practitioners facilitating.*

a UNDERSTANDING RANGELAND RESOURCES

Objective

To identify the rangeland's resources, their status, importance, use and rules of access, and any challenges being faced.

As well as identifying the rangeland resource base, it is important to know the condition of the resources and how the resource base has changed over time. Rangeland resources are distributed across a landscape or a pastoral resource unit. Their distribution may be patchy or relatively even.

it is important to know the **condition of the resources** and how the resource base has changed over time.

Resources may include:

- Grazing areas for wet and dry seasons;
- Water sources including surface ponds, seasonal and perennial rivers, lakes, earth dams, underground cisterns, deep hand-dug wells, taps, pipes and boreholes;
- Shrub land, open grassland, types of grasses, wildlife and wildlife habitats, woodland and forests used for browse/fodder, timber, hanging beehives and firewood;
- Saltlicks, brackish water and mineral sites; and
- Resources important for cultural or religious reasons e.g. a sacred mountain or cave.

Approach

An understanding of the rangeland resource base is obtained through consultations and discussions with community and government representatives and other interested parties. The facilitating team arranges a series of meetings for members of customary institutions, experts from key sectors, elders, women and youth representatives using different tools.

Participatory tools useful for initiating discussions include:

- Participatory resource mapping
- Seasonal calendars
- Rangeland species matrix
- Rangeland use and condition historical analysis.

Participatory resource mapping

Participatory resource mapping is a powerful information-generating tool. The discussions held during the drawing of the map are also a good starting point for identifying current access and control over resources. It is likely that men and women will view resources and their uses differently, so it is important that both men and women can contribute to the map and if necessary separate men and women mappings be carried out. It may also be necessary to take account of other social and cultural divisions in the community and take actions to ensure that all views and perspectives are included. The ***Mapping Guidelines for PRM in Pastoral and Agro-Pastoral Areas Volume I*** and ***Volume II*** provide detailed guidance, including preparatory steps and checklists.

Rangeland resource maps are best drawn on the ground in a flat sandy area using local materials. Important features are grazing areas, enclosures and water sources as well as sources of fuelwood and non-timber dryland products, medicinal plants and minerals. Rangeland productivity hotspots (the key resources that contribute to livestock productivity) are also highlighted (see *Box 1* What are rangeland productivity hotspots?). Information on resource condition, trends of change and access issues is obtained through discussions during the mapping process.

Rangeland resource **maps are best drawn on the ground** in a flat sandy area using local materials.

The map might also include settlements, farms, cultural sites, veterinary and social service centres, protected areas, wildlife habitats, conflict hotspots, hazards (such as flood zones), livestock disease hotspots, bush encroachment, invasive plants and overgrazed and degraded zones.

The broad initial mapping is at a scale that best shows the geographical area relevant to the pastoral system. This may include resources several hundred kilometres away, which can be shown as an arrow to a distant landscape. The directions that resource users and their livestock move to access resources are also shown on the map.

When finished, a photograph is taken of the map, preferably from above (e.g. by standing on the roof of a car) and a hand-drawn copy made on an appropriately large piece of paper, which may require several flipcharts taped together.

When finished, a **photograph** is taken of the map, preferably from above

Community-drawn rangeland maps can be converted to geographical information systems and computerized maps that show different aspects of the landscape layered with soil and ground cover maps. Satellite images can also be considered and have proved to be a useful starting point for community discussions about which resources people use across a landscape, as well as how and when.

The facilitating team are encouraged to consult the ***Mapping Guidelines for PRM in Pastoral and Agro-Pastoral Areas – Practitioners' Guide, 2015*** for more details on how to facilitate participatory mapping.

Box 1. What are rangeland productivity hotspots?

Many of the resources mapped during PRM are vital for maintaining the productivity of the pastoral livestock production system and need to be given special attention. These **productivity hotspots include important water sources, dry season grazing areas and areas of biodiversity that provide resources such as vital veterinary and medicinal plants**. As these hotspots are often found in the more fertile areas of a rangeland with less variable rainfall, they are also the areas that agriculturalists try to convert to crop production. These productivity hotspots can, therefore, be conflict hotspots where different stakeholders have opposing interests and where land-use conflicts are often difficult to resolve.

Pastoralism depends on these productivity hotspots while making use of land of secondary value and resources that are poorer in quality and, therefore, difficult (if not impossible) to use for other purposes. It is critical to appreciate that these secondary resources cannot be used as part of a healthy livestock production system unless there is also the accompanying access to the rangeland hotspot(s).

During PRM, it is crucial that security of access and protection of the hotspots is maintained. Communities identify those productivity hotspots of the greatest importance to them so that the utmost care can be given to their protection and, where needed, restoration. Otherwise, the whole rangeland becomes unproductive. Communities are likely to need help to do this. Ensuring that their needs and interests are justly considered within local land-use planning processes is critical.

Seasonal calendars

Pastoralist resource use and access changes according to seasons. It is important to understand how and why this occurs so that resource management is planned effectively. Asking pastoralist communities to draw a seasonal calendar to show these changes contributes to this understanding.

Ask the community how they would like to **divide the year into seasons**.

The starting point is to ask the community how they would like to divide the year into seasons that best reflect their own understanding of changing patterns of resource use and access. Questions asked about influencing factors, such as rainfall, temperature and labour ensure the relationship between these factors and resource use and access is easily determined. The calendar is drawn on the ground using local materials or on flipchart paper (*Table 1*).

As with all participatory tools, it is the discussion that accompanies the exercise that is particularly important. This allows the facilitating team to explore in more depth how, why, what and when changes occur, and the relationship between the changes and the resource users.

Table 1. Example of a seasonal calendar.

Seasons Characteristics		Ganna (June-Nov)	Bona (Dec-May)
Rainfall		●●●●●●●●	●●●●●
Temperature		●●●●	●●●●●●●●
Wind		●●●●●	●●●●
Frost		●●●●● (Oct-Nov)	
Grazing availability (grass – marga)		●●●	●
Browse availability		●●●●●	●
Water availability		●●●●●●●●	●●●●●●●
Income from livestock sale		●●	●●●
Livestock product		●●	●
Milk yield		●●	●
Labour demand for livestock related activities	M	●●●●●●	●●●●●●
	F	●●●●	●●●●
Labour demand for non-livestock related activities	M	●●●●	●●●●
	F	●●●●●●	●●●●●●
Incidence of disease		●●●●●●	●

Rangeland species matrix

A species-use matrix (*Table 2*) allows rangeland species and their uses to be identified. The starting point is for the facilitating team to ask the community to list the rangeland species (trees, plants and grasses), that are important for livestock or other purposes. Communities will probably use local names for plants, and species names will need to be verified later.

The local and species names are written along one axis of a table and the different uses are then placed on the other axis. The facilitating team then asks participants to rank the importance of the plants by placing different numbers of stones or other items in the boxes. This information is useful later in the development of the rangeland management plan where these species might need to be targeted for special attention.

Ask the community to **list and rank the rangeland species** (trees, plants and grasses), that are important for livestock or other purposes.

Table 2. Example of a rangeland species matrix.

Use	Cordeuxia edulis or local name	Acacia Senegal or local name	Boswelia spp or local name
For grazing	●●●		
For browse		●●●	●●●
For fodder	●	●●●	●●●
For human consumption			
For income generation	●●	●●●	
TOTALS	●●●●●●	●●●●●●●●●	●●●●●●

Ask the community to list important events related to the use of land and natural resources, such as **changes of government or changes in customary leadership**.

Rangeland use and condition historical analysis

Understanding broad trends of change in the use and condition of the rangeland over time is important if appropriate management is to take place in the future. The information collected contributes to decisions about what needs to be done to improve or maintain the rangeland condition and what needs to be done to prevent further negative change. An historical analysis helps gather this information.

The starting point is for the facilitating team to ask the community to list important events related to the use of land and natural resources, such as changes of government or changes in customary leadership in the first column of a table. The time of each event is noted in the second column and the third column contain some explanatory notes describing the event and its impact on land use and the condition of the rangeland (*Table 3*).

With all these participatory tools, the facilitating team encourages discussions to ensure a clear understanding of influences and impacts. During these discussions, participants can talk about major rangeland problems and start considering solutions.

Table 3. Example of an historical analysis of rangeland use and condition.

Event	Timing	Explanation
Land managed by customary institutions	**Pre-1970s**	There were no pressures on the land. Peaceful coexistence with neighbours. Plenty of grass, water and other resources.
Establishment of villagization scheme	**1970s**	Government-led villagisation scheme consolidated settlements in what used to be a prime dry season grazing area. Put pressure on remaining resources.
Government ranch established	**1985**	A 500-hectare government ranch established which fenced off prime dry season grazing area, increasing pressure on remaining grazing lands.
Wajiriwama dam built	**1995**	Dam built upstream reduced river flow.
Borehole development and conflicts with neighbours	**2000**	Multilateral agency project established boreholes in the area that triggered conflicts between community and neighbours.
First private wells established	**Early 2000s**	The establishment of boreholes kick-started a process of individual private well-digging; process of privatization of resources started.
NGO Pastoralist Livelihood Project on community-based natural resource management	**2004 - 2010**	NGO project established community natural resources management committees and attempted soil and water conservation (not as successful as hoped).
Prosopis juliflora first recorded in rangeland	**2006**	First time invasive plant Prosopis juliflora seen in the rangeland (has since spread over several thousand hectares).
NGO Pastoralist Livelihoods Project 2 on natural resources management and diversification of livelihoods	**2010–2015**	Project supported use of resources for diversification of livelihoods such as beekeeping, gums, resins and use of aloe vera.
National policy on Management of Prosopis juliflora	**2012**	National policy on management of Prosopis juliflora provided support and resources for removal and management of Prosopis.

Anticipated results

The output from these participatory exercises is a set of participant-created charts and maps with accompanying notes on rangeland resources, status, challenges and potential solutions for use in defining the rangeland management unit (*Step 2*). This becomes the foundation for more detailed investigations in the rangeland resource assessment (*Step 4*).

b IDENTIFYING RANGELAND USERS

Objective

To produce a stakeholder analysis and a map of key rangeland stakeholders, including direct and indirect users and the relationships among and between them.

Stakeholders include men and women, young and old, rich and poor, as well as visiting pastoralists and those with interests in the rangeland, such as conservation organizations, government, research organizations and NGOs. All of them have different relationships with rangeland resources and rights of access.

Approach

An understanding of the rangeland resource base is obtained through consultations and discussions with community and government representatives, as well as other interested parties. The facilitating team arranges a series of meetings for members of customary institutions, experts from key sectors, elders, women and youth representatives using different tools.

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In rangeland contexts, identifying resource users is often complex. Within pastoralism, herds move seasonally as grazing and water resources are distributed unevenly in space and time due to highly variable rainfall. This means that the number of users of an area is constantly changing. In pastoralist contexts, it is a challenge to know who plays what role in controlling resource access.

One way of ensuring that all users are identified and their rights are understood is to distinguish between primary and secondary users. A primary user might use a grassland area to graze cattle (primary use), while a secondary user might use the area for collecting herbs and medicinal plants (secondary use). It is also helpful to distinguish between permanent users, for example, those who use the resources as a water source all the time, and occasional users, for example, those who only use the resources at certain times of the year or under certain conditions.

The facilitating team conducts **group exercises and discussions** to identify rangeland stakeholders and involves representatives from as many stakeholder groups as possible.

Stakeholder analysis

For the stakeholder analysis, the facilitating team conducts group exercises and discussions to identify rangeland stakeholders and involves representatives from as many stakeholder groups as possible. The aim is to gather information on the following:

- **Who** are the users and collectors of resources in the area (including primary, secondary, permanent and occasional users)? Are the collectors and users always the same or do divisions occur? For example, men may take livestock far away to dry season grazing areas, with women staying closer to home with the young, pregnant, lactating or sick livestock. It is also important to identify who is responsible for maintaining the resource, such as ensuring a pond is kept clean, a grassland is not overgrazed or a tree is not damaged during gum collection.
- **What** are the different uses of the resources? For example, water drawn from a well is likely used for watering livestock and for domestic use. Or the different parts of a doum palm (*Hyphaene thebaica*) is likely to be used for different purposes such as roofing, rope, fodder and fuel.
- **Where** are resources accessed from and who controls access? Who has rights of use in an area and who doesn't? It is likely there will be complex rules of access, with some users having more or easier access than others, depending on customary regulations, clan affiliations and closeness to the resource. Even if people do not have a right to access a resource, they may still try to do so. Conflicts can then occur.
- **When** are resources being used? Are resources being collected and used at different times of the year by different users? Are resources being stored? if so, why and for how long? Are they being damaged in storage, as is often the case with gums and resins?
- **Why** are the resources being used? Is it for grazing and watering animals, or is it to obtain products for sale? If they are being sold, who sells them and how is the money divided among the household or the community? It is often the case that when money can be raised from the sale of resources it becomes harder to come to an agreement over the use, control and protection of that resource. This is particularly the case today, where cash is a more important commodity in pastoralist societies than in the past.
- And finally, **how** do the different stakeholders relate to each other? For example, are relationships good, broken or non-existent? It is important to understand who are allies and who are in conflict so that any problems can be taken into account and resolved.

The facilitating team aims to collect all this information from the stakeholders (resource users) themselves, although this is not always possible. It may be necessary to collect the information from others who only have secondhand knowledge of the users and their resources.

Discussing with people how they perceive their own rights and responsibilities over resources is the starting point for initiating discussions about who should have specific rights and responsibilities in a future rangeland management system. Identifying the interests, positions and needs of all stakeholders helps in the implementation stage when a consensus is needed on resource access, use and management.

Discuss with people **how they perceive their own rights and responsibilities** over resources

As well as participatory discussions, stakeholder mapping is an additional and useful tool for the analysis (see the further reading section for references on participatory engagement with pastoralists).

Stakeholder mapping

Stakeholder mapping is used to provide a visual summary of everyone who has an interest in a rangeland area and the relationships between them. It is also helpful for obtaining an understanding of the different opinions that stakeholders have of each other and for identifying which stakeholders are considered of most importance to whom. The exercise can be carried out with just one stakeholder, the local community, but ideally is repeated with other stakeholders, such as government ministries and departments to achieve a more complete picture of the situation.

Provide a **visual summary of everyone who has an interest in a rangeland area** and the relationships between them.

The facilitating team begins by asking group members to name the different institutions and authorities responsible for rangeland resource management, access and control. These are put onto circular pieces of card of one colour. On another set of circles in a different colour are the names of all the rangeland users the group identifies. The size of the circle illustrates the perceived importance of the institution or user. For those institutions with a greater role in managing the resource (or rangeland) or controlling access, the names are written on the larger circles. Larger circles are also used for users who use the most resources.

As an extra step, a further exercise can be undertaken to understand the relations of stakeholders with a specific resource or several resources, such as dry and wet season grazing. A large piece of paper with "*Dry season*" or "*Wet season*" written in the centre is put down. The facilitating team asks the stakeholders to place the circles with the names of the users onto the paper in a way that illustrates their relation to the resource and its management and use (i.e., those with a close relation and involvement to the resource are placed close to the resource and those who have a distant relationship are placed further away). The exercise is then repeated with the circles for the institutions. The facilitating team encourages the participants to draw lines between the different names to show the types of relations between the stakeholders. For example, a strong, bold, thick line depicts good relations between two parties, parallel lines illustrate relations of mutual support, thin lines illustrate weak relations, dotted lines show broken relations, and zigzags depict conflicts (see *Figure 2*)

Anticipated results

Using the information collected through the stakeholder analysis and stakeholder mapping, the facilitating team constructs a rights, responsibilities, relationships and revenues (4Rs) matrix (*Table 4*), which is then verified by the participants.

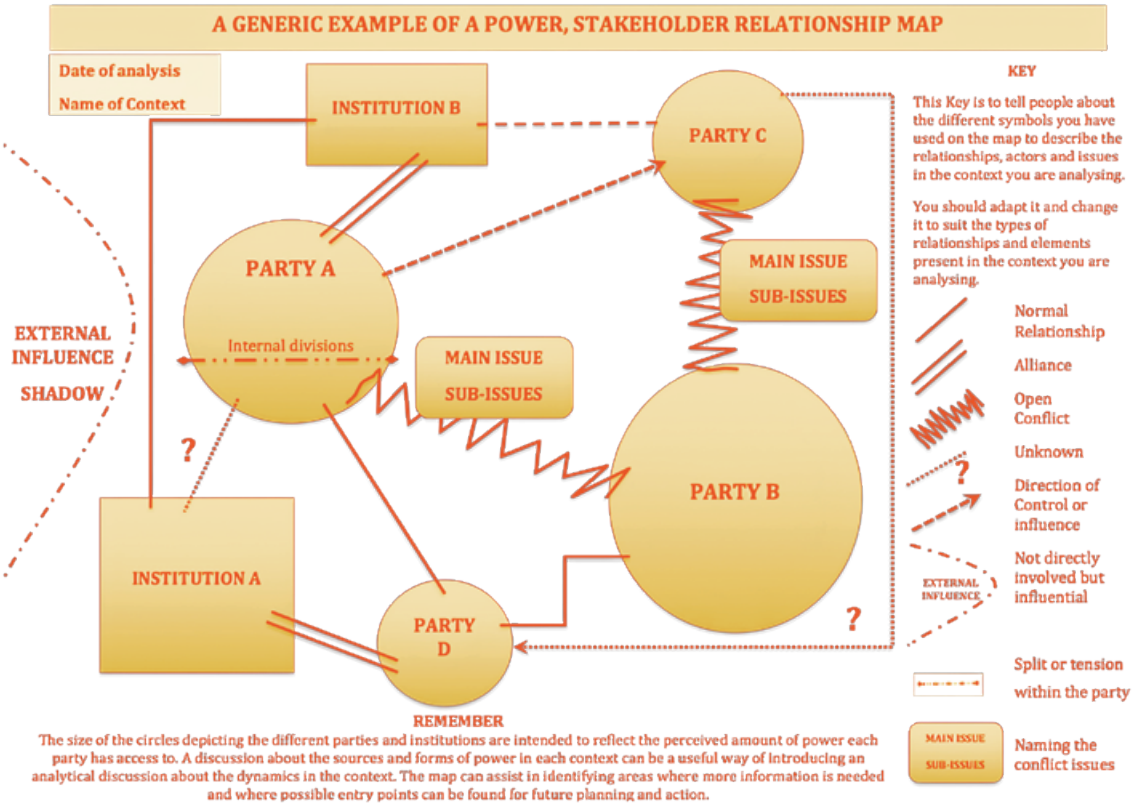
- **Rights:** Who has what rights to use rangeland resources and for what purpose?
- **Responsibilities:** Who takes what actions in terms of rangeland and resource management?
- **Relationships:** How do stakeholders relate to each other?
- **Revenues:** Who benefits from rangeland resources?

The information in this table provides the basis for discussions in PRM Stage 2 (implementation) about who should be involved in the rangeland management plan and agreement and their rights, responsibilities and benefits.

Table 4. Example of a 4R matrix for a dry season grazing area.

Stakeholder name	Rights	Responsibilities	Relationships	Revenues
Stakeholder 1 'Outsider' group	• Demand rights to graze and water animals	None	• With permanent users – conflict over access and use • With occasional users – conflict over access and use • With local government – conflict over access	• Livestock income and products
Stakeholder 2 Permanent user	• To graze animals in open areas • To graze animals in communal lands • To water animals at permanent water sources • To collect gums and resins • To collect other non-timber dryland products • To collect grass for fodder	• To control access to grazing and prevent overgrazing • To control access to ensure water sources are kept clear and clean • To protect enclosure fences of enclosures • To manage tree cutting • To guard the forest against fire • To stop agriculture	• With occasional users – reciprocal • With outsiders – conflict over the use of resources • With local government – supportive	• Livestock income and products • Income from gums and resins and other dryland products
Stakeholder 3 Occasional user	• To graze animals when grazing is low in own area in open areas • To water animals when visiting grazing areas to graze • To collect non-timber dryland products	• To prevent overgrazing • To ensure water source kept clear and clean • To manage tree cutting • To guard forests against fire	• With permanent users – reciprocal • With local government – conflict over access • With 'outsiders' – conflict over use of resources	• Livestock income and products

Figure 2 A generic example of a stakeholder relationship map

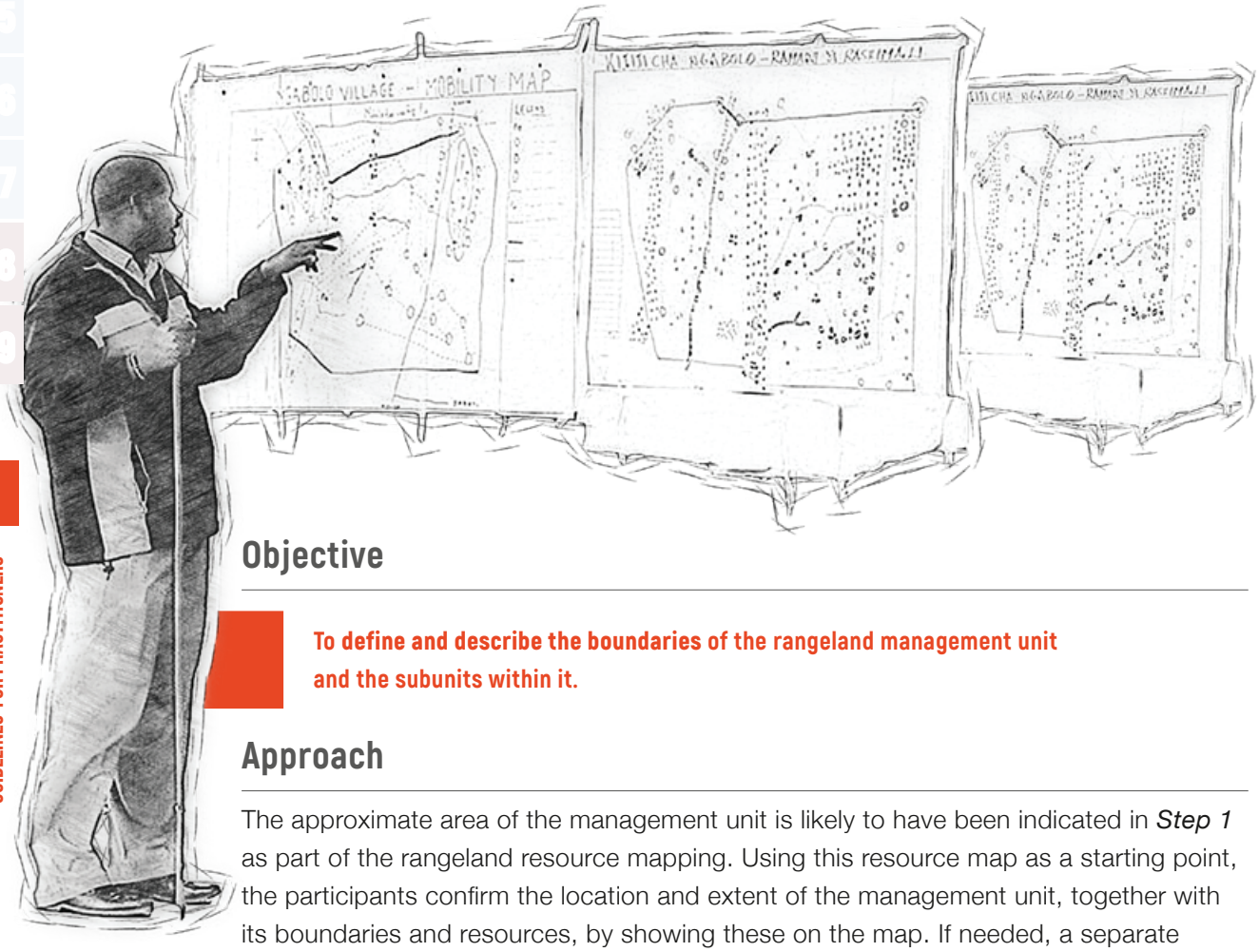


Source: Simon Fisher et al, 2000.[2]

2 Fisher, S., D. Ibrahim, J. Ludin, R. Smith, S. Williams, S. Williams. 2000. *Working with Conflict: Skills and Strategies for Action*. UK.

Step 2
Defining the rangeland management unit

The rangeland management unit is **the area of land over which the rangeland management institution has primary responsibility**, *jurisdiction and authority and for which the management plan or agreement is written. The facilitating team helps the community to define and describe this unit together with any smaller subunits.*



Ground-truthing is carried out to **ensure the map reflects the situation on the ground**.

Objective

To define and describe the boundaries of the rangeland management unit and the subunits within it.

Approach

The approximate area of the management unit is likely to have been indicated in *Step 1* as part of the rangeland resource mapping. Using this resource map as a starting point, the participants confirm the location and extent of the management unit, together with its boundaries and resources, by showing these on the map. If needed, a separate management unit map is drawn. Ground-truthing is carried out to ensure the map reflects the situation on the ground. It may be possible for an NGO or local government office to help digitize the hand-drawn map if this is thought to be beneficial.

It is important to recognize that the area of the management unit will not have hard and fast boundaries and will likely include reciprocal grazing and water-sharing arrangements across boundaries with neighbouring management units (see *Box 2 Boundaries*).

For easier and more specific management, monitoring and evaluation purposes, the management unit may need to be subdivided into resource-type subunits, reflecting the broad ecological differences of the sites and their current use and management differences. For example, grasslands (dry or wet season grazing areas), shrub land (areas used for browsing or areas that are inaccessible due to bush encroachment) or forests and woodlands. The community identifies these subunits with the knowledge they already have of the rangeland.

The management unit may need to be subdivided into resource-type subunits, reflecting the broad ecological differences of the sites.

After the subunits are identified, they are drawn on the rangeland map. Note that water sources found in these subunits cannot usually be separated from the ecological type within which they are found. However, a particularly large or significant water source can be a subunit by itself.

Where resource-type subunits are particularly large and relatively homogenous, it may be necessary to further divide the subunits into blocks for easier management.

Anticipated results

The process results in a clear map of the management unit and its boundaries (albeit porous), and, where appropriate, subunits to the level of detail required. This map is used in drawing up a rangeland management plan.

Box 2. Boundaries

Boundaries in pastoral areas are seldom, if ever, like boundaries in more sedentary communities. The rangelands are communally managed and different groups of pastoralists have well-established reciprocal grazing rights in neighbouring areas or clans. Boundaries can, therefore, be considered something of an alien concept. Traditionally, **boundaries are where one group's authority ends and another begins** and are simply '*known*'.

For local government to approve the authority of the rangeland management institution over an area of rangeland, it will be necessary for management units to be broadly defined, even though all parties will need to understand that the users will continue to support reciprocal grazing and other resource rights across the boundaries. Discussions and negotiations with neighbouring rangeland management units at this early planning stage can sharpen the debate and ensure that this issue is not overlooked.

Step 3

Strengthening or establishing a rangeland management institution

Objective

To help communities strengthen or establish the rangeland management institution. An effective community rangeland management institution is crucial for successful PRM.

The role of the facilitating team is to help communities identify or establish a rangeland management institution that has sufficient strength to take on the required responsibilities and authority. In some cases, this may be a customary institution and in others, it may be a more newly developed institution.

The skills and capabilities of the institution to fill their responsibilities will be assessed.

Approach

Help communities **to decide which existing institution has authority over the rangeland management unit.**

The Stakeholder Analysis in *Step 1* establishes the presence and status of any management institutions. In *Step 3*, the facilitating team:

- Encourages discussions among community rangeland users to decide which existing institution has authority over the rangeland management unit, whether it needs strengthening or a new one needs establishing and whether, with some adaptation, it can fulfil the necessary roles and responsibilities required. *Box 3* provides some guiding questions for these discussions.
- Confirms the appropriate local government administrative office to support the PRM process. The community rangeland management institution works with this office, including, where appropriate, on drawing up the rangeland management agreement.

Strengthening existing knowledge and skills in PRM

Once the rangeland management institution is identified, the knowledge and skills of its community members are assessed to determine what needs strengthening. It is likely that capacities and skills are needed in the following areas:

- Group management, including participation and inclusiveness;
- Negotiation and consensus building skills;
- Drawing up rangeland management plans and bylaws;
- Government policy, legislation, structure and ways of working;
- Reporting and documentation;
- Communication skills and use of technology;
- Public speaking;
- Peace building and conflict prevention; and
- Additional rangeland management technical skills.

Where there are capacity gaps practitioners will need to organize relevant trainings and support from external experts. In addition to understand the current strength of the institution and to serve as baseline for monitoring improvements, an institutional capacity assessment (ICAT) can be carried out (see *Box 4*).

The role of the management institution is formally defined in the rangeland management plan (*Step 5*) and agreement, if appropriate (*Step 6*). The facilitating team helps the institution build recognition and understanding of itself and its status in relation to other institutions or organizations with which it will work. Central to the role of the management institution is the ability to make decisions about rangeland management and to take action to follow up on its decisions.

Customary authorities

Historically, rangelands have been managed by customary authorities. Where customary authorities exist and are functioning well, they are the preferred rangeland management institution. However, if customary institutions are not socially inclusive, including gender inclusive, then discussions will need to take place with leaders as to how the institution can better include the views and needs of women, youth and other social groupings.

Where possible, the management institution (customary institution or other) needs to gain legal recognition, as this is likely to be a requirement for entering into a legal agreement with the official government. However, policy and legislation often does not support this. In such circumstances, it is useful to consider other institutions or organizations to take on the role of the management institution. In Ethiopia, for example, FARM Africa supported the establishment of cooperatives as rangeland management institutions.

If customary institutions are not socially inclusive, including gender inclusive, then discussions will need to take place with leaders as to how the institution can better include the views. and needs of women, youth and other social groupings.

The 'four legs' concept in PRM

To help demonstrate that a strong institutional foundation is needed for PRM, the 'four legs' concept was created (see *Box 5*). A governance structure that belongs to the community and is responsive to it, is the first of the four legs.

Anticipated results

An established or strengthened rangeland management institution capable of managing the rangeland unit and resources and well placed for negotiating with other stakeholders on securing rights of access to those resources is in place.

Box 3. Questions to ask when identifying a suitable institution

1. What role does the management institution need to play?
2. What institutions currently exist that could play this role?
3. In considering each of these existing institutions:
   - How well does the current role of this institution match the role of what is needed from a rangeland management institution?
   - What adaptations need to be made and are these feasible?
   - Does the institution have the necessary authority? If not, how can this authority be expanded?
   - Is the institution inclusive (includes women and youth)? If not, how can women and youth be included or at the very least ensure their voices and priorities are heard and considered?

Box 4. Institutional capacity assessment tool (ICAT)

An institutional capacity assessment should be carried out by the facilitating team. The ***Institutional Capacity Assessment Tool (ICAT)*** is an important monitoring tool for systematically evaluating the status of a community or other institution and their capacity to govern in an effective and equitable manner. It considers the functionality, structures and processes, composition, strengths and weaknesses of institutions and other elements of good governance.

A monitoring tool for systematically **evaluating the status of the community or other institution** and their capacity to govern in an effective and equitable manner.

ICAT is used for assessing and monitoring change in the governance capacities of community management institutions. The main parameters assessed by this tool include governance, engagement, planning, implementation, financial competency and monitoring. Each parameter has subparameters and uses levels 1–4, where 1 is the lowest Latent stage, 2 is Emerging, 3 is Established, and 4 is the Advanced stage. Each subparameter and level has a description of what is expected to be in place. It is important to note that an accurate representation of the status is essential for ensuring that the right support is provided to the rangeland management unit. There may be a temptation to inflate scores. However, this has the disadvantage of leaving no room for improvement; the lower the score, the more room there is for improvement.

How to do an ICAT assessment

The ICAT assessment has been developed as a monitoring tool for external assessment of a rangeland management institution's governance status, first used to obtain a status baseline at the beginning of a project or intervention and then used to monitor change in the management institution over the lifetime of a project or intervention. However, it could also be used as a self-reflection tool by communities wanting to understand the status of their management institution and where it needs improvement.

For external evaluation, the PRM facilitator administers the ICAT tool employing focus group discussions of mixed community members, including those participating in the management institution. The facilitator initiates discussions on each subparameter. Discussion points are noted in the Remarks column of each subparameter. This will be used to assign a score of 1 to 4 (i.e., Latent, Emerging, Established or Advanced).

PRM facilitators must maintain objectivity during the assessment, focusing on documenting the status of the subparameter. Scores should not be inflated for any reason. It is emphasized that the primary goal of the initial ICAT assessment is to establish a baseline for measuring subsequent changes whether improvements or declines.

ICAT enables rangeland management institutions to identify areas for improvement, to strategically allocate resources and inform decision-making and successfully implement activities. This capacity assessment also provides for tailored support and interventions to maximize impact and achieve long-term goals. Once the ICAT is carried out, the facilitating team, supporting NGOs and government, together with the management institution, can agree on how capacity can be built.

ICAT was developed by the ***Human, Environment, Animals and Livelihood (HEAL)*** project and the ***CGIAR Initiative on Livestock and Climate***.

Box 5. The 'four legs' of PRM

To help communities conceptualise the four important components of PRM, it is useful to consider these as four legs of a goat.

First leg
Establishment and governance of the rangeland management unit.

PRM is built on a foundation of representation and accountable community governance structures and processes. Principles include accountability, ownership, inclusivity, learning and capacity building.

Second leg
Management of the institution.

To create a suitable grazing plan that uses, for example, local knowledge, experience, and monitoring:

- Work within existing seasonal grazing patterns (note positives and negatives)
- Design or improve the grazing plan (may change as conditions and objectives change)
- Outline bylaws and actions for implementing and enforcing grazing plans (start with most feasible steps first)
- Prepare a management plan with grazing at its centre (about 3–5 years)
- Prepare an action plan (about 6–12 months) to implement the management plan

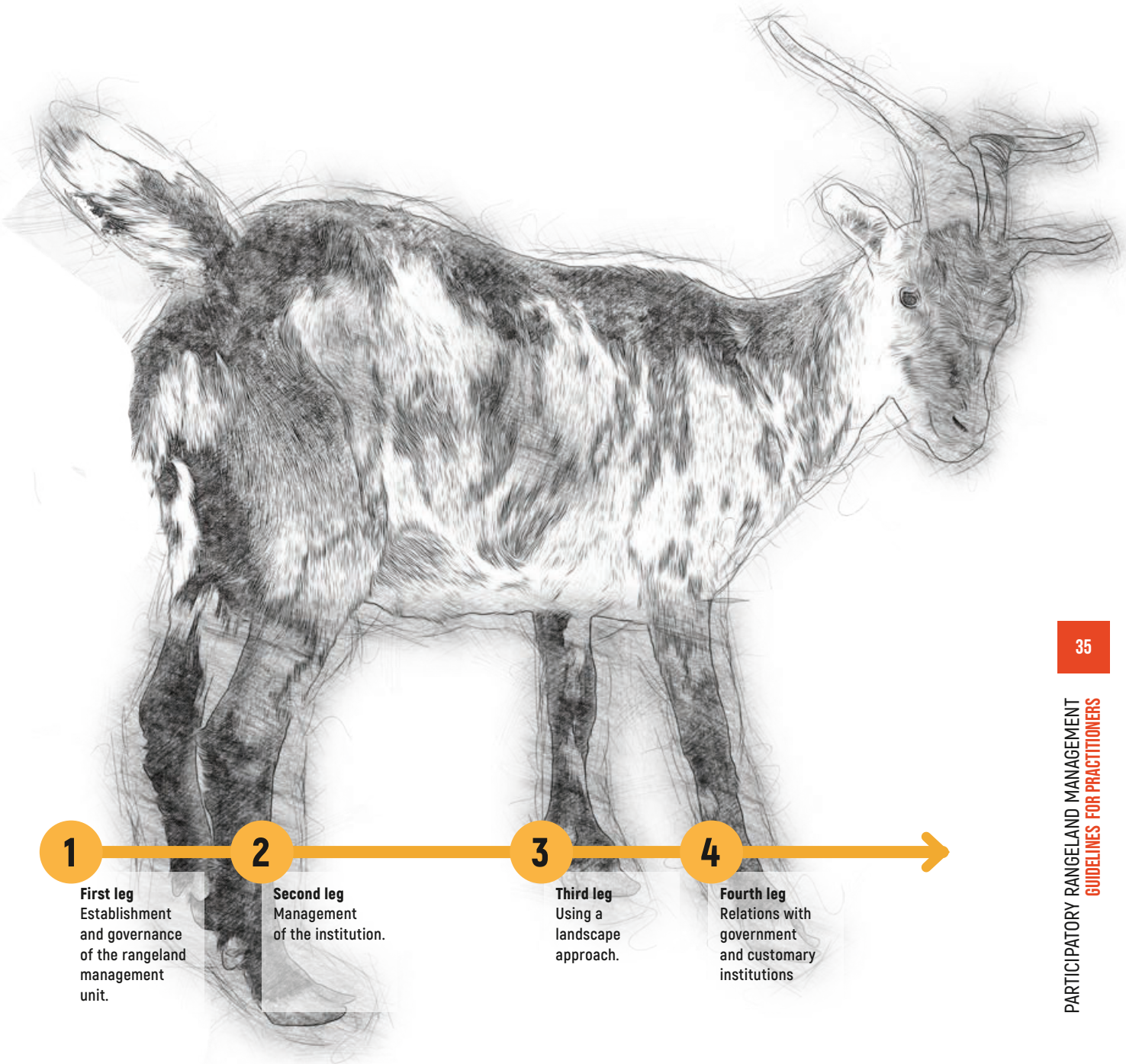
Third leg
Using a landscape approach.

The management institution needs to work with other communities beyond the rangeland management unit to coordinate grazing and prevent and reduce conflict. Ensure that neighbouring communities are aware of the rangeland management institution and its plans. Involve neighbours in planning, decisions and activities to encourage good relations and generate mutual understanding and benefits.

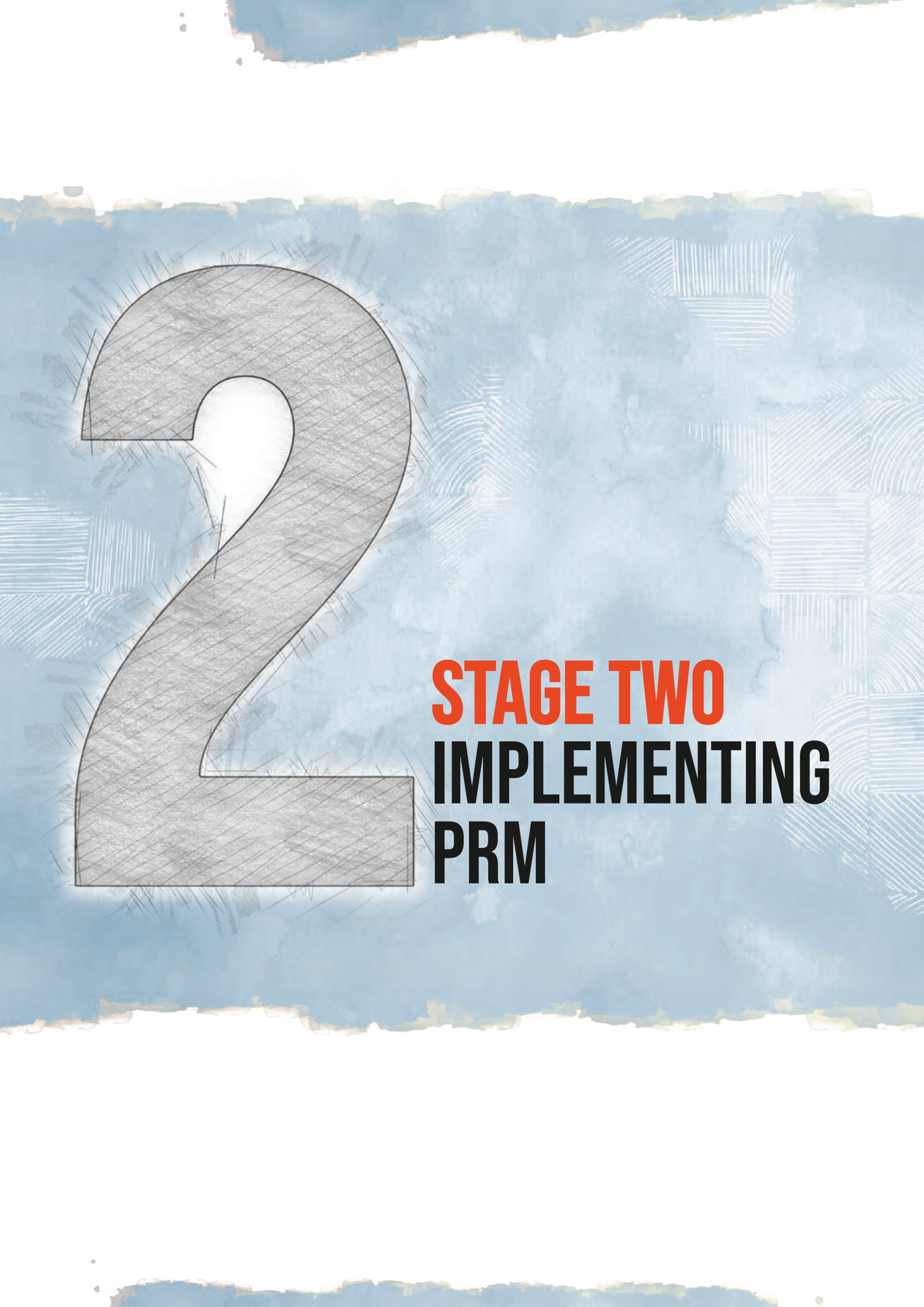
Fourth leg
Relations with government and customary institutions.

Clear and constructive relationships between community and government and customary institutions are key to legitimising the process and agreements. Work to secure formal recognition for rangeland management units based on existing local and national policies is needed.

Source: ***Participatory Rangeland Management Learning Kit***. 2022


1
2
3
4
First leg
Establishment and governance of the rangeland management unit.
Second leg
Management of the institution.
Third leg
Using a landscape approach.
Fourth leg
Relations with government and customary institutions


4. Sand; Stones
5. Guum f Resin
6 Herbal Medicine-Harvesting
7 Livestock
8. Wildlife
9. Farms
10. Rivers-seasonal
11. Rocks/Quarries
12. Minerals
13. Land
Livestock/
Land
Environment
Market Associations.



STAGE TWO
IMPLEMENTING PRM

Step 4

Undertaking a participatory rangeland resource assessment

Objective

A participatory rangeland resource assessment has four objectives:

- **Identify the potential of the rangeland management unit or resource-type subunits e.g. a dry season grazing area.**
- **Assess the condition of the rangeland management units relative to their potential.**
- **Identify the issues and concerns particular to each rangeland management plan to make informed decisions about future approaches and activities in developing the plan.**
- **Provide baseline data on the condition of the resources found in the rangeland management plan for monitoring and evaluating changes that will occur and as a contribution to an M&E system (see Step 9).**

The information collected about rangeland resources and users in the investigation stage (*Step 1*) can also feed into this assessment.

Approach

A participatory rangeland resource assessment is led by knowledgeable community members who will be responsible for the future management of those resources. The PRM facilitating team supports the activity, joined by local government experts.

The amount of spatial and technical detail collected in the assessment varies depending on the resources, knowledge and time available of team members. A first step is to understand what rangeland resource assessment knowledge and data collection skills already exist within the team and to organize training and gap-filling as appropriate. PRM facilitators may need to provide some necessary equipment for activities such as testing soil types, water pollution levels or help boost skills such as identifying and naming different plant species.

The participatory rangeland resource assessment consists of three phases. It is best if the same team works through the whole process and takes part in every phase.

A first step is to understand **what rangeland resource assessment knowledge and data collection skills already exist within the team** and to organize training and gap-filling as appropriate.

Anticipated results

The result is an assessment report describing:

- The rangeland management unit, including resource-type subunits as necessary;
- The potential of the rangeland management units; and
- The current condition of the rangeland management units.

These results feed into the development of the rangeland management plan (see *Step 5*). PRM facilitators help the community produce a report and undertake any necessary scientific analysis e.g. laboratory testing of soil samples. Additional inputs may be needed from specialists e.g. to analyse the level of pollutants in water and plants or animal diseases.

How to carry out a participatory rangeland resource assessment

The details below provide a summary of how to conduct a participatory rangeland resource assessment. More detail is provided in the ***Guidelines for Establishing a Monitoring System in Grazing Areas***. In addition, the PRM Toolkit for Kenya includes a ***rapid community monitoring tool to start monitoring*** and ***another for ongoing monitoring***.

The team is formed before the assessment begins. It is recommended that the team be made up of around six people, including community members (men, women, youth and elders) who are knowledgeable about the rangeland and who play a strong role in its use and management. Additional members should include at least one rangeland expert from the facilitating team and a representative of local government. All should have a common understanding of the process before embarking on the assessment.

Thinking about **what management units would be like** in their "best functioning state" i.e. a healthy, productive rangeland without any degradation.

Phase 1

Assessing the potential of the rangeland management units, including resource-type subunits

The first assessment task is carried out with a larger community group, including a mix of rangelands users and community elders. The group is asked to think about and then describe the 'absolute potential' of the management units and, where appropriate, the absolute potential of the resource-type subunits. This means thinking about what these units would be like in their "*best functioning state*" i.e. a healthy, productive rangeland without any degradation. It may be some time since the land was in such a positive state and elders may be needed to recall this. Help can be provided using scientific and technical expertise.

Rangeland condition indicators are used in the process of assessing '*potential*' and for identifying the best-case scenario for each of these indicators, and for others that may be added. Prompting questions are asked such as, "*What would a soil profile look like for a particular resource-type subunit with zero erosion in 50 years' time?*" or "*What would be the best-case scenario for ground cover in the management units (e.g. 100% ground cover at the height of the rainy season)?*" Before moving to *Phase 2*, the maximum absolute potential of the resource-type subunits is made clear for all the key indicators (*Box 6*).

Box 6. Assessment indicators useful for evaluating land condition

The assessment of land condition, including the definition of the reference condition for each ecological type, should be based on a wide variety of indicators of rangeland health. These indicators should provide information about soil and site stability, hydrologic function and biological integrity. Here, a core set of indicators can be considered, but their applicability should be validated with local knowledge and new locally important indicators may be added.

Suggested indicators:

- Amount of soil surface loss (particularly loss of organic matter and topsoil horizons)
- Amount of soil movement, such as water flow patterns and litter dams
- Amount of erosion, including the presence of gullies, rills (small gullies) and plant pedestals
- Amount of compaction and physical crusting
- Amount of litter (unattached plant material) on the ground surface)
- Amount of bare ground
- Spacing of bare ground (isolated versus continuous patches)
- Plant community composition by functional group (trees, shrubs, grasses and herbs; annual versus perennial grasses)
- Annual production of plants
- Reproductive capability of perennial plants (ability to set seed)
- Presence and abundance of invasive and non-local plants

Phase 2

Deciding where, what and how to collect data on the current condition of the rangeland, including resource-type subunits.

The second task is to identify the current condition of the resource subunits by collecting data as follows:

The **selection of monitoring sites** should reflect variability in resource condition across the subunit.

Where?

Data is collected from at least three sites within each resource-type subunit. Community members are asked where it is useful and important to monitor the following:

- Important grazing lands or pastures e.g. dry season grazing lands or rangeland productivity hotspots.
- Moderately degraded areas e.g. where good grasses have been lost and grass cover is decreasing, soil erosion is increasing. These are not severely degraded with large gullies for example.
- Areas that the community is more intensively managing or restoring through, for example, planned grazing, resting, bush clearing, using prescribed fire and re-seeding, as well as areas that will likely respond well to such recovery actions.

The selection of monitoring sites should reflect variability in resource condition across the subunit e.g. heavily degraded and lightly degraded areas, areas already under management or where level land meets a slope.

Note that land found at the bottom of a hill slope usually has particularly high potential productivity and resistance to drought and erosion.

What?

The rangeland condition assessment indicators in *Box 6*, plus any additional local ones, are used to consider the current condition of each subunit. These will include the cover and height of various types of vegetation such as grasses and trees, as well as dominant plant species, erosion severity, recent grazing intensity and invasive and encroacher species cover. General soil, topographic and hydrological attributes are also recorded. Local names of plants, trees or other flora are recorded as well as scientific names, together with any local uses and other knowledge community members may have.

More information on the data to collect plus the tools and processes to use can be found in the ***Guidelines for Establishing a Monitoring System in Grazing Areas***.

The level of data collection will depend on whether the community and facilitating team have any particular concerns about a specific rangeland subunit or intend to carry out any specific management actions there. For each indicator, the monitoring team decides whether the site is currently at or near its potential or has departed '*moderately*', '*substantially*' or 'almost completely' from its potential. This will later guide action as well as be a baseline for measuring intervention impacts.

How?

Once it is clear what data will be collected and from where, the team agrees how the data will be collected. Tools and methodologies are described in more detail in the ***Guidelines for Establishing a Monitoring System in Grazing Areas***.

Tools such as the Land Potential Knowledge System (LandPKS) can be used. Described in more detail in the above monitoring guidelines and at ***https://www.landpotential.org***, it uses simple standardized data collection tools and provides a centralized store of information on the internet. GPS equipment and use of the LandPKS App is required.

There may be a need for external expertise e.g. from rangeland ecologists, soil scientists and botanists. Some specialist equipment may also be required e.g. tools for taking deep soil samples. PRM facilitators can help the assessment team acquire these. The facilitators can also help the team prepare a data collection plan, which can be shared with the whole community so they are aware of what is going on.

See ***Sircely (2022)*** for a more detailed data collection protocol crafted for tracking sensitive rangeland areas and linking their condition trends to satellite remote sensing models and indicators.

Phase 3

Undertaking data collection

The monitoring team now collects data in the chosen sites.

Data collection begins with creating a unique identifier name or code for each monitoring site and recording the location using GPS. This name or code must be used each time data is recorded for that site.

Data collection begins with **creating a unique identifier name** or code for each monitoring site and **recording the location using GPS.**

Next, photographs of the site are taken to provide a visual record. Depending on the chosen methodology and type of data to be collected, the process now proceeds.

Once the data is collected, all data recording sheets are checked for any gaps that may need to be filled in during a follow-up visit. The assessment report is now written and results shared with the community in the rangeland management planning process (see *Step 5*).

Box 7. What is rangeland health?

Rangeland health is the degree to which the soil, vegetation, water, air, ecological processes and services provided by the rangeland are balanced and sustained. There are three main features to consider:

1. Soil and site stability. The capacity of an area to maintain and limit loss of soil resources (including nutrients and organic matter) by wind and water.
2. Hydrologic function. The capacity of an area to capture, store and safely release water from rainfall and run-on.
3. Biological capacity. The capacity of the biological community to support ecological processes within the normal range of variability expected for the site. The biological community includes plants and animals as well as microorganisms.

Different pastoralist communities may have different concepts of what a '*healthy*' rangeland means to them. In general, maintaining a healthy rangeland means maintaining its potential to continue providing goods and services. Most pastoralists and scientists generally agree that rangeland health can be defined in terms of three things: plants, water and soil. Maintaining rangeland health and condition is critical for maintaining and improving the livelihoods of pastoralist people and their livestock, as well as for conserving wildlife.

What is rangeland degradation?

Rangeland degradation is the reduction of the quality or condition of the rangeland and, thus, its capacity to support livestock, caused directly or indirectly by human activities.

What is resiliency?

Resiliency is the amount of change or disturbance that a rangeland can withstand or absorb without changing its own processes, functions and structures and the ability to re-organize itself and 'bounce back' following a disturbance. The more resilient a rangeland, the more disturbance or change it can withstand or absorb and the quicker it can bounce back.

Different pastoralist communities may have **different concepts of what a 'healthy' rangeland means** to them.

Step 5

Developing the rangeland management plan

The next step in the PRM implementation stage is the development of the rangeland management plan. The management plan is a key output of the PRM process and forms the foundation of a rangeland management agreement (where appropriate). Facilitators make certain that the plan is well developed by the rangeland management institution and has provided ample opportunity for inputs from all affected community groups and other stakeholders.

Objective

To develop a participatory rangeland management plan.

The role of the facilitating team is:

- To facilitate and support the community in the process and to ensure that planning is undertaken in a participatory way.
- To ensure that the rangeland management plan reflects decisions made about management approaches and activities based on data collected in the rangeland resource assessment.

Approach

Consultation meeting

Organize a **consultation meeting**, bringing together those who took part in the rangeland resource assessment with community and government representatives.

The first task for the facilitators is to help the community organize a consultation meeting, bringing together those who took part in the rangeland resource assessment with community and government representatives involved in the rangeland management unit. It may be appropriate to invite other stakeholders. The purpose of this meeting is to reflect on and interpret the results of the rangeland resource assessment and to identify solutions for better management in the future. Community interests and perspectives should be central to the plan. Facilitators support the process by ensuring that everyone understands the results and has an opportunity to express their concerns, views and priorities. The needs, positions and interests, as identified in *Step 1*, are an input here.

The meeting begins with a presentation of the findings of the resource assessment. In response to the results, the participants then establish short- and long-term objectives for improving the rangeland management unit (and subunits) and activities that need to take place to achieve these. Key principles, such as the importance of sustainability, are discussed (see *Box 8 Sustainability: A key principle for the management plan*).

Drafting the management plan

The second task for the facilitators is to help establish a small team made up of members of the rangeland management institution and others if deemed necessary, to draft the management plan. A proposed structure for the plan is given in *Box 9*, *Structure of the rangeland management plan*.

It can include an annual action plan, a budget and a capacity needs assessment and capacity building. External stakeholders, such as government experts, are consulted on the plan's development. Sustainable use of resources should be considered (see *Box 8*).

The management plan can **include an annual action plan, a budget and a capacity needs assessment** and capacity building.

Consultations between communities and local government

Once the rangeland management institution has a draft plan, the third task for facilitators is to arrange for the management institution to hold consultations and negotiations to reach a consensus on the plan. These are with the larger community and, where appropriate, with other stakeholders including government officials, particularly if assistance from government is needed to implement the plan.

Monitoring and evaluation

As management activities are carried out, it is important to test their effectiveness and impacts. The rangeland management plan's long-term monitoring and evaluation needs are, therefore, defined at this planning stage.

Define the appropriate **indicators to measure change**: ensure that the communities articulate what changes they want to happen to improve their rangeland.

The first task is to define the appropriate indicators to measure change. If the objectives of the management plan are clearly defined and they incorporate useful scientific knowledge (collected through the participatory rangeland resource assessment, *Step 4*), then developing monitoring tools is relatively simple. The key is to ensure that the communities articulate what changes they want to happen to improve their rangeland, for example an increase or reduction in a particular species or certain practices used or controlled.

The facilitators ask the community and other stakeholders to define the appropriate indicators for measuring change based on the objectives and activities of the management plan and any land-health and land-condition issues identified in the resource assessment. Stakeholders also define where to measure the change, prioritising areas of specific management interest or concern targeted in the resource assessment and management plans. M&E systems work best when based on processes already used by community members and that use their own knowledge systems while incorporating appropriate scientific knowledge. The facilitators help communities develop these systems (M&E is discussed further in *Step 9*).

Community leadership

The most important PRM principle is that the process is community-led and therefore, the community develops the rangeland management plan. It is based on their decisions on how to manage their resources, drawing from external expertise where required. Facilitators must resist the urge to impose rules and regulations and revert to a top-down approach. However, where communities are facing new challenges or do not have the expertise to address a challenge, help can be provided by bringing in expertise. Some of the capacity development interventions may need to be followed up with mentoring. Additionally, community skills and knowledge will be built through practical experience and the implementation of the rangeland management plan. The management plan must receive the approval of all the communities living within the rangeland management unit. Without this approval, it is unlikely that actions will be taken seriously or even allowed.

Anticipated results

Set an overall **long-term vision (25 years) and five-year short-term objectives.**

The result of *Step 5* is a management plan with short- mid- and long-term objectives. Procedures are included to ensure the plan is reviewed on a regular basis. It sets an overall long-term vision (25 years) and normally five-year short-term objectives. Monitoring progress can then be undertaken.

Box 8. Sustainability: A key principle for the rangeland management plan

Issues of sustainability must not be compromised in the management plan. As part of the plan, many important actions will need to be considered, discussed, negotiated and agreed. These may include:

1. **Sustainable levels of grazing.**
   These will be based on the resources available, their distribution and the movement patterns of livestock (which can only partly be predicted as mobility is primarily reliant on the climatic conditions of a particular year or period). Planning should include provisions for periods of crisis, such as grazing on grass reserved for times of drought.
2. **Sustainable water development.**
   The development of watering points and rules and regulations governing access to them is a critical issue. It may be necessary to restrict the development and access of some watering points if adequate grazing is not available in the vicinity to avoid overgrazing.
3. **Sustainable levels** for collecting non-timber dryland products including gums, resins and other plant products.
4. **The use and management of invasive species** such as *Prosopis juliflora* and *Acacia drepolobium*. Sometimes, there can be conflicts of interest between those who want to use these species and those who want to see them completely removed.
5. **Planning for drought and other climatic events, as well as longer-term climate change.**
   It can be challenging for communities to think and plan for the future and unpredictable events, however communities should be encouraged to do so and to make contingency plans to respond to crises events and/or longer term changes as appropriate.

If further information needs to be collected on sustainable levels of resource use and harvesting, then gathering the data required and experimenting with grazing or harvesting levels becomes part of the plan of action in the management plan. Harvesting rangeland products should recognise sustainable use levels for different uses, species of plants and products. Facilitators can help communities to develop sustainable use levels.

Box 9. Structure of the rangeland management plan

The rangeland management plan might follow this structure, though local adaptations can be made.

1. **Introduction**
2. **Description of the management unit**, including a resource map and the information collected through the rangeland resource assessment (summary of results and recommendations). This should clearly show the different resource-type subunits, their potential and condition. It may be useful to consider the different subunits separately and then split the management plan to focus on each in turn.
3. **Objectives of the management plan**
4. **Rangeland management institutions** and responsibilities include:
   - Rangeland resources and use
   - Rangeland users and rights of access
   - Management responsibilities
5. **Rangeland management actions** including:
   - Rangeland improvement
   - Rangeland development
   - Rangeland use and herd management, including an action plan and budget
6. **Capacity** needs assessment
7. **Monitoring and evaluation**
8. **Methods for revising the plan** as part of adaptive management

Step 6

Establishing a rangeland management agreement

Without clear rights to land and resources, communities are unlikely to have a strong incentive to invest in improving the productivity or restoring that land. Where communities do not already have secure rights to their land, PRM can be used to develop a rangeland management agreement with local government providing greater security to the rangeland management unit. The management agreement is a binding contract to secure access to the resources needed for PRM. Facilitators have an essential supportive and advisory role in this step.

Objective

To have a rangeland management agreement developed between the appropriate authorized local government office and the rangeland management institution.

The rangeland management agreement is signed by the head of the appropriate office on behalf of the government and the head or chairperson of the rangeland management institution on behalf of the community.

Approach

Reaching an agreement

Reaching an agreement is likely to require extensive meetings, discussions and negotiations between the various government offices and the members of the rangeland management institution particularly on rights and responsibilities. The main task of the facilitating team is to coordinate and motivate the parties to reach agreement on all aspects of the management plan. Specialist legal or other advice may be needed to ensure both parties fully understand the agreement's implications.

The main task of the facilitating team is to coordinate and motivate the parties to reach agreement

The rangeland management agreement

A rangeland management agreement could be structured as follows:

- **Article 1** Definitions
- **Article 2** Objectives of the rangeland management agreement
- **Article 3** Location and condition and health of the rangeland and its resources
- **Article 4** Description of the parties involved in the agreement
- **Article 5** Benefits to the agreeing parties
- **Article 6** Rights and responsibilities of the agreeing parties
- **Article 7** Rules and regulations of the agreeing parties
- **Article 8** Condition, legality and duration of the agreement

Articles 1–3 of the rangeland management agreement could include an introduction (similar to the rangeland management plan), definition of key terms, the objectives of the agreement (as defined in the management plan), and the condition and location of the rangeland unit and its resources.

Article 4 could contain detailed information about the agreeing parties.
On the government side, this would include those offices involved in the agreement.
On the community side, this would include the members of the rangeland management institution's executive committee.

The duration of a rangeland management agreement could be as little as 25 years or as long as 99 years.

Article 5 of the agreement could describe any benefit-sharing arrangements (see *Box 10 Explanation of terms for the rangeland management agreement*).

Article 6 of the agreement could clearly specify the rights and responsibilities of the parties signing the agreement. Decisions about rights and responsibilities are negotiated through discussions with and between the government and the communities involved.

Article 7 could clearly state the rules and regulations that govern the parties in the use and management of the rangeland management unit(s). This section would detail what is allowed and not allowed.

Article 8 could stipulate the legal conditions of the agreement. This would include the procedures to be followed in the event of a disagreement between the parties, a default of contract by one of the parties or the termination of the contract.

The duration of a rangeland management agreement could be as little as 25 years (in line with the management plan) or as long as 99 years (as in forest management agreements and property leaseholds in cities). The duration should be clearly stated. Other legal terms, conditions and requirements should also be made explicit. In a situation where multiple users are involved, it may be useful for all user groups to agree on the terms of the management agreement before signing it. The issue of disputes should be clearly explained: If either party breaks the agreement the appropriate legal action and procedures to follow should be plainly set out.

Anticipated results

A rangeland management agreement developed and made available in the appropriate local language. The management agreement is a vital document ensuring the sustainability of PRM and access to the resources required. Each signatory party should hold a copy.

Box 10. Explanation of terms in the rangeland management agreement

What are benefit-sharing arrangements?

Benefit-sharing arrangements are ways in which to divide the benefits of the rangeland management agreement, taking into account rights, resources, responsibilities and relationships. If, for example, the community is managing a rangeland where there are primary and secondary users, the agreement would state who has rights of access and under what conditions i.e., what use they can each make of the rangeland and what benefits they can each receive.

Another example might be where communities are benefiting from the collection and sale of dryland products such as gums and resins, and it is agreed that a tax be paid to government or a share of the revenue given. All such arrangements should be clearly stated in the agreement.

What is a partnership?

Partnership means a formal agreement between two or more parties (person or organizations) to work together in the pursuit of common goals and mutual benefit.

Step 7

Implementing the rangeland management plan

Effective implementation of the rangeland management plan requires that new partnerships are established between the appropriate local government offices and the community rangeland management institution, with each group working towards mutual goals. Facilitators provide help to PRM partners to learn any new roles and responsibilities.

It is essential that the community and the government recognize **the community's leading role** and that they are responsible for the management of their lands and resources.

Objective

To agree and develop new roles for communities and practitioners, with accompanying capacity building.

Roles for communities

The success of the rangeland management plan implementation is determined by the commitment that community members have to it and their incentives to invest time and resources in improving their rangelands. In their implementation of the management plan, the community plays a strengthened role as a rangeland manager. While some management activities are new to community members, others may have been carried out previously, though without formal recognition. It is essential that the community and the government recognize the community's leading role and that they are responsible for the management of their lands and resources.

Facilitators play a major role in building the capacity of the community to strengthen its role as a rangeland manager, including addressing new challenges. Some examples of the new roles and activities for the community are given in the list below. The list is not exhaustive. Many will have already been undertaken as part of the PRM process so far. Facilitators can help communities recognize and understand the implications of these roles.

Governance and management roles

- Legal rangeland resource managers and rangeland resource users
- Managers of the rangeland management institution
- Decision makers of new rangeland rules and regulations
- Implementers of management plans
- Resolvers of conflict and competition between and within rangeland user groups

Conservation and restoration roles

- Protectors and conservers of rangeland resources
- Marketers of sustainable rangeland products
- Removers and controllers of invasive and damaging species
- Selectors and planters of vegetation species for rangeland rehabilitation
- Promoters of rangeland health and conditions

Strengthening skills and knowledge is best done through shared learning and practical experience and supported by facilitators, government and other partners.

Innovation and experimentation roles

- Information providers and communicators of new rangeland uses and users
- Evaluators of new ideas and technologies
- Experimenters and actors within new rangeland management approaches and processes
- Adaptors to climate change and related influences

Communication and knowledge sharing roles

- Communicators of knowledge and findings
- Monitors and evaluators of participatory rangeland management systems and practices
- Assessors of rangeland resources through participatory rangeland resource assessment

Activities evolve as the members of rangeland management institutions and the pastoralists who they represent understand and develop their management operations and skills. Strengthening skills and knowledge is best done through shared learning and practical experience and supported by facilitators, government and other partners. Such support will need to be provided on an ongoing basis as new challenges arise and new skills are needed to overcome them.

Roles for PRM practitioners

PRM practitioners from NGOs and government to whom this volume is targeted also need to change their roles if the rangeland management plan is to succeed. PRM offers a radically different approach, and its procedures require new skills and knowledge. The lists below identify some of the new roles and activities facilitators need to take up. Developing and understanding these roles are best acquired through practical experience.

Capacity building

- Advisers to rangeland management institutions about ways to monitor conditions and health of rangelands and resources
- Facilitators of learning, communication and exchange between rangeland management institutions
- Trainers in new rangeland management skills and practice to address new challenges
- Experimenters testing new rangeland management approaches and processes, including ways to improve rangeland conditions and health working with communities
- Generators of new technologies and innovations

Provision of technical assistance

- Advisers to rangeland management institutions
- Facilitators of rangeland-based problem-solution analysis
- Moderators of different interests and conflict and competition over resources
- Facilitators in conflict prevention and transformation
- Documenters, analysts and disseminators of PRM results

Policy, legal and regulatory

- Consolidator of information on local rangeland management systems (rules and regulations)
- Analysts of rangeland management problems
- Negotiators of rangeland management rules and regulations
- Monitors of PRM processes and rangeland management agreement application
- Influencer of the development of more supporting and enabling rangeland policies, rules and regulations.

In addition to the specific skills listed above, skills in participatory development are particularly important, including participatory planning, participatory technology development, participatory learning and action, participatory monitoring and evaluation and participatory impact assessment. Such participation must be meaningful and of the highest degree if PRM is to succeed, as communities must be allowed to lead their development and natural resource processes. More information can be found in the further reading section.

Participation must be meaningful and of the highest degree if PRM is to succeed.

Ultimately, what is being asked for from facilitators is a commitment and understanding to support the system of rangeland management led by communities. If facilitators are to rise to the challenge, there needs to be a change of mindsets away from top-down approaches along with new PRM curricula and professional training.

3

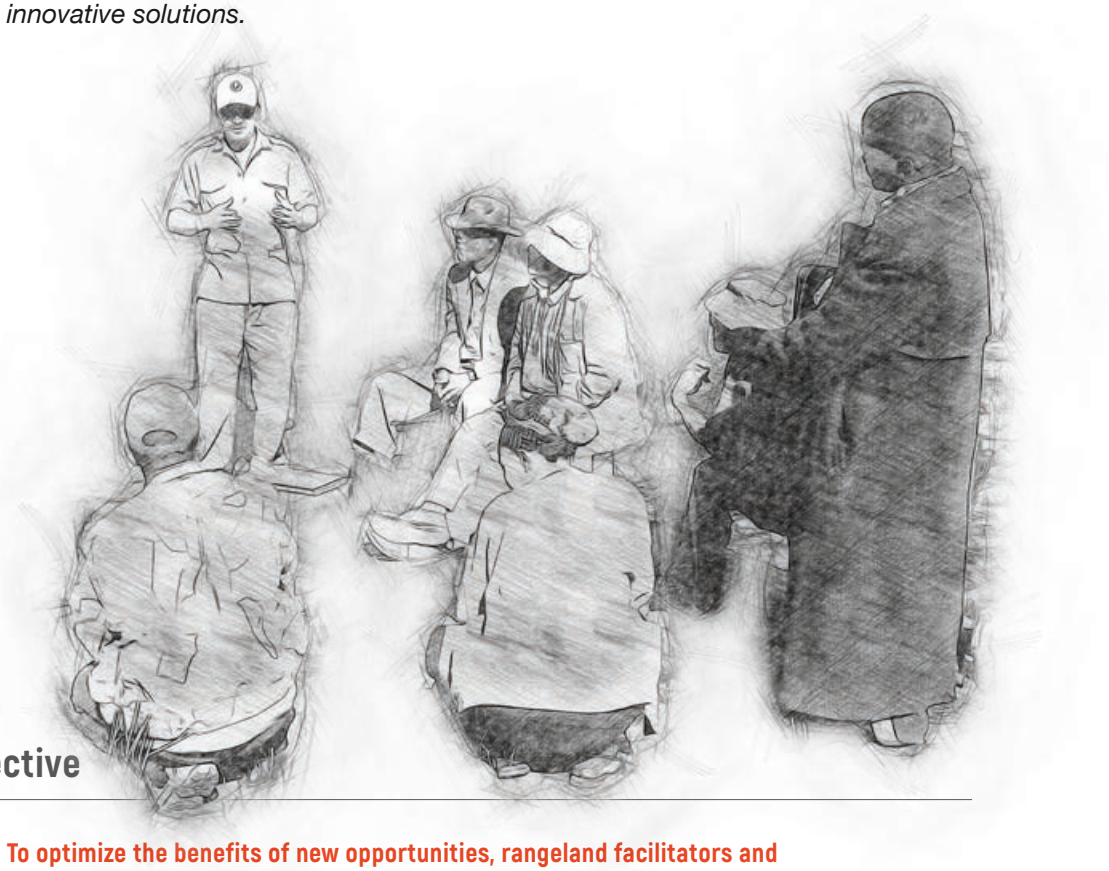
STAGE THREE
STRENGTHENING PRM

Step 8

Ongoing strengthening of rangeland management skills

New and positive opportunities are arising, including improved communication networks that allow for a greater spread of knowledge and information.

For maximum effectiveness, PRM partners will need to implement new rangeland management practices. Communities are not able to manage the many new challenges facing rangelands without help. They need support, skills and technical know-how from facilitators and other professional rangeland and natural resource managers to deal with the pressures on rangeland environments and identify innovative solutions.



Objective

To optimize the benefits of new opportunities, rangeland facilitators and communities work together to share and develop new knowledge and skills to improve resiliency and the means to cope with new threats.

Rangelands now face new and negative threats and challenges, such as climate change and the invasion of non-local plant species, for which adaptation is vital (see *Box 11 New threats and challenges*). But many new and positive opportunities are also arising, including improved communication networks that allow for a greater spread of knowledge and information. These can be used to benefit rangelands and those who live there.

Box 11. New threats and challenges

What climate changes can be expected?

There is increasing agreement that climates are changing, and the Earth is warming. Though climates have changed naturally for millennia, the difference today is that climate change appears to be heavily influenced by humans and our pollution of the environment. The exact nature of predicted climate change is not clear. However, it is highly likely there will be higher temperatures, increasingly unpredictable rainfall, and more climate related crisis events. Evidence of climate change in pastoral areas of East Africa and the Horn of Africa can already be seen in the increasing frequency of droughts, although in some parts it is predicted there will be an increase in rainfall.

In the face of this uncertainty, pastoralists have an advantage in that they are well-experienced in adapting to change and living with unpredictability. However, to continue doing so, they need to maintain their fully functioning pastoral systems, a critical aspect of which is mobility. Mobility is what allows pastoralists and their livestock to track resources across a rangeland area and to react immediately to any unusual adverse conditions or unpredicted events.

In the face of this uncertainty, **pastoralists have an advantage in that they are well-experienced in adapting to change** and living with unpredictability.

What are invasive species?

Invasive species are native or non-native species that invade an area where they would not normally be found. Invasive species cause damage to the habitats they invade economically, environmentally and ecologically and prevent the growth of local species. These invasive species may be introduced by someone or something, such as humans, livestock, wildlife and the wind and have characteristics that allow them to reproduce in a way that optimises fast spread and domination. Invasive species will often invade land (or water) very quickly, making them very difficult (if not impossible) to control or remove.

Many pastoral areas have seen an increase in invasive species, including *Prosopis juliflora*, *Parthenium hysterophorus*, and *Acacia drepanolobium*. These species have taken over grazing areas and blocked migration routes and access to water points. Some species such as Prosopis do have beneficial qualities and can be used to provide resources such as livestock feed, high quality timber and charcoal. However, in most cases the benefits that such plants can bring is minimal in comparison to the costs they incur for communities and their livestock. Integrated and strategic planning is required to allow communities, governments, research organizations and other stakeholders to work together to find solutions and ways of controlling their spread.

Approach

When practices are new or have not been used for some time, **practitioners help to (re)build management capacities.**

The management activities of the rangeland management unit reflect the specific conditions and health of the rangeland and the uses required of it. An area of already well-managed rangeland requires different management skills and practices to those required for an area of highly disturbed or degraded rangeland in need of rehabilitating. A dryland forest area requires different management skills and practices than those required for a grazing area to optimize grass production.

New or revitalized tools, such as the use of prescribed fire or the establishment of communal grass enclosures as drought reserves, are important management options for facilitators and communities to consider (see *Box 12 New or revitalized management tools*). When these practices are new or have not been used for some time, practitioners help to (re)build management capacities. Drawing lessons from approaches and processes currently used in other parts of the world can offer new and positive inputs, including ideas such as 'planned livestock grazing.'

Box 12. New or revitalised management tools

What is prescribed fire?

'*Prescribed fire*' refers to the controlled use of fire in an area of land or rangeland. Fire can be used to remove excess and unwanted vegetation, such as bushes, to prevent vegetation build up which could result in a larger, uncontrolled and more damaging natural fire and to encourage a flush or new growth of grass. The majority of native rangeland plants have adapted to fire as a normal part of the ecological cycle and thus have means to protect themselves. The '*right*' fire (usually one that moves quickly through an area in a controlled direction) is unlikely to cause significant damage to normal rangeland ecology and its production.

Fire has been used to manage rangelands for centuries. However, sometimes the role of fire in rangeland ecology is not fully understood, and it is thought that all kinds of fire are damaging. Fire should be used as a rangeland management tool and pastoral communities, governments and NGOs are working together to re-introduce it.

What is planned livestock grazing?

'*Planned livestock grazing*' means planting forage and using grazing rotations to maximize forage production and reduce sediment and nutrient loss through runoff. Pasture and grassland are divided into paddocks or enclosures, and the cattle (or other livestock) are moved from paddock to paddock on a schedule.

Areas can be excluded from livestock use and kept as grassland banks for times of need (e.g. in the dry season, or in times of crisis e.g. in times of drought. These areas can then be grazed block-by-block as necessary. Planned livestock grazing is an important part of holistic rangeland management. More details can be found in the *Holistic Management Handbook: Healthy Land, Healthy Profits* by Jody Butterfield, Sam Bingham and Allan Savoury. 2006. Island Press.

In some areas, rangelands are degraded so much that simply reducing grazing pressure is not enough for the land to recover. In these cases, communities and facilitators might consider doing some ecological restoration or rehabilitation to promote land recovery. It is likely that communities and facilitators have some knowledge and skills for undertaking rehabilitation, but these can always be improved, and lessons learnt from other rangeland areas and experiences can be vital (see *Box 13 Rangeland rehabilitation and restoration activities*). All these techniques will need to be tested and adapted by communities to their specific rangeland conditions.

The ideal approach for facilitators is to **use participatory and experimental techniques for developing new community rangeland practices** and to base these on indigenous knowledge and customary practices.

Box 13. Rangeland rehabilitation and restoration activities

Rehabilitation and restoration activities include:

- Clearing of encroached bush or invasive species, with the land managed, monitored or intensively used afterwards to prevent regrowth.
- Reducing erosion through plugging gullies and laying down obstructions to slow sheet erosion.
- Facilitating plant establishment through creating favourable micro-sites using methods such as furrowing and planting seeds.
- Improved livestock management and planned grazing.

The ideal approach for facilitators is to use participatory and experimental techniques for developing new community rangeland practices and to base these on indigenous knowledge and customary practices. For example, where the management plan's aim is to rehabilitate a rangeland area and encourage the growth of specific high-value grass species, the community members, supported by the rangeland manager, might set up a number of area-based experiments to determine the best species to introduce and how to manage them.

The inclusion of rangeland health within One Health is a relatively new concept and one that the HEAL project in Kenya, Ethiopia and Somalia is exploring with PRM as a broader community capacity-building process (see *Box 14*).

Anticipated results

An effective PRM process is one in which all the PRM partners experiment with and implement new rangeland management practices. These might be drawn from elsewhere, adapted and are implemented in a way that fully incorporates local indigenous knowledge. Communities, however, are unable to manage the many new challenges facing rangelands without help. They need support, skills and technical know-how from facilitators and other professional natural resource managers to deal with the pressures on the rangeland environment and to identify innovative solutions.

Box 14. Environment, One Health and PRM

One Health is an approach that brings together human, animal and environmental health to provide One Health packages of the three combined.

There are two clear sets of elements to the environment in **One Health**:

1. the biotic elements, including wild animals, plants, bacteria, fungi and viruses, and
2. the abiotic elements on which biotic elements depend are impacted by including air, fire, temperature, radiation, greenhouse gas emissions and water.

These two sets of elements closely interact. In an ecosystem, both elements are important. People and their livestock are part of many ecosystems as well. People and livestock can play a role in maintaining an ecosystem in a certain state, such as a savannah, through the use of fire and grazing and by doing so, favourably impact its health or biodiversity. People and livestock can also impact an ecosystem unfavourably through overgrazing, pollution of water bodies or more indirect influences on the climate.

Interventions to improve these two aspects of the environment will be different and likely involve different stakeholders. For a full One Health approach, humans, livestock and the environment (biotic and abiotic elements) need to be included.

PRM can play an important role in building the capacity of communities to engage in One Health, particularly in terms of the environmental (ecosystem) component where improving rangeland health will be the focus.

Step 9

Monitoring and evaluation for adaptive management

An effective M&E system helps determine the success of the PRM process. Communities develop their own M&E system as part of taking up and strengthening their rangeland management roles. There are two steps within the PRM process where M&E is integrated: (i) in the implementing stage when developing the rangeland management plan, and (ii) in the strengthening PRM stage where M&E is used to facilitate adaptive management and help determine best management practices.

Objective

For communities to create appropriate M&E systems capable of measuring the condition, health and productivity of their rangelands and the new changes that are occurring.

Pastoralists are highly skilled at monitoring rangelands and their resources, with community members holding valuable indigenous knowledge about rangeland processes and components. However, such knowledge is fading as younger generations show less interest in traditional ways and traditional rangeland management has had to adapt to new challenges. New skills and knowledge are now needed to cope and adapt.

A combination of indigenous and scientific knowledge helps strengthen decision-making in rangelands and contributes to the establishment of a robust M&E system that reflects the needs, knowledge and skills of those implementing it. Enabling the community to carry out participatory monitoring of their rangeland management practices is crucial; a major area for knowledge sharing towards improving and developing community management (see *Box 15* Participatory M&E for working with pastoralists).

Approach

- **Monitoring** is the ongoing process of collecting data to measure the progress and the condition of an activity to guide implementation. For example, if invasive species are removed, re-growth is measured and monitored. Or, if grass and tree seedlings are planted as part of a rehabilitation programme, the rangeland manager monitors their survival and growth rate to know whether to continue or adjust the activity.
- **Evaluation** is the periodic review of all the data and information gathered through monitoring. Evaluation is an in-depth analysis at a particular point in time of an ongoing or completed activity for the purpose of learning and planning. Monitoring and evaluation both promote joint learning and improved implementation, although evaluations are likely to involve a wider range of actors.
- If the collection and use of data within M&E systems presents a challenge to rangeland management groups, particularly to non-literate groups, **alternative methods of data collection and analysis** are developed based on local methods and tools already in use.

Table 5 provides six basic indicators of changes in rangeland conditions used for M&E purposes. These are measured using four basic methods: (i) amount of plant cover, (ii) tree and shrub density, (iii) gaps between plants, and (iv) plant height. This list of indicators is not exhaustive and is adapted to the local situation by the facilitating team and the community. Qualitative indicators are also identified.

Table 5. Indicators of change in rangeland condition.

Indicator	Description	Method
Amount of bare soil	More bare soil (soil not protected by dead plant material or rocks), means more erosion and less forage for livestock and wildlife.	*Plant cover*
Perennial grass cover	Most managers want more of the ground to be covered by perennial grasses, as this means more forage for livestock and less erosion.	*Plant cover*
Tree and shrub cover	Most managers want more cover of 'good' trees and shrubs (which provide forage for browsing livestock, such as goats and camels), and less cover of 'bad' trees and shrubs (problem species such as Acacia drepolobium, Prosopis or Opuntia).	*Plant cover*
Tree and shrub density	Tree and shrub density, together with tree and shrub cover, tells managers whether they are getting more 'good' or 'bad' trees in the rangeland. Increased seedling densities is a good early-warning indicator that tree cover is going to increase in the future.	*Tree and shrub density*
Gaps in ground cover	When plants are close together, water and wind cannot pick up enough speed to carry the soil away. Instead, water soaks into the ground and the wind has little effect. Plant bases slow the flow of water, while plant canopies slow wind erosion.	*Gaps between plants*
Plant height	Different species of wildlife and livestock prefer different heights of trees and grasses. Plant height, together with the space between plants, can be used to measure changes in vegetation structure.	*Plant height*

It is important that the M&E system reflects the objectives and content of the rangeland management plan. This includes monitoring the overall condition of the rangeland management unit and the different resource-type subunits. It is recommended that monitoring be carried out in the same sample sites used for collecting data for the rangeland resource assessment, using the baseline data (see *Step 4*). Additional monitoring can also take place in areas of particular interest or where a particular management technique is implemented.

The facilitating team ensures that mechanisms are in place to systematically review the results of the M&E processes within the management plan. This review allows a reflection on results and the development of new actions based on the results as part of adaptive management. Regular PRM working group meetings are held to bring government and community PRM actors together to discuss issues arising and resolve problems. In many areas, these meetings have been a useful review mechanism for M&E and have ensured that information is collectively analysed and acted on.

Anticipated results

An M&E system that ensures monitoring and evaluation is a regular part of management practice. Monitoring is more than just a checking mechanism by community rangeland managers, The M&E system supports positive outcomes or impacts based on the rangeland management plan.

Fundamentally, the aim of M&E is to improve implementation. In a relatively new process like PRM, it is essential that M&E is used positively to improve the PRM system. This is especially important in this early period as PRM is established, developed and expanded.

Box 15. Participatory M&E for working with pastoralists

There are some basic principles to consider when helping develop an M&E system for pastoralists.

1. *The issues to be monitored must be of genuine interest* to those involved.
2. *Indicators must be simple* and capable of communicating something to the people wanting to act on the results.
3. *The recording needs to be done in a form that partners can manage.* Monitoring methods should take into account that pastoral communities in developing countries have a strong oral tradition, low levels of formal literacy and little access to modern information and communication technology, except radio.
4. *Simple M&E systems with low intensity data collection* are the most appropriate. This would include using methods of recording and analysis that depend more on memory and discussion than on written records.

Most pastoralists do not accept data-intensive forms of monitoring. People living in sparsely populated areas, such as drylands, appreciate the opportunity to discuss with peers and prefer periodic meetings during which environmental or socioeconomic conditions (e.g. market, conflict) can be discussed in a semi-structured way.

At evaluation meetings, visualization techniques can be useful, such as before-and-after matrices, maps, proportional piling, flow or impact diagrams and SWOT charts (strengths, weaknesses, opportunities and threats).

When the issues are important to them, pastoralists will make their own informal evaluation individually and during discussions among themselves. Short, participatory evaluation workshops that use visual tools can be an effective way of structuring self-evaluation discussions and encourage institutions and communities to keep track of progress.

Source: Bayer and Waters-Bayer (2002)[3]

3 Bayer, W. and Waters-Bayer, A. 2002. Participatory Monitoring and Evaluation (PM&E) with pastoralists: a review of experiences and annotated bibliography. ETC and GTZ. *https://www.fao.org/documents/card/en?details=30fdef20-2abd-552b-9860-403c46ba64f9%2f*

MAINSTREAMING PRM CROSS-CUTTING ISSUES

Gender and social equity

It is important to avoid gender bias when planning for rangeland management. The PRM process should take into account the different relationships that men and women have with rangeland resources and, where appropriate, aim to contribute to more equitable relations. In pastoralist societies, gender roles strongly influence the division of labour and herding practices, and it is necessary to collect gender-disaggregated information on access and control over rangeland resources.

Access to water resources is often a critical issue for women, for example, both for domestic needs and for watering livestock. Livestock owned by women tend to be small ruminants and donkeys rather than the main herd animals (cattle and camels). Women also have specific ethno-veterinary knowledge of rangeland plants. To ensure all the relevant gender-disaggregated information is obtained as part of the PRM process, women need to be given sufficient opportunity to provide their input and express their views during the use of participatory exercises. Inclusive dialogue with women is easier if a member of the facilitation team is a woman.

Gender analyses are also now frequently used to assess the gender context of proposed initiatives and to identify roles, status and inequalities. Through a gender analysis, it is possible to obtain qualitative information for understanding the different roles of men and women, to identify what resources they have or control, to understand what their priorities are, and to uncover the reasons for gender differences. A gender analysis can be conducted using key informant interviews, focus group discussions, desk reviews and by using a wide range of participatory tools (for example, mobility mapping, resource mapping, seasonal calendars and transect walks). A gender analysis can also help identify where adverse gender issues are impacting women's empowerment, although additional expertise on women's empowerment may be required for this. See ***Gender Guidelines in PRM*** for details on gender integration activities within each step as well as checklists of questions.

As well as identifying gender inequalities, it is also important to consider social equity and to identify the different ethnic, social and wealth groups within rangeland communities when undertaking PRM. The use of rangeland resources will vary according to livestock ownership patterns, which depend significantly on wealth, age, gender and other factors.

Specific efforts will be required during participatory processes to ensure the involvement of marginalized and vulnerable groups who may be discriminated against when planning for the use of communal resources if sufficient care is not taken. Non-livestock owners also use rangeland resources and the facilitating team will need to be sensitive to social differences when undertaking decision-making and planning processes to avoid potential domination by wealthier male leadership groups who own large herds.

Conflict prevention and peace building

In pastoralist areas, it is important that interventions do not cause a new conflict or aggravate an existing one. Access over scarce resources is frequently the cause of conflicts in rangelands, and understanding the needs, interests and positions of different rangeland users is vital. Identifying resources and users in *PRM Step 1*, including the development of the 4Rs matrix, is a key process for ensuring the facilitating team and the community identify potential sources of conflict over resources.

As part of the identification of resource users, care should be taken to ensure discussions are held with all the pastoralist likely to use the resources identified in the rangeland management unit, both now and in the future, for example during a drought. Non-pastoralist stakeholders that might seek access to 'hot spot resources' should also be part of the discussion process to ensure protection of these ecologically important areas from other uses.

It is recommended that the PRM process follows a 'do no harm' approach and undertakes a comprehensive conflict analysis to ensure that the process builds peace through strengthened collective action rather than inflaming tensions. Specialist conflict mediation experts may be required for this.

The PRM process itself can be an important driver for peace-building efforts. Action Area 6 (Avoid and manage conflict) in ***Improving governance of pastoral lands*** (FAO 2016) identifies the following activities that help with peace building in pastoralist areas, many of which are undertaken as part of the PRM process:

- Restoring the capability of customary institutions
- Strengthening social cohesion and good social relations
- Strengthening environmental management and sustainability
- Repairing relationships
- Making governance and decision-making processes fairer
- Establishing tenure clarity
- Strengthening institutional capacity to buffer and respond to crises
- Addressing factors underpinning structural inequity

Developing enabling policy and legislation

Enabling policy and legislation is needed to provide government legitimacy to the PRM process and to encourage investment. Without this, PRM is unlikely to be sustainable. Practitioners and facilitating teams should undertake actions that help influence the development of new or improved policy and legislation for PRM.

In many pastoralist areas in East Africa, responsibility for land issues has been decentralised to district authorities. An important task for the facilitating team is to help strengthen the capacity of local government authorities to secure access to critical rangeland resources and ensure land tenure for pastoral communities. Customary tenure systems are frequently undervalued or ignored by national government tenure systems. Facilitating teams should, wherever possible, demonstrate the value and importance of customary systems using successful PRM examples.

One of the major challenges of PRM is that its impacts tend to be long- not short-term. It requires considerable time and resources to undertake the specific steps required and many local governments will not be willing to make the investments needed when its impacts are not immediately or quickly obvious. National policy and legislation should, therefore, be a target by facilitating teams with a view to embedding and institutionalizing the PRM process within national government departments. Working with regional bodies, such as IGAD and ICPALD, can be helpful in this regard.

FURTHER READING

PRM guidance for practitioners

Introductory Guidelines to PRM in Pastoral Areas. 2010.
Flintan and Cullis, Save the Children USA, FAO and ECHO: **https://cgspace.cgiar.org/handle/10568/99430**

This 32-page manual introduces PRM and promotes its essential elements. It is aimed at informing policy and decision makers in Ethiopia but is relevant everywhere.

Mapping Guidelines for PRM in Pastoral and Agro-Pastoral Areas. Volume I. 2015.
Compiled by Irwin B., Cullis, A. and Flintan F. Care and USAID: **https://cgspace.cgiar.org/handle/10568/105639**

This 56-page manual explains how to undertake resource mapping as part of PRM. The guidelines target a wide range of stakeholders in Ethiopia.

Mapping Guidelines for PRM in Pastoral and Agro-Pastoral Areas. Volume II. Practitioners Guide. 2015.
Complied by Irwin, B., Cullis, A. and Flintan, F. Care and USAID. **https://cgspace.cgiar.org/handle/10568/105665**

This 32-page manual is specifically targeted at practitioners, providing a condensed version of the Mapping Guidelines for PRM for use by a mapping team.

Participatory rangeland management toolkit for Kenya. 2020. Compiled by Robinson. L.W., Flintan, F., Kasyoka, S., Nganga, I., Otieno, K. and Sircely. J. **https://cgspace.cgiar.org/handle/10568/128048**

This 150-page toolkit is targeted at county government personnel in Kenya. It provides detailed guidance in the form of general tools and tools based on the four dimensions, or 'four legs,' of PRM: establishment and governance of the rangeland unit; management of the rangeland unit; using a landscape approach; and relations with government and customary institutions.

Participatory rangeland management toolkit for Kenya: Gender guidelines in participatory rangeland management. 2021.
Bullock, R. and Miriti, P. ILRI, Nairobi, Kenya. **https://cgspace.cgiar.org/handle/10568/117287**

This is a 7-page supporting document to be used with the PRM Toolkit for Kenya.

Participatory rangeland management learning kit. 2022.
PowerPoint Presentation by Nganga, I. ILRI, Nairobi, Kenya. **https://cgspace.cgiar.org/handle/10568/128186**

Learning cards covering the eight steps of PRM and the '4 legs' approach.

What is participatory rangeland management? **https://www.youtube.com/watch?v=RJ9lJgzqWTQ**

Animated film on the main stages and steps of participatory rangeland management.

Participatory rangeland management for pastoralists communities. 2023. By Lyaga, M., Sircely, J., Crane. T, Muigai, S., Nganga, I., Ngome, D. and Flintan, F. ILRI Nairobi, Kenya. **https://hdl.handle.net/10568/136023**

A comic book on participatory rangeland management.

Institutional Capacity Assessment Tool (ICAT) For Community Rangeland management institutions (RMIs).
2022. By Sircely, J., Ayehu, M. and Flintan, F. ILRI, Nairobi, Kenya. **https://cgspace.cgiar.org/handle/10568/128048**

An assessment tool for understanding the status of participatory rangeland management institutions.

PRM Evidence base

Status Report. Participatory Rangeland Management (PRM) Sites in Baringo, Kenya. 2022. RECONCILE. **https://www.ilri.org/knowledge/publications/status-report-participatory-rangeland-management-prm-sites-baringo-kenya**

This 16-page report summarizes achievements in two community conservancies, one community forest association and one community rangeland initiative.

Independent impact assessment report: Participatory Rangeland Management (PRM) in Kenya and Tanzania. 2021. Waweru, T., Maina, J., Liheta, B. and Apunda, E.W. African Research and Economic Development Consultants Limited. Nairobi, Kenya. **https://cgspace.cgiar.org/handle/10568/118128**

This 123-page assessment covering eight rangeland management units used survey methods to determine the impacts of PRM being undertaken in Kenya and Tanzania. The study identified key challenges as well as successful impacts.

Impact assessment confirms Participatory Rangeland Management's positive impact on rangelands and pastoral communities. 2022. **https://www.ilri.org/news/impact-assessment-confirms-participatory-rangeland-managements-positive-impact-rangelands-and**

ILRI blog posted on 18 July 2022.

Participatory Rangeland Management: Understanding Women's Engagement and Implications for Social Change. 2022. Bullock, R., Miriti, P. and Lopez, D.E. **https://cgspace.cgiar.org/handle/10568/119791**

This study assesses the impact of PRM on women's transformative agency. It found that PRM increased women's voice and agency in governance of PRM and meaningful participation.

Opportunities for Participatory Rangeland Management (PRM) in the Great Green Wall Initiative in Mali and Senegal. 2022. A 5-page brief by Flintan, F., Diop, A. and Coulibaly, M. ILRI, Nairobi, Kenya. **https://cgspace.cgiar.org/handle/10568/127889**

This study considers the opportunities and challenges of scaling PRM as a contribution to the Great Green Wall Initiative.

Empowering women through participatory rangeland management. 2021. ILRI, Nairobi, Kenya: **https://cgspace.cgiar.org/handle/10568/117286**

This 7-page brief is based on piloting PRM in Kenya and Tanzania.

Introduction to Participatory Rangeland Management (PRM). 2020. Flintan, F. ILRI, Nairobi, Kenya. **https://cgspace.cgiar.org/handle/10568/109925**

This is a PowerPoint presentation given at the Coalition of European Lobbies for Eastern African Pastoralism Webinar 14 October 2020.

Review of participatory rangeland management (PRM) process and implementation. Rangelands. 2019. by Flintan, F., Ebro, A., Eba, B., Assefa, A., Getahun, Y., Reytar, K., Irwin, B., Yehualashet, H., Abdulahi, M., Gebreyohannes, Z.T., Awgichew, S. and Gudina, D. Research Report 2. ILRI, Nairobi, Kenya. **https://cgspace.cgiar.org/handle/10568/106017**

This 73-page report is a detailed review of the experiences of PRM implementation in Ethiopia by different implementing organizations. It is aimed at informing future piloting and upscaling PRM in Kenya and Tanzania. The findings provide well-informed guidance for PRM implementation.

Participatory rangeland management planning and its implementation in Ethiopia. 2015. Awgachew, S., Flintan, F. and Bekure, S. Addis Ababa, Ethiopia: CARE. **https://cgspace.cgiar.org/handle/10568/67916**

This is a conference paper presented at the 2015 World Bank Conference on Land and Poverty, Washington, D.C., 23–27 March 2015.

The IGAD context–Guidance for practitioners

Policies and Proclamations Relevant to Pastoral Areas Land Management for Ethiopia, Kenya and Uganda. 2016. A 52-page review report by Tadesse. B. for ICPALD. 'Problems and policy gaps' **https://icpald.org/wp-content/uploads/2020/02/Land-Policy-Review-Report.pdf**

See in particular chapter 6.

Regional strategic framework: Rangeland management in arid and semi-arid lands of the IGAD region. 2020. 66 pages. IGAD Centre for Pastoral Areas and Livestock Development. **https://icpald.org/wp-content/uploads/2021/02/Rangeland-Strategic-Framework-Rangeland-Management-for-ASALs-of-the-IGAD-Region.pdf**.

Participatory techniques – Guidance for practitioners

Participatory rangeland resource mapping in Tanzania. 2014. International Land Coalition. **https://cgspace.cgiar.org/handle/10568/51348**

Adapted from the Mapping Guidelines for PRM in Pastoral and Agro-Pastoral Areas in Ethiopia, this 104-page field manual supports planning and management in rangelands in Tanzania, including Village Land-Use Planning.

Participatory Impact Assessment: A Guide for Practitioners. 2007. Catley, A., Burns, J., Abebe D. and Suji, O. Feinstein International Center, Tufts University. **http://www.reliefweb.int/rw/lib.nsf/db900SID/SHIG-7L2K8C?OpenDocument**

Participatory Impact Assessment (PIA) is an extension of Participatory Rural Appraisal (PRA) and involves the adaptation of participatory tools combined with more conventional statistical approaches to measure the impact of humanitarian assistance

and development projects on people's lives. The approach consists of a flexible methodology that can be adapted to local conditions. This 64-page manual provides further details on many of the tools presented in these PRM Guidelines for Practitioners.

Participatory Learning and Action: A Trainer's Guide. 1995. Pretty, J., Guijt, I., Thompson, J. and Scoones, I. IIED: ***http://www.iied.org/pubs/display.php?o=6021IIED***

This IIED manual is a key early resource on the principles of participatory learning and action. It focuses on facilitation skills, describes group dynamics and how to build interdisciplinary teams, and details how to conduct interactive exercises.

Participatory Monitoring and Evaluation (PM&E) with pastoralists: a review of experiences and annotated bibliography. 2002. Bayer, W. and Waters-Bayer, A. ETC and GTZ. ***https://www.fao.org/documents/card/en?details=30fdef20-2abd-552b-9860-403c46ba64f9%2f***

This 104-page review documents experiences, including grey literature, on participatory monitoring and evaluation with pastoralists and other livestock-keepers. It includes an analytical assessment and an annotated bibliography.

Participatory rangeland management planning: A Field Guide. 2018. Roba, G. and Davies, J. IUCN. ***https://www.iucn.org/sites/default/files/2022-08/2018-prmp_methodology.pdf***

This publication is about planning for PRM and does not follow PRM approach as described in this document. It follows a similar approach and is a worthy document to consider with useful additional emphasis on planning that is useful.

Planning with Uncertainty: Using Scenario Planning with African Pastoralists. 2009. IIED and SOS Sahel International: ***https://www.iied.org/12562iied***

This 29-page booklet illustrates how the idea of scenario planning helps pastoralists in Africa to manage uncertainty and change. It is written primarily for community development workers.

Negotiation and mediation techniques for natural resource management. 2005. FAO ***https://www.fao.org/documents/card/en?details=c3682239-ebf6-5637-a02c-b573f20838a9%2f***

This 205-page manual provides practical, step-by-step guidance on how to establish and manage a process of consensual negotiations involving multiple stakeholders. The guide is intended for practitioners working on participatory and collaborative natural resource management and rural livelihoods projects.

See also *Eldis website* (***www.eldis.org***), *IIED website* (***www.iied.org***), or *IDRC website* (***www.idrc.ca***).

Rangeland management monitoring tools – Guidance for practitioners

A set of guidelines of rangeland management tools that can be incorporated into the PRM process.

Riginos, C. and Herrick, J.E. 2010. *Monitoring Rangeland Health: A Guide for Pastoralists and Other Land Managers in Eastern Africa*, Version II. Nairobi, Kenya: ELMT-USAID/East Africa. ***https://jornada.nmsu.edu/files/Africa_RH.pdf***

Louhaichi, M. et al. 2022. *Sustainable Rangeland Management Toolkit for Resilient Pastoral Systems*. IUCN and ICARDA. 168 pages.

Participatory rangeland and grassland assessment (PRAGA) methodology. 2022. FAO and IUCN. First edition. Rome, FAO and Gland, IUCN. ***https://doi.org/10.4060/cc0841en***

NOTES

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