



## Tool 2-1

# Grazing planning basics for rangeland management

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### Objective

To determine feasible options for rangeland management and how they can be implemented towards creating a suitable grazing management plan.

### Anticipated output

A grazing management plan for the rangeland unit. A grazing plan is a 'living' document to be modified as conditions and objectives change. Initial, draft plans produced are shared with communities in the rangeland unit for feedback, modified in response, and then finalized for implementation. The grazing plan typically includes one or more maps showing different grazing zones and a document describing by-laws and other actions for implementing and enforcing the plan.

### Participants in this activity

- Members of community rangeland management institution and other pastoral community leaders actively involved in rangeland management.
- Personnel from the facilitating organization.
- Other stakeholders actively involved in rangeland management in the county, sub-county or community may include livestock experts from county and other government agencies, nongovernmental organizations, influential elders, chiefs and traditional leaders.

### When to use this tool

This tool relates to Step Eight of the participatory rangeland management (PRM) process—developing the rangeland management plan. (See Tool G-2 for a description of the stages and steps in PRM.)



## Introduction

The outcomes of PRM come from decisions taken to improve grazing management, and the implementation of these decisions through on-the-ground management actions. This is the Second Leg of PRM.

Since every rangeland landscape is unique and different from others, local knowledge plays a large role in informing rangeland management. Different landscapes often benefit from very different rangeland management strategies if those strategies match the local context. Several important aspects of local context can influence rangeland management strategies and whether those strategies succeed or fail to produce benefits to the community. First, livestock keepers can have different livelihood objectives, with some focusing more on livestock, others more on crops, or a combination of livestock and crops. Cropping, fodder farming (cut-and-carry and haymaking), grazing exclosures, and wildlife conservation can all be complementary to grazing if they are carefully located and managed to maintain the productivity of the larger grazing system. Otherwise, they can cause degradation by displacing grazing. Different livestock species have different grazing needs, and grazing strategies to produce milk for home consumption can be very different from grazing strategies for production of live animals for meat or sale. Where community institutions have high legitimacy and strength, rangeland management strategies can be more detailed. Where they do not, feasibility should be the primary concern.

Rangeland management always involves costs and trade-offs for pastoral herders: grazing lost because of resting or by-laws (opportunity costs); and the costs of planning, meetings, community engagement and management of conflicts within the community and with neighbouring communities (transaction costs). The landscape surrounding the rangeland determines the risk of conflicts or invasions by outside herders, which reduce the benefits of grazing management. Each of these costs and risks can be high or low depending on the local context. Where they are high, they should be taken seriously in the planning process (see tools under the Third Leg of PRM for ideas on managing landscape level conflicts). Finally, agro-ecological conditions, especially rainfall, temperature, elevation, soil types, topography, type and severity of degradation, primary forage and browse species, and invasive species threats (e.g. mathenge—*Prosopis juliflora*) are key elements of the local context.

As a general rule, grazing management and restoration (re-seeding, etc.) in rangelands should complement the local context of the area, and not ignore or work against the local context. This tool may be considered a ‘primer’ in fitting grazing management options to rangeland contexts. It describes a process for developing a basic grazing plan for a rangeland unit.

Effective grazing planning complements the social and ecological context of the area.

Such a grazing plan is one element, usually the first element, of a holistic and comprehensive rangeland management plan. Even if the first step a community takes is very simple, the eventual results can be revolutionary. First, the community rangeland management institution can gain legitimacy in the eyes of the community members seeing new benefits from better grazing management. Next, a stronger community institution may be more willing and able to visualize long-term plans, and to implement more detailed or more costly strategies that produce greater benefits. If these more sophisticated strategies prove effective and feasible, and institutional strength continues to grow, a process of sustainable intensification of rangeland management is already well underway. The endpoint of sustainable intensification is achieved when rangeland landscapes are producing at their maximum long-term potential and providing robust livelihoods community-wide.



## Steps

The rangeland management institution, in consultation with community members and with guidance from personnel from facilitating organizations if necessary, can go through the following steps to prepare a grazing plan.

### Step 1: Characterize existing seasonal patterns of grazing

- Where and when does grazing happen?
- Are there by-laws or rules regulating these patterns?
- Can and should any of these regulations be formalized or strengthened to improve land management?

Asking these questions first enables working within the system, by understanding it first.

### Step 2: Assess opportunities and limitations of the current grazing strategy

- What advantages does the current grazing system—the existing grazing patterns and rules—provide that should not be neglected? Can any of these advantages serve as a motivation for better organisation?
- What disadvantages does the current system bring about that should not become worse? Are there any major challenges that need special attention?

### Step 3: Agree on degradation causes and management objectives

- Assess and document the major root causes of rangeland degradation and the primary objectives to improve livelihoods and environmental condition. Examples of degradation root causes include:
  - a. Heavy grazing and droughts cause the loss of preferred, high-quality grasses in important pastures.
  - b. Heavy grazing and droughts create bare ground, cause soil erosion and reduce grass growth.
  - c. Invasive species (such as *mathenge*) reduce grass growth.
- Discuss and prioritize key management objectives that can successfully reverse the root causes of degradation over large areas of the rangeland. Examples of management objectives (to address the root causes above) include:
  - a. Improving the quality of grasses in important pastures.
  - b. Healing bare ground to reduce soil erosion and improve grass growth.
  - c. Removing invasive species (such as *mathenge*) to slow its spread and improve grass growth.
- These decisions guide the remainder of the grazing planning process. If at any time it becomes clear that the causes of degradation are incorrect, or the livelihoods, environmental, or management objectives are inappropriate or need to be changed, the grazing planning process may need to be started again from this step.



- Understanding the root causes of degradation can be challenging. To avoid adopting a strategy that is likely to fail, two key sources of knowledge can be of critical assistance:
  - a. *Local knowledge and experience* are essential for understanding of trends in rangeland condition, especially in the local area, and over many decades. Consult a wide audience of stakeholders knowledgeable about the local area, especially herders, community leaders and experienced experts. Methods for these consultations can include:
    - focus group discussions and key informant interviews
    - participatory trend analysis
  - b. *Rangeland monitoring* is critical for assessment of trends in rangeland condition, especially for adapting to changing climatic conditions, drought and long-distance incursions that commonly follow drought. Methods for monitoring can include:
    - field data collection
    - photo monitoring
    - satellite remote sensing analysis

For guidance on monitoring, see Tools 2-2, 2-3, and 2-4 in this toolkit.

#### Step 4: Improve the seasonal grazing system, taking the most feasible steps first

- Formalize existing areas as seasonal pastures.
  - a. Starting from the existing grazing system, community control over the various seasonal pastures is formalized in community by-laws or rules to:
    - limit excessive grazing in seasons when it can damage the rangeland;
    - allow resting and recovery of heavily grazed areas; and
    - protect severely degraded areas for major restoration, such as gullies.
  - b. *Dry season grazing areas* are often closer to rivers, swamps and other water bodies, and often the best pastures in the rangeland. In many cases a 'buffer' distance from these water bodies is enough to draw its boundaries but the distance should be decided with all stakeholders to ensure it is not too large or too small. The distance from water is likely to be between 1 km and 10 km, with different sites having different distances.
  - c. *Wet season grazing areas* are often far from rivers, swamps and other water bodies, and often the worst pastures in the rangeland. The 'buffer' distance from these water bodies marking out the dry season grazing area boundary also provides the boundary for wet season grazing areas (i.e. most of the rangeland).
  - d. *Drought reserves* are used as a last resort when rain has failed, the forage in wet and dry season grazing areas have been exhausted. In many rangelands, a traditional 'drought pasture' of some kind already exists, has been used this way for many years, and can be regulated with little difficulty.



Though easy to manage, drought reserves can benefit from community by-laws—when to open, when to close, who decides the timing, minimum distance from water points, etc.

- Decide whether seasonal grazing will be complete, partial, etc.
  - a. ‘Complete’ seasonal grazing is when the community decides that dry season areas are grazed only during the dry season, and all animals are restricted from grazing during the wet season (and wet season areas are grazed only during the wet season).
    - Strict rules like complete grazing restrictions may be necessary to make enforcement more feasible in some rangelands.
    - However, in many rangelands, strict rules may not be necessary—100% grazing prohibition is never a technical requirement, and it can encourage growth of invasive species, noxious weeds and undesirable woody plants.
    - Strict rules are impossible in some rangelands due to the locations of settlements, water and grazing resources (especially where most or all water points and settlements are located inside dry season grazing areas).
  - b. ‘Partial’ seasonal grazing is when most animals are restricted from grazing, but not all. Some animals are allowed at any time. For example, a community could decide:



- During the dry season, 80% of animals graze the dry season area and 20% remain in the wet season area.
- Then, during the wet season, 80% of animals graze the wet season area and 20% remain in the dry season area.
- In this case, there is low intensity of grazing in all areas for all of the year, which is less likely



to cause degradation. Partial resting is much better than no rest. The main problem with free access is that rangelands are never rested, leading to their rapid degradation. Partial resting is much more effective than no resting.

- The main problem with partial rest is that individual grass plants of the highest forage quality are grazed again and again and again, eventually resulting in their death and the loss of the best rangeland grasses.
- If invasive species, noxious weeds and undesirable woody plants are a problem in your rangeland, you may prefer partial resting and not complete resting.

c. The 'Grazing Box'—a tool for community discussion on grazing patterns

- The difficulty of keeping animal numbers to a minimum in areas near settlements and water points causes local degradation and reduces forage available. This is more severe in or near dry season grazing areas. The 'milk herd' that provides the bulk of nutrition and income for many is a constraint that can only be managed but not overcome in some landscapes. It is good to be realistic and accept that, especially when settlements and water are located inside a certain zoned grazing area, some percentage of animals will remain in that zone throughout the year (unless current settlement patterns and water access are changed through local planning). Keeping this in mind, it is best to reduce all-year-round grazing as much as possible.
- It may be helpful to complete the 'grazing box' below to discuss what percentage of animals should be in, for example, wet season grazing areas (zoned for wet season grazing) and dry season grazing areas (zoned for dry season grazing) according to institutional rules and/or local experience.

		Grazing areas			
		Wet season grazing areas		Dry season grazing area	
Seasons of year	Wet season		+		= 100%
	Dry season		+		= 100%

- For example, during the wet season, a community might have 60% of animals in the wet season grazing area, with 40% remaining in the dry season grazing area. This means the dry season area gets little rest during the wet season, reducing forage for the dry season and causing rangeland degradation (here, during the dry season, the community similarly keeps 40% of animals in wet season grazing areas, which also get little rest). A community like this would benefit from a shift to the next example below.

		Grazing areas			
		Wet season grazing area		Dry season grazing area	
Seasons of year	Wet season	60%	+	40%	= 100%
	Dry season	40%	+	60%	= 100%



- The question here is, what rough minimum percentage of animals is the feasible to achieve in dry season grazing areas during the wet season? In the second example below, in critical dry season grazing areas, degradation will be reduced, and the forage supply will increase as compared to the example above. Still, 20% of animals remain in dry season grazing areas during the wet season (meaning the rest is partial and not complete 100% rest), which means there is still some grazing all-year-round. Yet, 20% is a major improvement over 40% and will allow rangeland recovery to begin over a large rangeland area.

		Grazing areas			
		Wet season grazing area		Dry season grazing area	
Seasons of year	Wet season	80%	+	20%	= 100%
	Dry season	20%	+	80%	= 100%

- Decide the seasonal timing and process for animal movements.
  - Some communities use specific, inflexible dates that are pre-announced so that all herders know which rules are in effect, where and when. These dates may be the same every year. Since rainfall patterns are somewhat different every year, lack of flexibility can be a disadvantage (especially in very dry rangelands). As part of the grazing plan, the seasons should be clear to all stakeholders.
  - Other communities make decisions more flexibly so that livestock can be moved according to the availability of grass in response to the rain that has fallen. This flexibility is an advantage in dry rangelands with extremely variable and unpredictable rainfall. Using flexible dates for changing the grazing pattern has the disadvantage of requiring extensive discussions throughout the community to coordinate in a participatory manner. As part of the grazing plan, it should be clear to all stakeholders who will decide to take the decision, and the process this person or group of people will follow.
- Decide means of regulation.
  - There are many ways to create community by-laws or rules to implement seasonal grazing. The choice selected should be agreeable to community residents, and should be enforceable. A rule that cannot be enforced is a rule that does not exist.
  - Each approach has its strengths and weaknesses, requiring careful selection of by-laws. Some common examples of by-laws in communal rangelands include:
    - Grazing-focused rules:* grazing access is decided for each area and each season, and penalties are given for grazing in the wrong area at the wrong time. Enforcing grazing rules can be difficult in rangelands with large herds or long distances.
    - Settlement-focused rules:* areas are agreed where permanent and temporary settlements can be located during each season. The number of animals that can be kept by each household in each settlement may need to be decided for each season. Settlement rules may be difficult to implement where herders are not familiar with such rules.
    - Water-focused rules:* access to each water point is decided for each season, and penalties are given for using the wrong water point at the wrong time. Enforcing water point rules can be





useful in areas where pasture cannot be grazed without access to water, especially in wet season pastures and other areas far from other water sources.

- *New rules:* if these types of rules will not serve your community, what would? Think broadly and creatively, and consider different financial mechanisms. For example, most communities select punishments such as fines for grazing or settling in the wrong location at the wrong time.

A few successful tests have used community financial institutions (savings and credit co-operatives, community trust funds, etc.) to improve rangeland management. If anyone does not follow the rules, they may be denied access to community finances.

c. Assess the connection between grazing and other land uses and livelihood priorities.

- In many rangelands, herders are increasingly adopting new sources of livelihoods in addition to livestock, such as:
  - growing annual crops for food and livestock feed;
  - fodder farming and haymaking;
  - grazing exclosures (private or communal); and
  - conservation to improve wildlife habitat and to attract ecotourism.
- Depending on where in the landscape these additional sources of income and livelihoods are located, they can be either complementary or competitive with grazing management
- Cropping, fodder farming, haymaking and grazing exclosures are usually placed on some of the best grazing land in the rangeland. Small areas of these land uses can support grazing management by providing alternative sources of feed during dry seasons, and especially during drought. If these land uses cover large areas, they are likely to disrupt livestock movements and cause localized overgrazing and rangeland degradation.
- Wildlife conservation and ecotourism are major sources of income in some communities. These activities support grazing management when they are located in drought reserves, pastures being rested or other areas the community does not graze heavily on a regular basis. If conducted in critical pasture areas, however, these activities would conflict with grazing management.

- d. *Once community by-laws are accepted by the community, and implemented, the community now has a different grazing system.* From this point forward, progress may come more easily because the grazing system is becoming more organised. A larger set of options becomes potentially feasible.

After seasonal grazing is in motion and most community members are following by-laws, the rangeland management institution can assess a wide variety of options for improving or building upon seasonal grazing and developing a more comprehensive rangeland management plan. Some of these options will be addressed in other tools in this toolkit.



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