



Tool 2-5

Essential restorative grazing Part one – Rangeland resting

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Objective

To assist communities that already have a seasonal grazing plan with stepwise enhancement of rangeland productivity and rangeland restoration that can be conducted by local institutions without significant outside support.

Anticipated output

Improvement of the grazing management plan for a rangeland unit and creation or improvement of resting plans for a rangeland unit.

Participants in this activity

- Members of community rangeland management institutions and other pastoral community leaders actively involved in rangeland management.
- Personnel from the organization facilitating management improvement by a community.
- Other stakeholders actively involved in rangeland management in the county, sub-county or community: livestock experts from county and other government agencies, non-governmental 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). This tool can also be used in later stages of PRM to improve upon the existing management plan and management system.



Introduction

In many rangelands, a local rangeland management institution has implemented some kind of seasonal grazing plan. Under a seasonal grazing plan (see Tool 2-1 for the steps in developing a seasonal grazing plan), different pastures are used at different times of year so that all pastures receive rest from grazing at some point during the year, allowing recovery from grazing. Types of seasonal grazing plans include the classic wet season/dry season divisions in East Africa, winter/summer divisions in Asian and European mountains, and others around the world.

When a rangeland already has a seasonal grazing plan in place, the next steps likely to improve the rangeland and deliver more efficient livestock production might range from simple resting to planning grazing and recovery periods and more modest approaches to site restoration such as reseeding where feasible. While more intensive rotational grazing and restoration, such as rehabilitation of gullies and mechanical soil and water conservation structures may be feasible in some cases, heavier investments are often beyond the reach of many herding communities. These more intensive approaches can be seen as means to the final goal or endpoint of maximizing long-term livestock production per unit of land or per animal (intensification). For communities with a seasonal grazing plan successfully in place, the next immediate goal is rather to halt any ongoing degradation and begin restoring the rangeland, for which restorative grazing is the primary approach.

This tool may be useful to communities that already have a seasonal grazing plan in place, some of whom may be considering more intensive rangeland management though perhaps have not yet identified a clear, practical path to continue improving the productivity of their rangelands and livestock. The tool provides a few relatively simple approaches that may be useful for stepwise enhancement of rangeland productivity and rangeland restoration and that can be conducted entirely by local institutions without significant outside support (other than facilitation and information).



Targeted resting of specific areas

The most common approach for resting of rangelands is when a portion of a certain pasture type is rested for most or all of its season of use, to be grazed last. Resting frequently focuses on areas of the rangeland that are particularly important for livestock. The most common example in pastoralist practice is when a portion of the critical dry season grazing area is set aside and grazed last. This practice is also sometimes applied in wet season grazing areas, where a certain portion of the wet season grazing area is set aside and grazed last during the wet season. Note that the goals of resting can differ by the type of pasture:

- Dry season grazing areas (or any locally critical pasture type)
Example goals: (1) provide forage at the end of the dry season; and (2) allow natural forage regeneration in key pasture areas.
- Wet season grazing areas
Example goals: (1) allow natural forage regeneration; and (2) modestly increase forage availability late in the rainy season and in the early dry season.
- All-year grazing areas
Example goals: (1) allow natural forage regeneration; and (2) modestly increase forage availability late in the rainy season and in the early dry season.
- Areas with heavy grazing and/or major degradation
Example goals: (1) allow natural forage regeneration; (2) modestly increase forage availability late in the rainy season and in the early dry season; (3) limit or slow down ongoing rangeland degradation; and (4) through longer resting periods, reverse serious rangeland degradation.

The central goal of targeted resting is to ensure that specific, targeted areas of the rangeland receive some rest from grazing in most years or every year. Resting must be conducted during the rainy season to be effective.

Larger-scale, longer term resting is sometimes feasible (100's of km² for multiple months or over a year). For example, whenever pasture availability allows grazing elsewhere for the whole year, resting the entire dry season grazing area of a rangeland can be possible (or any other critical pasture type locally). The main factor enabling such ambitious resting is always a strong sense of ownership over or 'buy-in' into the rangeland management system.

However, unless stocking rates are controlled, which is often not possible, the more grazing areas are rested, the more grazing must go to other areas. Displacing grazing to wet season pastures, all-year areas, or outside the rangeland entirely can result in degradation of those areas. The scale and timespan of resting are, therefore, highly significant decisions, not to be taken lightly. The size of resting areas and the resting period are best based on local knowledge or where possible, simple trials.



Short-resting

Several types of grazing areas are difficult to rest in dry communal rangelands. Wet season grazing areas cannot be rested easily as they are grazed when rain is falling, and resting without rain does little or nothing. Areas close to settlements or water points are perhaps the most challenging to rest due to their importance for maintaining livestock health and production, and the difficulty of controlling grazing given their close proximity to heavily trafficked areas. Any all-year grazing areas are rarely rested as they are constantly in use.

In these pasture types—all-year and wet-season grazing areas, and areas close to settlements and water points—resting for long periods is generally impossible. However, even brief resting of these areas, or ‘short-resting’, can produce substantial gains in pasture cover within a short period of time, sometimes as little as one or two growing seasons.

The central goal of short-resting is to ensure that specific, heavily-used or other difficult to rest areas of the rangeland receive some rest from grazing in some years (but not every year). Resting must be conducted during the rainy season to be effective. Short-resting should only be used in areas where and when longer resting times are not possible.

In areas facing heavy grazing use requirements, brief resting of around two months minimum in the early rainy season can produce two benefits: (1) a substantial increase in forage cover, enabling natural regeneration of forages; and (2) a modest increase in forage cover and biomass in rested areas at the end of the rainy season and into the early dry season. Resting at the beginning of the growing season is termed ‘spelling’ in rangeland management.

The short-term increase in forage cover enhances pasture quality in the long term by encouraging regeneration of highly preferred perennial grasses from the soil seedbank, and moderately preferable grasses from the seedbank and from enhanced vigor and cover of existing grasses. This temporary increase in forage cover meanwhile improves short-term forage availability. The increase in vegetation cover and root biomass also helps to control erosion in the short and long term.

The size of resting areas and the length of the resting period are best based on local knowledge and experience.

- Two months of rest at the beginning of the rains is a good approach, but not in all cases. Resting implies multiple costs and multiple benefits that only producers from the area are able to evaluate (for example, resting one area will automatically push grazing to other areas, risking degradation there).
- The longer the resting period, the smaller the area that can be feasibly rested. Larger areas should be rested for a shorter time, while smaller areas can be rested for longer periods for better recovery.
- Shorter resting, such as one month of rest, might be feasible in rangelands that respond quickly, especially arid rangelands (< 300 mm rainfall per year) in hot climates.
- Longer resting, such as 3–6 months of resting or more, is more effective than short-resting.



Other critical success factors are the rainfall quality of the season, reseeding options and seasons of resting.

- For short-resting to be effective, average to good rains must fall. If rainfall is poor or comes too late, resting will give little benefit, and resting may be reasonably cancelled. During a drought, resting gives no benefit and should be cancelled.
- Short-resting can be combined with range reseeding of grasses such as buffel grass (*Cenchrus ciliaris*), especially in years of high rainfall. However, the reseeded area will likely require additional rest in the dry season following reseeding. The area can usually be grazed down fully after resting, but the young grasses will likely die if they are continually grazed and re-grazed throughout the dry season (note that severely degraded areas are not highly suitable for reseeding and will require longer rest from grazing).
- If range reseeding is an interest of the community, they should create exclosures (zero-grazing or cut-and-carry) for range seed production. Range seeds are currently expensive, costing USD 100 (KSH 10,000) for reseeding only one hectare. Creating exclosures is feasible in areas close to water or near cropping areas (or invasive species such as *Prosopis* can be cleared and exclosure planted), where soil conditions lead to high production and grazing is easier to prevent. For exclosure in pastoral areas, usually the selected grass species should be (1) tall and of high quality for cut-and-carry fodder harvesting; and yet also (2) able to survive reseeding in rangelands where soil moisture and fertility are low (buffel grass—*Cenchrus ciliaris*—is often the best grass). Only a few grass species meet both of these criteria. As the exclosure is cut for fodder to feed livestock, the seeds are removed and stored for reseeding in the next rainy season. Maximum production of cut-and-carry fodder and range grass seeds will require use of manure as fertilizers (NPK and other chemical fertilizers are not recommended unless use is to be repeated every year).
- The season of short resting is key. The best time to rest is unquestionably at the beginning of the rainy season to provide for grass seedling establishment and allow surviving perennial grasses to rebuild strength. If the early rainy season is not feasible, resting in the middle or end of the rains will be less successful, but can be tried. Resting at the end of the rainy season, if long enough such as one month or more, can allow grasses to set seed, although it is better to rest for the entire rainy season (also called 'deferred grazing'). If early and late resting are not possible, mid-season is much better than no resting. While resting at the middle of the season is not best, mid-season resting probably has the lowest cost since forage is often most abundant in the middle of the rainy season.



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