



Holistic Rangeland Management in Two Communities in Northern Tanzania



1. EXECUTIVE SUMMARY

Holistic Rangeland Management (HRM) is an adaptation of Holistic Management, which uses a decision-making framework and planning processes to produce ecologically regenerative, economically viable and socially sound management of grasslands. Successful Holistic Management practitioners are spread around the globe, organized into locally owned-and-driven Hubs and coordinated by the Savory Institute. More than 20,000 people have been trained in Holistic Management and its associated land and grazing planning procedures, and close to 30 million hectares are managed holistically worldwide .

The planning procedures have also been adapted to meet the needs of pastoralists managing communal lands. The approach is successful and sustainable because it increases land productivity, stocking rates and returns without compromising the long-term viability of the resource base.

Key to HRM's success is the Holistic Planned Grazing (HPG) process. HPG produces more forage and ground-covering litter between plants. It does so by keeping bunched animals moving around the grazing area, giving plants a chance to grow where the herd is not grazing, and scarifying bare soil surfaces and trampling down litter to enhance growing condition (planting of surface seeds, more concentrated fertilization, and improved water infiltration). Dramatic changes do not occur overnight; but within a single season, if well implemented, people will experience a difference.

The most immediate difference is that usually they will not run of forage (unless special circumstance occur such as large unplanned in-migration by herds from elsewhere, fire, or failed rains). This is because, due to the planning procedure, they are not only able to grow more forage in the growing (wet) season but are able to ration out what they have available for the non-growing (dry) season. A second common short-term change is that communities experience and appreciate marked improvements in their awareness and management, which result in a sense of greater unity and purpose.

The following make up the other key components of the approach:

- **Deepening community** understanding of 'ecological literacy' – the processes at work in all environments that our management can influence to help create the environment we desire; which communities use to assess their situations.
- **An understanding by communities** that they have the power to restore their land and water sources, achieved through exposure to both correct and incorrect use of rangeland management tools (grazing, animal impact, rest, technology and fire); together with continuous practice implementing correct use.
- **Refinements to management and governance** structures informed by the practical planning and implementation of HPG.



2. OVERVIEW OF APPROACH

We use a holistic approach to regenerate rangeland health, meaning that biophysical regeneration of rangeland health must be placed within local conditions and local knowledge. We therefore focus on regeneration within the socio-ecological system, with economic benefits improving as a natural byproduct.

Four main components are involved:

1. **Provide** technical biological regeneration know-how.
2. **Cultivate** adult and social learning through social processes.
3. **Consider implications** for daily grazing management.
4. **Refine management** and governance structures.

Technical biological regeneration is based on the principle of eco-literacy. That is, enhancing the four ecosystem processes that dictate the health and productivity of any ecosystem (water cycle, mineral cycle, community dynamic or biodiversity, and energy flow) and using available tools (grazing, rest, animal impact, fire, technology) to promote beneficial outcomes.

Adult learning involves assimilating new techniques that go against current practice, while social learning involves creating platforms for group planning, action, evaluation, review, and learning. This process allows regeneration to occur and be maintained. Grazing management is the central means of translating principles into practice and is supported by enabling community training and refining management and governance structures. The process was begun in the Selela and Kitwai B villages in October 2018.



2. KEY STEPS FOR IMPLEMENTATION

Key steps involve:

1. **Determine context:** Challenges to land and livestock and the perceived causes.
2. **Follow principles of regeneration:** Eco-literacy, tools, and grazing management.
3. **Implement dry season grazing plans:** Concrete translation of principles into daily practice.
4. **Implementation of dry season plans:** Land and management monitoring accompanied by group learning.
5. **Implement wet season grazing plans:** Concrete translation of principles into daily practice.
6. **Repeat above process** each season using adaptive planning and management, with ever-increasing participation and process dissemination throughout the target community as well neighboring communities.

A minimum of two years is necessary for these new practices to become common practices. Community self-sufficiency is achieved within five years.

3. INSTITUTIONAL AND GOVERNANCE ASPECTS OF THIS APPROACH

Description

It is critical that members of all governance structures — village council, sub-village chairman, and village and sub-village grazing committees — be intricately involved in every step of the process, including introduction, learning, planning, implementation, review, and plan modification. Leaders must collaborate with a group of committed individuals who self-identify as champions of land-water regeneration, including livestock owners and traditional leaders. This group will be supplemented by two to three suitable grazing coordinators selected by the community.

Lessons Learned

Tanzania's advantage is its existence of formal governance structures, as well as village members' intrinsic appreciation for and respect of due process in making and implementing decisions. Each step involves participation, technical training, information sharing, and input into improved management. The community embraces the motto *kundi moja, mpango moja* ("one herd, one plan"). In Kitwai B and Selela, this mentality has already extended beyond their borders to include neighboring villages.



4. IMPORTANT BIOPHYSICAL INTERVENTIONS EMPLOYED TO PROMOTE RANGELAND HEALTH

The central tool for improved rangeland health and restoration of degraded land is short-duration, high-intensity grazing achieved by bunching, coordinating, and directing herds for daily grazing. This involves all community herds and is implemented according to a seasonal (wet and dry) grazing plan. Such short-duration, high-intensity grazing yields a number of benefits, principally: (a) eliminating the cause of over-grazing bare land, which is the result of excessive grazing periods that expose plants to multiple defoliation, resulting in eventual death; (b) maximizing plant growth and recovery time on ungrazed sections; and most significantly, (c) maximizing animal impact — that is, breaking capped soils to allow increased water infiltration, planting of plant seeds, and concentrated manuring. These processes are implemented through holistic planned grazing.

Lessons Learned

The biological principles resonate with traditional Maasai knowledge and practice. In fact, our approach revealed that specific terms for bunched and directed herding exist in the Maasai language (engituroroto and engibooroto, respectively). However communities acknowledge these practices have been increasingly eroded over time, and welcome this modern validation of traditional practice. As such, understanding of the biological principles and practice presents no barriers.

The approach of a continuous and inclusive social learning process is also consistent with the Maasai social practice of consultation and consensus among all involved. Therefore, it is only dissemination of the principles and organization of livestock owners, herdsmen, and herds that remain the prevailing tasks.

A potential challenge is capturing buy-in from livestock owners with large herds. Some, including in Selela, have emerged as champions because they see the benefits for their herds. However, others view controlled grazing as a threat to their independence and dominance. The latter group need the strong appreciation for community and respect for leadership in order to be brought on board. This has already successfully occurred in both Kitwai B and Selela.

One factor without which any meaningful progress could not have been made has been working in partnership with Ujamaa Community Resource Team (UCRT) as the community facilitator/partner. UCRT's involvement created the necessary enabling environment, without which we would struggle to identify the right people and processes, thus leaving little time for actual implementation.

5. HOW RANGELAND HEALTH IS MONITORED

Data Collection Protocol

Our main tool is a fixed 1-meter x 1-meter plot placed in each grazing block. Thus, each grazing block becomes the focus of evaluation. Parameters scored are extent of bare land; extent of soil capping; the split between annuals and perennials; extent of overgrazed plants; extent of undergrazed plants; prevalence of litter; existence of invasive plants; height of grass; types of plant species; and date when the area was last grazed. These are scored with a simple evaluation method using a scale from 1 (low) to 5 (high) and then summarized visually as a bicycle wheel. Data are collected by community grazing coordinators along with sub-village grazing committee members initially at two-week intervals to enhance learning and awareness-raising, with a target of four times annually (the end of each dry and wet season) for longer-term monitoring.

Process by which data informs decision-making

Sub-village grazing teams use the data to determine changes in plot health over time; inform effectiveness of grazing pressure (that is, over- or undergrazing, and thus time exposure of plants); recovery period following grazing offtake by herds; and evidence of sufficient animal impact. Fixed plots are also photographed, with the photos then printed and laminated for sharing.

Examples

Fixed plots have been initiated only recently, mainly to raise awareness of the effect of a rotational block design on plant growth.

Lessons Learned

We have experienced high community interest and competence in monitoring land health, and believe the ease of documentation — photos taken and shared by community together with plot scores — is an effective approach.

6. COSTS FOR UPSCALING

For collaborators interested in working with the team or for stakeholders interested in replicating this approach.

For one village or specific area of intervention:

- Estimated annual cost.
- Annual labor requirements from partner organization and from the community.
- Years of external intervention until a community can implement this without external support.

Estimated annual cost has been \$124,000 for two communities over 145,000 hectares (Kitwai B dry season 63,000 + wet season 43,000; Selela dry season 14,000 + wet season 25,000). This equals \$0.86 per hectare for Year 1 establishment, the highest annual support requirement. If one estimates that a five-year period is required in order for communities to be self-sufficient, the estimated annual cost per village for years 2-5 is \$60,000 per year. A Global Environment Facility/World Bank estimate found that land restoration will require \$200 per hectare in sub-Saharan Africa, which conflicts with an estimate based on successful community-based and -led regeneration (for example, farmer-managed natural regeneration (FMNR) or natural regeneration) of \$20 per hectare.

7. SUMMARY OF KEY TAKEAWAYS FROM THE EXPERIENCE TO DATE

Major take-away points that should inform future work to succeed with improving rangeland health.

The above approach has been developed and refined with pastoral communities over the past 10 years in East Africa, and therefore provides considerable knowledge on how to improve rangeland health sustainably. The main take-away points in our experience are as follows:

1. **Overall approach: Replace “what” with “how.”** Ultimately, changed behavior is about appropriate social transformation (relevant, meaningful, sustainable). This needs to remain the focus of all interventions. Project best-practice approaches and methods are available in the literature on adult learning (remembering that “erosion begins in the human mind and spreads to the land”). We have found that placing all activities in a social learning framework is an appropriate and effective vehicle for social transformation — that is, how it’s done is more important than what is done. These two aspects must be combined and practiced by project staff for the best results. In working with a substantial number of partners in the development and conservation sectors, we have found that more emphasis should be placed on developing this awareness and these skills within organizations and institutions.
2. **Trust.** One necessary outcome that can flow from applying the holistic approach is the fostering of relationships and building of trust between beneficiary communities and project intervenors. As stated by Tony Rinaudo of World Vision, “You need to build trust with people, otherwise why should they try what you are bringing?” It is with this belief that World Vision helped restore 5 million acres across West Africa with the help of farmers and FMNR.
3. **Community ownership.** Social transformation is the central business of development; moreover, social transformation cannot be done for somebody by somebody else.” Therefore, the extent to which this approach is practiced across all aspects will determine the ownership level of the project. Ultimately, it needs 100% ownership to be effective. This extends to all aspects, including those traditionally designed or managed externally, for

example, design of training materials, work plans, implementation budgets, and the like.

4. **Longer time frames.** Since social processes take time, community projects require appropriate time frames for individuals and the collective to experience transition. In our experience this takes longer than typical project cycles. We recommend at least five years of support, but preferably 10 years in order to achieve the outcomes we believe are possible. Thus, we recommend a longer-term, lower-cost process-based approach that focuses on long-term capacity building (and transformation) over a shorter-term, higher-cost results-based approach.
5. **Solid transferable biological and ecological technical knowledge (Eco-literacy).** Our experience has indicated that rangeland management interventions have lacked appropriate knowledge of rangeland management itself in a manner relevant to pastoralist practice and reality. In our experience working with some 40 communities, in every case communities have been able to assess that their land is degrading. Typical interventions, however, lack concrete knowledge on the causes, and therefore the solutions. Central to this are several misperceptions or misunderstandings involving the five core rangeland management tools: grazing, rest, fire, technology, and animal impact. For example, misunderstanding exists on the cause of bare land — overgrazing — which prevents its avoidance. Likewise, prolonged resting of the land through prescribed destocking is not always beneficial. Further, there is a lack of awareness of the existence, role, and potential of animal impact for in-situ, low-cost natural regeneration (although awareness exists in pastoral communities). This lack of knowledge tends to push greater emphasis on the use of technology (for example, reseeding, bush-clearing, furrow-digging, applying chemicals, etc.) or fire, the regular use of which is generally harmful to ecosystem health and wasteful of grazing biomass. As a result, management recommendations that neglect to understand the scope of these matters incorporate interventions that not only do not reverse degradation, but instead worsen the problems.

- 6. A holistic approach.** Ultimately, land management cannot be divorced from culture or livelihoods. Any biophysical intervention must also be socially and economically beneficial if it is to be taken up by the community.
- 7. Alignment of governance, leadership, participation, and management.** There must be an emphasis on linking these social components. Too often they are addressed separately or one or more element is less represented.

8. REFERENCES

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