SmaRT Ethiopia





HIGHLAND COMMUNAL GRASSLAND MANAGEMENT: A PRODUCER-DRIVEN APPROACH FOR COMMUNAL GRASSLANDS IN THE ETHIOPIAN HIGHLANDS

KEY MESSAGES

- Communal grasslands cover large areas and provide 10-50% of total livestock feed to farmers in the Ethiopian highlands. However, unclear land use tenure and an absence of management plans has devalued grassland resources and resulted in land degradation and unsustainable conversion to other land uses.
- Highland Communal Grassland Management (HCGM) supports implementation of producer-driven planned grazing and intensive restoration of grasslands, increasing forage production and enhancing delivery of ecosystem services, for livelihoods and environmental gains.
- HCGM is a process for combining linked institutional and technical support for management by grassland user groups. Providing facilitation and simple protocols for a large 'menu' of management techniques resulted in the adoption of grassland management options (grazing management and intensive restoration techniques) into the management plans of 10 pilot user groups in the Menz area of Amhara Region.
- Clear user rights should improve communal grassland management by motivating local investment. Documenting management plans and depositing them with local government offices would complement ongoing government user rights certification to further enhance perception of land tenure security.

INTRODUCTION

In the highlands of Ethiopia, communal grasslands are a critical resource that provide 10-50% of total livestock feed to farmers (Eba and Sircely 2020a) and ecosystem services to greater society. Most communal grasslands are managed by government-registered user groups, some of whom have received government certification of user rights.

However, the present absence of producer-driven management plans, and the lack of clear and secure land tenure, result in heavy, unplanned grazing. Lack of rest from grazing reduces the capacity of grasslands to regain their productivity, while heavy and unplanned grazing can result in land degradation (Haileselassie et al. 2005). Sub-dividing communal grasslands for cultivation of crops is common but is often unsustainable on infertile or shallow soils. Degradation of grasslands reduces ecosystem services including carbon storage, infiltration of rainfall, and the control of erosion, runoff, flooding, and at large scales the sedimentation of dams including the Grand Ethiopian Renaissance Dam.



Photo caption: A farmer leads his sheep to graze in Menz, Ethiopia

Ongoing government certification for communal grasslands will clarify user rights, reduce disputes and competitive exploitation, avoid conversion of grasslands to other land uses (especially where unsustainable), and increase the value of grasslands in the eyes of farmers. The certification process may be further assisted by the creation of local, producer-driven management plans for grasslands, including rules, by-laws and enforcement mechanisms registered with local government. If communal grasslands are managed well, their potential can be tapped to increase the supply of feed for livestock production, enhance livelihoods and income, and contribute to economic growth, while safeguarding ecosystem integrity.

Usually with little evidence, communal grazing lands are often viewed as hopeless cases of the "tragedy of the commons" - whereby it is assumed that communal resources are competitively exploited rather than collectively and productively managed by resource users. The advancement of common-pool resource theory (Ostrom 1990), including the roles of institutions, values and the economics of commonpool resources in their management, has placed social and institutional structures and functioning on an equal footing with technical management recommendations that may or may not fit the system and the interests of its users. The recent development of flexible, linked institutional-technical packages for the management of communal grazing lands holds strong promise (Flintan and Cullis 2010, Reid et al. 2016, Robinson et al. 2020). The fusion of local knowledge and experience with scientific expertise will encourage the development of more realistic, inclusive and sophisticated approaches for managing grazing lands (Briske et al. 2011).

To improve management of communal grasslands in the Ethiopian highlands, ILRI researchers applied systems analysis and developed a novel structured process for supporting user groups to better plan grazing and restoration in their communal grasslands-known as Highland Communal Grassland Management (HCGM).

THE INNOVATION

HCGM is a local producer-driven approach for improving grassland management for livelihoods and the environment. HCGM proceeds through a structured set of steps, beginning with system characterization, and focusing at its core on management planning. Initial implementation of key management plan components is supported through action research restoration trials that demonstrate benefits of the management plan to producers and provide scientific data with multiple purposes.

Characterization (Phase 1) and prioritization (Phase 2) help external government or NGO facilitators of HCGM to understand and work 'within' the system. Characterization of management



A farmer walks his sheep back from the livestock market in Menz, Ethiopia. Photo ILRI\Zerihun Sewunet

systems enables the facilitating team to better understand existing management and to suggest more context-relevant options. Prioritization of management objectives is designed to build momentum toward management planning from the perspective of a grassland user group and its aspirations. Each phase is conducted through two-hour focus group discussions with the leadership and membership of a communal grassland user group.

The main work comes during management planning (Phase 3) (Figure 1), when the facilitators use a structured protocol (Sircely and Eba 2020a) to facilitate the user group to prepare a realistic plan for improving the productivity of their grassland through grazing planning and intensive restoration of degraded areas. Grazing management options (Table 1) are applied over large areas of a grassland and range from intensive rotational grazing to simple steps like short-resting. Intensive restoration options are used in small areas inside a grassland, including soil and water conservation structures, reseeding, and other techniques. Rules or by-laws are formulated to regulate grazing patterns and mobilize resources such as labour for restoration work. Management planning is conducted during a workshop, after which management plans for communal grassland user groups are prepared and translated into the local language by the facilitators, deposited with local government (woreda, *kebele*) and distributed to the user group and wider community.

Where technically feasible, action research trials (Figure 2) are set up to demonstrate benefits from the management plan and to accelerate collective action. The trials further provide scientific evidence on the biophysical effectiveness of producer-driven options for grassland management in context, while the 'control' plots from the trials serve to monitor grassland condition on the ground and up-scaled to the level of entire grasslands using remote sensing.



Figure 1. A communal grassland user group in Menz Gera Woreda, Amhara holds their HCGM management planning workshop in March 2021. **Photo ILRI/Jason Sircely**



Figure 2. End-of-season resting action research trial in Menz, Amhara, from above. Each location has six 60 x 60 m plots in two blocked tiers, treatment (three months' resting from July-September) and control (no rest). The total sample included five user groups' grasslands for a total replication of 30. **Source Jason Sircely**

PROGRESS AND IMPACTS

- The two early phases of HCGM in the pilot were documented in five research reports on characterization (Eba and Sircely 2020a, 2020b, 2020c), prioritization (Eba and Sircely 2020d), and baseline action research and monitoring (Sircely and Eba 2020b).
- Tools for HCGM implementation were produced in terms of a characterization manual (Sircely and Eba 2020a) and two field protocols for characterization and prioritization. The management planning phase was supported by the creation of a management planning manual (Sircely and Eba 2020c) and its essential companion protocol (an appendix to the manual). Management planning drove the production of a policy brief (Eba and Sircely 2021a), an action research trial protocol (Eba and Sircely 2021b), a targeting tool (Sircely and Eba 2021a), and an overall HCGM implementation guide (Sircely and Eba 2021b).
- Management planning was conducted in March 2021 for 10 communal grasslands in Menz (covering a total area of 326 hectares and with 1,264 households in membership). For all 10 grasslands, management plans were documented in Amharic and English, deposited with the Menz Gera and Menz Mama Woreda government offices and with the respective kebele (sub-district) government office for each grassland, and copies were distributed to the user group. User groups requested by-laws to be in the local language, Amharic, and to refer repeat, flagrant rule-violators to the kebele social court for enforcement. This request shows that users of communal grasslands have an interest in planning management, but need external assistance in preparation of the plan, and guidance and support in enforcement. For a name-redacted

example of a management plan for one of these grasslands in English and Amharic, see Appendix A.

- Grazing management options showed high adoption (Table 1), demonstrating that user groups found simple approaches for improving grazing attractive. Several intensive restoration options were also adopted, although the difficulty of identifying cost-effective intensive options constrained uptake.
- Restoration action research trials were conducted in five grasslands in Menz (Figure 2), focusing on the use of end-of-season resting (no grazing in the treatment areas for 3 months, July-September 2021) to improve grassland condition and feed availability, with outcome measures taken in October 2021.



A mother and her daughter at their home in Menz, Ethiopia. Photo ILRI\Zerihun Sewunet

		Grazing management options			Intensive restoration options				
Grassland area (ha)	Households in user group	Short- resting	Basic seasonal grazing	Rotational grazing	Reseeding	Gully rehab.	Removal of weeds, invasives	Trenches	Enriched exclosure
2	18	>	~	-	-	-	-	-	-
2.5	17	>	~	-	-	-	-	-	-
3	15	>	~	-	-	-	-	-	-
4	41	>	~	-	-	-	-	~	-
4	21	~	~	-	-	-	-	-	-
4	10	>	~	-	-	-	-	-	-
6	42	>	~	-	-	-	-	~	-
25	100	-	-	-	~	-	~	-	-
75	400	>	~	-	-	-	-	-	-
200	600	~	~	-	-	-	-	-	~
Total user groups:		9	9	0	1	0	1	2	1

Table 1. Management options for communal grasslands adopted in management plans

CRITICAL FACTORS OF SUCCESS

- HCGM is designed to be simple and transparent, to clarify management needs and plans and establish how they can be achieved in communal grasslands. HCGM sets a minimum standard or due diligence for engaging producers in managing their communal grassland.
- An innovative mindset was key to the development of HCGM. The key innovative core of HCGM, the management planning protocol, was developed by combining diverse rangeland literature with local grazing practice from the highlands and pastoralism in East Africa, to bring together a large set of management options for user groups to select from.
- Transdisciplinarity, a research strategy that crosses disciplinary boundaries to create a holistic approach, is required for linked institutional-technical approaches for managing natural resources. Throughout the development and implementation of HCGM, attention was devoted to social, agricultural, ecological, and economic contexts: from

feed uses across seasons of the year, to the benefits accruing to the household, to relevant national and local policies. The management plans provide for implementation of technical management options by local institutions, willingly agreed by the user group with local government as witness, to strengthen livelihoods and ecosystem services.

• Partnership was essential, especially with the user groups-whom we consider our partners, a key strength of a local institutional approach-as well as the woreda experts from Livestock and Land, who enabled active government engagement and contributed to facilitation, and the research team from ILRI who led facilitation and research together with Debre Birhan Agricultural Research Center of the Amhara Regional Agricultural Research Institute (ARARI). The work simply could not have been done without the combination of experienced and dedicated researchers, a knowledgeable implementation team with an earnest and diplomatic bearing and user groups willing to improve their grasslands.

IMPLICATIONS AND RECOMMENDATIONS

The development of flexible, linked institutional-technical packages for the management of communal grazing lands is promising (Flintan and Cullis 2010, Reid et al. 2016, Robinson et al. 2020). As one of these new transdisciplinary, institutional-technical approaches, HCGM has passed its first test.

By the end of the pilot, grazing management and intensive restoration techniques were adopted by communal grassland user groups in 10 management plans deposited with local government offices. The plans are producer-driven, simple, flexible and feasible, and the plans are likely to be built upon in future years according to the needs of the user group. Action research trials and monitoring baselines provided grazing management demonstrations to user groups, and the quantitative evidence needed to assess the biophysical impacts of techniques adopted under HCGM in the Menz pilot sites through plot-level data and remote sensing at the level of entire communal grasslands.

The following priorities should form the basis of next steps for HCGM and related work:

• The main limitation of the management plans is they are generally not likely to achieve the ultimate goal of maximizing the potential productivity of grasslands. There was strong interest in rotational grazing (Sircely and Eba 2021a) from the user groups, but none selected it due to feasibility concerns. In humid grasslands with generally predictable rainfall in the highlands, rotational grazing can effectively increase productivity. The ability to identify cost-effective intensive restoration techniques (which the user groups were willing to invest into themselves) was also limited, suggesting that alternative approaches and ideas may be needed.

- Building upon initial HCGM progress, follow-up visits would be helpful, e.g. after one or two years, to revisit the plan and make any changes needed. At this stage, more intensive options such as rotational grazing could be more likely to succeed.
- The need for assessment and verification of outcomes and impacts from HCGM, or lack thereof, highlights the value of monitoring HCGM using ground data and remote sensing, which will be essential in evaluating and refining the HCGM process adaptively.
- Better technical information for grassland management planning is desperately needed, especially hard evidence on producer-driven and -adopted techniques, which are provided by action research restoration trials such as those in five of the HCGM pilot grasslands.
- In some cases, user groups may be not able to make significant changes in their grasslands due to conflicts from within or especially outside the user group. In these cases, an assessment is needed to identify possible means of mediating, such as through a public multi-stakeholder forum, cooperativity exercises, or other options.
- The ultimate scaling potential of HCGM is exceptionally large. In its current form, HCGM can be implemented throughout the Ethiopian highlands. Yet sufficiently similar systems cover large areas elsewhere in Africa and Asia, including mixed farming and agro-pastoral

CONCLUSION

As agricultural intensification continues in the Ethiopian highlands, pressure on natural resources will also continue, which may incentivize improved management of neglected areas such as communal grasslands. Soon, those communal grasslands that remain will likely be managed in a much more detailed manner than at present. However, the current absence of producer-driven management plans, and the lack of clear and secure land tenure, subject communal grasslands to heavy, almost unregulated grazing that can cause land degradation.

Degradation and conversion of grasslands to other uses diminishes the supply of important feed resources in many areas of the highlands. Given their present importance to livelihoods (Eba and Sircely 2020a), we expect grassland productivity under improved management to be closer to the natural potential of communal grasslands, which would provide much greater benefits to farmer livelihoods.

HCGM takes a first step toward reaching the potential productivity of communal grasslands in the long term. For

this reason, HCGM takes engagement with the leadership and membership of user groups seriously, as the user group will largely decide how a communal grassland will ultimately be used. The flexibility of the HCGM process lends it to adaptation to a wide range of smallholder-managed communal grasslands in Africa and Asia among other areas.

Well-managed communal grasslands would significantly improve feed availability, livestock production, and the income and livelihoods of farmers who rely on livestock. In addition, certifying and planning the management of communal grasslands based on local priorities would slow land degradation, encourage restoration, and enhance ecosystem services across the Ethiopian highlands.

HCGM provides a clear strategy and pathway forward for practical and rapid improvement of grassland management in many of the mixed farming and agro-pastoral systems that support most smallholder producers around the world.



A communal grassland in Menz, Ethiopia. Better grassland management is key to maintaining livestock productivity and the environment in this highland region. Photo ILRI/Jason Sircely

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Partners

- Boda, Gebriel Meda, Ginfile, Girar Meda, Got Gowel, Kuri, Tebabina Merchet, Teteramba, Worase, and Zerma communal grassland user groups, Menz Gera and Menz Mama Woredas, Amhara Region
- Debre Birhan Agricultural Research Center of the Amhara Regional Agricultural Research Institute (ARARI)
- Menz Gera Woreda, Amhara Region
- Menz Mama Woreda, Amhara Region

Authors

Jason Sircely and Bedasa Eba, International Livestock Research Institute (ILRI)

CONTACT

Jason Sircely, Senior Scientist (ILRI) j.sircely@cgiar.org

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