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# COMMUNITY-BASED RANGELAND MANAGEMENT IN ETHIOPIA'S PASTORAL AREAS

## TRENDS, BEST PRACTICES, AND RECOMMENDATIONS FOR THE FUTURE

# COMMUNITY-BASED RANGELAND MANAGEMENT IN ETHIOPIA'S PASTORAL AREAS: TRENDS, BEST PRACTICES, AND RECOMMENDATIONS FOR THE FUTURE

USDA FOREST SERVICE ASSESSMENT

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Photo Credit: Lance Criley, U.S. Forest Service

# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| CBFM | Community-Based Forest Management |
| CBNRM | Community-Based Natural Resource Management |
| CBRM | Community-Based Rangeland Management |
| CV | Coefficient of Variation |
| EPRDF | Ethiopian People's Revolutionary Democratic Front |
| GiZ | German Agency for International Cooperation |
| HM | Holistic Management |
| IBLI | Index-Based Livestock Insurance |
| IGAD | Intergovernmental Authority for Development |
| LLRP | Lowland Livelihoods Resilience Program |
| MoA | Ethiopia's Ministry of Agriculture |
| NGO | Non-Governmental Organization |
| NRT | Northern Rangelands Trust |
| PFM | Participatory Forest Management |
| PLI | Pastoral Livelihood Initiative |
| PNRM | Pastoral Natural Resource Management |
| PRM | Participatory Rangeland Management |
| PSNP | Productive Safety Net Program |
| PRIME | Pastoralists' Areas Resilience Improvement through Market Expansion |
| RiPA | Resilience in Pastoral Areas |
| RMC | Regional Management Councils |
| RMP | Regional Management Plan |
| RPLRP | Regional Pastoral Livelihood Resilience Program |
| USAID | United States Agency for International Development |
| USDA | United States Department of Agriculture |
| USFS | United States Forest Service |

A young Borana woman with her goats, Borana, Ethiopia (Photo Credit: ILRI\Zerihun Sewunet).

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# 1.0 EXECUTIVE SUMMARY

## OBJECTIVES OF THIS REPORT

The U.S. Forest Service commissioned this report with support from USAID-Ethiopia to provide some guidance for community-based rangeland management (CBRM) efforts in **Ethiopia**. We focus geographically on the **Afar**, **Somali**, and **Oromia** regions, while recognizing that CBRM initiatives exist in other regions of Ethiopia. We refer to the wider **East African region** and the world when helpful examples exist elsewhere. For this report, we:

1. Describe key issues and misconceptions about rangelands and pastoral peoples that apply to the Ethiopian context and elsewhere in the world
2. Describe the status, trends, and opportunities for pastoral peoples, rangelands and rangeland management in Ethiopia
3. Describe and review the strategy and approaches of the Participatory Rangeland Management (PRM) program and similar CBRM programs in pastoral areas of Ethiopia
4. Assess best practices and lessons learned from CBRM programs in Ethiopia
5. Recommend ways to improve current approaches for future programs

## MISUNDERSTANDINGS ABOUT PASTORALISM

Misunderstandings abound about pastoralism. Most policies and development assistance for pastoralists is designed by non-pastoralists. All non-pastoralists bring in biases they often do not know they have, based on where they grew up and dominant narratives in their work organizations. This leads to inappropriate policies, development assistance and research.

**Figure 1:** Report geographic focus


**Correcting key misunderstandings:**

- **Pastoralism is not primitive or unproductive.** Rather, it is highly strategic, honed over millennia, and more productive than commercial ranching or farming in most rangelands.
- **Pastoral herd sizes and movement strategies are not illogical.** Instead, substantial herds and frequent movement, including over long distances, are key to surviving dry seasons and drought (and to adapt to climate change).
- **The tragedy of the commons is not widespread.** Rather, pastoralists have customary institutions (or governing bodies and rules) that sustain rangelands. In fact, the tragedy of enclosure, where farmers fence rangeland, is a major reason for degradation in rangelands.
- **Settling pastoralists is often not good for people and rangelands.** In fact, sedentarization destroys pastoralism unless

livestock mobility is maintained. It leaves vast areas of dry rangeland without its most productive use, which is livestock grazing.

- **Grazing does not inevitably cause degradation.** Actually, degradation is rather rare, although it does occur, with some prominent examples in Ethiopia. When it does occur, it is usually caused by policies that degrade rangelands (like preventing burning or encouraging the spread of crop farming) rather than by livestock grazing.

## ETHIOPIAN PASTORALISM: STATUS AND TRENDS

Ethiopian pastoral grazing lands cover half of Ethiopia and are home to 10% of Ethiopia's people as well as 100% of Ethiopia's camels, 28% of its cattle, 70% of its goats and 30% of its sheep. Both agropastoralists and pastoralists live in rangelands, with the former growing both crops and livestock while the latter graze livestock as their principal livelihood, although there is much flexibility in how people think about their livelihoods. Agropastoralism covers 26% of rangelands with the rest in pastoralism.

Today, both pastoral and non-pastoral populations are growing rapidly in Ethiopian rangelands. Governmental policies often promote the conversion of the best watered pastoral land into extractive commercial farming and subsistence crop farming. Pastoralists need access to these lands to pursue their livelihoods and to survive drought and avoid famine. Policies and development practices inadvertently undermine traditional pastoral ways of sustaining the land, weakening their traditional decision-making power through their customary institutions. These institutions, when strong, prevent conflict and land degradation.

Other trends in pastoral lands include the spread of land privatization and enclosures, unregulated water development, livestock intensification, increasing conflict, livestock population growth, shrinking herd sizes per household and restrictions on pastoral mobility. Ethiopia's first ever pastoral policy, completed in 2019, supports pastoral mobility and land use. It promotes communal land certification as a way to address pastoral land use rights and other pastoral rights.

## PARTICIPATORY RANGELAND MANAGEMENT AND OTHER CBRM PROGRAMS

PRM is a robust process of engaging pastoral communities to develop pastoral-driven ways to improve rangeland management in Ethiopia. Participatory Forest Management (PFM) was developed in the 1990s for forested areas of Ethiopia and then adapted into PRM in the 2000s. The goal of PRM, and CBRM around the world, is to devolve power from central government back to pastoral customary governing bodies (or institutions) and support those bodies to develop sustainable and equitable ways of managing rangelands. In Ethiopia, PRM focuses on revitalizing pastoral customary institutions. Sometimes, when pastoral institutions are weak, PRM creates hybrid institutions between pastoral communities and government.

PRM is a long-term process that has already had significant impacts. PRM focuses on making sure that pastoralists drive their own development processes and governance. PRM then provides a step-by-step way to strengthen pastoral customary institutions to re-establish their management over rangelands. The steps are meant to be adapted to each pastoral culture and situation. PRM recognizes the all-important need to develop strong institutions at both community and landscape scales in pastoral lands. PRM is also strengthening the capacity of pastoral leaders and their institutions to self-sustain their CBRM efforts.

One interviewee, deeply involved in the PRM process, observed the following impacts:

***"PRM has helped users secure tenure and prevent land grabbing, reduce conflict, know their resource base, prioritize rehabilitation areas and actions, mobilize resources from within and outside, and improve rangelands."***

Rangeland improvement included developing drought fodder reserves and restoring communal grazing areas by dismantling individual enclosures, farming lands and settlement areas. Pointing to broader impacts, this interviewee concluded:

***"....communities engaged in PRM developed better resilience capacities during the 2015-17 drought and maintained their food security as compared to others not engaged in the initiative."***

## BEST PRACTICES AND RECOMMENDATIONS

We interviewed 17 people from government, NGOs, the private sector and donors who know about or work with CBRM initiatives in Ethiopia. We also consulted the literature over the past two decades and used our own experience in CBRM and pastoralism to develop CBRM best practices and recommendations.

For **overall recommendations about CBRM**, interviewees emphasized the following:

- **PRM *is a foundational best practice* in CBRM with its deep and systematic participatory process.** This process ensures that pastoralists get the development assistance they want and need. PRM and other CBRM initiatives would be improved if they focused on building pastoral capacity and turning over leadership of the initiatives to pastoralists themselves.

- **Other development initiatives with some CBRM objectives will be more impactful if they *adopt the PRM process*, putting pastoral needs first.** Examples include the Lowland Livelihoods Resilience Project (LLRP) which is now engaging with PRM. The Productive Safety Net Program (PSNP) could work closely work with PRM to leverage resources. These programs would have much wider impact if they fully engaged pastoral communities, built the capacity of pastoral leaders, empowered pastoralists to lead their own development and supported pastoral customary institutions.

- **Revitalizing pastoral customary institutions and norms is the right objective for CBRM in Ethiopia.** In practice, this means the Ethiopian federal and regional governments have to *decentralize some power to local pastoral institutions* to lead development and governance of their lands and peoples. This also means that the governmental administrative structures (kebele, woreda) must both respect and sometimes defer to pastoral communities in decisions that affect pastoral lands and lives in a functional governance partnership.

- **CBRM institutions and the rules they develop *must be different from region to region and culture to culture.*** Why? Pastoralists who live in rangelands where rainfall is more predictable don't need as much flexibility in their grazing strategies as those pastoralists who live in rangelands where rainfall is highly unpredictable. For example, Borana pastoralists live where rainfall is more predictable and thus can afford to set strong boundaries on where people graze. The Afar and Somali pastoralists, who live where rainfall is less predictable, need fewer grazing boundaries and more flexible rules. For the Afar and Somali, it may be more effective for them to develop institutions and rules that restrict access to key resources like riverine areas and wetlands than rules that establish strict grazing land boundaries. With climate change, most rangelands are receiving less predictable rainfall so movement rules and boundaries will need to adapt.

- **CBRM initiatives also need to support governing bodies that can make decisions at *several scales from local to landscape.*** This is because pastoralists must dynamically move livestock to distant pastures during dry and wet seasons and particularly during droughts. Rangeland management institutions are more effective when they can negotiate access with outside groups and have a process to incorporate outside livestock when seasonal movement and/or droughts occur in surrounding areas.

Interviewees made many specific recommendations for the **PRM process**:

- First, PRM is having more impact than its reviews articulate, and a good **theory of change** will help highlight those impacts and suggest processes to monitor.

- The **adaptability and flexibility of the PRM process** is one of the keys to its ability to revitalize customary institutions that are appropriate and sustainable for pastoralists.

- The **monitoring process for PRM** is relatively weak, partly because it is time consuming and expensive to monitor CBRM impacts. One recommendation is to develop simple annual monitoring based on key pastoral and development indicators. Then every five years or so, groups of CBRM initiatives can engage research institutions to find funding to do deeper evaluations using gold standard designs with 'before and after' and 'with and without' comparisons of social, organizational and ecological impacts.

- For further PRM research, the program should include a **strong process of action research or co-production of knowledge with pastoralists** that integrates pastoral with scientific knowledge.

- PRM should be supported with **long-term funding**, since this deep process of engagement requires this type of engagement to achieve deep impact.

- **Institutionalizing and mainstreaming PRM in wider governmental development programs**, like LLRP and PSNP, is imperative. PRM fits best with activities that address conflict, disasters and climate change.

- There was good support to develop a **community of practice** to share lessons learned among CBRM programs in East Africa.

- Rangeland management would benefit from

**greater inclusion of women and youth**, but these efforts should not unnecessarily disrupt customary institutions and be driven with priorities learned from women and youth.

On **particular technical approaches to CBRM**, our interviewees had this to say:

- Many were **skeptical about the usefulness of Holistic Management** approach for traditional pastoral societies grazing on common land. This adaptive management system relies on a high level of management control and relatively few stakeholders with little conflict, neither of which are likely among pastoralists managing land in common. Additionally, the associated intensively managed rotational grazing system is a poor substitute for complex, culturally embedded, pastoral grazing management systems.

- **AfriScout** is a mobile service that provides current water and vegetation conditions on localized grazing maps, enabling pastoralists to make more effective migration decisions. Interviewees did not agree on its usefulness, with several interviewees saying they could not imagine pastoralists needing this technology or using it. But another interviewee said that AfriScout maps provided real-time pasture and water availability information for livestock mobility decision making, reduced conflict and prevented disease transmission.

- On **grazing enclosures**, their use should be limited to avoid encouraging farming in rangelands, and instead, they are a useful tool to rehabilitate rangelands.

- For **control of invasive woody species**, there was skepticism that current efforts of bush clearing can be maintained because of labor constraints. Better might be an integrated approach that assesses the impacts of woody plants on ecosystem function and services and looks for solutions that are embedded in cultures and the local ecology.

**For education**, recommendations included:

- There is a strong need for **pastoral capacity building in leadership** and other aspects of pastoralism and CBRM. One interviewee pointed out that the current higher education system in Ethiopia rarely trains students about pastoral production systems. Thus few graduates of universities are prepared to lead pastoral projects or develop appropriate pastoral policy. In Kenya, the biggest impacts of CBRM projects occurred through the actions of stronger and better pastoral leaders.

**For broader development,** our sources recommended the following:

- There needs to be a **much deeper discussion among development practitioners about whether development really benefits pastoralists.**

- There needs to be more focus on **development that supports pastoral priorities** like sustaining livestock and rangelands. This will help build the resilience capacity of pastoral and agropastoral communities and to enhance the contribution of pastoralists to the national economy because most livestock exports come from pastoral areas.

- Many interviewees lauded the new **2019 pastoral policy** and its support for pastoralism and mobility. One interviewee highlighted the need to develop a 25-30 year road map for implementation of the policy. The policy is much more than a pastoral policy, it is for all people in former pastoral areas, pastoral or non-pastoral, and thus addresses the trade-offs faced in this situation (for example, mobility vs settlement).

- Others suggested that **big development projects**, like dams, do more harm to pastoralists than good.

Salt harvesting, Danikil Depression, Afar Ethiopia
Photo Credit: Lesly Derksen

# 2. INTRODUCTION

## 2.1. CONTEXT AND BACKGROUND

### THE COMMUNITY-BASED RANGELAND MANAGEMENT CONCEPT

Community-based rangeland management, or CBRM, supports the traditional and customary ways that pastoral peoples have managed land, often for millennia, to support their families by herding livestock. CBRM falls under the broader umbrella of community-based natural resource management (CBNRM) or community-based conservation[1–3]. CBRM supports the value of local or traditional knowledge about how to use land. Often, but not always, this type of management occurs where communities use the land in common, deciding how to use the land as a group. CBRM usually has the twin goals of ecological conservation and social-economic development. To support local communities doing CBRM, central governments devolve some decision-making power over land to local communities by supporting their customary institutions.

### RANGELAND MANAGEMENT IN AFRICA

Many African rangelands are common land (or communal land), usually owned and controlled by governments for the benefit of pastoral communities. Common ownership allows pastoralists to develop flexible strategies of land use over time so they can survive in a dry environment with unpredictable rainfall. Pastoralists move their herds from day to day, season to season and year to year to strategically ensure rangeland health and sustained production. African pastoralists have some of most effective systems to manage the commons (or common property)[4,5], even in the face of rapid change.

Pastoralists in Ethiopia, like the rest of Africa, have developed sophisticated systems of grazing the land[6]. Many pastoralists use centuries-old institutions and rules to decide how and when to graze wet and dry season pastures, and access wells, riverine areas and other resources that are critical for their survival. For example, the Afar clan-based *Makabantu* elders coordinate grazing with neighbors to access pastures and water during droughts[7].

### "TRAGEDY OF THE COMMONS" IS NO LONGER SUPPORTED

In the 1960s, the idea of the tragedy of the commons strongly influenced outside perceptions and governmental prescriptions for pastoralism. This idea states that common land with no rules of use is destined to be degraded[8]. This is important since most global rangelands are held in common by groups, not by individual private owners[9].

This idea and anti-pastoral prejudices often spurred governments to claim that pastoral land was wasteland and poorly managed, and that pastoralists needed to be settled[10,11]. Governments often use this tragedy to justify "control over, or privatization, of communal grazing lands"[12,13]. However, neither state control nor privatization provides the "creativity and flexibility" that pastoralists need to find and use far flung resources, especially during the dry season or drought[12].

In the 1980s, new evidence showed pastoralists, like many communities around the world, often have rules of use for their commons and manage them sustainably[5,13,14]. In other words, use is not a free-for-all. Also, rangelands proved to be more resilient to pastoral grazing than previously thought[15–17]. We now understand that even open access pastures can be sustainably used by pastoralists[18–20]. This is not to say that common use of pastures is a panacea. For example, even when pastoralists use land in common, not all members of society necessarily benefit equally from that use[21].

With this new understanding of the pastoral commons, NGOs and governments started supporting community-based efforts to revitalize traditional, customary pastoral institutions to manage land, with early examples in East Africa[22–26]. These efforts also devolved power to local communities, integrated indigenous and scientific knowledge, and addressed both conservation and development.

In Ethiopia, community-based work started with community-based forest management (CBFM) in the mid-1990s[27]. This work built on decades of previous work in natural resource management by the Ethiopian government, communities, and the international community. In the mid-2000s, this approach quickly grew into community-based approaches in rangelands[27–32]. These CBRM efforts work closely with pastoral communities, like those in the Afar, Somali and Oromia regions, in partnership with the Ethiopian government, NGOs, and other stakeholders.

## TODAY'S CHALLENGES TO COMMON LAND MANAGEMENT

Today, pastoralists see many changes that undermine their traditional institutions of common land management, especially changes in land use and land tenure[9,12]. In some countries of East Africa, like Kenya, pastoralists now subdivide and privatize their pastoral land, especially land with more rainfall or near towns[33,34]. This removes pasture from common use by other herders. In other countries, like Ethiopia, the government retains control over land, giving residents the rights to use the land[35,36]. Sometimes, however, the Ethiopian government also restricts pastoral access to their pastures. This occurs when the government excises the best land for other uses like state farms, large-scale resettlement schemes, or foreign commercial use[35]. Thus, private ownership or state control weakens customary institutions and threatens the very survival of pastoralism.

Other changes that challenge traditional pastoralism include population growth, greater needs for education and health services, climate change, and globalization[9,34]. Pastoralists also now need better access to services like education and health care, which means a mobile lifestyle is more difficult to maintain. Globalization brings greater demands for food, fuel, and recreation from pastoral lands. This means governments and the private sector see pastoral lands as ideal places for new wildlife parks for tourism, new mines or renewable energy, and new commercial farms.

These changes can reduce pastoral welfare and degrade rangelands. For example, the general assembly of the Ethiopia's Borana people, the Gumii Gaayo, meeting in 1996 "recognized the declining welfare of the Borana society in general… The 'cattle problem,' as viewed by Gumii Gaayo leaders, is seen as a reduced productivity per head due to high stocking rates and environmental degradation..."[37].

**WHY IS COMMON LANDS PASTORALISM IMPORTANT TO THE COUNTRY OF ETHIOPIA?** Pastoral grazing is more profitable and sustainable than most other uses like farming and mining[9,18,38,39]. Pastoralism is also more compatible with wildlife and tourism than other uses[40,41]. Where farms replace pastoral rangeland there is more overall poverty and inequality[39,42,43]. This poverty forces pastoralists to migrate into towns and cities[44]. Poverty and competition over rangeland resources also create violent conflict that undermines the Ethiopian state[45].

## THE CURRENT CBRM MODEL

CBRM initiatives today have a strong focus on governance. This governance consists of decision making by pastoral people using their customary institutions (or rules and organizational bodies). Sometimes CBRM governance is by new hybrid institutions where pastoralists collaborate with NGOs or government. Pastoralists must plan their herder movements both locally and across large landscapes because they must move during dry seasons and droughts, sometimes over long distances. This means their decision making is more complex than in neighboring highland areas because of these complicated movements[31]. Also, most CBRM initiatives work locally with local communities and implement "a fairly common suite of technical practices that a community committee implements and enforces"[31].

However, CBRM initiatives differ from place to place depending on how the land is owned, the mixture of livestock keeping and crop agriculture present, and the strength of customary institutions. CBRM initiatives also differ by distance that pastoralists must move seasonally and how communities are organized[31].

## OBJECTIVES OF THIS REPORT

The U.S. Forest Service commissioned this report with support from USAID-Ethiopia to provide some guidance for CBRM efforts in Ethiopia. We focus geographically on the Afar, Somali, and Oromia regions, while recognizing that CBRM initiatives exist in other regions of Ethiopia. We also refer to the wider East African region and the world when helpful examples exist elsewhere. For this report, we:

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4. Assess best practices and lessons learned from CBRM programs in Ethiopia

5. Recommend ways to improve current approaches for future programs

## 2.2. HOW WE DID THIS REVIEW

Our consultancy team was composed of three Americans—two men and one woman. While we have worked in East African pastoral systems for a total of 36 years, we are not from Africa and we are not pastoralists. Our team lead (Reid), however, lived in East Africa for 20 years. We thus represent a foreign perspective on Ethiopian pastoralism that includes significant first-hand experience working with pastoralists. We recommend that the next review of CBRM in East Africa include pastoralists as lead team members to get a strong insider's view and to support a growing cadre of pastoral consultants.

We conducted this review between 15 July and 30 November 2020. We first did an in-depth review of published and gray literature (reports) on CBRM and pastoralism in Ethiopia. We found several recent reviews of CBRM in Ethiopia[27,29–31,46]. We thus focused this report on tested best practices of the past and a forward-looking assessment to complement these existing reviews. Once we completed the review, we developed a set of interview questions to fill the gaps in the literature. We then conducted 16 interviews that were 1-1.5 hours long with 17 participants from government, NGOs, the private sector, and a research institution. We first chose interviewees who were authors on Ethiopian CBRM reports and then selected others based on interviewees' recommendations. We also included a majority of Ethiopians as our interviewees and always asked about pastoralists to interview. In the end 60% of our interviewees were Ethiopians but only 15% were pastoralists (see list of interviewees in the report appendix).

For the interviews themselves, we developed a set of interview questions to improve our understanding of CBRM in Ethiopia. We looked for repetition of answers and shifted the questions slightly from interview to interview to dig deeper where our understanding needed strengthening. This shifting means we then could not and did not use the data in a quantitative manner. For example, we did not count how many interviewees agreed with a particular best practice we describe. We recorded and transcribed interviews and then coarsely coded responses into the topics above. We then used this information to fill gaps in the literature and identify CBRM best practices. We use quotes from the interviews to highlight various points throughout the report text. We wanted to include several pastoralist advisors on our consultancy team but found this difficult to accomplish given language differences and our short timeframe.

### Interviews in the time of COVID-19.

- 16 interviews with 17 participants from government, NGOs, the private sector and a research institution
- 60% of interviewees were Ethiopians
- 15% of interviewees were pastoralists

## 2.3 DEFINITIONS

Definitions of pastoral and agropastoral people, customary institutions, rangelands, community-based rangeland management and best practices

### Pastoralists and Agropastoralists

**Pastoralists** are people in cultures centered around herding livestock[47]. They "are people who make their living primarily from herding livestock but also exploit other resources"[48]. **Agropastoralists** are settled people who grow both crops and herd livestock and thus convert part of rangelands into croplands[9].

### Rangelands

"Land on which the indigenous vegetation…is predominantly grasses, grass-like plants, forbs or shrubs and is managed as a natural ecosystem. **Rangelands** include natural grasslands, savannas, shrubland, many deserts, tundras, alpine communities, marshes and meadows"[49]. Rangelands have variable and often harsh climates, are sparsely populated and remote from markets[50], produce significant livestock, and are mostly used and managed in common[9].

### Community-based Rangeland Management (CBRM)

**CBRM** initiatives or programs aim to better manage rangelands through participation of pastoral communities and resource users in decision making. CBRM initiatives devolve power and authority over natural resources from the central government to local pastoral communities, address both pastoral development and rangeland conservation, and build on customary management practices, local institutions, and traditional knowledge (adapted for rangelands from Armitage (2005)[1] and Kellert et al (2000)[3]).

### Customary Institutions

**Customary institutions** are the traditional governing bodies, rules, and cultural practices that help pastoralists sustainably manage rangelands, maximize livestock production, and reduce conflict with neighbors[51–53]. In Ethiopia, governing bodies include the Oromo *Gada*, Afar *kedo-badaho*, and Somali *xeer*. Rules include who, where, and when pastoralists can herd livestock. Cultural practices prescribe the person-to-person interactions or preferences such as sharing rangeland knowledge or livestock after droughts.

### Best Practices

**Best practices** are the philosophies, policies, processes, and actions that lead to successful CBRM. Note that it may be inappropriate to use a "best" practice that is successful in one place in a different place[54–56]. Even minor differences from place to place may turn a "best" practice into a "mediocre" practice. Because of this, we use the word "best" with reservations. It may be more accurate to call the practices we describe here "good practices".

We propose a simple typology for CBRM initiatives for Ethiopia (Figure 2.1). Though we encourage leadership by pastoralists, we also acknowledge that different levels of CBRM may be appropriate and more successful in different situations.

## Community-Led Rangeland Management Initiatives

**Community-led rangeland management initiatives** are those where pastoral communities set and implement their priorities and thus communities own and lead decision making about rangeland management. Because of this approach, these types of CBRM projects are self-sustainable (if customary institutions are strong), and pastoralists receive significant benefits since they lead and receive all the benefits. Development programs are community-led when they work with community-led institutions and limit themselves to community-requested actions.

## Community-Engaged Rangeland Management Initiatives

**Community-engaged rangeland management initiatives** are those where joint collaborative partnerships set and implement priorities and thus the partnership owns decision making about rangeland management. These partnerships often include pastoral governing bodies / institutions, NGOs and sometimes government. Often, partnerships use participatory processes to strongly engage pastoral society through customary institutions. Through this process, communities often partially drive the priorities of the initiative. But pastoral communities only sometimes lead these initiatives, self-sustainability is an issue, devolution of power to the local level is partial, and benefits flowing to pastoralists are moderate.

## Community-Consulted Rangeland Management Initiatives

**Community-consulted rangeland management initiatives** are those where government and sometimes NGOs set and implement priorities and thus government or NGOs own decision making about rangeland management. These initiatives consult / involve pastoral communities in initiative activities. They tend to focus less on broader rangeland governance and more on tactical project activities like bush clearing, invasive plant removal, or broader livelihood support activities, like "food and cash for work". It is not clear how much these initiatives are driven by community priorities or if they are self-sustainable at all. Here, there is little building of pastoral capacity, the benefits flowing to pastoralists can be relatively low (unless they support pastoral priorities), and there is little devolution of power.

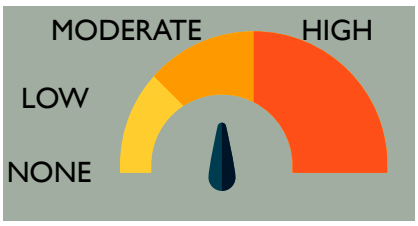



**Figure 2.1:** A general typology of community-based rangeland management (CBRM) initiatives (see Table 4.1 for specific project details).

| | COMMUNITY-LED | COMMUNITY-ENGAGED | COMMUNITY-CONSULTED |
|---|---|---|---|
| **WHO SETS PRIORITIES?** | Pastoralists | Usually NGO | Govt./NGO |
| **WHO IMPLEMENTS?** | Pastoralists | Collaborative | Govt./NGO |
| **WHO OWNS THE OUTCOMES?** | Community | Collaborative Partnership | Govt./NGO |
| **FOCUS ON GOVERNANCE** |  |  |  |
| **SELF-SUSTAINABILITY** |  |  |  |
| **ROLE OF CUSTOMARY INSTITUTIONS** | Strong | Moderate | Weak to Absent |
| **PASTORAL CAPACITY BUILDING** |  |  |  |
| **DEVOLUTION OF POWER** |  |  |  |
| **BENEFITS FLOWING TO PASTORALISTS** |  |  |  |

**CBRM initiatives in Ethiopia**

| | |
|---|---|
| **PRM** | Participatory Rangeland Management |
| **MoA** | Ethiopia's Ministry of Agriculture |
| **LLRP** | Lowland Livelihoods Resilience Program |
| **GiZ** | German Agency for International Cooperation |
| **PSNP** | Productive Safety Net Program |
| **RPLRP** | Regional Pastoral Livelihood Resilience Project |
| **RiPA** | Resilience in Pastoral Areas |
| **PRIME** | Pastoral Resilience and Market Expansion |
| **PLI** | Pastoral Livelihood Initiative |

| | COMMUNITY-LED | COMMUNITY-ENGAGED | COMMUNITY-CONSULTED |
|---|---|---|---|
| **ETHIOPIAN PROJECT EXAMPLES** | Borana Gada System<br>Afar Clan Lands<br>Somali Xeer System<br>HELVETAS | PRM<br>MOA's LLRP<br>GIZ Weir Project | MoA's PSNP<br>MoA's RPLRP |
| Projects trending toward community-led | **RiPA** ← **PRIME** ← **PLI2** ← **PLI1** | | |

### WHERE DO SPECIFIC CBRM INITIATIVES IN ETHIOPIA FIT IN THIS TYPOLOGY?

Community-led initiatives (also see Table 4.1) are led by the traditional governing bodies of pastoral society, like the Gada system of Borana pastoralists, the *kedo-badaho* clan lands of the Afar and the *xeer* system of the Somali[57–59]. These bodies then create the rules that determine how pastoral society works. This type of CBRM also includes work of NGOs who support pastoral institutions, like parts of the Helvetas project. In our view, they also include local level land-use planning or inter-community grazing agreements, which Robinson et al (2018)[31] do not view as part of CBRM.

Community-engaged initiatives include USAID-supported Pastoralists' Areas Resilience Improvement through Market Expansion (PRIME)/ Resilience in Pastoral Areas (RiPA) projects led by a range of NGOs using the PRM process. In fact, over time, USAID projects have moved toward community-led in this typology, from the PLI1 to PLI2 to PRIME to RiPA, as they have learned how to better support pastoral institutions. Included here are other projects that adopted PRM as their process like the World Bank/IFAD-supported Ethiopian Ministry of Peace's Lowland Livelihood Resilience Project (LLRP).

Under community-consulted rangeland management projects are projects like Ethiopian Ministry of Agriculture's Productive Safety Net Program (PSNP) as well as their Regional Pastoral Livelihood Resilience Program (RPLRP)[60,61]. Both of these projects seem to be trending towards a community-engaged approach.

## 2.4. CORRECTING MISUNDERSTANDINGS ABOUT PASTORALISM AND RANGELANDS

### WHY MISUNDERSTANDINGS OCCUR

First-time observers of dry rangelands and pastoral people understandably find them different than the settled farmland or urban areas that 99% of the people in the world grew up in[15,62]. This means pastoralists have uncommon knowledge and non-pastoralists can bring misconceptions about proper land management with them to pastoral lands. For pastoralists, this can be problematic because most governmental policy and development assistance in Africa is developed by non-pastoralists[15], who dominate the populations of most African countries and foreign donor agencies. These policymakers and donors naturally assume that what is best for settled farmers and farmland is also best for pastoralists and rangeland.

Here, we briefly describe five major lessons from pastoralists and researchers that correct these persistent misunderstandings. Learning these lessons will ensure that we make recommendations that are pro-pastoralist and appropriate for community-based rangeland management in Ethiopia. This is particularly important because pastoralism manages more land on earth than any other livelihood, and most of this land is common land[9].

### PASTORALISM IS STRATEGIC

We often underestimate how strategic and sophisticated pastoral herding and grazing strategies are. In the past, outsiders thought pastoralists held large herds for prestige, not recognizing that holding large herds is a critical strategy that allows them to survive frequent livestock loss due to drought[16]. Also, to outsiders, pastoralism often appears to be unproductive compared with settled ranching or farming. Common lands pastoralism is actually 30-200% more productive than commercial ranching in Africa[15,38,63]. In Ethiopia, Afar pastoralism was consistently more profitable than irrigated cotton or sugarcane farming in the Awash Valley, Ethiopia[39]. In addition, pastoralists annually produce about 75% of the milk and more than 50% of the meat in sub-Saharan Africa[62,64]. Finally, for more than a century, observers of pastoralism have proclaimed it is a dying way of life, but pastoral society remains remarkably resilient and creative today in the face of rapid change[39].

### MOBILITY IS ESSENTIAL

Many observers of pastoralism misunderstand how important it is for pastoralists to be able to move their herds both locally and across long distances as needed. Working through customary institutions, pastoralists carefully plan daily and seasonal movements to access the best forage but also to avoid conflicts, access water and other key resources, and maximize livestock health[65]. Ethiopia's Borana, for example, have four levels of movements from local to long distance, from the *olla* to *arda* to *reera* to *deedha*[12,37]. This sophisticated strategy maximizes production from their herds and rests grazing land when they move herds to new pastures. Policies that prevent movement and settle pastoralists weaken or destroy this important strategy of pastoralism. Today, however, some pastoralists have no choice but to settle as farming takes over some of their best rangeland[12]. Other pastoralists, however, choose to settle to be near schools and other services.

### TRAGEDY OF ENCLOSURE MAY BE THE BIGGER TRAGEDY

As described above, the tragedy of the commons is rarer than we used to think, even if it still affects policy for pastoral lands. Today, some pastoralist observers think the bigger challenge to rangeland health and pastoral well-being is the "tragedy of enclosure". This is when people subdivide rangeland, often privatize and fence it, and then settle down and stop herds from moving[66]. When livestock cannot move to ephemeral green pastures, livestock are less productive[67,68]. This also occurs when governments excise the best land from pastoral areas for conservation areas, commercial farming and ranching, mining, or other uses, preventing pastoral access to resources that are key to their survival during dry seasons and droughts. Enclosure can also have negative effects on wildlife populations and rangeland health[68].

### SETTLING PASTORALISTS (SEDENTARIZATION) IS PROBLEMATIC

The Ethiopian governments of the Derg and Ethiopian People's Revolutionary Democratic Front (EPRDF) pushed pastoralists to settle as a solution to the perceived problems of over-population and over-grazing in pastoral lands[10]. Settled pastoralists can be less healthy, lose their culture and can overgraze settled areas[69]. If all pastoralists settled, vast areas of land would indeed become wasteland, being too dry to farm. Additionally, most pastoralists would lose access to distributed key resources such as water and minerals. But there can be advantages to settling: more education, access to health services, and new livelihoods for pastoralists[70].

### GRAZING DOES NOT INEVITABLY CAUSE DEGRADATION

Another persistent misconception is that livestock grazing invariably degrades the land and spreads deserts. But this is less common than originally thought[9,40]. In-depth reviews of the evidence of livestock degradation in Africa come up with surprisingly few well-documented examples of this phenomenon[40]. While livestock can degrade land, degradation frequently occurs because of the tragedy of enclosure, or undermining customary pastoral institutions, or even climate change.

With the experience of working with pastoralists, non-pastoral observers soon develop a deep appreciation for the sophistication and creativity inherent in common lands pastoralism. This appreciation brings a new realization that "modern" ranching elsewhere has something to learn from common lands pastoralism[71]. For example, African pastoralists have long exploited diverse and varying landscapes to ensure herd productivity and stability. This exploitation of heterogeneity is now recognized as a key strategy for pastoralists and ranchers worldwide[71]. Given this, we conclude that it is risky for non-pastoralists to assume that lessons learned from settled farming or from private ranching systems are necessarily appropriate for African pastoral systems on common land.

## 2.5. ETHIOPIA'S PASTORAL SYSTEMS

### PEOPLE, LAND, AND LIVESTOCK

Cattle, camels, sheep, and goats are the main source of livelihood for 10% of the Ethiopian population, or about 11.6 million people as of 2020[72–75]. In the last Ethiopian census, nomadic pastoralists made up 3% of the population while settled pastoralists and agropastoralists were 7% of the population.

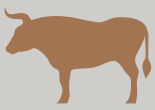
The landscapes where these pastoralists live cover 49% (552,193 km$^2$) of Ethiopia, mainly in the eastern and southern parts of the country[74]. These are mostly lowland areas with semi-arid or arid climates that are dominated by grasslands, shrublands, savannas, and woodlands. As such, they support a relatively small portion of the population, with many more people concentrated in the wetter, more temperate highlands (Fig 2.2). At the same time, these lowlands contain approximately 44% of the country's total livestock, including 28% of cattle, 42% of sheep, 70% of goats, and 100% of camels[76,77].

Lowland management of livestock differs substantially from management in the highlands. Highland households own small herds which forage on a mix of forage and crops. By contrast, pastoralists own about five times as many livestock per household as highland farmers, rely almost exclusively on native forage for feed, and range over significantly larger areas of land. Cattle alone account for 48% of pastoral household income[77].

10%

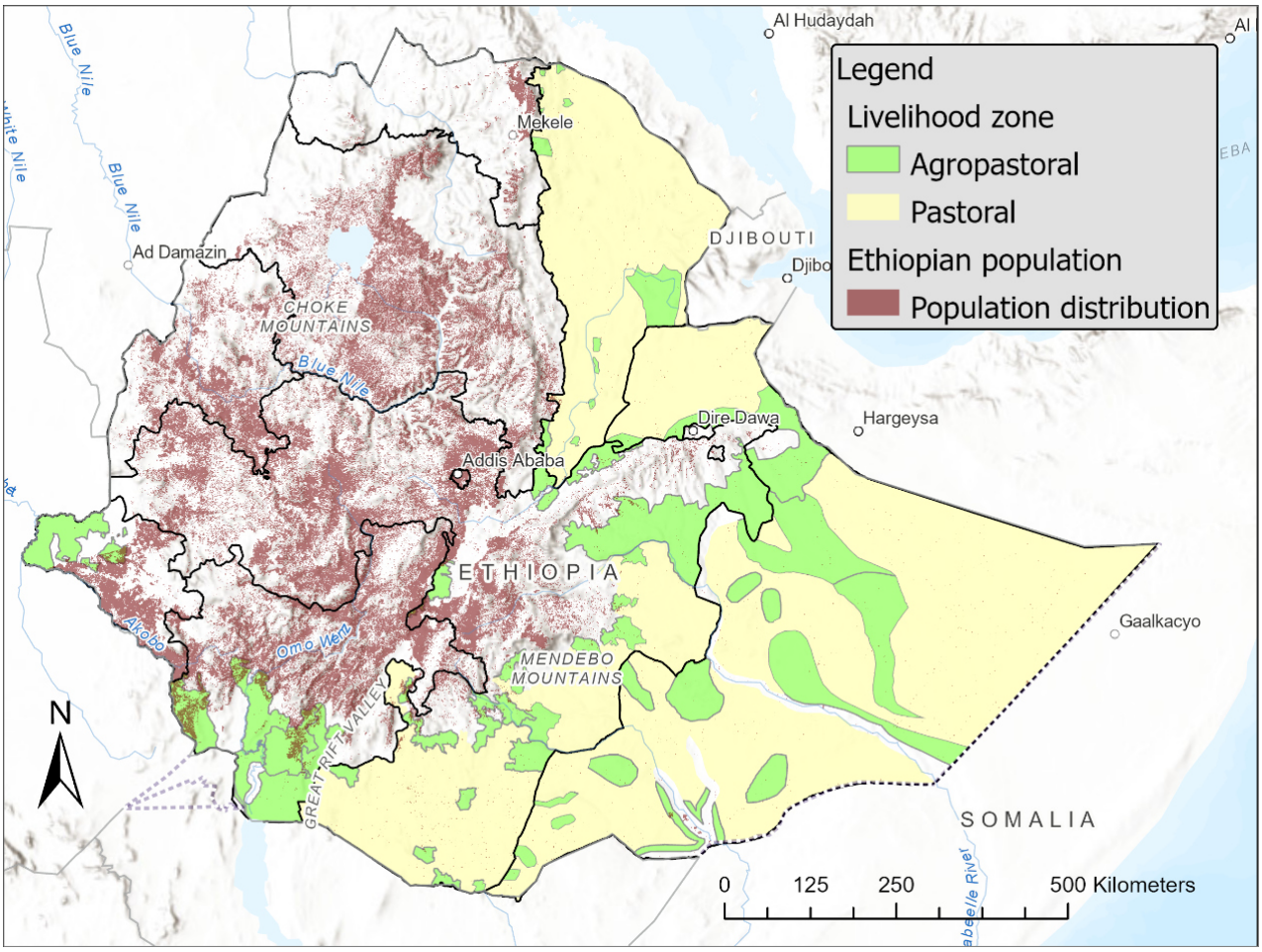
of the Ethiopian population derive their livelihoods from cattle, camels, sheep, and goats

48%



of pastoral household income is derived from cattle

**Figure 2.2:** Ethiopian pastoral and agropastoral areas with human population distribution (note small and sparse brown dots in pastoral areas).

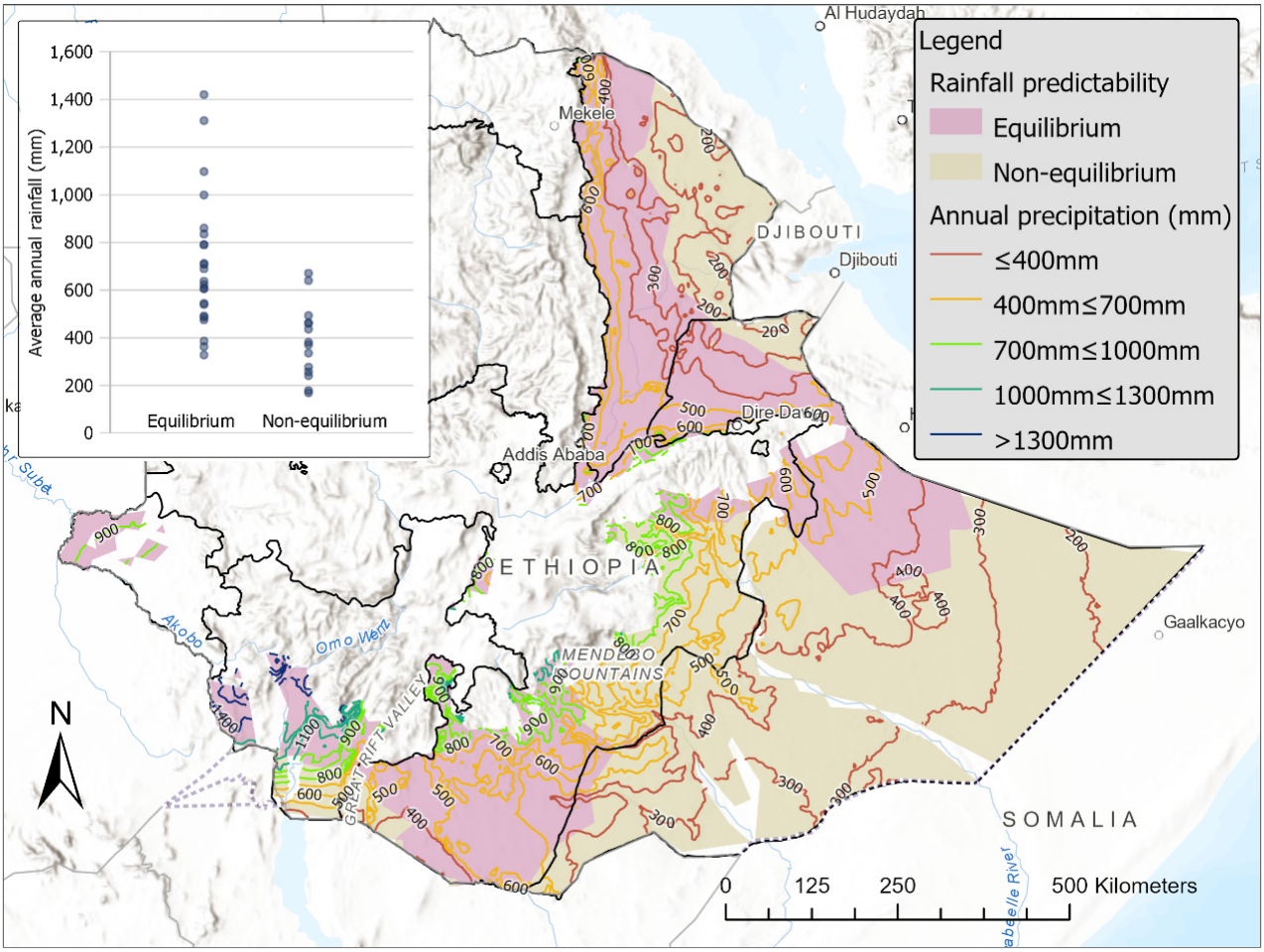



## VARIABILITY OF RAINFALL

Though total rainfall is important in rangelands, the variability of that rainfall may be even more important to the way pastoralists live. Predictability of rainfall plays a fundamental role in determining forage distribution, and therefore which pastoral strategies will be successful. Rainfall variability in rangelands is measured by how much rainfall varies compared to average total annual rainfall, known as the coefficient of variation (expressed as a percentage).

In the driest Ethiopian rangelands, such as those in parts of Afar region and most of Somali region, pastoralists live in non-equilibrium rangelands. This is where rainfall from year to year is most unpredictable (has a high coefficient of variation) and pastoralists are highly mobile in search of green pastures where rain recently fell. In equilibrium rangelands, such as those found in the southern Oromia region, annual rainfall is more consistent (and usually higher overall), and pastoralists are less mobile (Fig 2.3).

**Figure 2.3:** Rangeland type and average total annual rainfall in Ethiopia's rangelands. Equilibrium rangelands have a coefficient of variation (CV) of annual precipitation of less than 33%; non-equilibrium rangelands are above 33%. The graph on the left shows that rainfall is not the same as CV. Even though higher CV areas generally have lower rainfall, there are notable exceptions. Data from von Wehrden et al. (2012)[78] and WorldClim (https://www.worldclim.org/).

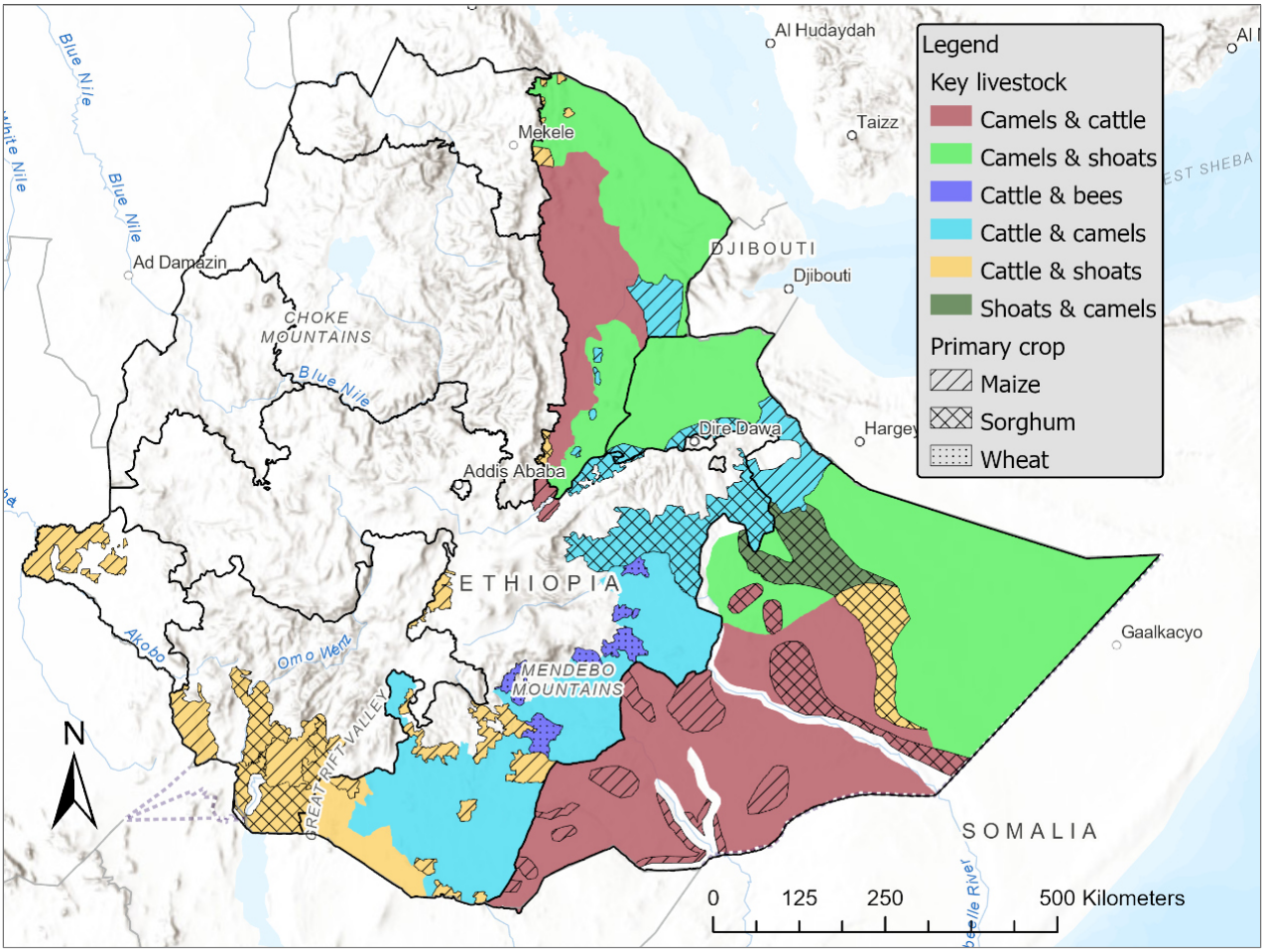



Rangeland degradation due to livestock grazing is much less likely in non-equilibrium than equilibrium rangelands[78]. This is because the more variable and drier environment usually forces pastoralists to leave or reduce their herd sizes before degradation happens[16]. Here, rules restricting grazing use are often less necessary. In equilibrium rangelands, pastoralists move less and rest pastures less often, and thus degradation is more common. Here, pastoralists avoid degradation by creating customary institutions (or rules) that regulate livestock movement, allowing some pastures to rest seasonally. Note, though, that degradation can occur in either rangeland type in places where livestock concentrate, such as around settlements, new water structures, or key resources like wetlands and rivers[37,79].

## ETHNICITY AND LIVELIHOODS

Ethiopian pastoralists and agropastoralists are diverse ethnically and in their livelihoods. Pastoral livelihoods vary among ethnic groups but also among clans and other subgroupings within ethnic groups. Settled agropastoralists raise cattle and shoats (sheep and goats) while growing crops such as sorghum and maize. By contrast, nomadic pastoralists tend to herd larger stock such as camels and cattle and do not grow crops (Fig 2.4)[74]. The dominant pastoralist ethnic groups of the USAID-funded RiPA area are the Afar, Oromo, and Somali, with smaller areas in the SNPP region occupied by the Dassanach, Hamer, and Nyangatom.

**Figure 2.4:** Key types of livestock in pastoral and agropastoral areas (with dominant type listed first), with primary crops in agropastoral areas.




## 2.6. THE VALUE OF CUSTOMARY INSTITUTIONS IN RANGELAND MANAGEMENT

### CUSTOMARY INSTITUTIONS

Customary institutions are the traditional governing bodies, rules, and cultural practices that help pastoralists sustainably manage rangelands, maximize livestock production, and reduce conflict with neighbors[51–53].

Even if past customary institutions are no longer applicable, understanding their underlying principles can help today's pastoralists make decisions that support future rangeland sustainability.

Pastoralists design their customary institutions to fit two different ways they access and use the land, either as common property or as open access rangelands. All land in Ethiopia is state owned, but we use the term property to describe how land-use is controlled. Historically, pastoral societies first established grazing lands with more flexible, open access rules. As populations grew and rangelands became more crowded, pastoralists then created more rules to ensure sustainable use of rangelands as common property. These rules are necessary but require more structured governing bodies and were more costly to pastoral society. Open access rules require less work to maintain but are more susceptible to non-pastoralist policy and population growth[18].

**Table 2.1:** Common property versus open access rangelands: their characteristics.

| GENERAL HISTORICAL FEATURES | OPEN ACCESS GRAZING LANDS | COMMON PROPERTY GRAZING LANDS |
|---|---|---|
| Boundary by definition | Fuzzy, not exact, or flexible | Clear and fixed, known to all |
| Members by definition | More open, in some cases all pastoralists | Limited, difficult to join group |
| Resource, livestock forage, rules | Do not convert grazing lands or limit movements | Seasonally restricted, discussed |
| Cost and strength of customary institution | Low and weak | High and strong |
| Environmental sustainability requirements | Dynamic livestock movements; Drought occasionally reduces livestock numbers | Rules, monitoring, and enforcement adjusted to match forage growth and use levels over time |
| Societal sustainability risk | External population does not enter and convert grazing lands | Members do not privatize important grazing lands as internal population increases |
| Typical environments | Few neighboring non-pastoralists: Arid, drier rangelands (but possible in semi-arid); likely large but can be small | Many neighboring non-pastoralist groups: Semi-arid, wetter rangelands; can be smaller in size |
| Example pastoral cultures | Somali<br>*Xeer* system<br><br>Afar<br>*Kedo-badho* system | Oromo<br>Gada system<br><br>Dassanach |

Livestock heading home in the evening after grazing, Abala woreda, Afar, Ethiopia (Photo Credit: ILRI/Fiona Flintan)

## OPEN ACCESS AND COMMON PROPERTY RANGELANDS

Customary institutions with *open access* rangelands have low costs and maximize societal livestock production[51]. In open access rangelands, all herders (or those from within a specific group) can move their livestock without restrictions[19]. Pastoralists maintain these rangelands with few rules and little resource monitoring. Limited rules allow households to move livestock quickly, which can help avoid mass livestock death from drought or disease[80,81]. When individual households suffer livestock losses, customary institutions often support restocking from family and friends[82]. Low costs and efficient livestock production explain why open access was the default land practice[51].

Societies with open access rangelands work best in large arid regions with low populations[8,20]. Livestock-driven land degradation is rare because droughts frequently limit livestock numbers[16]. Under these conditions, costly border enforcement is unnecessary. However, sustainable management of open access rangelands is not assured. Mobility must be maintained because key resources, like dry season grazing areas, can be overgrazed if pastoralists settle[71,83]. Additionally, the need for pastoralists to protect boundaries increases as outside populations encroach. Violent conflict is more likely to arise when customary institutions have few rules to negotiate cross-boundary movements[45,51,84].

Some pastoralist cultures create *common property* to exclude others who threaten to overuse the rangelands[20,51,85]. Common property entails rules that set clear land boundaries to limit resource access. Common property is easier to sustain in equilibrium (often wetter) than non-equilibrium (often drier) rangelands, because forage is denser and more dependable in equilibrium rangelands. Here, pastoral groups require less land to manage their livestock[82].

Customary institutions with common property often regulate seasonal livestock grazing movements and create drought forage enclosures for member households[86]. This requires forage use monitoring and enforcement that must be adapted to match forage production[13]. It also requires labor and is based on strong social relations that take time and trust to form. The effort is worthwhile because in equilibrium rangelands livestock are at greater risk of creating negative long-term environmental impacts. Here, droughts are less likely to limit livestock numbers, so livestock must be moved in a way that allows vegetation to recover as needed[71,82,87].

Private property rangelands are often inequitable, inefficient, and more costly than common property or open access systems[13,18]. For this reason, pastoral societies have never established them without being forced to by outsiders. In Ethiopia, private (individual or family) rangeland use began in the 1960s and has increased even though recent policy discourages it[88]. Private property can be ecologically sustainable, and management is easier because no coordination between households is required. However, private property requires excessive costs to exclude others, directs land benefits to fewer people, and usually occupies the wetter rangelands that require the least mobility[13,83,89]. The subdivision of rangelands into private property increases livestock vulnerability to drought and lowers productivity for everyone[67]. All customary institutions protect the community from privatization of rangelands, but some allow for the limited privatization of water resources[88].

Customary institutions often need to make rules at both local and landscape scales to give pastoralists access to local pastures in the wet season and distant pastures during the dry season or drought[90–92]. At these times, the customary institutions work to negotiate livestock movements across family, subethnic, or ethnic boundaries that exist from local to landscape scales. This can reduce conflict and makes movement easier for poorer pastoralists[92,93].

# 3. CAUSES OF CHANGE IN ETHIOPIAN RANGELANDS: STATUS, TRENDS, CHALLENGES, AND OPPORTUNITIES

The purpose of this section is to highlight and summarize the challenges and opportunities that CBRM in Ethiopia must address to sustainably manage pastoral systems. We cannot capture all the historical events or complexity in these dynamic and diverse systems, but we will point out significant differences that determine the success of CBRM across Ethiopian pastoral regions (Afar, Somali, SNNPR, and Oromia). Our theory of change for dryland pastoralism is based on evidence from many nations, but we give examples from Ethiopia where able and appropriate. Pastoralism in Ethiopia is diverse in practice and therefore no single CBRM prescription can be given. Instead, we encourage practitioners to understand fundamental rangeland characteristics and drivers of change. CBRM must be set up to learn about the challenges and adaptations from a cultural-community perspective. The topics below are meant to foster the learning process and community discussions needed to find innovative community solutions that equitably support pastoral livelihoods[1].

Sheep market, East Shewa, Oromia. (Photo Credit: ILRI)

## 3.1. POLICY AND POPULATION GROWTH: WHY COMMUNITY-LED RANGELAND MANAGEMENT IS SO CHALLENGING

### POLICY UNDERMINING PASTORALISM

Past and some current Ethiopian government policy and actions have undermined pastoralism and customary institutions. The 1995 constitution stated that "Ethiopian pastoralists have a right to free land for grazing and cultivation as well as the right not to be displaced from their own lands"[2]. But actions from various parts of the governments have often run counter to this principle[2]. Some government agents view pastoral rangelands as empty or unproductive and promote their commercialization[3,4]. Government administrative structures weaken the former power of pastoral customary institutions in decision making[5].

Since the Ethiopian state owns land, their commercialization of land is legal, but this was done without the consent of pastoralist communities[3,6–8]. The Ethiopian government continues to work to settle pastoralists in villages particularly to make way for large-scale development projects along rivers[9]. Table 3.1 below highlights some critical events and 'development' efforts that have impacted pastoralism and customary institutions in the Oromo, Somali, and Afar regions.

**Table 3.1:** Policy and events threatening pastoralism and customary institutions

| TIME PERIOD OR EVENT | OROMO REGION - BORANA AREA | SOMALI REGION | AFAR REGION |
|---|---|---|---|
| 1937 – 45 | Conflict and drought<br>Aga Adi | (And prior): Italian, Ethiopian, British, and French divided Somali pastoralists | Conflict: Awsa Sultanate and Italians join forces |
| 1945 – 55 | Traditional enclosures constructed to protect calves, not fenced | Construction of water points (birkads) for cattle leads to clan conflict | 1962: Awash Valley Authority begins development planning for Afar including sugarcane and cotton irrigation.<br><br>1970: 25% of irrigable land developed (removed from grazing)<br><br>1973: famine |
| 1961 – 74 | Conflict between Somali and Borana<br>Rinderpest outbreak<br>First fenced enclosures approved in Guji | 1962: Privatization begins, and land is divided among clans in attempt to reduce conflict | |
| Derg Regime 1974 begines | Ban of wildfires; forced sedentarization (kebeles - villagization).<br>Ethio-Somalia War;<br>Confict between Borana and Somali; communal enclosures expand | Emigration to Somalia during war; Cooperative enclosures begin;<br>Derg start government enclosures for commercial producers | War; Sultan removed from power<br><br>Late 1970s: Prosopis juliflora, introduced and spreads |
| 1983 – 85 | Critical drought | Critical drought | Critical drought |
| 1988 – 91 | NGOs support communal enclosures through FFW; ILCA (ILRI) and CARE introduce hay-making | Somali civil war with immigration into region; charcoal-deforestation; development of water points | Food for work programs plant and spread P. juliflora |
| Derg Regime ends 1991 | Still no wildfires; settlement policy revoked; support for cultivation; private property rights | EPRDF government regionalization policy. Land claiming for farming. Agropastoral practices in Somali communities begin. NGOs start enclosures for rehabilitation. Riverine grazing enclosures spread. | EPRDF government regionalization policy. Sedentarization encouraged. Sultan returns |
| 1993 – 2001 | Major Borana-Somali conflict over land. Deforestation due to fire. NGOs use CFC/FFW programs to clear land. | Borana-Somali conflict | Large-scale land acquisitions for sugar and cotton production continue. Hydroelectric dams limit water flow. Riparian forests (good for grazing) have been bulldozed. Studies show that crop production is less economically valuable than livestock production. Major efforts to remove Prosopis juliflora |
| 2001 – 11 | Large expansion of private fenced enclosures; Then, government land use plans define settlement and grazing areas;<br>Dismantle some private enclosures | Increase in private enclosures with crop farming, sedentarization around water points for education and services increased; NGO encouragement of enclosures. Government rehabilitation enclosures | |

Today, there are growing efforts within the Ethiopian government to support development and land rights for pastoralists. A pilot land certification program (LAND or Land Administration to Nurture Development) in some pastoral areas has begun with some benefits to pastoralists[15]. In Borana this program grants communal land-use rights to pastoralists organized through customary institutions *(deedha* boundaries). These efforts, in conjunction with efforts from development projects like PRIME, have helped secure grazing lands for pastoralists. However, these efforts will need to be adapted to other customary institutions when expanded[16,17].

It is still unclear how to best integrate government jurisdictions and customary boundaries at the needed local and landscape scales to assist pastoralism[15,18]. Additionally, government-development projects like the Regional Pastoral Livelihoods Resilience Project (RPLRP) now make concerted efforts to support pastoralism with "do no harm" approaches. These approaches attempt to compare the benefits of implementing no development actions with implementing new actions. Despite this progress, there is still much room for improvement in how the government supports pastoralist rangeland management. The new 2019 pastoralist policy runs the risk of promoting crop production or alternative land-use practices that weaken customary institutions if the pastoralists are not properly engaged[4,15].

### POPULATION GROWTH

Population growth also undermines and challenges the roles of customary institutions[19]. Ethiopia has one of the largest and fastest growing populations in Africa[20], and pastoralist groups are now more physically surrounded by non-pastoral groups than in the past. This means pastoralists have an increased need to protect and monitor their grazing lands. At the same time, internal pastoralist populations have grown, lowering per capita livestock ownership and resource access[3,4]. There are limits to how many livestock rangelands can sustainably support. Also, the cost of mobility and drought risks rise as household herd sizes shrink. Customary institutions now need to restore mobility and regulate livestock forage use in new ways[21,22].

Pastoralists should have a role in setting policy and addressing population growth in ways that work for them. Discussion, learning, and collaboration are needed to find solutions to these great challenges. If fruitful, the effort will almost certainly strengthen the ability of customary institutions to adapt and manage rangelands sustainably under these changing conditions[19,23,24].

### CUSTOMARY INSTITUTIONS IN PRACTICE

Historically, both Afar and Somali pastoralist groups have customary institutions that generally support open access to grazing lands while the Oromo use common property. The Afar follow a *kedo-badaho* (clan lands) rule and practice where some movements are clan-restricted along the Awash riverine areas, open to all Afar in drier rangeland territories, and groups of elders negotiate movements across clan boundaries[25]. The Somali clans determine regular boundaries as well but use *xeer* customs and rules to guide agreements about resource use and clan access[26]. The Oromo (Borana-Guji) Gada system uses common property rules to manage livestock grazing and water access at different scales as needed, e.g., *olla*, *arda*, *reera*, *madda*, and *deedha*[27–29].

We do not know how well pastoral community-led institutions historically functioned or are currently working in Ethiopia—more ethnographic studies are needed[19,24]. They have existed and adapted over hundreds of years to match their rangeland and societal needs, but now struggle because of policy and population growth. We recognize some customary institutions have practices that marginalize women and youth, but this does not mean they should be avoided altogether[30]. We do know they continue to support effective day-to-day rangeland management decisions and will be the default pastoralist approach when resource challenges arise[24,31].

## 3.2. WHAT HAPPENS WHEN CUSTOMARY INSTITUTIONS ARE UNDERMINED?

Challenges arise when customary institutions no longer can address rangeland management issues. Policy and rapid population growth have created four major threats to Ethiopian pastoralism and their customary institutions. Rangelands are being fragmented and grazing lands lost due to (1) large-scale land acquisitions by government and the private sector, (2) pastoralist enclosures and privatization of land and water, and (3) unregulated water development. Fragmented rangelands reduce livestock mobility. Lost mobility means (4) droughts are a greater threat.

### LAND "GRABS"

Land acquisitions by outsiders take key rangeland resources away from pastoralists, decreasing mobility and livestock production while increasing conflict. Foreign and Ethiopian corporations have made large-scale land acquisitions, also called land grabs, mostly for crop cultivation[3]. Our interviewees commonly identified land grabbing as the biggest direct threat to pastoralism. We do not know how much or how fast land has been

converted for cultivation, but one interviewee said, "*hundreds of thousands of hectares*". This is a significant knowledge gap despite many studies[32]. More importantly, these land acquisitions often occur in key resource areas such as next to rivers or within wetlands, which are essential for dry season and drought grazing. This has also directly and indirectly led to conflict in the South Omo, Afar, Somali, and Oromia regions[3].

Land acquisitions for crop farming hurt pastoralism and provide few benefits to local communities. Agricultural corporations have provided few jobs, taxes, or products to pastoralists and made Ethiopia more dependent on foreign investments[3]. Lowland pastoral areas generally have soils and climate less suited for crop cultivation[33]. Crops in these areas require high inputs, such as irrigation and fertilizers. Compared to mobile pastoralism, crop farming is less sustainable in the long-term[3,4,33]. Community-based rangeland management must have the ability to stop land grabbing and negotiate desired land acquisitions to realize pastoral benefits and lower costs.

### ENCLOSURES AND PRIVATIZATION

The threat of land grabs, as well as internal population growth, have caused pastoralists to defensively enclose and privatize communal rangeland resources. Sometimes pastoralists use the language of government policy that favors settled farming to stake their claim to land. As one interviewee said, *"They will never say, 'this is my rangeland', they will say 'this is my farm', so that they can enclose the area"*.

Enclosing grazing lands for communal livestock use (such as for weak or lactating animals or as drought reserves) is a customary practice in Borana and other regions. Today, enclosures are more widespread and fewer households benefit from any single enclosure. It is often pastoralists with large herds that can afford the costs of enclosing or privatizing land or water access[4,11]. In Borana the vast majority of households are cultivating some land[34]. Reduced grazing lands limit livestock mobility particularly for pastoralists with few livestock. This pushes them further into extreme poverty or into other livelihoods and urbanization[21].

### UNREGULATED WATER DEVELOPMENT

Water resource development, without a community-led approach, has further limited seasonal livestock mobility. Development agencies, government, and pastoralists have invested heavily in water resource development to provide water for livestock and people. Water resources and settlements are now spread more widely throughout grazing lands in Ethiopia[35]. This forces pastoral households to graze on the drier pastures, since farmers take over the wetter pastures for crops and enclosures. This leaves households with fewer options to move as forage is grazed and breaks down traditional grazing rules or patterns of use[36].

This reduced mobility means that livestock repeatedly graze desirable forage, promoting the growth of less desirable plant species[22,37,38]. During dry seasons, livestock are increasingly fed with supplemental feed, making mobility less necessary but risking further impacts on rangeland vegetation[39,40]. Water development can be greatly beneficial to pastoralists, but usually only when regulated to support communal livestock mobility at the same time[36,41].

### DROUGHT VULNERABILITY

Land acquisitions, private enclosures, and unregulated water development contribute heavily to landscape fragmentation that puts pastoralists at greater risk during drought. Droughts are time periods when lack of rainfall leads to a disruption in livelihood activities[42]. For pastoralists this means landscape fragmentation and lost livestock mobility makes them more vulnerable to drought because livestock are more likely to die[36]. CBRM initiatives can learn from local and traditional knowledge to understand the social and environmental causes of drought and then assist pastoralists to make dynamic adaptations that often emerge from drought[43].

## 3.3. PASTORAL SOCIETIES RESHAPED AND IN TRANSITION

Pastoral societies in Ethiopia have undergone changes that have important implications for community-based rangeland management efforts. We highlight and summarize four general increasing trends: (1) education in schools, (2) livelihood diversification and intensification, (3) women's labor and societal roles, and (4) sedentarization. These trends have reshaped pastoral societies and need to be considered in community-based rangeland management if it is to sustainably assist pastoralists, their livestock, and rangelands, in today's context.

### EDUCATION

Pastoral families in Ethiopia increasingly invest in sending their children to school for what is called formal education[44,45]. Pastoralists often pay for schooling-related costs (e.g., supplies, uniforms) through the sale of livestock products, leading them to adjust livestock husbandry practices[46,47]. Perhaps more important, access to schools often requires a portion or the whole family to settle in a permanent location[9,36]. Families then shift their herds to more drought resistant sheep and goats, but this often increases vegetation pressure or changes CBRM or customary rules required for rangeland sustainability[48,49].

Pastoralists often lose their traditional knowledge and change their aspirations when they go to school[45]. Good herding requires deep knowledge of rangelands and livestock husbandry[50], which youth are hard pressed to acquire when spending their weekdays at school[51]. Schooling can also cause young pastoralists to lose interest in pastoralism and migrate away from pastoral areas[45,46]. One interviewee told us that the greatest long-term sustainability question for pastoralism is, *"How can we make the young generation interested in pastoralism?"* Educated youth have started playing a vital role in creating innovative development interventions in pastoral businesses[44], but these interventions need to be accessible to mobile pastoralists so they can continue to move their livestock[52].

> *How can we make the young generation interested in pastoralism?*
>
> An interviewee's greatest concern for the long-term sustainability of pastoralism.

## LIVELIHOOD DIVERSIFICATION AND INTENSIFICATION

Formal education can pay off when pastoralists diversify their livelihoods[44,46,53]. Pastoralists have taken up a variety of new livelihoods like crop cultivation, shop-businesses, and employment in urban areas[7,34,44,54]. Educated adults with diversified livelihoods provide food, livestock feed, livestock market support, restocking, and mobility support to their pastoral families during droughts[21,55–57]. These actions and others are a counter force that has recently reduced drought suffering in some communities[44,46,56]. Some pastoral communities in Kenya have had success developing conservation efforts to increase benefits and diversify incomes in ways that do not necessarily threaten pastoralism but come with management trade-offs[58].

Schooled pastoralists also intensify livestock production and develop livestock markets[21]. As demand for livestock products increases, wealthy individuals or families invest in large commercial herds that are usually less mobile and they manage with supplemental feeds or on ranches–though new government policies discourage land privatization[36,41]. This practice can result in inequitable or unfair consumption of pastures by these larger herds that then push smallholder pastoralists out of pastoralism[7,21,44]. Intensification also means greater commercialization of livestock production. In Ethiopia this has led to more abattoirs, camel milk processing facilities, grain-fed finished livestock, and market expansion, but also contributes to sedentarization[6]. Pastoralists without livestock and who do not have the community connections to restock are at risk of taking up livelihoods potentially harmful to rangeland resources like charcoal and crop production[7].

## WOMEN'S ROLES

Women's roles in pastoral societies have changed and their voices will be important for understanding how to improve community-based rangeland management[59,60]. Pastoral customary institutions have been valuable for rangeland management, but never have provided equal voice or rights for women[61]. Women have replaced the labor lost when young (male) herders attend school. Women have also directly diversified livelihoods in response to recurrent droughts[46,59]. Some development programs, like SOS Sahel in Borana, have had success learning what women need and how they want to promote their participation and voice in rangeland management meetings[62]. Other programs, like PRM and PRIME, include women (and youth) on the Rangeland Management Councils they create but outcomes have not been evaluated.

However, an interviewee warned that pushing for women's inclusion in the Somali traditional system might be hindered until genuine trust is established between communities and development programs. They may be more sensitive to perceptions of outside interference after a long history conflict and marginalization[26]. If CBRM programs revitalize customary institutions, they should recognize the challenges this could create for women and their new pastoral roles.

## SEDENTARIZATION

Sedentarization is the process of reduced movements and living in more permanent locations[53]. When unplanned, sedentarization contributes to greater fragmentation and lost mobility, but new adaptations can help maintain mobility. Access to education, the development of businesses, commercialization of livestock, and government policy are the major forces behind pastoralist sedentarization in Ethiopia[6,21,41,63].

In the past, customary institutions limited settlement distribution; for example, in Borana and Guji settlements were organized in lines corresponding with seasonal grazing boundaries. Today, many pastoralists in Ethiopia have given up nomadic or transhumant lifestyles to settle. These settlements are often created without customary institutional involvement. In these situations, settlements are more likely to be located in the best grazing areas, where water is permanently available. This restricts movements, limits rangeland

recovery periods, and disrupts customary grazing rules.

Refugee camps or government resettlement plans also pose similar land-use risks when established too quickly or permanently in rangelands and bring in immigrants with different livelihood preferences[9,11]. Unplanned communities increase fragmentation-mobility issues and disrupt customary seasonal grazing rules. This has increased the impacts of drought on livestock, but herders are also finding new ways to maintain livestock mobility[46,56]. Families now split up so that herders remain on the move while settled family members connect with them via mobile phones and help scout grazing areas using motorbikes. These types of adaptations might encourage the next generation to stay in pastoralism. Community-based rangeland management and land certification can support settlement planning and mobility as pastoralists settle[4,15].

## 3.4. ENVIRONMENTAL CHANGE

Instead of a comprehensive analysis, here we focus on a few key environmental drivers of change in Ethiopian pastoral systems. We use these to illustrate how pastoralism is influenced by changes in the environment, and how CBRM and other initiatives can support pastoralists to adapt to change.

### WOODY PLANT ENCROACHMENT

The encroachment of woody plants into grassland areas is of concern to livestock keepers across the world[64]. In Ethiopia, there has been an increase in woody plants in different regions since at least the early 1990s[13,65–67], and many interviewees cited them as of major concern. These woody plants may be native plants such as *Commiphora africana* or non-native plants such as *Prosopis juliflora.* Regardless of origin, they are usually seen as undesirable because they lead to reductions in edible forage for livestock.

The causes of woody plant encroachment are varied and much debated. In the Borana lowlands of southern Oromia region, an increase in woody plant cover was likely caused by government policy that discouraged burning[64,66]. In the Afar region, particularly along the Awash River, the invasive shrub *Prosopis juliflora* was intentionally planted for its hardiness and usefulness for shade and as a windbreak [68]. However, with assistance from livestock, wildlife, flooding, and other natural processes, this species has now spread to cover nearly 1 million hectares[67]. Poorly managed livestock grazing, often in combination with policy suppression of burning fires, is another frequently cited cause of woody plant encroachment.

Often, when shrub-dominated communities replace grasslands, there is no change in ecological function[64]. For example, in the Borana lowlands an increase in *Acacia-Commiphora* shrubland resulted in shifts in the distribution of soil nutrients but no evidence of negative effects on soil[66]. However, pastoralists there were very concerned about perceived reductions in available herbaceous forage.

This is an important point—woody plant encroachment is often more of a challenge to human livelihoods than to ecological health. Indeed, in the case of Borana, the cause of encroachment was development interventions and government policy that limited livestock mobility and the use of fire. Borana pastoralists suggested that they could adapt by reintroducing fire, diversify their herds, and clearing bush, but that government policy prevented them from doing so[66].

Above, Commiphora africana, or African myrrh, a woody plant that has been on the rise in Ethiopian grasslands since at least the early 1990s. The plant can lead to reductions in edible forage for livestock but may not affect the ecological health of land. (Photo Credit: Alchetron)

### INVASIVE SPECIES

Instead of thinking of non-native plants as always bad, many are now thinking more holistically about including invasives as part of "novel ecosystems"[69,70]. At the same time, it is important to recognize that some non-native invasive species do cause severe damage to ecosystems and livelihoods.

*Prosopis juliflora* in Ethiopia is one invasive species clearly causing significant ecological damage, if only due to the extent of its invasion[68]. Even though we do not understand all the effects of *Prosopis* on Ethiopian rangelands we know it causes changes in plant communities including the loss of herbaceous species and large increases in bare ground, as well as potential effects on the water table and hydrology [68,71–73].

Other non-native invasive species of concern in Ethiopian rangelands include *Parthenium hysterophorus, Acacia drepanolobium,* and *Senna*

*obtusifolia*. These species reduce the native plant seed bank, herbaceous plant cover, and overall plant species diversity[74,75]. These plant community changes can then lead to more permanent changes to a site's soil stability and ability to capture water, making restoration much more difficult[76].

## CLIMATE CHANGE

Human-caused climate change threatens to both exacerbate and overshadow other environmental changes in Ethiopian rangelands. Of foremost concern to pastoralism are changes in the amount, intensity, and predictability of rainfall[77]. Climate projections show that overall annual rainfall will increase in southern Ethiopian rangelands, but rainfall will decline in the northern rangelands. Across the country, dry spells will likely be more frequent, while wet spells become more rare[78]. As temperatures rise, evaporation will increase, causing even more drying[79]. In fact, it is likely that all rangelands in Ethiopia will become drier because hotter temperatures will increase evaporation, compensating for any rainfall increases.

The success of pastoralism is based on efficient tracking of environmental conditions, which itself relies on the knowledge embedded in pastoral cultures[80]. As rainfall patterns become increasingly erratic and unpredictable, Ethiopian pastoralists will need to adapt. Indeed, this is what pastoralists in rangelands with highly variable rainfall have been doing for centuries[81]. The challenge for pastoralists, then, is not necessarily climate change but rather modern restrictions on pastoralists' ability to adapt to an altered environment.

Given their history of thriving in environments that others consider to be barren wastelands, there is little doubt that Ethiopian pastoralists can adapt to future environmental change. In addition, we find that broad-scale external interventions that aim to address challenges like invasive species are prone to failure and unintended consequences. Even in the case of *Prosopis*, landscape-level eradication is likely to fail and the best solution may be effective utilization[72,82]. CBRM initiatives that support the ability of pastoralists to work through their customary institutions to solve problems they identify will likely be the most successful and sustainable.

### A COMMENT ON "DEGRADATION"

In recent decades, the Western range science community has shifted to evaluating rangelands through the lens of "land health instead of land uses"[83]. Rangeland health is defined as "the degree to which the integrity of the soil, the vegetation, the water, and air as well as the ecological processes of the rangeland ecosystem is balanced and sustained"[84]. Rangeland health must be understood within the context of the inherent potential of a site, based on its soils, climate, and topography.

Unfortunately, it is still common to find the term "rangeland degradation" applied to factors such as reductions in livestock forage production, shifts in plant community composition, and increases in bare ground. We are not saying that these phenomena can never be evidence of degradation. Rather, they are not *in and of themselves* evidence of degradation if examined on a short time scale, without reference to site potential, or only in relation to human uses. To understand if degradation is happening, care must be taken to identify appropriate indicators of rangeland health that are relevant to a given site and to study these over time.

That these kinds of narrow interpretations of degradation have been used to justify alienation of pastoralists from their lands lends special emphasis to this point. This also means that there is often greater potential to improve conditions with changes in management than would be possible if the land were truly degraded.

## 3.5. LIVESTOCK HERDS AND THEIR MANAGEMENT

As conditions in pastoral areas change, so do pastoralists. Sometimes they adapt to altered conditions, but in other cases external interventions force them to change. In either case, as pastoralists change, so do their livestock herds and management.

### LIVESTOCK DIVERSIFICATION AND HERD SIZE

Pastoralists actively change the types of livestock they herd and the size of their herds. For example, the Dassanach and Hamar peoples of South Omo began adding camels to their herds in 2006[85] and now camels make up 20% of their herds. Though this was with the support of NGOs, it was also a response to displacement caused by floods, as well as the camels' hardiness in an area increasingly prone to drought.

While Afar pastoralists diversify their herds to include more browsers in response to invasion by *Prosopis*, they also reduce overall herd size. In fact, households in the Middle Awash area also shrank their herds by 80% as a response to the multiple challenges posed by *Prosopis*[13]. These households now depend on casual labor and small trade to supplement their incomes, because they no longer can depend on livestock. In other areas, such as the Somali region, the decreasing viability of pastoral livelihoods may instead lead to increased average herd size as livestock ownership is concentrated among fewer and more wealthy owners.

Pastoralists in the Borana zone of Oromia region said that they have adapted to environmental and policy changes by both diversifying their herds and decreasing their herd sizes[77]. This includes changing cattle-dominated herds to include drought-hardy camels and goats that can take advantage of increasing woody plant cover. Herd diversification was also a response to increasing household size. However, pastoralists noted that inclusion of camels was constrained by inadequate knowledge of how to care for them.

### RESTRICTED MOBILITY

Borana pastoralists respond to rising population, environmental change, and loss of grazing land by keeping livestock near their settlements instead of moving them to distant pastures[29]. While this is a rational response to decreased land availability, it has not improved the viability of pastoralism. Instead, these changes mean that livestock produce less, and year-round grazing will eventually degrade rangelands.

We have identified **four key trends in livestock management** among Ethiopian pastoralists:

(1) increases in overall livestock numbers (see section 2.4);

(2) reduced herd size per household (with exceptions);

(3) livestock species diversification; and

(4) restricted mobility in grazing.

Other initiatives to, for example, improve herd health or increase market access must not only recognize these trends as the current reality but also understand that they are likely to continue.

Each presents a complex challenge to pastoral viability, rooted in demographic shifts, government policy, and environmental change, that will not easily be reversed.

## 3.6. CONFLICT

Conflict and security issues in Ethiopian rangelands are dynamic and complex. There have been many excellent reviews of these issues focused on Ethiopia or the region[86–88]. Here, we focus on some key examples that provide important context.

Certainly, conflict over space and resources has always been present among pastoralists[89]. These conflicts occurred at many levels: within the community, within an ethnic group, with other ethnic groups, and with non-pastoralists such as farmers. Though customary institutions often mediated conflict, especially within an ethnic group, resource-based conflict was still fundamental to highly mobile pastoral cultures[88,90].

### BORDERS

With the advent of modern nation-states, borders were typically drawn in lightly populated areas where pastoralism was the dominant land use. These new borders both worsened existing conflicts and created new conflicts, in some cases by creating new identities within ethnic groups. For example, the Ethiopia-Kenya border, which was the last drawn in East Africa, divided previously cohesive groups of Borana-Oromo, which led to conflict between them[86]. In a similar way, the ethnic regionalization of Ethiopia, which is often aimed at limiting conflict, can instead create new divisions[91].

### RESOURCE SCARCITY AND LAND TENURE POLICY

In the Afar region, resource scarcity was the main cause of conflict, both among the Afar and with adjacent groups such as the Issa-Somali and Karrayyu-Oromo[90]. In all cases, decreasing land

access, especially to key resources, and increasing populations led members of these groups to cross ethnic boundaries in search of forage. At the same time, those within their own borders became less tolerant of intruders due to their own declining resource base. In this area, resource scarcity "has transformed a cooperative game of using pastoral resources into a zero-sum game"[90].

This resource scarcity is often rooted in land tenure policy. In the southern Ethiopia rangelands of Oromia and Somali regions, the layering of changing government-based land policy on top of centuries of pastoralist inter-ethnic negotiation has increased conflict[92]. Particularly, policy changes have repeatedly shifted administrative borders, compelling the Borana and Somali pastoralists to repeatedly adjust their resource borders. At the same time, government policy has ignored the role of customary institutions in resource administration.

Conflict between farmers and pastoralists is a classic example of land use conflict. Farmers and pastoralists clash along the Awash River in Afar and along the Omo River in SNNP region. In eastern Amhara region, the Borkena wetland, formerly a key dry season resource for both Oromo and Afar pastoralists, has become largely inaccessible to them[93]. Though policy changes and natural disasters have played a role, NGO interventions that favored commercial farmers have contributed greatly to the conflict.

### CUSTOMARY INSTITUTIONS

Strong customary institutions are essential to conflict mitigation. In the Shinile zone of Somali region, conflict management via customary institutions is more timely and "is more contextualized, laying a basis to trace historical underlying factors that have led to recurrence" of conflict[94]. This leads to the conclusion that policies should aim to build the capacity of elders' councils and other customary institutions.

However, it is likely that these customary institutions can no longer mitigate or resolve conflict on their own, as many of the problems have roots in government policy. This means that collaboration between strong customary institutions and adaptive government is necessary. It is therefore important to support a "systematic combination" of these institutions wherein there is close coordination and mutual respect[88].

A pastoralist with his goats in Borana, Ethiopia. (Photo Credit: ILRI/Zerihun Sewunet)

# 4. ETHIOPIAN CBRM: EVOLUTION AND CURRENT STATUS

## 4.1. HOW HAS CBRM BEEN PRACTICED IN ETHIOPIA AND HOW HAS IT EVOLVED?

There are different ways CBRM programs in Ethiopia define participation in CBRM. As one interviewee described, *"...often what the government calls participation is this food for work stuff. Whereas, what we are talking about is really community ownership and land rights and tenure as the fundamentals of what pastoralists have been asking for…"*.

Recognizing these different visions of participation, we defined three broad types of CBRM initiatives in Ethiopia, from least to most participatory, and least to most community-led and owned (Figure 2.1 above, Table 4.1 below). The least participatory, but perhaps the best funded and have the most potential to be impactful over the short term if well implemented, are *community-consulted CBRM* initiatives. These programs consult community members, but it is not clear if this consultation influences program design. The process of how this consultation occurs is also unclear.

The MoA's Productive Safety Net Program has the potential to be community-consulted, but one interviewee observed that this program is not as inclusive of pastoralists as it could be, especially in the lowlands. Despite a description of participation in the PSNP Manual, for example, at least one source reports that no community participation in selection of project clients occurred[1]. Intergovernmental Authority for Development's (IGAD) RPLRP is another example of a community-consulted CBRM, although it may also fall outside of CBRM because it focuses beyond the community level on cross-border issues and policy[2].

The second, more participatory type is *community-engaged CBRM*, exemplified by the USAID-funded PRIME and RiPA programs. These programs use the detailed and robust PRM process for community engagement and participation in rangeland management[3–7]. The MoA's LLRP falls here as well[8], since it recently adopted some of the steps of the PRM process. However, the LLRP are *"not big fans of customary institutions...(they think) you're going backwards and using outdated systems"*, according to one interviewee.

In the case of LLRP, the primary decision maker is the government, so devolution to pastoral communities is weak. When these programs engage in a truly participatory process, their short-term impacts may be slower, but their impacts may also be more enduring. Another program of this type is GiZ's water-spreading weirs project, which one interviewee described as having community engagement as a basic requirement of this work[9].

The best examples of *community-owned and -led CBRM* initiatives are pastoral customary institutions like the Borana's Gada system and the Somali's *xeer* system. Both these systems are traditional governance structures used by these pastoral groups to make decisions about pastoral life and rangelands. This type also includes NGO programs that only support pastoral customary institutions without bringing in a new process of their own. One potential approach to support pastoralist-led institutions is the "help for self-help" approach of the NGO, HEKS/EPER, which supports local institutions, so they function without outside help[10]. We do not include this NGO here because we did not interview them.

The work by Helvetas in Borana to support customary rangeland institutions falls here because they ask the community and customary institutions, "*how can we help?*" Unfortunately, we cannot comment on the impact level of these customary institutions or this NGO because this information was not available.

One interviewee estimated that there are about 100 NGOs working with pastoralists in Ethiopia and some of them work on customary institutions, although this is rare. This wealth of NGOs means there may be ample opportunity to support pastoral leadership of CBRM, especially if programs like PRM work closely with local NGOs.

Karayu lady, Fentale, Afar, identifying rangeland resources on a satellite image as part of planning for Participatory Rangeland Management (Photo Credit: PRIME/Kelley Lynch).

**Table 4.1:** Description of selected CBRM programs in Ethiopia by program partners, CBRM type, goals, work locations and years of operation.

| PROGRAM | PROGRAM PARTNERS | TYPE OF CBRM | GOALS | REGIONS AND YEARS OF WORK |
|---|---|---|---|---|
| Helvetas | Welhungerhilfe NGO | Community-engaged | Drought relief initially, now secures herder access to water and pasture | Borana, 2015-2020 |
| PLI1, PLI2, PRIME, RiPA | RiPA: USAID, RiPA North - Mercy Corps & CARE; RiPA South - PCI & GOAL, iDE | Community-engaged | Market expansion, CBRM using PRM, livelihood diversification, disaster risk, women empowerment, nutrition, crop/ livestock productivity | Oromia, Afar, Somali and SNNP regions; PLI,1&2 = 2005-2024, PRIME = 2025-2019, RiPA = 2020-2024 |
| MoP's LLRP | Ministry of Agriculture, World Bank, International Fund for Agricultural Development (IFAD) | Community-consulted and engaged | NRM, livelihood diversification, social services, institutional capacity building, knowledge management and M&E<br><br>Government main land manager | 100 woredas, Oromia, SNNP, Gambella, Benshangul-Gumuz, Afar, Somali regions, 2019 - 2025 |
| GiZ water-spreading weir project | Woldia Univ., Wollo Univ., Sirinka Agric. Research Center, APARI and the local community | Community-consulted and engaged | Spreading flood water to improve grassland production and restore grassland health | Afar, 2015-present |
| MoA's PSNP | CIDA, DANIDA, the Netherlands, EU, Govt of Ireland, DfID, UN Children's Fund, USAID, the World Food Program | Community-consulted | NRM, livelihood diversification, social services, institutional capacity building, knowledge management and M&E | Most regions, 2005-present |
| IGAD's RPLRP | FAO and local partners | Both community-consulted & regional | Cross border NRM, livestock trade, enhancing pastoral livelihoods, reducing drought risk | Kenya, Uganda, Ethiopia, 2015-2019 |

**Notes:** PLI = Pastoral Livelihoods Initiative, PRIME = Pastoral Areas Resilience Improvement Through Market Expansion, RiPA = Resilience in Pastoral Areas, PCI = Project Concern International, iDE = International Development Enterprises, SNNPR = Southern Nations Nationalities & People Region, MoP = Ethiopian Ministry of Peace, LLRP = Lowland Livelihood Resilience Project, GiZ = German Agency for International Cooperation, MoA = Ethiopia Ministry of Agriculture, PSNP = Productive Safety New Program, IGAD = Intergovernmental Authority for Development, RPLRP = Regional Pastoral Livelihoods Resilience Project.

There were a variety of other programs mentioned by our interviewees that we did not assess due to lack of availability of an organizational representative and the brevity of this consultancy. These include: the work of Swiss NGO, HEKs; Tetratech's work on land tenure on USAID's Land project; ILRI's HEAL project working on One Health; the structured technical groups in Ethiopia's Ministry of Agriculture; and the CBRM work of SoS Sahel Ethiopia.

## 4.2. PRM: WHAT IS IT AND HOW HAS IT EVOLVED?

Here we describe PRM because it is the most well-developed community engagement process for CBRM in the lowlands of Ethiopia. PRM was built on previous work by several NGOs in Participatory Forest Management that commenced in the mid to late 1990s and has evolved over the subsequent decades[5,11] (see PRM timeline in the Appendix Table A2). Key to this process is PRM's intensive efforts to rebuild community-led CBRM by revitalizing and adapting pastoral customary institutions into modern and functioning community-led and government-supported CBRM efforts. This allows projects that use the PRM process to design their work so that it closely aligns with the aims and desires of pastoral communities.

Key partners in PRM over time include: pastoral customary institutions in Oromia, Somali, Afar, Gambella, SNNP, and Benshangul-Gumuz regions; SOS Sahel; Save the Children USA; Farm Africa; the Ethiopian Ministry of Agriculture; the Ethiopian Ministry of Peace; CARE. The work was funded by USAID (PLI 1, PLI 2, PRIME and RiPA), Cordaid (Bale Mountains), DfID (BRACED), World Bank (LLRP), and IFAD (LLRP), as well as the EU in Kenya and Tanzania. CARE has also implemented PRM in the Mandera Triangle of Ethiopia, Somalia and Kenya, funded by EU BORESHA,

The general PRM process appears in Table 4.2 below. PRM practitioners have adapted these steps in the PRM multiple times to improve PRM and make it fit local situations. This flexibility is not only needed but is one of the big strengths of PRM. Many of our interviewees described the critical role and high value of the regular meetings and priority setting required at the beginning of the PRM process. They universally agreed that the success of PRM depends on this trust building process. It provides pastoral communities with the best chance of owning and adapting CBRM so that it gets integrated into "*the way things get done*" in their communities. More recently, funding concerns prompted the Lowland Livelihood Resilience Project to add a new step to the PRM process that develops Rangeland Investment Plans. Note that PRM steps are not a linear process and the steps are meant to be adapted in each new situation[5].

Interviewees universally agreed that the success of PRM depends on this trust building process. It provides pastoral communities with the best chance of owning and adapting CBRM so that it gets integrated into *"the way things get done"* in their communities.

**Table 4. 2:** The three stages and ten steps of the Participatory Rangeland Management process (draft from Irwin (2021)[12].

| STAGE 1: PRM INVESTIGATION STAGE | PRM STEPS | STEP DESCRIPTION |
|---|---|---|
|  | **STEP 1.** Identify rangeland resources, including resource users and resource uses | This is done by the PRM set-up team visiting government offices and community groups. |
|  | **STEP 2.** Participatory Resource Mapping | A participatory exercise that enables community groups to map out and display their rangeland resources |
|  | **STEP 3.** Stakeholder / Institutional Analysis | This step develops comprehensive information about different stakeholder groups |
| **STAGE 2: PRM NEGOTIATION STAGE** | **PRM STEPS** | **STEP DESCRIPTION** |
|  | **STEP 4.** Defining Management Units: The Rangeland Management Unit (RMU) | This step uses the map information as well as information about traditional land units |
|  | **STEP 5**. Institutional Strengthening | Once the key institution is identified there is often the need to strengthen the group's management capacity |
|  | **STEP 6.** Rangeland Management Plan (RMP) and Bylaw development | Government extension workers facilitate community management planning discussions |
|  | **STEP 7.** Legitimization of the Rangeland Management Plan and Bylaws with all stakeholders | Communication of rangeland management plans to the wider community |
| **STAGE 3: PRM IMPLEMENTATION STAGE** | **PRM STEPS** | **STEP DESCRIPTION** |
|  | **STEP 8.** Building technical capacity of stakeholders to implement Rangeland Management Plans | The initial management plan is improved over time through technical discussions and capacity building |
|  | **STEP 9.** Implementing actions in the new Rangeland Management Plans | This involves organizing working groups and source funding to cover the cost of plan activities |
|  | **STEP 10.** Monitoring and Evaluation of the Rangeland Management Plan | Monitoring the implementation of the management plan and the health of the rangelands |

## 4.3. IMPACTS OF PRM IN ETHIOPIA

Since its conception, there have been two studies of the impacts of PRM[4,5], and one study of the impacts of Pastoral Natural Resource Management (PNRM), which was a slightly adapted version of PRM[6]. While this is a limited body of evidence, it presents important information about potential social and ecological impacts of the PRM process.

As might be expected, the social effects of the community engagement inherent to PRM are more readily apparent soon after implementation starts. Perhaps foremost of these is the creation or strengthening of a "rangeland management body" (or the Rangeland Management Council), an essential step in PRM. Most surveyed participants in PRM areas felt that the creation of the body had been inclusive, that they are satisfied with its work, and that it has the power to make management decisions[5]. Note, however, that there were wide ranges in the responses to these questions among different kebeles, indicating differing implementation of PRM or, perhaps, low sample sizes.

There is also evidence that household resilience and adaptive capacity are strengthened by active engagement in PRM, though some capacities can be negatively impacted[6]. Inclusion and empowerment of women, though not a specific goal of PRM, is nonetheless improved as a result of the stakeholder-inclusive process[4,5]. In fact, participation of women was roughly equal to that of men[5]. It is important, though, to ensure that appropriate accommodations (such as female facilitators) are made because participation of women was lower when NGOs did not plan for these needs.

By requiring careful planning, PRM has led to more strategic resource management, including better definition of grazing areas, improved access to key resources, dismantling of private enclosures, and movement of inappropriate settlements[4]. The participatory resource mapping process, in particular, has provided key insights to communities in these areas[13]. Another noted strength of this planning process is better collaboration in addressing the challenges presented by invasive species[4]. PRM has led to a measurable increase in land dedicated to pastoralism, though it is difficult to say if this will sustain over the long run or is merely a response to significant external investment[5].

Measurable improvements in rangeland health as a result of PRM are more difficult to assess. Certainly, the cover of undesirable woody plants decreased, although this was likely a result of direct management actions paid for by the projects[5]. Other documented changes in vegetation type and browsing intensity by projects are difficult to attribute to PRM activities, given the year-to-year heterogeneity of these rangelands[5]. It will likely take much more time to assess the sustained ecological impacts of PRM.

One interviewee, deeply involved in the PRM process, observed the following impacts:

***"PRM has helped users secure tenure and prevent land grabbing, reduce conflict, know their resource base, prioritize rehabilitation areas and actions, mobilize resources from within and outside, and improve rangelands."***

Rangeland improvement included developing drought fodder reserves and restoring communal grazing areas by dismantling individual enclosures, farming lands and settlement areas. Pointing to broader impacts, this interviewee concluded:

***"....communities engaged in PRM developed better resilience capacities during the 2015-17 drought and maintained their food security as compared to others not engaged in the initiative."***

# 5. CBRM BEST PRACTICES FROM ETHIOPIA AND ELSEWHERE

In this section, we describe the tested best practices (BP1-21) that improve CBRM, which generally correspond to R1-R21 in Section 6. Unless otherwise noted, there is evidence from Ethiopia (and often from elsewhere too) that these practices have improved CBRM. We also include some BPs that apply to Ethiopia but where evidence for their effectiveness comes only from elsewhere. We have marked these BPs with a *. We distilled all BPs from interviews, written documents, and our own pastoral and development experience in East Africa.

## 5.1. CBRM AND PRM: OVERALL BEST PRACTICES IN ETHIOPIA

### BP1. ACTION RESEARCH AND FREQUENT ASSESSMENTS ALLOW CBRM PRACTITIONERS IN ETHIOPIA TO RAPIDLY IMPROVE CBRM OVER TIME

CBRM practitioners in Ethiopia use a strong action research approach to propel their social learning. They have learned from and supported several reviews of Participatory Rangeland Management (PRM), its tools, and wider concepts[1–8]. Other reports have provided important background and context[9–14]. Key lessons described by these documents include the importance of strengthening customary institutions in CBRM, the need for multiple levels of governance in pastoral areas, the need to institutionalize CBRM in government development efforts, and a much deeper understanding of where power should lie in governmental and customary institutions in pastoral areas. Other CBRM programs also have good supporting reports and documentation[10,12,15–17].

### BP2. USING PRM BUILDS PASTORAL COMMUNITIES, WHICH IS THE FOUNDATION OF SUCCESSFUL PASTORAL DEVELOPMENT

PRM, as practiced in Ethiopia, is a robust system of methods and processes that engage pastoral communities and their customary institutions. Our interviewees widely recognized the strengths of PRM as an inclusive engagement process for implementing CBRM. One interviewee, in describing the best ways to engage pastoralists, said that it takes months and sometimes years to build the needed level of trust, but that "*once they trust you, you are theirs*". Interviewees highlighted PRM's participatory and inclusive process[7], the commitment to repeated participatory meetings and trust building activities, the participatory mapping methods[3], and community monitoring methods[2].

## 5.2. SHARING POWER WITH AND BUILDING CAPACITY OF PASTORALISTS IN ETHIOPIA AND WORLDWIDE

### BP3. AROUND THE WORLD, DECENTRALIZING AND DEVOLVING POWER MAKES CBRM MORE PASTORAL-APPROPRIATE, EQUITABLE, EFFICIENT, SUSTAINABLE, AND TRANSPARENT

Decentralization of power is the shifting of power and decision making (or devolution) from a central place, like the nation's capital, to more local levels. In Ethiopia, decentralization is best represented by regionalization from the national level to the federal states. Decentralization includes devolution of power. Devolution is a best practice in CBRM worldwide [18]. Why does devolution strengthen CBRM initiatives and pastoral communities? First, decision making is both more efficient and more appropriate when it is made as close to the local situation as possible[18]. Second, if decisions are made locally, they will be more sustainable because they are locally adapted at an appropriate scale and subsequently owned and implemented by local communities[19]. Finally, at least theoretically, the benefits from local decision making should be more transparent and distributed more equitably[18]. **"***Effective devolution takes time, requiring a shift in focus from a static concept of management to a dynamic concept of governance shaped by interactions, feedback learning and adaptation over time*"[18].

One interviewee described many Ethiopian examples of decentralization and devolution in CBRM. These include *'pilot communal land certification in Borena, endorsement of PRM plans by regional and woreda governments, resource allocation at the woreda level to implement PRM plans, and recognition of rangeland councils by the government.'* Communities have led the implementation of PRM plans by, for example, dismantling private enclosures and relocating farms and settlements that are in prime pastoral grazing areas.

### BP4.* ELSEWHERE IN AFRICA, BUILDING PASTORALISTS' CAPACITY TO CONTROL DEVELOPMENT AND MANAGEMENT HAS LARGE IMPACTS ON PASTORAL DEVELOPMENT AND COMMUNITIES

First, the curriculum at many agricultural universities in Ethiopia is weak on training in pastoral production and culture, focusing instead on highland-oriented farm production. One interviewee said:

***"….still, within the agricultural colleges, you don't get taught about pastoralism, and if you do, I think it's probably a very minor subject. We've had young pastoralists who were put through agriculture college coming back, and they no longer recognize what they did or what they were. They were full of half-baked technical (knowledge). And they no longer knew how to survive within the system that they grew up in".***

Second, when training about pastoralism is in-depth and realistic, education can empower the next generation of pastoral leaders[20]. These leaders tend to then become leaders of NGOs, businesses or governmental departments and have a strong influence on business and pastoral development and policy. There is also a substantial value in informal training for members of pastoral communities, including women and youth[21].

## 5.3. GOVERNANCE: STRENGTHENING PASTORAL CUSTOMARY INSTITUTIONS IN ETHIOPIA AND ELSEWHERE

### BP5. "COMMUNITY-CONSULTED" APPROACHES MAY DELIVER FAST IMPACTS, BUT ARE THEY SUSTAINABLE?

CBRM programs that only consult with communities and do not fully engage them may be able to achieve reportable results faster than "community-engaged" CBRM programs that embark on intensive pastoral engagement processes. The trade-off is this: if pastoral communities are not fully engaged and have leadership of initiatives, the initiative will not be sustainable.

In Ethiopia, an example of "community-consulted" CBRM is the Ministry of Agriculture's Productive Safety Net Program (PNSP), which is a large social protection program. Here, the PSNP establishes and consults with local committees at the kebele level but does not revitalize customary pastoral institutions. If PSNP does not support these institutions, it means PSNP will not strengthen the foundation of pastoral decision making nor will it build pastoral leadership for self-sustainability of PSNP's work.

Also, evaluations of PSNP's work show that when they establish strong local committees, they give participants (pastoral and non-pastoral) more voice and they achieve greater impacts. Where the local committees are weak or absent, social protection impacts are also weak[22]. Local participants in these committees have more voice about program implementation if local committees are strong. Even so, male participants are more likely to raise complaints and have them addressed than female participants[22].

### BP6. REVITALIZING CUSTOMARY INSTITUTIONS ENSURES DECISION MAKING IN THE RIGHT HANDS AT THE RIGHT LEVEL

Customary institutions make the rules that local communities use to make decisions and includes the informal or formal bodies whose members discuss, debate and decide on issues using these rules[23]. In pastoral areas, these bodies can be local grazing associations, or larger cross-society bodies like the Gada system of the Borana or the more informal xeer system of the Somali. These are the only institutions that truly meet local community needs because they best understand local power, authority, and organization[24]. Critics of customary institutions question if they are powerful enough and whether they support popular concepts of justice and fairness'[24].

Overall, both our interviewees and other observers[25,26] cited stronger customary institutions as the best way to ensure appropriate, just, and sustainable pastoral development[1,27]. McPeak and Little, long-time scholars of Borana and Somali pastoralism, write:

***"Thus, in a policy choice between land use management by the formal state or customary institutions, the latter organizations and their leadership are more likely to sustain livestock production and livelihoods in a more equitable and environmentally sustainable fashion"[28].***

But how to do this well? It is clear that customary institutions in pastoral systems around the world are weakening because of social-ecological change. However, outsiders are the main cause of institutional weakening when they undermine their power. Several of our interviewees agreed that pastoral customary institutions in Ethiopia "are largely fading away in pastoral lands in the face of the historical imposition of the formal government administrative and jurisdictional institutions".

This "fading away" is stronger in some regions than others. For example, in Borana, while customary institutions are weaker than the past, they are sufficiently strong that strengthening existing institutions is the appropriate focus. By contrast, in Afar, one interviewee described how completely "distorted and corrupted" pastoral customary institutions have become over time. First, past governments took over the dry season grazing areas of Afar herders along the Awash River to establish state farms and then sugar plantations. Then the government hired the pastoral leaders of customary institutions as consultants and they no longer represented pastoralists, "*so they lost their role, and as well as their reputation and the confidence and trust from the community side*." The pastoralists now feel that "*you know, we are those people who* have no customary institution….And the formal system also is not working…we are communities lost in between…".

Even where pastoral customary institutions are weak, they can be rebuilt based on cultural norms and the "way things get done". For example, two interviewees encouraged building on the traditional clans and sub-clans in Somali region, under the broader norms of the xeer system. PRM naturally focuses on this approach, since their goal is to build on customary institutions like the xeer system.

Other interviewees favored building 'hybrid' institutions that combine the strengths of local pastoral communities and government agencies (like agricultural extension). This is the approach taken by the PRIME and RiPA projects, where they use the PRM process to work with local community members to establish these new, hybrid rangeland management institutions, built on existing customary instutions[7]. NGOs involved in PRM then facilitate the creation of these new hybrid institutions by understanding the traditional institutions first and then building on them. As one interviewee said:

***"….whether it is the xeer system in Somali region or the gada system in Oromo. Just follow those traditional structures, and …sometimes you can also use the modern government structures that are in place. You can combine both of them, but I think the people with the knowledge and the people who are really practicing the life and livelihood are within these traditional structures, so...that's where to start".***

Several interviewees also emphasized the importance of designing these hybrid institutions to be highly adaptive to cope with the rapid changes that pastoral societies now face in pastoral lands. One example is the rapid growth of settlements in pastoral lands near water, which means the best pastoral resources in the system, of crucial importance to pastoral survival during dry season and drought, are disappearing. This situation is very challenging to traditional institutions if they assume regular access to these types of areas, whereas a hybrid institution may have more power and access.

In addition, formal government support for customary institutions can be weak if young administrators do not understand and do not respect the rangeland knowledge of pastoral elders. In Borana, one interviewee was hopeful that repeated meetings between elders and young administrators would start to bridge this gap between their knowledges. Key in this case is to get the government to recognize the dheeda governance system and the value of elder knowledge.

### BP7. REVITALIZING CUSTOMARY INSTITUTIONS IN CBRM INCLUDES WOMEN AND YOUTH THROUGH A DELIBERATE COMMUNITY-BASED PROCESS

It is somewhat contradictory to aim to revitalize customary institutions that are largely controlled by elders and men, and then also support the role of women and youth in that decision making. This shift is occurring because the traditional roles of pastoral women and youth are changing as they have more opportunities for education and different livelihoods[29,30]. In addition to pastoral traditional norms, development policy and practice has "traditionally failed to understand the significance of women's role in pastoral livelihoods"[31].

While women have a strong value in pastoral society, their role is traditionally limited to particular spheres. For example, one interviewee said:

***"Pastoralist women can be a key to success, but they are still very much second-class citizens in Afar. They… are the ones most likely to engage in community-based work as they are the ones around".***

Another of our interviewees commented on the gender focus of western donors as it relates to Somali society like this:

***"It is sometimes… wasteful of time, energy and money... You (should) just follow what that (Somali traditional) xeer system says. I know how USAID and other organizations strictly try to say, oh, (we need this) gender element….Well, that western style does not change things much even if you try to push it. But ….it is known whose role is to do this and not to do that. So my advice is just try to follow that. It is inbuilt. It is already there, but sometimes for a foreigner….you can't just see. So, I would recommend even if you want to do it, you just maybe follow what is there, but if you bring in some new thing about the gender… (it will) not be ….fruitful".***

What is the best practice so far here? Given the changes in pastoral society, few observers argue that women and youth should continue to be left out of decision making. But especially in CBRM, with its goal to revitalize customary institutions, inclusion of women and youth would require a change from what is 'customary'. The best approaches today are ones that do not dictate participation, but rather discuss and learn how women and youth can better participate in CBRM. Starting with an action research approach on priority issues for women, for example, empowers women to have more of a voice [24,31] which can transfer to issues related to CBRM. For youth, the need of inclusion is also acute because of the weakening of pastoral society caused by the flight of youth out of pastoralism to other livelihoods[32].

### BP8.* BUILDING STRONG CUSTOMARY INSTITUTIONS AT BOTH THE LOCAL AND LANDSCAPE SCALES ENSURES LOCAL COMMUNITY PARTICIPATION AND BROADER RANGELAND SUSTAINABILITY

It is well recognized by PRM and other CBRM approaches that there are different levels of decision making and governance in pastoral areas, from the local to the landscape level[6,7]. In settled farming systems there is less need for landscape-level governance than in pastoral areas. This is because farmers do not need to make decisions beyond their farm gate, but pastoralists have to move to distant pastures, especially during the dry season and drought. Therefore, coordination of who uses what pasture and when is needed at very broad scales. Indeed, as one interviewee said, "*these are communal rangelands that cannot be managed at small scale or with only some stakeholders at the table*".

The need to integrate and address governance at different scales means policy and practice need to be fundamentally different in pastoral areas than highland farming systems in Ethiopia. Best practice for CBRM initiatives is to strengthen institutions at the levels of scale needed, usually at both the community and landscape scales. In most areas, a third, broader level of institution will be needed to make decisions about pastoral issues that cross borders between different pastoral groups, as in the Ministry of Agriculture's Regional Pastoral Livelihoods Resilience Project (RPLRP) project.

## 5.4. IMPROVING IMPLEMENTATION OF CBRM AS A PROCESS: FOCUS ON PRM

Here we review some of the processes used to implement CBRM, with a focus on the details of the PRM process. We know from past reviews of PRM[4,7] that: 1) there is a need to implement PRM at different scales, including the community and landscape scale (see BP 8 above); 2) PRM should be "embedded in a wider development process and an enabling policy environment" (see BP 16 below); 3) PRM is not a "rigid, linear process" of steps, but rather is meant to be adapted as situations change; 4) PRM "is a means of empowering communities, including women", and; 5) PRM improves rangeland condition, highlighting the importance of good baseline monitoring.

### BP9. RECOGNIZING THE BROADER IMPACTS OF CBRM AND PRM, BEYOND RANGELAND MANAGEMENT, STRENGTHENS THE CASE SUPPORTING THEM

Community-based rangeland management can be transformative for pastoral communities, their rangelands, and the policies governing them[20]. It is essential to recognize and track these larger impacts, and purposely plan to promote, magnify, and accelerate those impacts.

The documented short-term impacts of PRM, for example, include revitalized customary institutions, healthier rangelands, and improved livestock productivity (see section 5.3). But beyond these impacts are larger ones that are likely to be more important:

- One interviewee said that CBRM, particularly PRM, served to slow down political land grabbing by elites.
- PRM provided pastoralists some security of land tenure through rangeland management planning that has increased "the government's perception that these lands are being managed and used". This is important because if land is not perceived as being used, others can push to take the land over from pastoralists.

- PRM united fragmented efforts at CBRM into a structured, step-by-step process. One interviewee said, "we put that process on the table with those guidelines and then, with the idea that people would take them up and pilot them, which is what happened, and then PRIME came along and really upscaled it".

- The PRM approach is now affecting how fast land certification occurs, a major step for pastoral land tenure in Ethiopia.

- PRM is now having much larger impacts through efforts to mainstream the PRM process in very large development projects like the Lowland Livelihoods Resilience Project (LLRP) and the Productive Safety Net Program (PSNP).

But there is also a cautionary tale here. TANGO International did a robust analysis of the impacts of PRIME, which included PRM[8]. They found that the natural resource management activities promoted by PRM have multiple positive impacts, but also some significant negative impacts on household resilience to drought. On the positive side, PRM (which they called Participatory Natural Resource Management or PNRM) supported conflict mitigation and disaster preparation and mitigation. It also increased household access to basic services and communal resources. Households that participated at high intensity in PRM had more asset ownership and adaptive capacity than households that participated in PRM at low intensity.

On the negative side, high intensity PRM households, compared with low intensity PRM households, had less access to hazard insurance, financial resources, infrastructure and formal safety nets. These households also had less linking social capital (the links among households). The lack of access to hazard insurance had a particularly strong and negative impact on household resilience. Some of the negative impacts were caused by the restricted access to pastures set up by the new Rangeland Management Councils established as part of the PRM process[8].

### BP10. PRM EMPOWERS PASTORALISTS BECAUSE IT DEEPLY ENGAGES PASTORALISTS AND THEIR PRIORITIES DRIVE PRM ACTIVITIES

CBRM succeeds when initiatives support pastoralists to identify their own priorities, definitions, and standards[33,34]. Several interviewees highlighted the strength of PRM's consultation process with communities. They emphasized how this is difficult, long-term work that requires many community meetings to develop trust and to ensure the process is guided by a pastoral perspective. One interviewee said, "Unless you have a process that is very regular and repeated, they won't trust you. ….that is one thing that I've seen that is very consistent about these livestock producers. Is that they don't trust easy, but once they do, then you are essentially theirs.". Of course, the biggest challenge "is to really get the diverse interest groups in pastoral communities to be equally listened to in the community planning process".

### BP11. DEFINING RANGELAND MANAGEMENT UNITS REQUIRES A DIFFERENT APPROACH IN ARID AREAS WITH OPEN ACCESS SYSTEMS

One interviewee described that PRM has adapted when applied to different contexts, particularly as the original process gets applied to more arid, open access lands (see non-equilibrium areas in Figure 2.3). Several interviewees described the specifics of these adjustments. In PRM, one of the key steps is to define the Rangeland Management Unit (RMU), so that clear governance rules refer to that unit and its boundaries. Interviewees said that this step worked well in Borana, where customary institutions in the Gada governance structure supported the RMU boundary definitions. However, several interviewees the RMU concept and its clear boundaries does not work as well in the more arid, open access systems of the Afar and Somali. One interviewee explained about Somalis: "*So they do travel hundreds of miles and it wasn't easy to really define a rangeland unit in that context.*"

### BP12. NEW METHODS AND TOOLS OFTEN STRENGTHEN PRM, BUT ALL NEW TOOLS NEED TO BE TESTED WITH PASTORALISTS

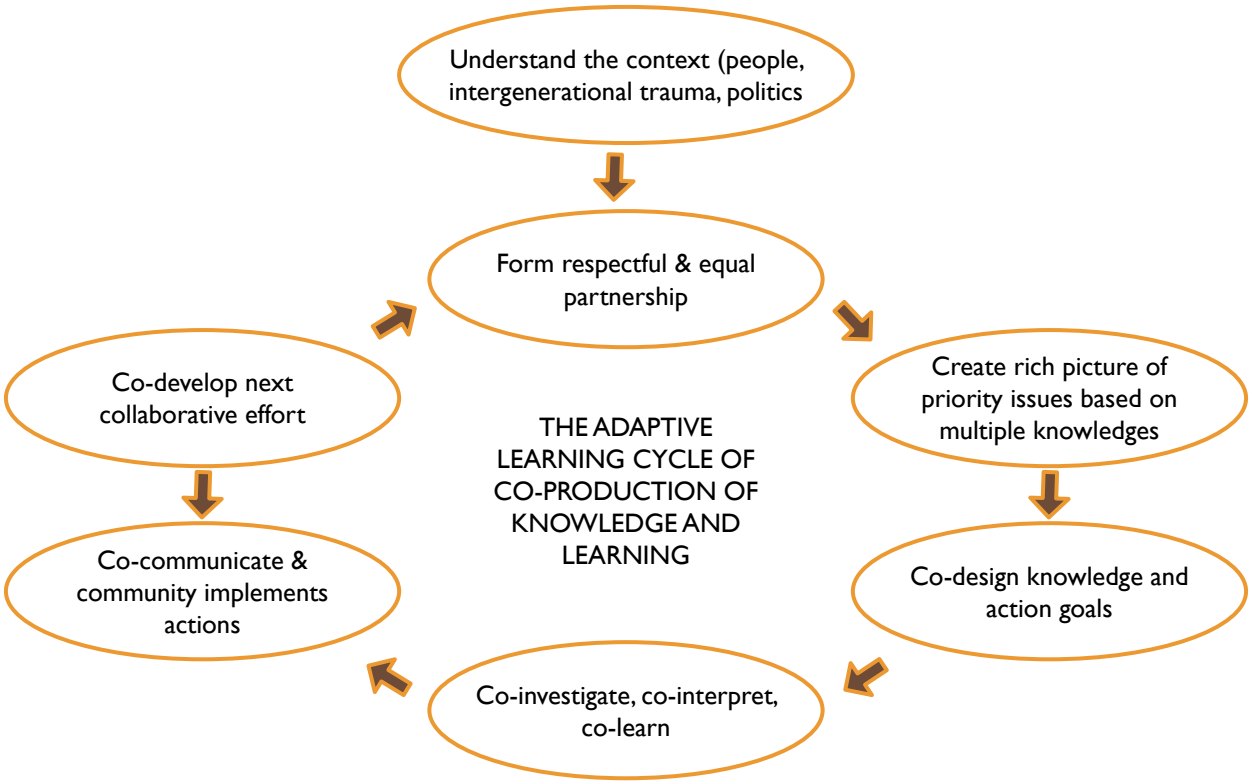
Our review and interviews identified several excellent tools that the PRM team has developed over time. These include a natural resource mapping protocol[3], a protocol to characterize CBRM communities[5,6,35] and a Rangeland Investment Plan. These are all tools that help PRM's planning process, and some can also be used to evaluate the impacts of that process.

For the next phase of the USAID-funded RiPA project, the implementing partners intend to integrate PRM with other tools like AfriScout, Holistic Management (HM), and Index-Based Livestock Insurance (IBLI)[36,37]. AfriScout is "a mobile service provides current water and vegetation conditions on localized grazing maps, enabling pastoralists to make more effective migration decisions"[37]. The HM method is "a decision-making framework known for applying planned livestock grazing for soil restoration"[37]. IBLI is a method and tool and "is a product that is designed to protect against prolonged forage scarcity. IBLI triggers payment to pastoralists to help maintain their livestock in the face of severe forage scarcity"[37]. We assume that PRM and RiPA will test all of these tools with pastoralists before applying them.

## BP13. PARTICIPATORY RESEARCH WITH PASTORALISTS EMPOWERS THEIR VOICES AND SUPPORTS FASTER PROGRESS TOWARDS CBRM GOALS

Traditional research usually does not identify research problems with communities and often does not deliver the results back to communities. On the other hand, some Ethiopian CBRM initiatives, like PRM, take a very different approach[31]. They use action research to bring together pastoralists, development practitioners, government managers, and researchers to identify problems and engage in social learning by experimenting with and then implementing actions together. They then cycle through this process again and again. This is, more generally, called co-production of knowledge and action (see Figure 5.1 below). If time and resources are limited, the co-production team can focus on the key steps of team formation, co-identification of problems, shared learning, and implementation of action together.

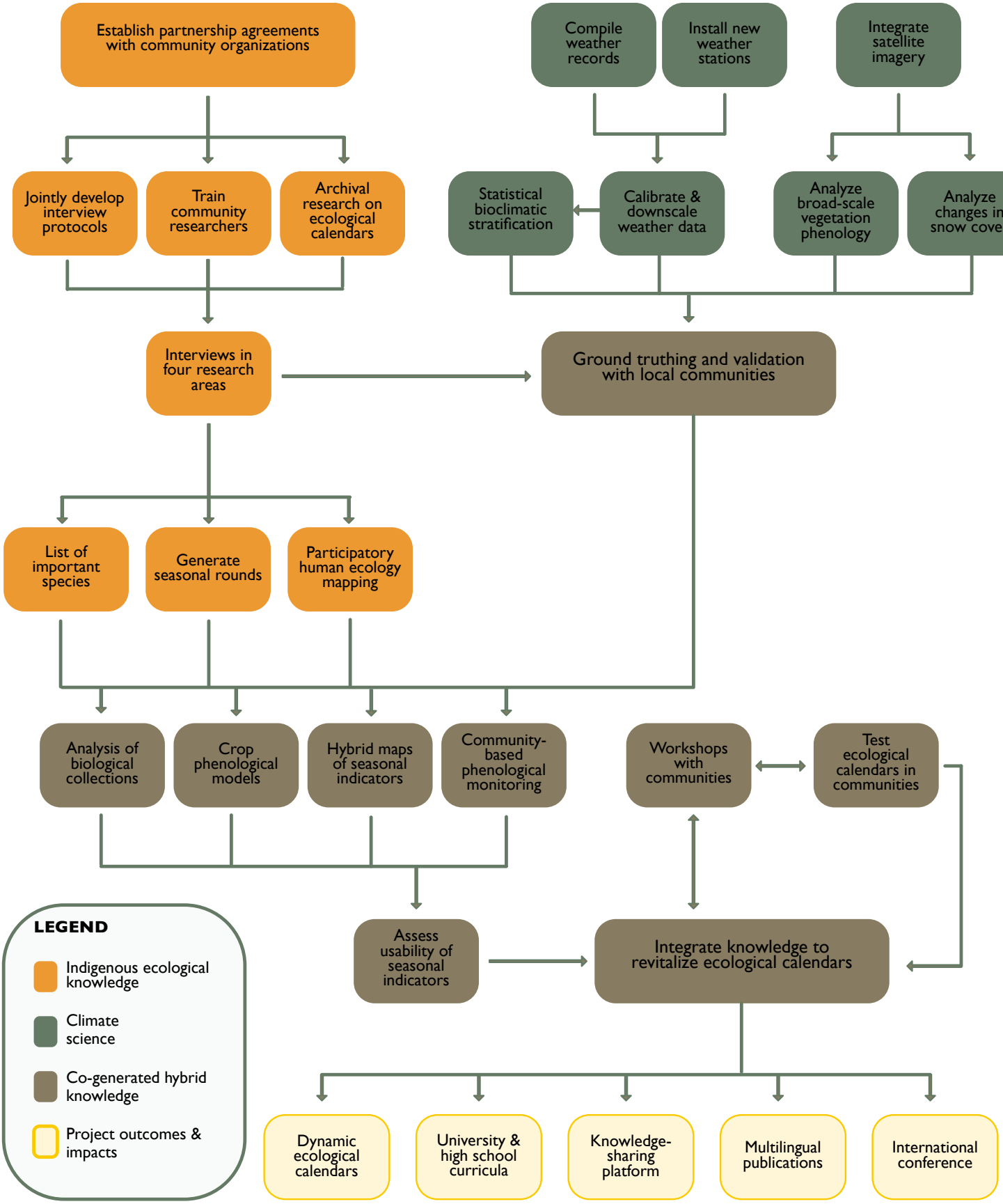
**Figure 5.1:** The adaptive learning cycle of co-production of linked knowledge and action (adapted from Steger et al in press[38]). This can also be called a "social learning cycle".




One key step in this process is the weaving of multiple knowledges to create a 'rich picture' of a CBRM problem of concern. These knowledges, for example, include those of pastoralists, development practitioners, government managers and researchers. This cycle was used in Kazakhstan and Afghanistan to understand food security issues with pastoralists[39]. The team of pastoralists and researchers brought together traditional pastoral knowledge with different kinds of research through interviews and remote sensing. They then ground-truthed their learning with local pastoral communities (Fig 5.2). From this integration of knowledges, they then developed joint products like indicators, phenologies of seasonal vegetation change, maps, curricula, a knowledge sharing platform, and publications. They then worked with the government of Afghanistan on a new pastoral policy which is just now being implemented[40].

When integrating knowledges it is critical to treat both scientific and traditional knowledge as valuable sources of knowledge, rather than assuming that one is superior to the other. There are many examples of how to do this well[20,33,39,41–43]. When possible, the ways to do this should be formalized to ensure transparency and clarity[1].

**Figure 5.2:** Specific example of how pastoral communities and researchers integrated knowledge and co-produced knowledge and action in Kazakhstan and Afghanistan[39].



As one interviewee told us, the *xeer* system of customary institutions of the Somali puts:

> ***"a lot of emphasis on the management of the rangeland……if we don't keep those xeer systems …. and the institutions …. it is going to be very difficult to manage the rangeland. If those knowledges are lost, I don't think any scientist can come and substitute with another knowledge because these are hard to duplicate, (they are) very pragmatic approaches".***

In this process, traditional knowledge can be particularly useful when developing key indicators of project success. The best indicators are specific and known by herders, practitioners and scientists to affect the resilience of pastoral livelihoods, like milk production, frequency of drought, water source availability, forage availability, vegetation cover, and biodiversity [44].

For example, pastoralists develop indicators that link rangeland conditions with herd production and health.

In northern Kenya, Ariaal pastoralists "…classified grazing resources into 39 landscape patches grouped into six landscape types and classified soil as 'warm', 'intermediate' or 'cold' for the purpose of land use….the herders used soil conditions and vegetation characteristics to assess biodiversity. Plant species were described as 'increasers', 'decreasers' or 'stable'. The decreaser species were mostly grasses and forbs preferred for cattle and sheep grazing and the increasers were mostly woody species preferred by goats. The herders evaluated biodiversity in terms of key forage species and used absence or presence of the preferred species from individual landscapes for monitoring change in biodiversity. (Then)….the herders used anthropogenic indicators concerned with livestock management for assessing landscape potential and suitability for grazing"[44].

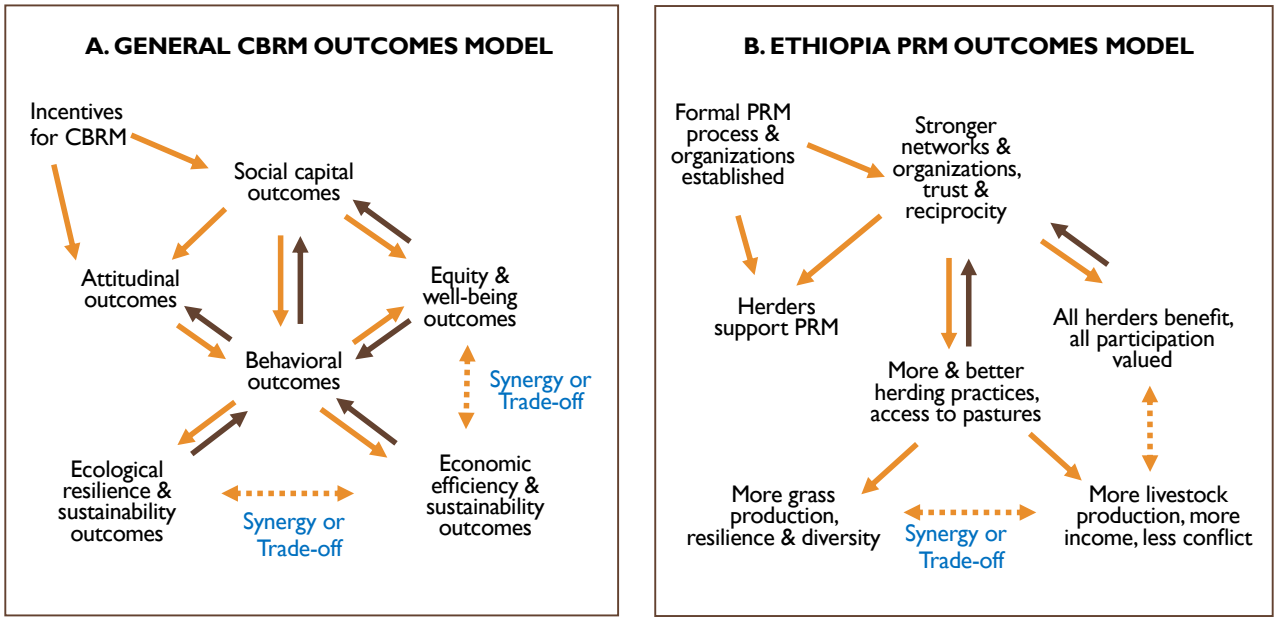
In Ethiopia, Afari pastoralists apply their indicators to judge if rangeland is degraded. They refer to severe levels of land degradation as *aboroiti baaro*. These are bare of herbaceous cover. They refer to other landscapes that lose herbaceous cover and are invaded by *Prosopis* species as *aboroiti baaro.* Land in fair condition is where there is dry plant litter and standing grass hay, or *kafiin isoole baaro*[34]. Oba et al[45] give specific step-by-step methods for integrating herder and scientific knowledge.

Common grazing areas in Abala Woreda, Ethiopia. (Photo Credit: ILRI/Fiona Flintan).

## BP14. IN ETHIOPIA AND ELSEWHERE, PRACTITIONERS ARE KNOWLEDGEABLE ABOUT BEST PRACTICES FOR ASSESSING OUTCOMES, BUT OFTEN DO NOT HAVE THE RESOURCES TO IMPLEMENT THEM FULLY

There are many types of outcomes and impacts that need to be assessed for any CBRM effort to ensure they improve their impact over time. PRM, for example, is interested in participatory process outcomes (like the steps of PRM itself), governance outcomes (like formation of Rangeland Management Councils), leadership outcomes (like individual capacity building), social outcomes (like improved livestock productivity), and ecological outcomes (like improved soil health or vegetation community resilience)[7,8]. Figure 5.3 below shows two theory of change diagrams, one based on CBRM outcomes and the other specific to PRM goals and processes. Notice that there is typically a sequence of outcomes, with some coming earlier in the PRM process, like social capital outcomes, and some coming later, like ecological and economic outcomes. Key to impact is the central part of the figure where pastoral behaviors change, by creating Rangeland Management Councils (RMCs) that implement Rangeland Management Plans (RMPs), which, in turn, change pastoral access to pastures, for example. Also note that there are places where significant trade-offs can occur, between ecological and economic outcomes or, perhaps, between economic and equity outcomes.

**Figure 5.3:** Proposed general CBRM outcome model (A) and Ethiopia PRM model (B), connecting different types of outcomes. CBRM = community-based rangeland management. Blue arrows = feed forwards, green arrows = feedbacks, dotted blue lines = possible synergies or trade-offs. Figure adapted from eight other works[46–53].




Unfortunately, it is difficult to assess multiple impacts in a reliable way. It is expensive to measure so many types of impacts partly because specialized skills are sometimes needed. This means that most CBRM practitioners, including those in Ethiopia, are left with little reliable information to assess the success of their efforts (Flintan et al 2019). And this is likely to continue: one of our interviewees saw little prospect of NGOs or pastoral communities being able to afford to implement monitoring and evaluation of CBRM projects in the future.

What would it take to do a robust assessment of CBRM, if it could be done? First, it is important to have a "gold standard" design so that results are clear and unequivocal[54,55]. This is step 8 in the PRM model, which the creators acknowledge needs more rigor[7]. The best design is a *randomized controlled trial*, where communities are randomly assigned to receive the "PRM treatment" or are part of a "control" group. This is rarely possible because project kebeles are selected for a variety of reasons and randomization is not practical or even ethical.

The second-best design is a *case-control design,* which is possible in most situations. Here, the project team compares cases with and without PRM side by side at one point in time, but also compares PRM cases before and after treatment over time. From the social and ecological sciences there are standard methods and tools to measure CBRM impacts. Overall, the evaluation of a CBRM

case can be guided by the protocol developed by Robinson et al[6]. This manual describes a holistic, systems-based approach to characterize and evaluate CBRM cases. The section on "describing changes over time" includes a list of potential biophysical, social, and management impacts for consideration.

To assess and monitor rangeland ecological impacts, PRM projects frequently use the guide written by Riginos and Herrick[2]. This is an excellent resource, but it is not clear if it was designed and tested with pastoralists. Unfortunately, we find that PRM projects often seem not to follow their guidelines. Most troubling is the tendency to abbreviate or altogether skip step one, inventory and assessment, and move right into a monitoring program. Rangeland assessment is very different than monitoring. Assessment requires that the CBRM teams only compare differences in CBRM effects within the same ecological community to control for differences caused by the ecological community itself. This avoids, for example, attributing changes in vegetation to CBRM when they are actually just changes caused by comparing two different ecological communities.

Especially in dry rangelands, it is important to understand what is and is not degradation. For example, bare ground may not indicate degradation but is instead a natural consequence of low productive potential and seasonal variability[56]. In these systems, it may be more important to measure site stability and resilience over time rather than use one-time measurements of bare ground as evidence of degradation.

The social outcomes of CBRM can be measured using indicators like the strength of herders' networks (structural social capital), levels of trust and norms of reciprocity (cognitive social capital), household assets, net cash income, and livestock number per household[52]. In these social assessments, it is important to measure social outcomes at the household level but also to measure outcomes at the CBRM organizational level. But, again, it is important to develop indicators here that make sense to pastoralists.

### BP15. LONG-TERM COMMITMENT BY NGOS AND DONORS HAS ALLOWED PRM TO BE SUCCESSFUL AND IMPACTFUL

A range of NGOs and donors have worked over time to develop, improve and apply the PRM process (see Table 4.1 and Appendix Table A2 for partners). PRM itself requires long-term engagement to ensure that pastoral communities not only participate in the process of revitalizing their own institutions. In addition, the PRM process requires many repeated meetings to develop the needed trust and to work through a detailed process. This may be difficult but is crucial to support communities to better sustain their rangelands.

Shorter term funding, which has occurred, really hobbles the potential impacts of PRM. One interviewee described how PRM barely gets started in the usual 5-year project cycle. This can leave a community with a Rangeland Management Plan but no way to continue to implement the interventions in the plan. Or a Rangeland Management Council forms but has not legal status and thus then fades away.

In particular, USAID's long-term funding of NGOs to implement PRM is one positive example of what is needed. The current effort to expand PRM through strong partnering with government programs is laudable, with the next step being connection to the business community.

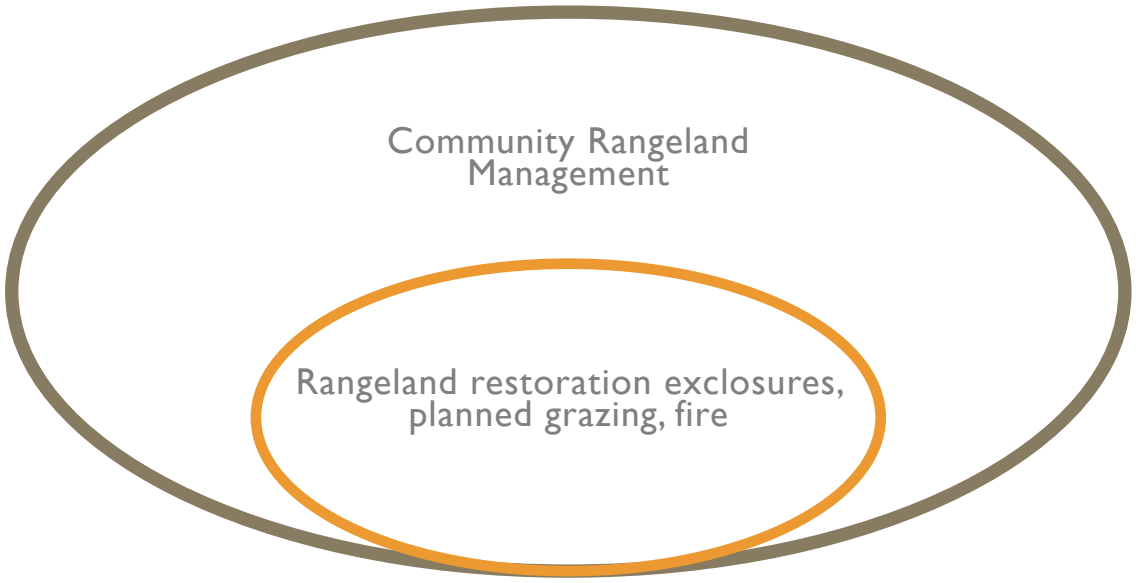
### BP16. BEGINNING EFFORTS TO MAINSTREAM AND INTEGRATE PRM WITH GOVERNMENT PROJECTS ARE IMPORTANT FOR IMPACT

Recent efforts by RiPA partners to integrate PRM into larger government objectives and larger development projects are important and have the potential for significant impact. These include programs like the LLRP and the PSNP of the Ethiopian government.

## 5.5. LANDSCAPE REHABILITATION AND APPLIED MANAGEMENT THROUGH CBRM

The following are best practices that occur at the local scale to manage, restore, or rehabilitate rangelands. They will usually be part of a larger CBRM project, as shown in Figure 5.4 below. The larger CBRM program includes the strengthening of customary institutions so they can better manage livestock grazing at the landscape scale. In PRM, the more local rangeland rehabilitation practices are part of the RMP.

**Figure 5.4:** The nesting of rangeland rehabilitation and restoration at the community scale within larger CBRM programs that work on landscape-scale governance issues (from Robinson et al[6]).




### BP17.* INTEGRATING TRADITIONAL AND CONTEMPORARY RANGELAND MANAGEMENT PRACTICES PROVIDES STRONG LEARNING OPPORTUNITIES AND POTENTIAL IMPACTS

One interviewee emphasized that the community level is the scale where it is particularly important to integrate indigenous pastoral knowledge and scientific knowledge of range management practices. It may not always be appropriate or effective, but this integration has been used by the Northern Rangeland Trust (NRT) in Kenya to promote learning and adapt management. NRT has used regular community site visits to rangeland rehabilitation enclosures and adapted the information from the US Forest Service's International Seminar on Livestock Grazing Management to promote discussions on the causes of rangeland degradation. These discussions are meant to illicit traditional knowledge and combine it with rangeland science to find novel management solutions when needed. It is not clear the impact these discussions make but they theoretically help engage the community and practitioners in a co-learning process and NRT plans to continue with them (see their Rangelands Strategy 2019-2022[57]).

### BP18. USING ENCLOSURES FOR REHABILITATION CAN BE USEFUL, BUT EXPANSION OF PRIVATE ENCLOSURES MUST ALSO BE CLOSELY REGULATED

Enclosures have both positive and negative impacts on pastoralism, depending on whether they are used to rehabilitate the rangeland or used to excise rangeland for other uses. Sometimes pastoralists use enclosures to protect forage for later use or to rehabilitate rangelands that have been invaded by woody plants or lost vegetation. But pastoralists also increasingly excise and fence rangelands with enclosures for cereal production or other private purposes[28,58–60].

Enclosures reduce communal livestock mobility, decrease livestock production, and increase grazing pressure on remaining lands[28,61]. Some wealthy households are able to secure enough land for cultivation to make it profitable[28], but poor pastoralists do not increase their incomes or adaptive capacity when they use enclosures for cultivation[58]. The benefits of cultivation to a few can mask the negative impacts to the larger pastoral community[62].

About 6-16% of households had semi-privatized enclosures in Borana and Guji[58]. Historically, Somali grazing enclosures were rare or nonexistent because of *xeer* customary rules[60,63]. Both Borana and Somali pastoralists oppose private range enclosures, but they are more accepted in the agro-pastoralist Guji areas[60,64].

Communal grazing enclosures, depending on their size, can threaten overall livestock mobility and increase grazing pressure outside enclosures but also have the potential to restore desired plant cover. Frequent or intensive grazing outside enclosures is likely to promote bush encroachment of unwanted species[65]. However, when Afar, Somali, and Oromo pastoralists limit grazing and actively remove unwanted plants, herbaceous cover and desired plants increase in enclosures [66–69]. In the Somali region, the government establishes enclosures and pays pastoralists to clear and restore degraded land [60,68].

Some CBRM programs (such as PLI2 and PRIME) have generally supported the use of enclosures for rehabilitation and bush clearance. Enclosures for rehabilitation may be most successful when there is sufficient seed bank for plants to recover and overgrazing was the cause of vegetation decline[68].

NRT has had vegetation rehabilitation success with enclosures in Kenya by removing unwanted species, sowing grasses, and using bunched cattle grazing practices. However, at this point, these have been high-cost efforts with significant management challenges, unequal household benefits, and may result in spillover grazing impacts into other areas[70–74]. If restored these areas can also have a 'green-magnet' effect that draws in herders and counteracts rehabilitation efforts. NRT is now considering using smaller enclosures more spread out through communities to avoid concentrating grazing pressure and is working on promoting smaller village level grazing plans[57]. A comparison of the experience of Ethiopian and Kenyan pastoralists with enclosures will help improve both PRM and NRT programs.

### BP19. USING INTEGRATED INVASIVE SPECIES MANAGEMENT ALLOWS MORE STRATEGIC AND EFFECTIVE CONTROL OF WOODY PLANT ENCROACHMENT

Traditionally, Borana pastoralists controlled the invasion of woody plants in rangelands by burning regularly[75]. A combination of government burning prevention policies (recently rescinded), grazing pressure and climate change has inadvertently encouraged native and non-native woody plants to spread across rangelands in Ethiopia[76].

Given this situation, some in Ethiopia and elsewhere are changing the way they think about and manage invasive species. For some, this means working to ensure that invasive species management will truly improve the health of rangelands. For others, this means accepting that climate change is altering plant communities, and that some species are better considered part of "novel ecosystems" that are here to stay[77]. Overall, this is part of a new approach that some are calling "Integrated Invasive Species Management".

This type of management of invasive woody plants means that pastoralists and others first clearly identify their justification and goals[77]. Management plans for invasive woody plants should consider their impact on both *ecosystem function* and *ecosystem services*. While *ecosystem function* focuses on the ecological health of a site, *ecosystem services* focuses on how the ecosystem provides goods and services to humans, either directly or indirectly[78,79]. One of the best ways to understand these impacts is by measuring the effect of invasive woody plants on the abundance and diversity of native plant species and groups (e.g., perennial grasses, other woody shrubs, etc.)[77].

Additionally, pastoralists and others should seek to understand both the initial causes of invasion of woody plants and the potential consequences of any treatments instead of simply seeking removal at all costs. An approach to removal that focuses on understanding and using a site's own ecological processes is crucial[80]. For example, aggressive removal of the non-native woody shrub, *Prosopis juliflora,* that fails to address the reasons that it arrived on the site and became dominant in the first place are likely to fail. On the other hand, *Prosopis* removal that also works to prevent re-colonization by restoring native plants, properly managing grazing, and limiting inflow of *Prosopis* seeds has a much higher chance of success[81]. If pastoralists also target restoration areas to sites where soil and water conditions are advantageous to removal, all the better.

It is essential that communities not only be included but lead invasive species management, especially landscape-level efforts at control[82]. This is because success at mitigating the negative effects of invasive species requires long-term management that will likely extend beyond the life of any external development intervention. At the same time, because invasive species cross boundaries and are linked to many other rangeland challenges, cross-institutional collaboration must also be part of any effort.

### BP20. SUPPORTING PASTORAL CUSTOMARY GRAZING MANAGEMENT, WHICH IS SUITED FOR COMMON LANDS, IS USUALLY MORE APPROPRIATE THAN ADOPTING APPROACHES USED ON PRIVATE RANCHES

The management of grazing livestock to meet multiple social-ecological goals is a complex endeavor. Even applied at a small scale, it requires the synthesis of a broad range of information about the interactions between livestock and the environment across space and over time. At broader scales, where landscapes are collectively managed and grazed by many herds, the complexity is enormous. In such cases, adaptive place-based knowledge embedded in pastoral institutions is far likelier to achieve long-term sustainability than prescriptive, command-and-control-style approaches[83–85].

Though it is just one case, HM exemplifies the problems of prescriptive approaches to grazing management. HM is a natural resource management framework that takes a whole system approach to improving decision making[86]. It is often associated with ranching on private land, and particularly with intensively managed rotational grazing, including pasture subdivision. This association of HM with intensive rotational grazing has at times been rejected by Alan Savory, HM's founder[86,87]. Confusingly, at other times he has seemed to encourage this association[88,89].

Taken as a whole, HM's careful triple-bottom-line (economic, social, and environmental) approach to management shares much in common with other adaptive management approaches[87]. Indeed, many of the positive outcomes associated with HM are similar to those documented for adaptive management[90–93]. At the same time, claims that the positive outcomes associated with HM are instead due to rotational grazing have generated significant controversy, with little scientific evidence in their favor[87,94–97].

HM can be an effective approach to range management but is suited to situations where there is a high level of control (like on private land), few stakeholders (like on a ranch), and little conflict (like where there are few herders). This is rarely the case on the common land that dominates pastoral lands in Ethiopia and the rest of Africa. Indeed, most pastoralist cultures have evolved significantly more complex and effective approaches for range management on common land than could be achieved through application of HM. Instead of seeking to apply a general system such as HM, we encourage practitioners of CBRM to understand and support the locally specific knowledge embedded in pastoral customary institutions about how to manage their commons.

More specifically, we strongly discourage the promotion of intensively managed rotational grazing and resting on Ethiopia's common land, particularly the use of fences to subdivide pastures. Though it can certainly be effective in the right situation, rotational grazing and resting is by no means right for all vegetation communities, climates, or peoples[91,95,98]. For example, we know that rest from grazing is a fundamental need of most forage plant species. However, intensive grazing management with heavy fencing is only one way to achieve the control needed to ensure this rest. There is good evidence that pastoralists within strong customary institutions have been practicing "rotational resting" without fences for centuries on their common land[99].

However, in grazing lands where customary institutions have broken down, support for new ways of managing and adapting grazing are likely to be needed. This may occur where pastoralists have settled or privatized land, or where cropland occupies large portions of the rangelands. These situations provide an opportunity for communities to innovate and adapt older systems into new situations, perhaps under the guidance of the Rangeland Management Councils. In these situations, experimentation with practices from outside Ethiopia's pastoral lands may be appropriate if desired by local RMCs.

## 5.6. BEYOND CBRM: BROADER DEVELOPMENT OF PASTORAL AREAS

### BP21. DEVELOPING AND IMPLEMENTING A PASTORAL-SPECIFIC POLICY IN ETHIOPIA MAKES DEVELOPMENT MORE EFFECTIVE AND JUST; IMPROVEMENTS ARE NEEDED

Several interviewees emphasized the importance of Ethiopia's first pastoral policy, finalized in 2019. The Ethiopian government developed the policy because:

> ***"Ethiopian pastoralists have not been beneficiaries of the development, democracy, and peace dividend underway in the country to the expected level because of the absence of a pastoral development policy and strategy that translates their constitutional rights and that takes the ecology, livelihood, and life style of pastoral areas into account"***[100].

As one interviewee said:

> ***"The most important thing [about the new pastoral policy] is mobile pastoralism is now considered a viable livelihood system in the lowlands".***

The interviewees also lauded how consultative the pastoral policy development process was, but it is not clear to us how extensively pastoral communities were included in the stakeholder consultations. In the policy, it states that "*In pastoral regional states, the draft was discussed with higher management bodies, government and non-government organizations, educational institutions, and community organizations; and additional inputs were gathered from these consultative meetings*"[100]. This likely means the elite leaders were consulted but, for example, did women, youth, and the disabled have a voice in this policy?

While one might think this policy should support pastoralism, this is not always the case, as suggested by this interviewee's comment: "*Albeit, of course, it's [the policy] still very schizophrenic in that it still says but ultimately, surely we'll all settle down.....*". For example, one of the principles of the policy states that it is desirable to "*develop and use surface and underground water resources; irrigable land based on research and evidence; and renewable resources, minerals…*"[28]. In most pastoral areas of the world, these kinds of developments have always created conflict with pastoral land access and movement[29,30]. Instead the new pastoral policy is much more than a pastoral policy, it is for all people in former pastoral areas, pastoral or non-pastoral, and thus addresses the trade-offs faced in this situation (for example, mobility vs settlement).

One interviewee lauded the policy for being realistic about what pastoral areas are today in Ethiopia. The interviewee pointed out that:

> ***"pastoral areas are changing- it is a place where we have pastoralists, agro pastoralists and non-pastoralists (people transitioning out of pastoralism (but are) still in the system dependent on others). The policy aims to support all livelihoods in the pastoral areas with proper land use planning'* for all livelihoods without compromising the other. The policy will address tradeoffs like this, '*....irrigation-based/rain-fed crop/fodder production (where it is feasible and has potential) will be promoted for people leaving pastoralism, particularly the youth who aspire non-pastoral livelihoods, without blocking access for dry season grazing areas and water for pastoral households.*"**

Another interviewee said the most problematic part of the pastoral policy is that it relegates pastoralism to "water in-sufficient areas". This then cuts off pastoralists from key resources like riverine areas and wetlands that are critical to their survival during dry seasons and drought. This distinction was made in the pastoral policy to allocate areas that can support crop production for that purpose, but inadvertently excluded pastoralists.

A third interviewee highlighted the need to have strong policy preventing powerful people from "grabbing" the most productive pastoral land at the regional level and below. In Oromia, this means policy from the Oromia Pastoral Development Commission. This interviewee commented that the establishment of the regions resulted in restricted mobility between the regions, and that inter-regional policy is the way to solve this problem.

In addition, the pastoral policy has implicit assumptions about the value of pastoralism compared to crop agriculture that are not correct. One assumption is that irrigable agriculture has more economic value than pastoral production, which was not true in the case of irrigated agriculture along the Awash River compared with Afar pastoral production[31]. In Kenya, rain-fed crops return more than pastoralism until rainfall is below 300-400 mm, and then pastoralism is more reliable and productive than rain-fed agriculture[32]. And, commercialization of pastoralism does not always pay better than subsistence pastoralism[33].

An Afar family moving their house by camel in Ethiopia. (Photo Credit: Wolfgang Bayer)

# 6. RECOMMENDATIONS FOR THE FUTURE

Here, we present recommendations (R1-24) for improvement of CBRM in Ethiopia and, specifically, for Participatory Rangeland Management. These extend the general lessons of the CBRM best practices into specific actions that should be taken by CBRM leaders in Ethiopia. R1-R19 correspond to BP1-BP19 in the Section 5; R20-R24 build on BP section 5.6. Thus, the sections headings are structured according to the best practices headings and each recommendation generally connects to a best practice.

## 6.1. CBRM AND PRM: OVERALL BEST PRACTICES IN ETHIOPIA

### R1. KEEP IMPROVING CBRM AND PRM AND BROADLY COMMUNICATE LESSONS LEARNED

- **Keep learning by studying past CBRM and PRM reviews and assessing current efforts and simplify complex information in short form for wider communication.** New implementers of PRM need to study Flintan and Cullis (2010)[1]; Riginos and Herrick (2010)[2]; Awgachew et al (2015)[3]; Irwin et al (2015)[4]; Robinson et al (2017)[5]; Robinson et al (2018)[6]; TANGO International (2019)[7]; and Flintan et al (2019)[8]. Also search for online reports by the implementing agencies and NGOs. However, these papers contain a lot of complex information that needs to be simplified. We hope this report serves to summarize and highlight some of the main points, but there needs to be further simplification for wider digestion by development practitioners.

### R2. EXPAND PRM TO NEW LOCATIONS AND SHARE LESSONS THROUGH A REGIONAL COMMUNITY OF PRACTICE

- **Continue to implement and adapt the PRM approach for use in existing and new locations.** PRM will expand its impact if it is continuously adapted in place and also to new locations. PRM could also be adapted to new issues. CARE Ethiopia is now adapting PRM, so it includes negotiating conflict among pastoralists. If this is successful, PRM could also be adapted as a more general pastoral engagement process for other issues in pastoral areas, like disaster risk management, and climate change.
- **Build a community of practice to share PRM and CBRM lessons learnt throughout the region.** Our interviewees were universally supportive of this idea. This group would be composed of CBRM practitioners, development practitioners and researchers who are actively working with CBRM programs in East Africa. While each country situation is different, there are common challenges they share like the weakness of pastoral land tenure, revitalizing customary institutions, rangeland fragmentation, and CBRM governance at multiple scales. One interviewee said, "it's good to have regional-level coordination, sharing experiences in terms of technique and approaches, best approaches and also to ensure alignment of rangeland development activities across those bordering areas".

## 6.2. SHARING POWER WITH PASTORALISTS THROUGH CBRM

### R3. DECENTRALIZE DECISION-MAKING AND LEADERSHIP TO PASTORALISTS TO BUILD PASTORAL COMMUNITIES

- **Partial devolution, through community-government partnerships, may be a key way to strengthen communities with government support.** CBRM practitioners have made much progress in empowering pastoral communities, but it is not clear that pastoral-led CBRM will either be fully possible or are the best way to empower pastoral communities. Several of our interviewees described the strength of taking a partially devolved approach by integrating customary pastoral institutions with government institutions to create hybrid community-government institutions.
- **Build pastoral community leaders not just participants in a long-term process and this will create trust and impact.** The project team must view pastoral community members as leaders of these efforts rather than just "participants" in programs developed by non-pastoralists programs. Developing leaders can be a long-term process but it is an essential way to ensure transformative empowerment of pastoral communities[9].

### R4. BUILD PASTORAL CAPACITY TO HAVE LARGE AND LONG-LASTING IMPACTS; THIS INCLUDES EDUCATION FOR NON-PASTORALISTS TOO

- **Focus on investment in pastoral capacity** since it will likely have more and longer lasting impacts on rangelands than investments in technical interventions to improve natural resources (or other interventions, for that matter). Why is this so? As Coppock et al (2017)explain: *"Although they can be vital and productive if well managed, technical investments such as improvements in forages, livestock breeds, or water resources are riskier than investments in people, especially in situations that are dominated by exploitation under conditions of open access or weak rangeland governance. Droughts, wildfires, disease epidemics, and similar natural phenomena can also quickly erase some of the technology gains slowly achieved via livestock or rangeland management. Thus, priority investment in the rangeland dwellers themselves is a sound course of action"*[10]. This training can be formal or informal but must be designed with pastoralists to meet their needs.

- **Support development of university courses and practical short-courses focusing on pastoralism.** Several of our interviewees lamented the scarcity of pastoral courses at universities. This was the same situation in Kenya, so USAID funded the establishment of the African Drylands Institute for Sustainability (ADIS) focused on pastoral studies at the University of Nairobi (https://adis.uonbi.ac.ke). The goal of the institute is "to establish a web of collaborative institutions engaged in enabling dry land communities' access higher education and take part in action research so as to offer them a lasting empowerment tool". The institute attracts and supports pastoral and non-pastoral students to study pastoralism and to support research needed by different pastoral communities in Kenya. For short courses, many of our interviewees emphasized how little many people, including Ethiopians, know about pastoralism. Given the misconceptions surrounding pastoralism, it is particularly important that government managers, development practitioners and researchers get introduced to the unique features of pastoralism before they make decisions affecting pastoral communities.

- **Engage pastoralist consultants to lead assessments** like this one. It is common for development agencies to hire foreign consultants for assessments related to pastoralists. In many cases, there are few pastoral consultants available to hire. However, assessments will likely make more appropriate recommendations if pastoralists lead them. One approach is to pair non-pastoral and pastoral consultants to improve the pool of experienced and high-quality pastoral consultants.

## 6.3. GOVERNANCE: STRENGTHENING PASTORAL CUSTOMARY INSTITUTIONS IN ETHIOPIA AND ELSEWHERE

### R5. "COMMUNITY-CONSULTED" APPROACHES NEED TO EVOLVE INTO "COMMUNITY-ENGAGED" APPROACHES, SUPPORTING PASTORAL LEADERSHIP

- **Community-consulted CBRM projects need to adopt strong participatory processes like PRM and work with leaders of pastoral customary institutions, not just governmental institutions.** This applies, for example, to the natural resource elements of the PSNP, which will be more impactful and sustainable if they adopt PRM's process in their programs, even if this may be unrealistic**.** Pastoral institutions could then lead implementation of the program in each place, determine who benefits and why, and control how the program gets rolled out.

### R6. FURTHER STRENGTHEN PASTORAL CUSTOMARY INSTITUTIONS AND GOVERNMENT SUPPORT FOR THESE INSTITUTIONS

- **Begin a CBRM effort by assessing the role and strength of pastoral customary institutions and focus on revitalizing weak institutions**[6]. For Borana, institutions are weak at the local, community scale. For Bale, they are weak at the landscape scale. This assessment can be done using tools like the Pastoral Livelihood Initiative's (PLI) customary institution assessment. This assessment should take place before the initiative starts, so that the program has a better chance of supporting rather than undermining customary institutions. The assessment is also the foundation for monitoring and evaluation of initiative progress. Key questions here are: What are the customary institutions in place that determine decisions on rangeland management? Do pastoralists think that revitalizing the existing customary institutions will improve rangeland management? Who would gain and who would lose with stronger customary institutions and how?

- **Strengthen governmental support for pastoral customary institutions.** Our interviewees emphasized the importance of getting strong governmental recognition and support for customary institutions. For example, for Borana, the national and regional governments supported community land certification that strengthened pastoral land access and ownership. Now they are preparing participatory land use plans and implementing communally certified grazing lands. Indeed, for PRM to work, the government must recognize pastoral customary institutions and support their role as the decision makers about rangeland management. Several interviewees emphasized the importance of legalizing the Rangeland Management Councils (RMCs) as part of the PRM process. When this did not happen in the past, they described seeing multiple NGOs establishing RMC's over time in the same place, and each fading away in turn. McPeak and Little (2019) summarize this need well: *"At a minimum, increased collaboration between administrative structures and customary institutions could prevent ….future conflicts. Ideally, the collaboration goes beyond a "do no harm" objective to instead facilitate a collaborative approach to jointly defining land management plans. Such an approach would allow adaptation to the obvious changes that are occurring in the area while protecting the viability of the livestock production and marketing system. This would build on the customary rangeland systems that allow mobility within viable wet-season/dry-season grazing units. A collaborative approach could combine the effectiveness of customary conflict resolution mechanisms with the need for government structures to prevent or resolve conflicts that are beyond the capacity of local institutions."*[11].

- **Start by empowering local, customary institutions, then involve local government.** It is important to follow a sequence in involving government. Once a CBRM initiative first empowers local, customary rangeland management institutions, these institutions then can be connected with the government at different levels, like the woreda. Here, one interviewee highlighted the importance of negotiating the potentially contradictory planning done by the pastoral-oriented RMCs and the highland-oriented land-use plans developed at the woreda level. Then the next step is to help the customary institutions gain recognition and land tenure certification.

- **Don't inadvertently undermine customary institutions.** Be careful that development work does not **i**nadvertently undermine customary institutions as it sometimes has with the Northern Rangeland Trust in Kenya[12].

### R7. CONTINUE TO REVITALIZE CUSTOMARY INSTITUTIONS TO INCLUDE WOMEN AND YOUTH

- **Continue discussions to adapt customary institutions to better integrate women and youth.** CBRM should continue to organize discussions with women and youth to learn their roles in pastoralism and how they want them changed. Full community participation will strengthen rangeland management but should be done in a way that helps marginalized voices without critically undermining customary institutions[13,14]. It will be important to adapt approaches as the economic roles of women change as they get more involved with business. With youth, pastoralism itself will need to evolve if it is to retain the next generation in pastoralism.

### R8. CONTINUE TO BUILD STRONG CUSTOMARY INSTITUTIONS AT BOTH THE LOCAL AND LANDSCAPE SCALES

- **Target interventions at the right scales of institution**. One interviewee supported the RiPA program approach of explicitly targeted interventions at different levels of governance. For example, decisions about technical interventions like bush enclosures should reside with community-level institutions, whereas decisions about larger grazing rules should reside in landscape-scale pastoral institutions. One interviewee said that community-level interventions ensure buy-in, while landscape-level interventions ensure impact.

- **Rebuild traditional cross-border institutions.** Add a new step to PRM to rebuild cross-border institutions that used to exist. This will facilitate regular opportunities for different communities within a region and between regions to talk to each other to negotiate movement and access. This will facilitate initiatives like IGADs transnational transhumance protocol, allowing livestock and pastoralists access to very distant pastures when in need.

## 6.4. IMPROVING IMPLEMENTATION OF PARTICIPATORY RANGELAND MANAGEMENT (PRM)

### R9. DEVELOP A CLEAR THEORY OF CHANGE AND RECOGNIZE AND MITIGATE AND POSSIBLE NEGATIVE IMPACTS OF PRM

- **Develop a clear theory of change connecting CBRM interventions to broader impacts with pastoralists.** All projects, if they have not already done so, should develop a clear theory of change that recognizes the wider impacts of implementing CBRM, and PRM in particular. This should be done with pastoralists. This is also a good time to develop pastoral-appropriate indicators of success and proper ways to measure those indicators.

- **Work to understand and mitigate the negative impacts of CBRM (including PRM).** The TANGO International report points to some trade-offs in implementing PRM[7]. It is very important for RiPA (and others using PRM) to find out why this occurred, who was affected, and how to mitigate these negative impacts.

### R10. CONTINUE TO DEEPLY ENGAGE PASTORALISTS AND THEIR PRIORITIES IN PRM

- **Continue to deeply engage pastoral communities and select the right people to lead this engagement process.** One interviewee described the engagement process this way: "*… because unless you engage the whole community, heartedly, from bottom of your heart, from site selection to impact assessment and evaluation, then you will not get confidence, because ….these people are not ignorant. They know better than you because they are the ones who lived for 100 years or 200 years in that arid, marginal area, and they lived with their life. So we have to learn the life and we have to talk to them. We have to learn from them…*". The right people to lead this process of engagement are open-minded, humble, good listeners, and not biased against pastoralists[9].

### R11. DEFINE RANGELAND MANAGEMENT UNITS (RMU) DIFFERENTLY IN ARID AREAS WITH OPEN ACCESS LAND THAN SEMI-ARID AREAS WITH COMMON LAND

- **Design CBRM and PRM so it fits the open access systems of arid pastoral lands.** New implementers of PRM need to understand that they must adapt this process so it can work in the Somali and Afar regions. Here, lands are arid, and pastoralists thus must move long distances and thus they need fluid boundaries. Here, establishing rigid boundaries of an RMU may not make sense. For example, one interviewee commented, "*as there is no official demarcation between the clans and boundaries change from time to time, I'm sure it is going to be difficult…(to establish boundaries)*". A better approach may be to focus on making rules about the use of **key resources** like wetlands and riverine areas. PRM takes this alternative approach and should be followed and improved. If pastoral and government institutions focus on and are monitoring those resources, this will provide the resources extra protection. In addition, one interviewee advocating placing special emphasis on resource mapping and land certification in the Somali region. "*So, it is really going to be very helpful if we can map out and then at the same time try to certify (the land) in one way or another.*" This will help "*protect pastoralist land from other competing interests*".

- **Design of hybrid institutions may be important here.** "*Yes, PRM can work here (in Somali areas) but it must rebuild even weaker institutions than in Borana or come up with hybrid community (clan) and government institutions. It must entirely build on the clan and sub-clan structure. It must define the Rangeland Management Unit not according to rainfall and vegetation, like in Borana, but according to the social and cultural structure of clan management in these cultures*".

- **Negotiate boundaries among communities.** Add a new step to PRM (or adapt the mapping and negotiation steps) to support communities to negotiate the borders of RMU's with the neighboring communities. "*One additional step …in the process of defining the rangeland units… is to get community's consensus on which area belongs to who and what area belongs to which rangeland unit and sub-unit, and how best those sub-units could be managed*".

### R12. NEW PRM METHODS AND TOOLS NEED TO BE TESTED WITH PASTORALISTS

- **Be careful about introducing new technology and grazing practices developed elsewhere.** Our interviewees did not agree on the usefulness of the new tools like AfriScout and Holistic Management. We agree with the interviewees who recommended that all tools need to be "vetted" by pastoralists so they can decide if they are useful, before they are introduced by RiPA or any other CBRM program. Interviewees did not agree on its usefulness, with several interviewees saying they could not

imagine pastoralists needing this technology or using it. But another interviewee said that AfriScout maps provided real-time pasture and water availability information for livestock mobility decision making, reduced conflict and prevented disease transmission. It would be useful to evaluate the use of this tool. However, this interviewee had a compelling argument: pastoralists combine AfriScout with their indigenous knowledge of pastures in Afar and Oromia to reduce "….*livestock mortality because previously in terms of travel, long distance, when they reach (the pasture), there will not be pasture"*. Along with our team, at least three interviewees were highly skeptical of HM and its applicability to pastoral areas of Ethiopia.

- However, **integration of new methods into PRM may be useful.** PRM is a process, not a tool. As such, it may be useful to continually scan other processes for their usefulness, especially those used by other CBRM-based programs in Ethiopia and elsewhere. This is the spirit of PRM—to be adaptive. Inclusion of other tools from other programs might also help donors, NGOs, government, and the private sector to buy into a joint process. One interviewee pointed to Human Centered Design as a promising method to work with communities on community-centered innovation. Human-centered design is "a leading qualitative innovation methodology that maximizes the likelihood of adoption, long-term sustainability, and scalability of a market-based solution"[15]. Another tool to explore is the SUCCEEDS tool that CARE is using to measure key elements of success of their programs. PRM should explore the usefulness of integrating this tool. Indeed, the right information in the right place is like gold. One interviewee said that the USFS program of mapping fragmented rangelands "….*is priceless information"*.

### R13. STRENGTHEN THE ACTION RESEARCH / CO-PRODUCTION PROCESS OF PRM; REQUIRE TRADITIONAL RESEARCHERS TO FOCUS ON PASTORAL NEEDS

- **Strengthen and evaluate a robust action research / co-production of knowledge process integrating pastoral knowledge within an adaptive learning cycle.** This is mentioned in PRM's foundational documents[1] but not emphasized in the recent PRM reviews[7,8]. Integrate pastoral knowledge to define the problems to focus on, identify local social and ecological indicators of program success and evaluate the progress of the governance systems that PRM helps pastoralists create.

- **Require traditional researchers to include pastoral needs as part of their research and integrate traditional knowledge in their findings.** Encourage and support research and researchers that bring together pastoral and scientific knowledges on an equal basis. This is as much a philosophy for researchers as it is a practice[16]. There are many examples of the success of this approach in anthropological research and excellent guidelines for how to integrate different knowledge systems[17]. Often research is not relevant to local needs, but it can be, if researchers are required to do this. In our experience, finding that "sweet spot" where pastoralist and scientist's priorities overlap, means changing the traditional way that science is done, even social science[9]. This means designing the research with pastoralists and returning the findings to them.

### R14. USE ROBUST M&E DESIGNS WITH PASTORAL INDICATORS; EXPAND FUNDING BY PARTNERING WITH RESEARCH ORGANIZATIONS

- **Use robust designs for monitoring and evaluation (M&E) including baseline measurements, case-control comparisons, and repeated assessments over time that include multiple types of indicators testing a theory of change.** A good theory of change can guide the types of impacts to measure. Baseline measurements occur before the intervention starts, comparing either households that will and will not participate in the intervention, or those who will participate at different levels of intensity, like the work of Tango International (2019)[7]. This sets up a case-control comparison over time. If this is not possible, then the next most robust design is monitoring baselines over time. Multiple measurements of CBRM could include measuring the implementation of the intervention, the livestock production and husbandry impacts, social and ecological impacts, and organizational impacts.

- **Ensure indicators are practical and link to the pastoralist's management objectives and are measurable often and easily**. One interviewee emphasized that "*monitoring outcomes should not be decided in advance without any community consultation"*. As another interviewee explained: "*as scientists, we get far too focused on monitoring, whereas if you were actually a rangeland manager, what monitoring does a cattle keeper, whether he's in Ethiopia or in the UK or in the US, what do they do to monitor their rangeland? It's going to be something much more practical and much more immediate to the management objectives that they have"*. For example, in southern Ethiopia, the amount of grass cover on the ground was one of the principal indicators for pastoralists[17]. In Mongolia, communities and researchers are discussing a simple phone-based app for

herders to measure rangelands using key pastoral/scientific indicators all on the same month that national monitors are measuring a national network of plots (R. Reid, pers obs). Herders provide measures of national plots plus other grazing areas.

- **Partner CBRM programs with research-oriented organizations to increase funding and skills, and to do periodic and robust monitoring that includes use of pastoral indicators.** Research institutions and universities have access to additional skills and funding not always available to local pastoral communities, local governments and the NGOs that support local efforts. Key here is partnering with these institutions but also finding the institution and researchers who will be the 'right fit' to work on demand-driven research that incorporates local needs and knowledge. PRM in Ethiopia has partnered with applied researchers from the International Livestock Research Institute which work in teams including Ethiopian researchers and institutions. The next step is to involve more Ethiopian university faculty and students and to partner with non-Ethiopian universities to catalyze broader research but also curriculum change at universities (both in Ethiopia and elsewhere). Education goals can be funded by entirely different education grants that universities can lead.

### R15. CONTINUE LONG-TERM SUPPORT OF PRM BY NGOS AND DONORS AND CONTINUE TO BUILD SELF-SUSTAINABILITY

- **Continue to support PRM, as a process, as part of long-term programs of CBRM**. One interviewee observed, "*…(you) must be willing to be invested for the long run. Everything in Afar always starts from "Adam and Eve" [the beginning]. Only through long term engagement can you get anywhere*". USAID has laudably done this with PLI1 & 2, PRIME and now RiPA, and we recommend they continue on this trajectory.

- **Ensure that Rangeland Management Plans (RMPs) include a business and financial plan to ensure the Rangeland Management Council (RMC) and its work is eventually self-sustaining.** One interviewee said: '*...the goal should be to build the capacity of the RMC to be self-sustaining and this means being socially, technically and financially viable – so communities no longer need external NGO support and can functional alone on an equally footing with government*'. For example, if not done already, each RMP should include a financial plan section that describes the costs of management. As one interviewee described, '*....then a major part of the NGO facilitation is to build the capacity of communities and the RMC to secure funding to implement their plans. In a functional PRM system, any NGO with funds to support governance or local interventions in pastoral areas would be directed by the woreda government to speak to the RMC to see which areas of their RMP needs funding support.*' In the Lowland Livelihood Resilience Project (LLRP) these business and financial plans take the form of Rangeland Management Investment Plans, which specifies how to finance the RMCs strategic objectives and interventions. Another interviewee suggested "*…the Rangeland Council…. can lease out their land to the private sector. And also, that will help them to get some resources so that it can be self-financing….And on water resource management, they are bringing some private sector engagement for sustainability as well*".

### R16. EXPAND MAINSTREAMING AND INTEGRATING PRM WITH GOVERNMENT PROJECTS

- **Continue to align PRM and government initiatives to empower pastoral voices and expand the impact of these development programs.** The consortium of partners who developed PRM are now working with other broader governmental programs to integrate this participatory approach into these programs. If this can be expanded, there is a strong prospect for both sustainability of PRM and broad-scale impacts. This alignment will require careful alignment of government development objectives with the PRM process so that PRM does not undermine the focus of government programs, according to one interviewee. This alignment will allow economies of scale to occur and will prevent wasteful overlap of different projects. One interviewee described this process: "*…we try to link to any new development programs coming into the area and making sure local government and communities also prioritize those existing plans they already put together as a priority whenever new programs or projects are coming in*".

- **Continue to focus on integrating with PSNP, LLRP and WPLUP.** One interviewee suggested that PRM is most suited for integration with programs that focus on disaster risk management, conflict mitigation, and climate change adaption. Particular programs that PRM is suitable for include the Productive Safety Net Program and the Lowland Livelihood Resilience Project of the Ethiopian government. Also important is integrating woreda land-use planning (WPLUP) processes into PRM, both for the planning process but also for the funds it would release from the woredas to support pro-pastoral development[8].

- **Make sure this integration still empowers pastoral voices.** Several interviewees pointed out that the key challenge here is ensuring that pastoralists have a real voice in these government-driven programs which has not always been the case in the past.

- **Don't presume that government managers understand pastoralism or rangelands.** One interviewee said not to assume that government managers know much about either pastoralism or rangelands and understand that they will need to be trained.

## 6.5. LANDSCAPE REHABILITATION AND APPLIED MANAGEMENT THROUGH CBRM

### R17. USE GROUP LEARNING TO INTEGRATE TRADITIONAL AND CONTEMPORARY RANGELAND MANAGEMENT PRACTICES

- **Set up demonstration plots, treatments, and experiments in pastoral communities** of management practices like those discussed below. Use these experiments as the centerpiece for the social learning and knowledge co-production process, using pastoral measurement indicators. This work can then be effectively integrated into the larger range management planning process, like adapting the RMPs developed during the PRM process.

### R18. USE ENCLOSURES TO REHABILITATE RANGELANDS, BUT REGULATE EXPANSION OF PRIVATE ENCLOSURES

- **Strengthen community-led land-use policy encouraged by the PRM process and regulation of grazing enclosures.** Community land certification that gives land-use rights is needed to help pastoralists prevent unwanted land-use activities. Pastoralists, using their customary institutions, are more likely to be able to maintain mobility and key rangeland resources if the land is certified[11,18]. These institutions need to include rules of use that ensure pastoralists with low livestock wealth can access appropriate grazing enclosures[19]. CBRM initiatives can help change government policies that encourage pastoralist crop farming or fodder production that bring few benefits and high community costs[20]. Crop farming has limited value in many pastoral areas and communities should therefore decide on whether or how to reduce them[21].

- **Support the reduction or elimination of semi-private enclosures, where appropriate,** particularly those that benefit single households**.** Semi-private enclosures will help more people if incorporated into kebele or *reera* (Borana) communal enclosures. This will discourage pastoralists from converting private enclosures into croplands[11,19,22] and help with overall rangeland management coordination.

- **Support communities to use communal enclosures to rehabilitate grazing land and to produce fodder at small scales.** One interviewee suggested that enclosures can improve rangeland vegetation through seasonal rest. Experimentation will help communities learn how to best rehabilitate rangelands with enclosures and to avoid displacing grazing impacts to other areas[23–26]. Households should move the location of enclosures over the years, as well as occasionally burn or intensively graze them as needed**.** When pastoralists move communal enclosures through time, they are more likely to maintain grasslands and avoid woody encroachment[25,27]. For fodder production, one interviewee emphasized that expanded use of small-scale enclosures close to settlements can reduce labor and risk for young women herding these animals.

- **Involve all stakeholders, including younger male pastoralists, in rangeland rehabilitation efforts.** Government, NGOs, customary institutions, and community members should collaboratively decide where to establish communal grazing enclosures. This should happen at the PRM planning stage and be part of the Rangeland Management Plan. It appears that younger male pastoralists are more likely to switch to crop farming when they are excluded from pastoral decision making, which pushes them out of livestock husbandry[19,21].

### R19. USE INTEGRATED INVASIVE SPECIES MANAGEMENT TO CONTROL WOODY PLANT ENCROACHMENT

- **Carefully plan management of invasive plants to ensure that any interventions will achieve the impacts that pastoral communities want and need.** This can be done by holistically evaluating invasive species, including what caused them to invade, and then managing them to achieve the outcomes that pastoralists identify. It is essential in this process to carefully weigh both the ecological and livelihood impacts of invasive species, both currently and over the long run. It may be that some species that are ecologically harmful have little livelihood impact, or vice versa.

- **Local pastoralists should lead invasive species management**, from identification of the challenge to implementation of a management program to monitoring. Without fundamental involvement of pastoralists, the long-term viability of any effort is questionable. As one interviewee told us, "*I know ten projects that are all doing bush clearing, but they go and clear some bush, and it grows again in two- or three-years' time. That's not successful, sustainable natural resource management*". For example, in Afar, the Rangeland Management Plans specify pastoral plans to remove invasive woody plants. To be successful, there must be broader collaboration among smaller, fragmented efforts to develop a broader strategy shared by different development efforts working on plant removal, according to several interviewees.

### R20. ENSURE GRAZING MANAGEMENT IS SUITED TO COMMON LANDS

- **Ensure grazing management is suited to common lands grazing by working through pastoral customary institutions.** This includes mechanisms for addressing and mitigating conflict, ensuring mobility, and maintaining ecological health over time. While intact customary institutions may seem less organized than prescriptive systems such as Holistic Management (HM), we suggest that this is due to their complexity and adaptability, as they have evolved to match the complexity and variability of the systems they are managing. If these institutions are found to have broken down, we encourage CBRM programs to support pastoralists to rebuild them under the new conditions rather than implement an entirely different management system.

- **Do not apply lessons and practices from private lands ranching, like HM, unless pastoral communities find them valuable.** Ranching systems typically have high levels of control over the land and other resources through private land ownership, and few decision makers. As such, both scientific findings and anecdotes from these ranches may not be relevant to pastoral grazing management in a common lands context, even when the results are from similar climates and ecosystems. As one interviewee told us, "*if you can't manage the boundaries at some level, you can't manage the basic grazing system. And….in a pastoral area, it is really very, very difficult to get everybody [to agree on a plan*]". This means that systems such as HM that rely on high levels of top-down control are unlikely to succeed because they are unable to match the high complexity of pastoral systems. In reference to pastoral complexity and HM, an interviewee told us that "*when you can't answer those sorts of questions, I mean, it's not serious stuff, is it?*".

## 6.6. BEYOND CBRM: BROADER PASTORAL DEVELOPMENT FOR PRACTITIONERS, DONORS, AND POLICY MAKERS

### R21. DESPITE ITS GROUND-BREAKING NATURE, DON'T ASSUME THE NEW ETHIOPIAN PASTORAL POLICY ALWAYS SUPPORTS PASTORALISTS

- **Have deeper discussions about how development affects pastoralists.** Interviewees wanted to see the development community have much deeper discussions about how they affect pastoralists. These discussions should include topics like who really has the power in pastoral areas and the unintended consequences of development work.

- **Development should focus on what pastoralists most care about: livestock and rangelands.** For pastoral areas, several interviewees suggested that pastoral development should focus on what pastoralists care about the most: pastoralism, their livestock, and rangelands. Livestock and rangelands are the biggest assets that pastoralists have. Focusing on their main assets also means that there is a chance that pastoral development will help pastoralists, rather than meet the needs of non-pastoralists. Other important interventions, like market expansion and veterinary care, can then be integrated into the foundational focus on pastoralism, livestock and rangelands.

- **Address contradictions in the policy that promote both pastoral mobility but also development that creates barriers to mobility.** Barriers to mobility include promotion of the growth of farming areas in pastoral key resource areas and promotion of the settling of pastoral people.

- **Redefine lowland areas to include and emphasize the importance of key resources so that pastoralists have permanent access to these key resource areas** even if they fall in "water-sufficient zones".

- **Don't assume subsistence pastoralism is the least profitable way to use lowlands,** As described in the misconceptions in the introduction of this report, often pastoralism returns more than irrigated and rain-fed agriculture, and more than commercial pastoralism.

- **Develop a 25-30 year comprehensive pastoral development strategy and road map for implementation of the policy.** Many interviewees were eager to see implementation of the policy and thought careful strategic planning was in order.

### R22. REGULARLY REVIEW THE PASTORAL POLICY WITH PASTORALISTS TO REDUCE ELEMENTS THAT DAMAGE PASTORALISM AND LAND GRABBING

- **Hold regular, participatory community meetings to obtain feedback on the pastoral policy** as written and implemented**.** It is important to set up a transparent mechanism or platform for pastoralists to give feedback on the policy without fear of retaliation. One way to do this is to attach such consultations to inclusive participatory processes in pastoral areas like PRM, as long as it does not overwhelm those intensive processes. Government representatives should lead or at least be present at these meetings.

### R23. RETHINK BIG DEVELOPMENT IN PASTORAL AREAS: IT CAN DO MORE HARM THAN GOOD

- **Big development can particularly hurt already marginalized pastoralists.** Several of our interviewees described the disconnect between what is good for pastoral communities and how some development occurs. One issue is the focus on big development by government and some international organizations. Such projects, like a dam and reservoir, often benefit non-pastoral people but occupy pastoral land, and require a huge amount of resources for maintenance. One interviewee said: *"The politicians in our country are saying, 'Build a big dam, …build big...' So this "big, big, big" needs ….human capacity, material capacity, technical capacity. Big structure requires big service, big structure requires big people….you have to maintain it, you have to utilize it, you have to manage it, you have to protect it, ….you have to collect fees for it. ...so you cannot start from big. Start from small and grow up".*

### R24. REDUCE FRAGMENTATION AND ALIGN MANDATES IN DEVELOPMENT STRATEGIES AND INTERVENTIONS

- **Reduce fragmented development approaches.** Several of our interviewees lamented how fragmented different development approaches are, which causes confusion at the community level as well as inefficiencies. One interviewee said, "…*there are a number of NGOs working in pastoral areas with a packet of interventions….a piecemeal approach. (They) give some seed of money for that, they do this one, they do that one….then they pull out and everything is lost".* There are good efforts to try to solve this problem, but these clearly need to be expanded and strengthened.

- **Clarify overlapping development mandates.** Another issue is the confusing and overlapping mandates for development within different bureaus of the Ethiopian government. One interviewee said, for example: *"So when you're talking about the issue of rangeland or land management, multiple mandates do exist in different government bureaus. For example, there is a Land Management Bureau and there is a Pastoral Development Bureau, under (each) is a natural resource management department. So often these two institutions do have different visions on how they want to manage their plans....".* One interview recommended clarifying, coordinate, collaborating and communicating different natural resource goals within different bureaus of the Ethiopian government and within the broader development community.

## 6.7. CONCLUDING REMARKS

One interviewee wants all of us to ask:

***….what do (pastoralists) want, what do they aspire to? And maybe you need to start again with them, say, "What do you want your rangelands to look like in 100 years' time? What do you want to pass on to your children's children's children? What do you want them to look like and what are your aspirations, your hopes? And then what would we need to do now in order to ensure that that happened? And is all this water resource development, is this a good thing? And is this near permanent grazing around the towns a good thing? And is all this acacia cutting down and harvesting a good thing?"***

Photo Credit: Richard Forsman U.S. Forest Service

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