

Community-based rangeland management in Dirre rangeland unit

Taking Successes in Land Restoration to scale project



**RESEARCH
PROGRAM ON
Livestock**

ILRI PROJECT REPORT



Community-based rangeland management in Dirre rangeland unit

Taking Successes in Land Restoration to scale project

Nizam H. Abdu and Lance W. Robinson

International Livestock Research Institute

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Acronyms

ACF Administration for Children and Families

AFD Action for Development

IGAD Intergovernmental Authority on Development

OSHO Oromo Self-help Organization

PRIME Pastoralist Areas Resilience Improvement through Market Expansion

RESET Resilience Building and Creation of Economic Opportunities in Ethiopia

Glossary¹

| | |
|-------------------|--|
| Aadaa: | A culture, including customs, traditions and values of the society |
| Abba Gada: | Lit. 'father of Gada', i.e. political leader of the Borana for one eight-year Gada period. |
| Arda: | A specific location or a geographic area where a group of villages settle. |
| Dheeda: | A large cluster of grazing areas in the Borana rangeland, and the biggest unit after the Borana rangeland as a whole. It comprises several maddas. |
| Gada: | An age set that assumes ritual, political and religious responsibilities for an eight-year term of office. |
| Gumi Gayo: | The supreme decision-making assembly of the Borana Oromo, which meets once every eight years at Gaayo in Dirre District. The Gada organizes the assembly. The assembly is held at the mid-period of the new abba Gada, i.e. four years after the abba Gada comes to power. |
| Jaarsa: | Elders. |
| Jarsumma: | The process of resolving disputes among individuals or between the different communities or ethnic groups. Entails searching for 'win-win' solutions. |
| Kalo: | Portion of the grazing land reserved for calves, lactating and injured and weak animals. Today it is usually fenced. |
| Madda: | Lit. 'aquifer' or 'permanent water source'. Also refers to a territory organized according to water sources. It is the second largest leadership unit after dheeda. |
| Obru: | it is a piece of farm land occupied by the agro-pastoralist around their home stead. |
| Olla: | 'Village' or pastoral camp – a group of homesteads that may be set up temporarily or remain in the same place over several years. A newly encamped 'village' is called 'quftuma'. |
| Reera: | Collection of close <i>ardas</i> . |

1. Definitions based on Tache and Irwin 2003 and Borbor Bule personal communication.

A. Introduction

In southern Ethiopia and developing countries generally, issues of food security, land degradation, and the connection between the two are of great concern for policy and for development programming. The Borana pastoral community, located in the extreme southern part of Ethiopia and northern Kenya, has been facing challenges in these areas due to recurrent drought, bush encroachment and erosion of customary resource management systems. Strategies adopted by development actors for helping Borana communities adapt to these conditions often involve support from traditional social structures such as the *Gada system* (Riché et al. 2009; Elias et al. 2015; Flintan et al. 2011; Fayo 2011; Zander 2006). The *Gada system* represents a form of traditional institutional capital for addressing land degradation, ensuring effective natural resource management, developing drought coping mechanisms, and resolving conflict. Government and non-governmental organizations have undertaken various interventions. However, in the Borana pastoral community, the impacts of these interventions on management of, and conflict resolution for, natural resources including rangelands and water sources have not been thoroughly assessed (Flintan et al. 2011). The project aims to deepen understanding the biophysical, social, land tenure and governance context, as well as the interventions aimed at strengthening local institutions for rangeland management.

One category of interventions for reversing and preventing land degradation in drylands is support for community-based rangeland management (CBRM). This study focuses on one case of support for CBRM carried out by the Pastoralist Areas Resilience Improvement through Market Expansion (PRIME) and Resilience Building and Creation of Economic Opportunities in Ethiopia (RESET) projects in Dirre Rangeland Unit in Borana zone in southern Ethiopia. The study analyses interventions by the organizations implementing these projects and the community's roles in managing the resource in Dirre area.

B. Methods and study area

Description of the study area

The Dirre rangeland unit is one of five *dheedas*—large customary rangeland territories—in the Borana areas of southern Ethiopia, and is made up of six smaller areas called *reeras*. Most of Dirre’s area is found in two districts (woredas)—Dirre and Miyo—as well as extending into Arero and Dhas. In Dirre, bush encroachment is taking over large areas of productive grasslands. The evolution of viable range management practices being applied as part of Borana culture can be traced back many generations, whereas bush encroachment is a relatively recent phenomenon. In combating the bush encroachment challenges, various interventions have been undertaken including research on bush control techniques. In the past, Borana pastoralists had a well-established grazing management tradition which is based on seasonal mobility (*godaansa*) for the utilization of grazing lands. This *Godaansa* or seasonal mobility usually follows the ‘*abuurraa*’ which means assessment of available grass elsewhere. During the assessment, an individual or a group of scouts travel across a given rangeland which can be in Borana territory or out of it, and search for available and accessible grazing land. After their return a larger group may move with their livestock. However, this traditional management system lacks definite cultural practices for checking the spread of these recent invasive plants. Different areas in Dirre rangeland show different features in terms of the state of range conditions, and the trends and scale of degradation.

Methods

The primary data gathering method used key informant interviews, of which fourteen were conducted. Respondents for key informant interviews were sampled purposively based on their understanding of the functioning community-based system for rangeland management in Dirre and the interventions carried out by the PRIME project. Accordingly, several of the key informants were selected based on their knowledge about the rangeland condition through time and Borana history in general. We also conducted interviews with project managers and a district rangeland expert. From the six *reeras* of Dirre *dheeda* units, we interviewed the *abba reera* (lit. ‘father of the *reera*’) of each, and interviewed other knowledgeable elders in order to strengthen our findings. Those *abba reeras* are automatically members of the *reera*-level grazing councils and additional members are recognized elders. From those interviewees, we collected primary data about the rangeland condition, intensity of bush encroachment, decision-making and the rangeland management system in Dirre, trend of drought in different *Gada* periods, and sources of conflict among different ethnic groups and means of conflict resolution. See Annex for the interview guide used.

The data collection process was accomplished in two phases. On the first round, we conducted in-depth interviews with the key informants. We also gathered the secondary data on livestock population, human population, rainfall trend and other basic information about the Dirre *dheeda* unit from Dirre district rangeland experts. On the second round, we conducted focus group discussions (FGDs) across the four *reeras* of Dirre Rangeland Unit, namely, Dubluk, Weeb, Melbana and Romso. The group size ranged from 15–20. The FGDs comprised two main group categories—members and non-members of the rangeland council—from the same *reera*.

Table 1: Summary of key informant interviewees

| Key informants | Number |
|------------------------------------|--------|
| Abba reera | 6 |
| Elders and other customary leaders | 3 |
| Research institute | 1 |
| NGOs | 4 |
| Total | 14 |

Table 2: Detailed description of key informants

| Name | Reera | Position | Comments |
|------------------|----------------|---------------------------|---|
| Wako Sora | Romso | Abba reera | Elder and abba reera |
| Galgalo Dida | Dubluk | Abba reera | Livestock trader and abba reera |
| Guyo Dida | Weeb | Abba reera | Peasant association manager and abba reera |
| Samphole Jilo | Miyo-arda-jila | Abba reera | Elder and abba reera |
| Garbole Adi | Sodda | Abba reera and dheeda | Elder, abba dheeda (at Dirre level and Borana level) and abba reera |
| Guyo Godana | Melbana | Abba reera | Elder and abba reera |
| Borbor Bule (Dr) | Dubluk | Elder | Honorable doctor (jaarsa argaa dhageettii) |
| Kura Jarso | Arero | The Borana-abba Gada | Successor of abba Gada Guyo Guba Bule |
| Dida Jarso | Yabello | SOS/PRIME project manager | Implenter of PRIME project |
| Katelo Duba | Mega | Rangeland expert | Expert at Dirre district |

The focus group respondents were similarly selected purposively based on their community representativeness in the Dirre grazing committee, their social status in the community and their experience and involvement in the community-based rangeland management. All the FGD members were Dirre grazing unit committee members at the *reera* level plus others, of the same *reera*.

Analysis was guided by a protocol developed by ILRI for providing a structured characterization of community-based rangeland management (Robinson et al. 2017). Most of the variables in the protocol are categorical variables, and most are straightforward and factual in nature. The research also collected data that was more qualitative and exploratory, both from primary and secondary sources. The data was narrated in detail based on the themes to understand the processes of the community-based rangeland management in Dirre rangeland unit.

C. Basic information on the case

Overview

Dirre has an area of 728,762 hectares and an estimated total population of 177,898. This particular Rangeland unit, Dirre, includes different locations that need different interventions. These characteristics of Dirre points out types of interventions required for resources such as grazing land, forest, water resources and some other mineral sites that are important for the improvement of the pastoralists' livelihood system.

PRIME is a five-year project led by Mercy Corps Ethiopia in partnership with international and local organizations. Funded by the United States Agency for International Development (USAID), PRIME focuses on selected areas of Ethiopia's Afar, Oromia and Somali regions. Implementing partners include Mercy Corps (lead), Aged and Children Pastoralists Association (ACPA), Action for Integrated Sustainable Development (AISDA), CARE, Ethiopian Centre for Disability and Development (ECDD), Haramaya University, and SOS Sahel. In southern Oromia region, CARE and SOS Sahel have led the natural resource management components of the project.

More recently, CARE began another project, RESET. RESET focuses on improved access to basic services, enhanced livelihood income and diversification of opportunities; improved disaster risk management capacity; and research and knowledge management enhanced to reduce vulnerability and tackle root causes of irregular migration and displaced persons in Ethiopia. It also has a natural resource management component.

In Dirre rangeland unit, just like other dheedas of Borana, the intensity of bush encroachment is high. Dirre is well known for its suitability for different livelihoods as the site has different weather conditions from other rangeland units of Borana. Both pastoralist livestock production and some cropping are practiced, although the productivity of the rangeland is declining over time. The practices being applied for the rangeland management and improvement can be traced back many generations, whereas bush encroachment is a recent phenomenon which took hold after the ban of the use of fire that was implemented during the Dergue regime.

In the past, the Borana rangelands were in excellent condition and the community was well known for its well-organized system of rangeland management. Seasonal livestock mobility ensured that pastures all had some periods of rest. However, recently, many research findings indicated that the traditional rangeland management is diminishing (Helland 2000, Homann et al. 2008) and land use in the area has been changing over time (Angassa and Oba 2008).

Summary of Case

I. General information

Ia. Development agent(s)
SOS Sahel, and CARE.

Ib. Name of program(s)/project(s)
PRIME and RESET

Ic. Terminology used by the development agent to describe their community-based rangeland management approach.

Participatory rangeland management.

Id. Extent of the particular case (the rangeland unit)

In the case of Dirre, and the other Borana communities supported for rangeland management by PRIME and RESET, the rangeland unit is equivalent to a traditional territory called a 'dheeda'. Dirre dheeda has an area of 728,762 hectares and an estimated total population of 177,898. It is located at the centre of the other four dheedas of Borena. It is bordered by Wayama on the southeast, Golbo on the southwest, Malbe on the west and Gomole on the north.

Ie. Briefly identify and describe the key community governance structures and/or processes for the case

In order to strengthen the traditional ways of resources management among the Borana while also fostering collaboration between the community and the government, the PRIME project established the councils at various levels. The key overarching governance structure for the rangeland unit is the rangeland council at the level of the dheeda, a rangeland territory in the customary Borana system. Dirre dheeda is made up of six reeras—a smaller territory—and each reera in turn is made up of between four and seven ardas. Each arda has a council with eight members. The arda councillors also come together at the reera level to meet. The collection of arda councillors in a reera select two persons to serve as *abba reeras* (lit. 'father of the reera'). These *abba reeras* also sit together at dheeda level as the dheeda rangeland council, and they also select two from among themselves as *abba dheeda*. The grazing plan is developed at dheeda level. It describes the rangeland management approaches and defines the rules governing the use of resources. At the same time, it also outlines bylaws and its enforcement mechanisms.

In Dirre rangeland unit, the governance structure involves both the community and the government. The councillors at lower levels are selected both from local administrators and the elders. Though the members of the councils at lower levels can be composed of elders, youth, women and government representatives, those serving on the dheeda level rangeland council are always from the elders who are free from government affiliation.

The decline of the traditional system has weakened the ability to control the widespread bush encroachment.

Figure 1: The Borana rangeland units



Source: PRIME 2015.

2. Specification of the approach

2a. Short description of the approach

Building on customary institutions and territorial definitions, PRIME helped to establish councils at arda, reera and dheeda levels, and has supported them with various rangeland management and rehabilitation interventions, including development of a grazing plan for each dheeda. Overall, the PRIME project follows a market-based approach for building resilience, the rangeland management aspect being just one component. In implementing particular rangeland management activities, a cost sharing approach is used. The community members actively participate and they also share the cost of resources management via labour force provision, monitoring and supervision of the development activities. More recently, the RESET project has worked through the same structures.

2b. Detailed description of the approach

The natural resource management aspects of the PRIME project in Borena zone are led by SOS Sahel and CARE. The main implementer is SOS Sahel while CARE is mainly playing advisory roles. SOS Sahel has a three prolonged development approach (SOS report 2007 p: 5):

1. Innovative interventions in the field with the participation of all relevant actors.
2. Action research to inform program improvement and policy formulation.
3. Networking and policy informing both within and outside Ethiopia.

In the approach they follow, the actors established rangeland councils at dheeda level. As Borana has five traditional territories (dheedas), each dheeda has its own grazing council. Through election of eight members from each arda, the councillors are organized at arda level, at reera level, then at the dheeda level. Those members actively participate and contribute to the development of the grazing plan for Dirre rangeland unit. Accordingly, any development project coming to Dirre rangeland unit will be expected to accommodate to the rules and regulations developed in the grazing plan, although the extent to which this will happen in reality remains to be seen.

For the implementation of particular technical interventions such as bush clearing, they follow a 'cost-sharing approach'. In doing so, the project personnel discuss implementation with the community representatives and set what that particular community can contribute to that particular activity and what they might need from the project. For example, if the community contributes labour, supervision of the activity and scaling up among other communities after the project, the project provides the community with material support, technical support, advice and refreshments during the field work.

2c. Country/ region/locations of the specific case

Ethiopia-Oromia region-Borena zone- Dirre, Miyo, Arero and Dhas districts

2d. Key Dates:

Table 3: PRIME/RESET II intervention key dates

| Key date | Activities performed |
|-----------------|---|
| 2013 | Preparation period of PRIME |
| June, 2014 | Meeting of community representatives from all five dheedas at Yabello |
| June, 2014 | Digitalization of resources map workshop |
| June, 2014 | Nomination of abba dheeda (rangeland councilors member) |
| September, 2014 | Development actions (Bush clearing, SWC practice, rehabilitation, ex-closure establishment) |
| March, 2015 | Rangeland management plan development (Write up) |
| June, 2015 | Pastoral land certification discussion (Borana elders, abba dheeda , Guji and Gabra, district land admiration) at Yabello |

D. Characterization of the social, economic and biophysical context

Issues and challenges for rangeland management in Borena zone

According to local elders interviewed for this research, the main challenges related to rangeland management, rangeland productivity and livestock-based livelihoods are as follows.

1. Increased number of water points. According to abba reera and abba dheeda, Garbole Adi of Sodda, one of the main factors that are degrading the productivity of rangelands is the increased number of water points, and he narrated:

'...long time back, the Borana rangeland did not have many water sources. We used to use few water sources such as ella and small ponds. Now days, many development actors are coming with water development projects. This intervention brought problems of rangeland management. The Borana used to migrate to search for grazing and water sources during dry season. They come back and settle when the rain comes. When we are on our search of water and grazing resources, the nearby rangeland resources get a relief for rehabilitation. Now, however, as we have more water sources even than grazing places, no one is willing to migrate for the water search and everybody knows that grass is not available elsewhere in Borana; impossible to say somewhere in Borana is better to others. So, we live here with our livestock and degrade the rangeland more.' (Garbole Adi)

2. Expansion of farmland. Among the Borana dheedas, Dirre is the most convenient for farming. Today it has become a cause for declining rangeland productivity with key pasture areas being lost and the grazing pressure on remaining pastures increasing. People are also fencing huge areas of the rangeland, purportedly as farmland. During the Gumi Gayo assembly in 2008—a traditionally pan-Borana conclave held every eight years—private kalo (enclosures) were banned by the collective decision of the assembly. However, some people have found a way around the ban by claiming their enclosures are 'obru' for farmland.

Other people will not access the resources inside the fence of the obru/farm enclosures without the owner's permission.

3. Ban of the use of fire: Burning of selected pasture areas was traditionally part of the rangeland management toolkit of the Borana. During the Dergue regime, however, a ban on burning was implemented. According to some elders, such as honourable Dr. Borbor Bule, the ban on the use of fire during that time was not for the Borana rangeland; rather it was only for the forest land in the country, especially in the highland areas. However, the elder explained that, due to a misunderstanding of the idea by the officials at that time, the fire ban rule was imposed on the Borana rangeland as well. This ban is widely believed to have been the main factor for the encroachment of invasive bushes today.

Currently, the Dirre dheeda pastoral community, and the whole Borana community's interest in using burning for restoration, is great. However, there are still a number of factors hindering this. One factor is that effective use of fire for bush control requires a good quantity of grass biomass to be used as an input for burning so that the fire will be sufficiently hot to destroy unwanted bushes. Some community members are not willing to burn grass to prevent the loss of immediate animal feed. If burning were to be allowed again, benefits could include the following:

- a. *Bush control*: Burning the rangeland helps control bush encroachment. To burn a given land, resting the grazing area for a season is important. This helps get grass biomass that will be used for burning.
 - b. *Tick control*: According to the elders, burning the rangeland was applied seasonally for two main purposes: one is for the regeneration of palatable grasses and the other is to control ticks.
 - c. *Growth of fresh grasses*: As mentioned in the first two points above, traditional application of fire was used to generate fresh grass.
 - d. *Improvement of livestock productivity*: Ultimately, appropriate application of fire, by improving rangeland condition and controlling ticks, is believed to contribute to improved productivity.
1. ***Inappropriate village settlement arrangement in the rangeland***: The springing up of more and more settlements has resulted in more and more areas that never receive a rest from grazing pressure. After the 2008 Gumi Gayo assembly, some development agents in collaboration with government agencies and customary institutions, started to arrange the settlement of the Borana-pastoral community. It was somehow effective in terms of reducing land degradation through identification of seasonal grazing areas, which has been facilitated by the rearrangement of settlement patterns.
 2. ***Decline in the power of the customary institutions***: Customary institutions among the Borana are not limited to resource management; rather they constitute a leadership system regarding resource management, conflict resolution, and the organization of self-help during difficulties (livestock death, fire outbreak, livestock and human death and disease outbreak, injuries, ethnic group conflict, crop failure etc.). Nowadays, however, the power
 3. of the institution to manage the resource is declining, and the whole system is weakening. As Garbole Adi narrated

'...our traditional management of resources is a pillar of our livelihood. We never had any failure to solve our lives' problems using our customary institution. Our Gada system has full power and authority to deal with our challenges. Today, we cannot say we have strong customary system. Even though we use the system to resolve our conflict, manage our grazing land and water resources, introduce new rules and amend the old ones, the system in general is declining over time. This is due to the fact that government comes with top down approach that sometimes denies the values of local institutions. For example, we have the traditional way of managing resources. We believe that the Borana rangeland is owned by us. But, in case government says that they need land for investment or a ranch, we cannot say no. We have to accept and allow them...'

4. **Declining dry season grazing reserves:** There is a tradition of keeping reserves for grazing during different times in a year. The Borana classifies their grazing lands in different parts for different grazing seasons. For example, they reserve the land for dry season grazing for lactating cows, old animals, calves and preferred bulls for mating. These livestock categories are kept in a separated area only during the dry season whereas it's possible to mix them during the rainy season. Currently, the season-based land classification seems hardly valid anymore as there exists a high degree of bush encroachment, high livestock and human population and a large number of water resources, resulting in insufficient pasture land to allow for following the seasonal migration patterns. The tradition of keeping village-owned dry season grazing reserves is, therefore, fading out.
5. **Extensive land degradation due to soil erosion:** Soil erosion is largely a consequence of bush encroachment. When the areas are invaded by invasive plants, said the one of interviewees, '*...soil erosion happens when there is not grass to tap the soil during the heavy rain. Bush removes the grass; when there is no grass there is always soil erosion. When there is not soil, there will not be any grass...*'
6. **Encroachment of invasive bushes and other plants:** Bush encroachment has a great impact on the rangeland degradation and the livelihood of the community. Though many interventions have been taken to combat the encroachment, it still has rampant negative effects on the natural resources and the economy of the people. Some pastoralists are moving towards directing the bush to other uses. They produce charcoal or firewood from it; however, not all bush species are usable for the production of charcoal. Sometimes people will cut and burn ecologically more advantageous trees rather than the undesirable bush species.
7. **Private kalo:** Private *kalo* enclosures, according to the Borana Gumi Gayo, are officially forbidden: no one has the right to own a private *kalo*. However, individuals are still finding a way to enclose pastures. Individuals who are able to clear and plough some portion of land are allowed to do so, but this paves the way for them to fence much larger areas. Such enclosures may have a small piece of farmed land, but it also becomes, for practical purposes, a private forage bank.

Overview of the context

Table 4: Social, economic and biophysical context—summary

| Dimension | Variable/characteristic | Value/comments |
|--|---|---|
| Biophysical | Mean annual precipitation | 614 mm ¹ |
| | Rainfall variability | CV=31.3% ² |
| | State of rangeland condition at initiation of the intervention | Bush encroachment was already rampant at the time of the interventions. Overgrazing around permanent settlements. |
| Demography, livelihoods and social structure | Population density | 24.41/km ² |
| | Degree of competition for/pressure on land | On prime lands, particularly bottomlands with greater soil retention capacity, extremely competitive. Growing human population due to in-migration, natural growth and loss of pasture to agriculture and bush encroachment creates great competition on remaining land |
| | Ethnic hetero/homogeneity of the rangeland unit | Ethnically homogeneous (>= 85% of the population is Borana) |
| | Ethnic hetero/homogeneity of the region within which the rangeland unit is situated | Ethnically homogeneous (>= 85% of the population is Borana) |
| | Percentage of land within the rangeland unit under cultivation | Not available. |
| | Percentage of land within the region unit under cultivation | Not available. |
| | Predominant livelihoods | Pastoralist livelihoods dominate |

| Dimension | Variable/characteristic | Value/comments |
|--|---|---|
| Governance and tenure | Type of land tenure | De jure state property but not enforced, with de facto communal tenure |
| | Security of land tenure | Somewhat secure |
| | Is there elected local (commune, municipality, village— not meso-level such as counties in Kenya, but rather local) government? | No |
| | Strength of customary institutions for natural resource management | Declining over time. Currently have limited formal authority regarding decisions. Although still moderately strong moral authority. |
| Neighbouring communities and inter-community relations | Extent to which other communities/ rangeland units within the region also have similar community-based rangeland management and governance structures | Most communities have similar governance and management structures. |
| | Strength of community organization in other communities/rangeland units within the region | Relatively, Dirre grazing unit is better compared to the adjacent communities |
| | Severity of inter-community conflict and livestock theft; and resolution | Severe conflict mainly between Garri and Borana |

1. "Thornton, P. 2014. Rainfall and rainfall variability. Pages 38-39 in Sebastian, Kate, Ed., "Atlas of African agriculture research and development: Revealing agriculture's place in Africa." Washington, D.C.: International Food Policy Research Institute (IFPRI) <http://dx.doi.org/10.2499/9780896298460>

2. *ibid*

Biophysical context

The mean rainfall in Dirre is 614 mm. per year. Rainfall is highly variable with a coefficient of variation in annual rainfall of 31.3%. According to the Borana elders interviewed for this research, drought can normally be expected once in one given Gada period (eight years). Today, however, it can be three times or more. The state of the rangeland during the initiation of the intervention was severe with bush encroachment already rampant. There is also overgrazing around permanent settlements.

Demography, livelihoods and social structure

As the boundaries of Dirre do not correspond to existing administrative units for which statistics are available, we estimated the population density based on data pertaining to the kebeles within Dirre dheeda. The population density is approximately 24/km², which is comparable to the whole Borana (21/km²). Precise estimates of the amount of land under cultivation were not available. One study (McCarthy et al. 2003), using participatory mapping, estimated, very roughly, about 16% of the land in Borana territory as being cultivated. The level of cultivated land in Dirre is certainly higher as it has some of the most favourable conditions for farming. Competition for land is very high due to growing human and livestock populations resulting from in-migration and natural growth. These factors, combined with the loss of pasture to agriculture and bush encroachment creates great competition on remaining pasture land. Ethnically, in Dirre rangeland unit and Borena zone generally, more than 90% are from the Borana ethnic group. Greater than fifty percent are pure pastoralists followed by agro-pastoralist (23%) and <10% by others.

Governance and tenure

With regard to land tenure, all land in Ethiopia is formally state property with the state having exclusive authority on issues such as border demarcation, and allocation of land to investors for development. Other than that, on a day-to-day basis in Borena zone, customary and communal institutions have some degree of de facto authority for management of land. Through these institutions, communities manage, evaluate and utilize the resources, albeit with a very limited ability to enforce decisions on land management. The strength of customary resource management institutions has declined over time, although they still possess moderately strong moral authority. The interventionist

nature of the Ethiopian state means that often, resource tenure and governance in Borena zone is, informally, based on collaboration and negotiation between the community institutions and the government. The de facto communal tenure is moderately secure at best, with the state able to allocate land and to override local decisions at any time. A new system of land registration for communal land will presumably strengthen communal land rights; however, at the time of this writing, it was only in the earliest stages of being piloted.

Neighbouring communities and inter-community relations

Similar dheeda-level rangeland councils are in place for all the neighbouring dheedas. Comparing Dirre to those dheedas, as well as to neighbouring groups outside of the Borana territory, Dirre is perhaps in a slightly better position. According to elders and knowledgeable pastoralists interviewed for this research, Dirre is managed relatively more effectively than most other areas in the region. The Dirre rangeland unit has its own rangeland management plan initiated by the community and documented by the stakeholders (PRIME/RESET under CARE). However, within Dirre, the six reeras do not have significant differences regarding rangeland management.

Conflict between the Borana and adjacent communities or with minorities within the Borana territory is common. These conflicts are resource-based, ethnic group based or border-based conflicts. These conflicts often have serious negative impacts such as human death or livestock loss. A recent example narrated by Guyo Dida of Weeb about the conflict between Garri Somali and the Borana:

'...it was a month ago that the Garri tried to cross our border between Wachile and Weeb. They strategized collaborating with the Gabra Oromo to control over the Borana. They used religion to provoke the grievance, to break the historic and blood based relationship between Borana and Gabra. We and Gabra both have similar culture. We speak the same language. We have been living together since the time immemorial. We are brothers and sisters in law. The Gabra Oromo preserved strong bond with Borana for many years through inter marriage, common language and exchange of ritual materials. But the Garri used them against us through religious propaganda. We are the Borana- the people of tradition, norms and values. They are both muslims. The Garri calls us Kafir (dis-believers) and Garri and Gabra are both consider themselves as muslims. They knew that we Borana don't have any negativity against any religion. We are so much democratic. But the Garri used this as entry point to control our land. Then we had a fight for a couple of days. Some of the Gabra in Borana moved to the Garri side. Through our traditional conflict resolution mechanism we managed to sit down and discuss about the issue. In between we captured one big camel from Gabra and brought it to Weeb. Once a lost animal stays for a month at its place of destination, we have the right to change the skin (to sale or slaughter). Nevertheless, we did not do anything since we have the 'jarsumma' in hand. Jarsumma is an Oromo term used for the process of conflict resolution traditionally. We brought the Gabra back to Borana and returned their lost camel peacefully...'

The role of jaarsa and jarsumma in conflict resolution is supported Bayeh et al. (2015) describing the role of these institutions in western Oromia. According to the authors, *jarsumma* is derived from the word '*jaarsa*' in *Afan Oromo* (the language of Oromo people) which means the elders. The *jarsumma*, therefore, is the procedure of solving disputes among individuals, groups or tribes over common or private resources or ethnic-based conflicts. It involves deliberation, ascertaining of the truth in any dispute, and searching for win-win solutions. The *jarsumma*, still functioning today, is an important piece of traditional institutional capital. Even though the study by Bayeh et al. (2015) did not focus on natural resources management, the authors showed that this kind of dispute resolution technique is well respected and more preferred than the formal court. This is because, the authors argued, it is less time consuming, has lower transaction costs, and works toward win-win solutions, unlike the formal court where one must be a winner and the other must be a loser.

Table 5: Enabling and hindering factors

| Condition | Specification |
|--|---|
| Social/ cultural/ religious norms and values | Enabling: Borana culture and norms are natural resource management enabling factor |
| Availability/ access to financial resources and services | Hindering: no or limited financial access |
| Institutional setting | Hindering: As traditional institution is declining over time |
| Collaboration/ coordination of actors | Enabling: collaboration between the community and actors Hindering: collaboration among actors |
| Legal framework (land tenure, land and water use rights) | Enabling: the community has the right to use the common property Hindering: no/limited land tenure |
| Policies | Enabling: Land verification for example Hindering: Investment decision by government body |
| Land governance (decision-making, implementation and enforcement) | Hindering: controlled by higher body |
| Knowledge about sustainable land management, access to technical support | Enabling: the community has deep knowledge of sustainable land management |
| Markets (to purchase inputs, sell products) and prices | Hindering: Limited market access for all |
| Workload, availability of manpower | Enabling: there exist available labour and experts manpower |

E. Characterization of the approach to community-based rangeland management

Overview

Table 6: Characterization of the approach—summary

| Dimension | Variable/characteristic | Value/comments |
|---|--|---|
| Methods used by development agent | 3. Methods | PRIME experts conducted meeting with abba dheedas at reera level. The very entry point for any development agent is problem identification with the community |
| | 3a) Community entry process and participatory activities used by the development agent | |
| | 3b) Approach to capacity building used by the development agents | Short term training on hay making, seasonal grazing, early warning, governance and destocking |
| | 3c) Nature of incentives and business model | Mainly, material supports as recent approach, refreshment and small payment to be diverted for pond establishment that is based on cost sharing approach |
| | 3d) Types of technical rangeland management options being supported by the development agent | 1. Bush clearing/thinning 2. Seasonal planned grazing 3. Kalo making 4. Pond construction |
| | 3e) Advisory service | Yes |
| | 3f) Involvement of local communities in different phases | Active participation at every level (see the detail below) |
| | 3g) Monitoring and evaluation as part of the approach | Yes: Community-agent joint monitoring and evaluation approach |
| | Governance | 4. Governance design |
| 4a) Governance type | | Collaborative/shared |
| 4b) What form does community representation take? Participation/representation... | | Based on communities and/or jurisdictions |
| 4c) Are there provisions for regular election of officers/representatives? | | No. |
| 4d) Involvement of women, minorities and other groups | | In Dirre, the ethnic minority population is very small. Women are active participants in the arda-level councils. |
| 5. Basis of structures/processes in customary institutions | | |
| 5a) The decision-making structures/ processes for the rangeland unit... | | Are a hybrid of customary and new institutions and procedures |
| 5b) Are there any hereditary or other customary leaders who are automatically part of the leadership structure? | | Yes (informally, but not in terms of written rules) |

| Dimension | Variable/characteristic | Value/comments |
|--|---|--|
| Authority | 6. Legal mandate | |
| | 6a) Registration of the main decision structure as a legal entity | No registration of the structure as a legal entity |
| | 6b) Recognition of the process of the rangeland unit by the legislative framework | No decision making structure of the rangeland unit is a legal mandate by the legislative framework |
| | 7. Authority and governance powers of the rangeland unit's governance structures/ processes. | |
| | 7a) What governance powers do the rangeland unit's governance structures/processes have? | Has full governance and management powers |
| | 7b) In cases where rangeland unit's governance structures/processes have limited authority (have merely an advisory/coordination function), where instead does the bulk of authority lie? | Not applicable |
| | 7c) Who decided on the selection of technical options to be implemented | Land users alone (self-initiative) |
| | 7d) Specify on what basis decisions were made (several options are possible) | Evaluation of well-documented sustainable land management knowledge (evidence-based decision-making) Research findings Personal experience and opinions (undocumented) |
| | 7e) Graduated sanctions | Yes. |
| | 7f) Conflict resolution mechanisms | Yes: Mainly jarsumma (traditional systems of dispute resolution by elders) |
| Management | 8. Staffing | |
| | 8a) Is there a secretariat (e.g., paid staff working for the community organization in an office)? | No. |
| | 8b) Are there paid field staff (e.g., rangers, rangeland managers, etc.)? | No. |
| | 8c) Does the rangeland unit hire professionals (e.g. rangeland ecologists, tourism managers, etc.)? | No. |
| Spatial organization, scales, and levels | 9. Definition of the rangeland unit | |
| | 9a) How is/was the geographic extent of the rangeland unit defined? | Pre-defined |
| | 9b) What criteria are/were used to define it? | Traditional territories |
| | 10. Nesting and multi-level planning approach | |
| | 10a) Are there clearly defined territories and associated institutions nested within the rangeland unit structure? | Yes. |
| | 10b) Is the rangeland unit formally nested within a larger structure? | Yes. |
| | 10c) How does resource planning at the rangeland unit level relate to planning at levels above and below? | Primarily at the rangeland unit level and then further details and planning are done at lower levels |

Methods

Methods used by development agent

The organizations involved in the PRIME and RESET projects have been guided by principles of Participatory Resource Management (Awgichew et al. 2015). Some of those actors are SOS Sahel mainly working on bush clearing, material support, pastoralists' training on hay making, etc. SOS Sahel is working as an implementer of PRIME project with CARE. The core value of SOS Sahel, according to the project manager, is based on active participation from the community in making decisions, learning from the local community and past experiences, strengthening the capacity of the local community with short-term training on the rangeland management, developing foreign networking and partnerships, and strongly working towards gender equality to build solidarity that ensures social inclusiveness.

In the whole process, different development agents apply different development approaches. For example, according to SOS-Sahel-PRIME project manager Mr. Dida Jarso, they follow two main strategies: active community participation at every level and cost sharing.

In the first strategy, the interest of the pastoralist is always kept at the centre. The pastoralist community members identify the problem and discuss it with project personnel and other their stakeholders. A vital component of this strategy is to make use of traditional Borana strong social capital. The second strategy is cost-sharing, which helps create a sense of ownership of the particular activity, and avoid dependency syndrome and unrealistic expectations.

Community participation activities take place at different phases of the project. After they initiate ideas for particular activities, community members plan implementation with project personnel, agreeing on what each is expected to provide. For example, the community may need payment for a particular intervention. Recently, however, they are either provided with tools for bush clearing or they shall divert the payment towards other development activities rather than using the money for daily expenditures.

Table 7: Sites of bush thinning by PRIME

| Reera | Arda | Village/olla | Area in ha |
|---------|------------|--------------|------------|
| | Qeqlo | All villages | 125 |
| Web | Har-Jarte | All villages | 125 |
| | Higo | All villages | 125 |
| | Qawa | All villages | 25 |
| Dubluq | Dubluq | All villages | 175 |
| | D/Dhibayu | All villages | 175 |
| | D/Bedena | All villages | 175 |
| | Semero | All villages | 100 |
| | Sodda | All villages | 100 |
| Sodda | Guto | All villages | 100 |
| | Anole | All villages | 100 |
| | Gorile | All villages | 100 |
| | Medhecho | All villages | 100 |
| | Did-Mega | All villages | 100 |
| | H/Hallo | All villages | 125 |
| | Did-jaarsa | All villages | 125 |
| Romso | Romso | All villages | 125 |
| | Fulo-Romso | All villages | 125 |
| | Gololcha | All villages | 125 |
| | Miyo | Hamesa-Arb | 50 |
| Miyo | H/Babo | Arbora | 50 |
| | Baha | Koticha Jiru | 50 |
| | Melbana | Hara-Wariyo | 50 |
| Melbana | Ch/Liche | Giriftu | 50 |
| | Ch/Turura | Cheri | 50 |

Source: Dirre rangeland unit grazing plan 2017

Governance and management

Governance design

Traditionally, the Borana rangelands have been a multi-level commons with decisions being made at multiple levels, with varying degrees of management of access and use, some areas such as communal enclosures for milk herds (kalo) being reserved exclusively for local residents and other areas such as *foora* pastures being essentially open access resources. In recent years, however, competition over utilization of the resources has increased. As customary institutions have gradually eroded, attempts to develop new management systems have proven difficult. The transaction costs associated with agreeing upon and enforcing rangeland management, as in most pastoral systems, are quite high.

The approach of the PRIME, and later RESET, projects has been to reinvigorate elements of the customary system. Earlier work in other dheedas was not well-accepted by government actors, but in the last two years, collaboration with the government has been much stronger, and this was noted in the governance structure for Dirre. The decision-making structures are mostly community organizations—councils that operate at dheeda-, reera- and arda levels—but with government representation at reera and arda levels. For Dirre rangeland unit, there are 32 ardas organized into six reeras. The councils at arda level include five members from the local officials and three elders. The five members from local officials include the peasant association (PA)-level Security Council representative, officers of Women and Children Affairs and of Youth Affairs, the development agent (DA), and the PA chairman. All the arda committee members from all the ardas of a particular reera meet together and assign two people to serve as abba reera. The two abba reeras from each reera come together at dheeda level and select two abba dheedas. Also, the two abba dheedas from each dheeda level also select abba dheedas for the entire Borana rangeland. The community representation is based on community members who are elected by the people and included into the arda-level grazing committees. Members of arda-level committees are classified as permanent and non-permanent. The permanent members are the three elders. The other five members—the government representatives—may change their position, or move to other PAs or be replaced by other newcomers. In this kind of situation, the person who will take the position of that particular individual will take over the responsibilities and roles of the former person. There are no reserved spots for women or minorities. Women typically are represented in the arda committees by virtue of the fact the government officer for Women's and Children's Affairs is usually a woman.

The overall structure of the grazing councils at the different levels was developed through discussion between staff of the PRIME project and the community. Mr. Hussein Miyo, of CARE, narrated '*...it is always challenging to perform developmental activities in Borana. Everyone is coming with their own developmental approach. There is no uniform guide that everybody should follow. While some NGOs are providing material supports, others are paying cash-for-work. In this kind of situation, it seems that management of the resources is not going to be sustainable after a while. That is why we first asked the pastoralists about the approach that they believe would bring about some significant changes regarding their rangeland resources management. They mentioned that they prefer their traditional ways of resources management by far from that approaches followed by development actors. Our next question was 'why don't the pastoralists apply their traditional approaches and they told that no one asked them to do so; rather actors come with their own ideas. Then PRIME established the grazing councils at arda, reera and dheeda levels.'*

Basis of structures/processes in customary institutions

The system is based on the customary territorial system of the Borana, particularly the dheeda, arda and reera territories, and the multi-level organizational structure mirrors the traditional system. The elders selected to sit on councils typically include customary leaders in the traditional governance structure, and this establishes a key linkage to that system.

Table 8: Reeras in Dirre

| Reera | Number of ardas |
|---------------|-----------------|
| Dubluk | 4 |
| Melbana | 4 |
| Mio-arda-jila | 6 |
| Romso | 6 |
| Sodda | 7 |
| Weeb | 5 |

Legal mandate

There is, as yet, no registration of the governance structures as legal entities.

Authority and governance powers

Except for decision-making on land allocation and border demarcation, which are the exclusive province of the state, the community has the power to develop plans for management of rangelands and enforce grazing rules. Despite lack of legal recognition, the committees and councils put in place do have some ability to implement and enforce their plans and enforce sanctions. Ultimate authority, however, rests with the government.

Identification and implementation of technical options is done in a participatory way through consultation between the committees/councils and project personnel, this selection being based on previous experience and knowledge around soil types, range vegetation composition and history of the particular rangeland. Enforcement of plans and rules is based on traditional practices, the community having its own law to punish wrong doers. For example, if someone grazes the *Seera-Yabiyye* (pastures reserved for calves, lactating animals and preferred bulls), during the wet season, he or she will be punished with ETB 500 per head. Similarly, conflict resolution is based on traditional practices and institutions through a category of elders called *jarsumma*.

Management

There is no paid staff working for rangeland council or subsidiary councils/committees at lower levels. They are supported, however, by government staff, such as development agents, who are allocated by the government for each PA.

Spatial organization, scales and levels

Definition of the rangeland unit

The geographic extent of the rangeland unit is predefined in that the PRIME project elected to work on the basis of existing customary territories, namely the dheedas, the extent and approximate borders of which were established probably centuries ago. The classification of dheedas was based on criteria that seem to include soil type and colour, climatic condition/weather, land topography, the presence of tree species or forests in a particular location. Accordingly, the Borana-grazing units are classified into two main areas: Liban and Dirre. In today's geographical and political boundaries, the Liban is in the Guji zone of Oromia Regional State, whereas the broader Dirre area corresponds to Borena zone and contains five dheedas. The dheeda described here in this report is itself known as Dirre, but also as Garacha Tula. The dheeda names have their own meaning and indicate their soil type or weather condition. For example, Gomole means land that is better off: the area used to be free of bush and was known by its

condition as productive grasslands, having colder weather conditions. Golbo means valley. This grazing unit is known by its hot weather conditions, whereas Wayama means red-soil based on the fact that the grazing unit is characterized by the soil type. Dirre means 'Dorsum,' i.e. Dirre is in centre of other dheedas. Similarly, it is like dorsum of a bull, and flat on the top. Dirre experiences a mix of different weather conditions, unlike Gomole which is colder or Golbo which is hotter.

Nesting and multi-level planning approach

Multi-level planning is one of the main characteristics of the system being previously supported through the PRIME project, and now through RESET. The main rangeland planning takes place at the dheeda level, and then is implemented in collaboration among the community, development agents and government bodies at lower levels. However, discussions on plans are also held both at levels below the dheeda (reera and arda), as well as at a higher level among all dheedas, with information feeding upward and downward. Some further, more detailed planning is also done at lower levels.

F. Outcomes and impacts of the approach

Participatory assessment—methods

The implementation of participatory rangeland management in Dirre is still quite young, and it is not realistic to expect changes in rangeland conditions at the broad rangeland level. However, we did carry out a participatory assessment of particular interventions implemented under the Dirre rangeland council system. The assessment evaluated conditions that existed before and after the intervention.

This assessment was carried out through FGDs.

with two main categories of participants—members of reera level rangeland councils, which consist of two representatives from each arda, and people who are not council members—in separate discussions. In the latter case, these respondents were selected from people from the same reera. The council member FGDs typically had eight participants, whereas the non-council-member FGDs typically had 15 or more participants. Segregated discussions with the two groups helped to account for, and identify, any possible bias on the part of council members. In the FGDs, the following steps were followed:

1. A short discussion was held with the FGD participants on the participatory impact assessment (PIA) tools. This was a brief overview to help the members of our FGD understand and get a clear idea about the approach before starting the assessment.
2. Request the members to name one *kalo* that was supported by PRIME under the grazing council. This helped us collect basic information about that particular intervention.
3. Facilitate the members to identify their own criteria to indicate any change since the intervention. Surprisingly, all the focus groups, both council members and non-members, identified mostly the same set of criteria.
4. Score the change in order from the least to the best. The value of 1-5 was assigned to each indicator set by the community, and scored according to the perception of the community about the change in that particular indicator.

Eight FGDs were conducted in in four different reeras of the rangeland unit, two in each reera. The reeras were based on their representativeness among the six and are summarized in Table 9.

Table 9: Selected reeras and type of intervention

| Reera | Peasant association | Intervention (kalo) | Begin (year) | End (year) |
|---------|---------------------|---------------------|--------------|------------|
| Dubluk | Kersa Dembi | Kersa Dambi | 2013 | 2016 |
| Weeb | Weeb | Kulkulle | 2013 | 2016 |
| Melbana | Melbaba | Gara Haya | 2014 | 2016 |
| Romso | Haralo | Korommi | 2015 | 2016 |

Participatory assessment—results

Impacts of one intervention implemented under the grazing council were analysed for each reera.

Weeb reera

The Weeb reera comprises four PAs: Weeb, Kawa, Har-jarte and Kelkalo. The following are criteria set by members and non-members. All the criteria were scored from 1–5.

Table 10: Summary of impact assessment for Weeb reera case: Members

| No | Impact indicators | Before the intervention | After the intervention | Change |
|----|---------------------------------------|-------------------------|------------------------|--------|
| 1 | Grass cover | 2 | 4 | +2 |
| 2 | Livestock body condition | 1 | 3 | +2 |
| 3 | Tick population | 1 | 2 | +1 |
| 4 | Livestock number accessing the kalo | 1 | 4 | +3 |
| 5 | Women' s burden | 1 | 5 | +4 |
| 6 | Numbers of predators reduced | 1 | 3 | +2 |
| 7 | Knowledge of fodder storage | 1 | 4 | +3 |
| 8 | Numbers households accessing the kalo | 1 | 3 | +2 |
| | Total | 9/40 | 28/40 | +19/40 |

Although drought is stressing the community, still there exists improvement in most indicators.

Table 11: Summary of impact assessment for Weeb reera: Non-members

| No | Impact indicators | Before the intervention | After the intervention | Change |
|----|---------------------------------------|-------------------------|------------------------|--------|
| 1 | Grass cover | 2 | 3 | +1 |
| 2 | Livestock body condition | 1 | 2 | +1 |
| 3 | Tick population | 1 | 2 | +1 |
| 4 | Livestock number accessing the kalo | 1 | 3 | +2 |
| 5 | Women' s burden | 1 | 3 | +2 |
| 6 | Numbers of predators reduced | 1 | 3 | +2 |
| 7 | Knowledge of fodder storage | 1 | 2 | +1 |
| 8 | Numbers households accessing the kalo | 1 | 3 | +2 |
| | Total | 9/40 | 21/40 | +12/40 |

The non-members usually assigned a lower score compared to the members, which may imply some small level of bias on the part of the members.

Melbana reera

Melbana reera comprises four PAs: Melbana, Cheri-Liche, Cheri-Turura and Baha.

Table 12: Summary of impact assessment for Melbana reera: Members

| No | Impact indicators | Before the intervention | After the intervention | Changes |
|----|----------------------------------|-------------------------|------------------------|---------|
| 1 | Bush free land | 3 | 5 | +2 |
| 2 | Livestock body condition | 2 | 3 | +1 |
| 3 | Milk production | 2 | 3 | +1 |
| 4 | Calves number accessing the kalo | 2 | 3 | +1 |

| No | Impact indicators | Before the intervention | After the intervention | Changes |
|----|---|-------------------------|------------------------|---------|
| 5 | Women' s burden reduced | 1 | 4 | +3 |
| 6 | Numbers of predators reduced | 1 | 4 | +3 |
| 7 | Grass for ceremony | 2 | 3 | +1 |
| 8 | Numbers households accessing the kalo | 1 | 4 | +3 |
| 9 | Length of months livestock can graze the kalo | 2 | 3 | +1 |
| | Total | 18/45 | 30/45 | +16/45 |

Table 13: Summary of impact assessment for Melbana reera: Non-members

| No | Impact indicators | Before the intervention | After the intervention | Changes |
|----|---|-------------------------|------------------------|---------|
| 1 | Bush free land | 2 | 5 | +3 |
| 2 | Livestock body condition | 2 | 3 | +1 |
| 3 | Milk production | 2 | 3 | +1 |
| 4 | Calves number accessing the kalo | 2 | 3 | +1 |
| 5 | Women' s burden | 1 | 3 | +2 |
| 6 | Numbers of predators reduced | 1 | 3 | +2 |
| 7 | Grass for ceremony | 2 | 3 | +1 |
| 8 | Numbers households accessing the kalo | 1 | 4 | +3 |
| 9 | Length of months livestock can graze the kalo | 2 | 3 | +1 |
| | Total | 15/45 | 30/45 | +15/45 |

Similar scores were assigned by members and non-members.

Romso reera

Romso reera comprises six PAs: Haralo, Did-Jaarsa, Did-Mega, Romso-Fulo, Romso and Gololcha.

Table 14: Summary of impact assessment for Romso reera: Members

| No | Impact indicators | Before the intervention | After the intervention | Changes |
|----|-------------------------------------|-------------------------|------------------------|---------|
| 1 | Grass cover | 2 | 3 | +1 |
| 2 | Livestock number accessing the land | 1 | 3 | +2 |
| 3 | Milk production | 2 | 3 | +1 |
| 4 | Livestock category grazing the kalo | 2 | 3 | +1 |
| 5 | Hay making | 1 | 3 | +2 |
| 6 | Numbers of predators reduced | 1 | 4 | +3 |
| 7 | Users (villages) increment | 1 | 3 | +2 |
| 8 | Non-predators re-introduced | 1 | 4 | +3 |
| 9 | Tick population reduced | 2 | 3 | +1 |
| | Total | 13/45 | 29/45 | +16/45 |

'Livestock category' means that the land was used more for animals that were large and having good body condition. Participants mentioned that today calves, injured animals, lactating cows and preferred bulls are grazing the kalo.

Table 15: Summary of impact assessment for Romso reera: Non-members

| No | Impact indicators | Before the intervention | After the intervention | Changes |
|----|-------------------------------------|-------------------------|------------------------|---------|
| 1 | Grass cover | 2 | 3 | +1 |
| 2 | Livestock number accessing the land | 1 | 3 | +2 |
| 3 | Milk production | 2 | 3 | +1 |
| 4 | Livestock category grazing the kalo | 2 | 3 | +1 |
| 5 | Hay making | 1 | 3 | +2 |
| 6 | Numbers of predators reduced | 1 | 3 | +2 |
| 7 | Users (villages) increment | 1 | 3 | +2 |
| 8 | Non-predators re-introduced | 1 | 3 | +2 |
| 9 | Tick population reduced | 2 | 3 | +1 |
| | Total | 13/45 | 27/45 | +14/45 |

Dubluk reera

Table 16: Summary of impact assessment for Dubluk reera: Members

| No | Impact indicators | Before the intervention | After the intervention | Changes |
|----|---|-------------------------|------------------------|---------|
| 1 | Bush free land | 2 | 4 | +2 |
| 2 | Grass cover | 1 | 4 | +3 |
| 3 | Grass accessibility | 3 | 4 | +1 |
| 4 | Livestock category grazing the kalo | 1 | 3 | +2 |
| 5 | Milk production | 2 | 3 | +1 |
| 6 | Reduced number calves death due to Feed | 2 | 4 | +2 |
| | Total | 11/30 | 22/30 | +11/30 |

Dublik reera comprises five PAs: Higo, Dambal-Dhibayu, Damla-Baddanna, Dubluk and Kersa-Dambi.

Table 17: Summary of impact assessment for Dubluk reera: Non-members

| No | Impact indicators | Before the intervention | After the intervention | Change |
|----|--|-------------------------|------------------------|--------|
| 1 | Bush free land | 2 | 4 | +2 |
| 2 | Grass cover | 1 | 4 | +3 |
| 3 | Grass accessibility | 2 | 3 | +1 |
| 4 | Livestock category grazing the kalo | 1 | 3 | +2 |
| 5 | Milk production | 2 | 3 | +1 |
| 6 | Reduced number of calves death due to Feed | 2 | 3 | +1 |
| | Total | 10/30 | 20/30 | +10/30 |

Stakeholders' perceptions of impacts

Though there is stress with drought and scarcity of forage, kalos established under PRIME, has reduced the workload, especially for women. Women used to travel longer to search for fresh grass for calves. Now, however, as Seera-Yabiyye in the form of kalos has been established near the village, they no longer need to travel long distances. PRIME project staff have two main indicators that they use, namely, the number of hectares under a particular intervention, and the number of beneficiaries of their interventions. Accordingly, Mr. Hussein, Miyo of CARE, explained that the numbers of hectares, under some kind of protection such as kalo has doubled, as has the number of users of the kalo.

G. Discussion

The Borana have been facing challenges due to increasing frequency of drought and land degradation, particularly in the form of bush encroachment. Some strategies adopted by development actors to assist Borana communities to meet these challenges have involved building on traditional forms of capital such as the Gada system and its institutions for natural resource management, conflict resolution and self-help. This study has aimed at deepening the understanding of one approach to addressing land degradation challenges through a particular strategy for supporting community-based rangeland management. The study employed in-depth interviews with the key informants comprising *abba reeras* and other individuals. The respondents were selected purposively based on their community representativeness in the Dirre grazing committee structures, their knowledge and their experience. Analysis was guided by a protocol developed by ILRI for providing a structured characterization of community-based rangeland management.

Factors such as the social and cultural norms and values of the community were assessed as being among the enabling factors in the social context. The approach adopted by PRIME and RESET projects has been updated and revised through experience since the beginning of the project, and the approach adopted in Dirre has benefitted from lessons learned through implementation in other *dheedas*. The governance structure for the Dirre rangeland unit lies between the community and the government in a form of shared governance. Multi-level planning is one of the main characteristics of the system being supported previously through the PRIME project, and now through RESET. The main rangeland planning takes place at *dheeda* level, but discussions on plans are also held at both levels below the *dheeda* (*reera* and *arda*), as well as at a higher level among all *dheedas*, with information feeding upward and downward. Further, more detailed planning is also done at lower levels. The overall effectiveness of this particular approach to community-based rangeland management is difficult to judge at this stage and will be the subject of research to be done later in the project. However, signs are strong that the approach seems to be well-adapted to the socio-political context in that the system seems to be gaining acceptance by community members, including elders, and government actors.

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Annex: Key informant interview guide

Informed consent script

My name is _____ from the International Livestock Research Institute. Currently, I am undertaking the research on community based rangeland management (CBRM), case of Dirre dheeda unit of Borena zone. The purpose of the study is to understand the institutional arrangement of the CBRM, decision making process, roles of women and the linkage between the managing community and other stakeholders. The outcome of the research will be an input for further research, documentation for the policy makers and help other stakeholders to design the best-bet intervention plan. The purpose of the research is to understand how the CBRM works, to learn the success and challenges. All the information to be collected from the respondents will be confidentially kept and used for the research purpose only.

[Note: not all questions were asked of all respondents]

Part I: interview questions to actors in Dirre dheeda unit

1. Can you tell me who are the main development actors or other stakeholders involved in supporting rangeland management in Dirre, what their main activities are and at what stage they're involved?
2. Name of your Program(s)/Project(s).-----
3. Local name for the specific CBRM _____
4. Geographical coverage/area coverage and starting and ending year
5. What kind of approach do you use to the community based rangeland management?
6. What are the main characteristics/ distinct features of the approach?
7. Do you have a typical set of stages you go through in working with the community?
8. What kinds of participatory activities and interactions do you carry out?
9. What are the aims/objectives of the approach?
10. Which were the stages of implementation?
11. What did land users like/dislike about the approach?
12. What are the approaches to capacity building used by the development agent and explain the subjected covered?
 - a. on-the-job
 - b. site visits/ pastoralist -to-pastoralist

- c. demonstration areas
- d. public meetings
- e. courses
- f. Other (specify):

13. Do community members receive financial/material support: food for work or food for assets, payments, tax incentives, subsidies, etc.? (Please explain.)
14. If so, how do they get paid? On what basis?
15. Does the possibility of revenue from ecotourism play a significant role in incentivizing community engagement? (Please explain.)
16. What is the focus of the ecotourism? What purpose is the money used for? Who collects that one?
17. Are payments for ecosystem services part of the strategy? (Please explain.)
18. Is credit provided in a way that is connected to the community rangeland management activities? Provide a short narrative description.
19. List the types of technical options provided by the stakeholder (s)
 - a. bush clearing
 - b. rangeland reseeding
 - c. seasonal planned grazing
 - d. water points for livestock
 - e. Fuel-efficient stoves, etc.
 - f. other (specify) _____
20. Where was the practice successful?
21. What do you want done in this regard, and where?
22. Do land users have access to an advisory service (technical assistance provided to land users by extension workers/ advisers from government, NGOs, projects, etc.)? If yes, explain who is providing it, and if no, explain why not.)
23. Involvement of local land users/local communities in the different phases of the Approach (please fill the following table)

| | Involvement of local land users/local communities | | | | | Specify who was involved and describe activities |
|-----------------------------------|---|--------------------------|---------------------------|--------------------------|--------------------------|--|
| | None | Passive | Active | | | |
| | | | Payment/ external support | interactive | Self-mobilization | |
| Phase of the approach | | | | | | |
| initiation/motivation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| planning | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| implementation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| monitoring/evaluation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| other (specify; e.g., 'research') | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

24. What does the nature of incentives look like? (Please explain in terms of financial/material support: food for work or food for assets, payments, tax incentives, subsidies, etc.?) Does the possibility of revenue from ecotourism exist?
24. Is monitoring and evaluation part of the Approach? 1. Yes 2. No (if yes, please explain)
25. Could you please explain the total budget of the project?
- The budget for the rangeland management components of the project/program,
 - The cost for this particular community/rangeland unit.
26. What types of land tenure do exist in Dirre dheeda unit?
- Communal tenure
 - Secure/identified/demarcated communal tenure (e.g., group ranch)
 - Fuzzy/unrecognized communal tenure (e.g. Trust Land)
27. How does the state tenure look like in Dirre dheeda unit?
- De jure state property but not enforced, with de facto communal tenure
 - De jure state property but not enforced, with de facto open access
 - Public land (national parks, etc.)
28. Is there a secretariat (e.g., paid staff working for the community organization in an office)? 1. Yes 2. No
29. Are there paid field staff (e.g., rangers, rangeland managers, etc.)? 1. Yes 2. No
30. Does the rangeland unit hire professionals (e.g. rangeland ecologists, tourism managers, etc.)? 1. Yes 2. No

Part 2: interview guide to Dirre dheeda official (s): Range experts, DAs, etc.

- Can you please list the PAs included with Dirre Rangeland Unit?
- What are the Predominant livelihoods in Dirre dheeda unit?
 - Pastoralist _____ (%)
 - Agro-pastoralist _____ (%)
 - Other _____ (%)
- Who has authority regarding the following? (Decision making authority)

| List of NRs and /Degree of Authority | Institutions | | | | | |
|--------------------------------------|---------------------|---------------------|------------------------|------------------|-------------------|-----------|
| | Federal/ Highest | Regional/ higher | Zonal/ Intermediate | Woreda/ Lower | PA/ Grassroots | Community |
| Water | | | | | | |
| Advice and Coordination | | | | | | |
| Framework setting | | | | | | |
| Full management Power | | | | | | |
| Pasture/Grassland | | | | | | |

| List of NRs and /Degree of Authority | Institutions | | | | | |
|--|------------------|------------------|---------------------|---------------|----------------|-----------|
| | Federal/ Highest | Regional/ higher | Zonal/ Intermediate | Woreda/ Lower | PA/ Grassroots | Community |
| Frame work setting | | | | | | |
| Full management Power | | | | | | |
| Forest and forest products/Timber/ Incense and gum | | | | | | |
| Advice and Coordination | | | | | | |
| Frame work setting | | | | | | |
| Full management Power | | | | | | |
| Land | | | | | | |
| Advice and Coordination | | | | | | |
| Frame work setting | | | | | | |
| Full management Power | | | | | | |
| Construction Stones/Sands/Gravel | | | | | | |
| Advice and Coordination | | | | | | |
| Frame work setting | | | | | | |
| Full management Power | | | | | | |
| Minerals | | | | | | |
| Advice and Coordination | | | | | | |
| Frame work setting | | | | | | |
| Full management Power | | | | | | |
| Wild life | | | | | | |
| Advice and Coordination | | | | | | |
| Frame work setting | | | | | | |
| Full management Power | | | | | | |
| Others(please state) | | | | | | |
| Advice and Coordination | | | | | | |
| Framework setting | | | | | | |
| Full management Power | | | | | | |

4. Ethnic hetero/homogeneity of the rangeland unit:

- a. Borena _____ (%)
- b. Gabra _____ (%)
- c. Garri _____ (%)
- d. Konso _____ (%)
- e. Other (please mention them) _____ (%)

Part 3: Interview questions to the community in Dirre rangeland management unit, abba dheeda, abba olla etc.)

1. Name of the interviewee _____
2. Name of the village _____
3. Age of the interviewee _____
4. Gada class _____

-
5. Genders of the interviewee _____
 6. Position of the interviewee in the community _____
 7. What does the security of land tenure look like in Dirre dheeda unit?
 - a. Very strong _____
 - b. strong, _____
 - c. medium _____
 - d. weak, _____
 - e. very weak _____
 - f. Non-existent _____
 8. Do you have confidence that your land is secured for the next 20 years? Explain.
 9. Do think your children will live here after 20 years?
 10. How does the strength of customary institutions for natural resource management look like in Dirre dheeda unit?
 - a. Very secure _____
 - b. Somewhat Secure _____
 - c. Somewhat insecure _____
 - d. Very insecure _____
 - e. Non-existent _____
 11. Can you tell us about the range condition during the last 7 Gada periods?
 12. State of rangeland condition at initiation of the intervention (explain)?
 13. What is the degree of competition for/pressure on land currently? Explain.
 14. Is there any graduated sanctions? Please list and explain.
 15. When did you formulate those sanctions? (Please explain.)
 16. Is there any conflict with these ethic groups? 1. Yes 2. No
 17. If number 10 is yes, please explain the source of the conflict.
 18. Are there any traditional ways of conflict resolution? 1. Yes 2. No
 19. If yes, please mention them and explain.
 20. Is there any conflict with neighbouring dheeda(s)? 1. Yes 2. No
 21. If number 10 is yes, please explain the source of the conflict.
 22. Are there any traditional ways of conflict resolution? 1. Yes 2. No
 23. If yes, please explain the source of the conflict.
 24. How is the strength of customary institutions for natural resource management?

25. Which stakeholders are participating in, and supporting, CBRM?
26. To what extent do other communities/rangeland units within the region also have similar community-based rangeland management and governance structures? Explain in detail.
27. How is the strength of community organization in other communities/rangeland units within the region? Do you have a sense of how well organized the other dheedas are? What about Guji communities? Please explain.
28. Please complete the following table and justify (the influence of different variables on the CBRM).

| Condition | Specify: |
|--|---|
| Social/cultural/religious norms and values | <input type="checkbox"/> enabling:..... <input type="checkbox"/> hindering:..... |
| Availability/access to financial resources and services | <input type="checkbox"/> enabling: <input type="checkbox"/> hindering: |
| Institutional setting | <input type="checkbox"/> enabling: <input type="checkbox"/> hindering: |
| Collaboration/ coordination of actors | <input type="checkbox"/> enabling: <input type="checkbox"/> hindering: |
| Legal framework (land tenure, land and water use rights) | <input type="checkbox"/> enabling: <input type="checkbox"/> hindering: |
| Policies | <input type="checkbox"/> enabling: <input type="checkbox"/> hindering: |
| Land governance (decision-making, implementation and enforcement) | <input type="checkbox"/> enabling: <input type="checkbox"/> hindering: |
| Knowledge about sustainable land management, access to technical support | <input type="checkbox"/> enabling: <input type="checkbox"/> hindering: |
| Markets (to purchase inputs, sell products) and prices | <input type="checkbox"/> enabling: <input type="checkbox"/> hindering: |
| Workload, availability of manpower | <input type="checkbox"/> enabling:..... <input type="checkbox"/> hindering:..... |
| Other (specify) | <input type="checkbox"/> enabling: <input type="checkbox"/> hindering: |

21. How are committee/council members for the dheeda committee chosen? Does each arda send representatives, or each kebele? How are those representatives chosen? Are there any seats reserved for women? For minorities like Gabras or Gujis who live in the area? What form does community representation take in the CBRM?
- Participation/representation is based on stakeholder groups
 - Participation/representation is by citizens as citizens (e.g., citizens directly elect representatives) to the main governance structures
 - Participation/representation is based on communities and/or jurisdictions
30. Are there provisions for regular election of officers/representatives? 1. Yes 2. No (if yes explain the process and if no please justify why not)
31. To what extent are women involved in governance design, in decision-making within the governance arrangements, and in implementation?

- 32. What about ethnic minorities? Other minorities? Provide a short narrative description.
- 33. Describe the organizational structure. Besides the main committee, for the dheeda is there anything else? Sub-committees? How is the abba dheeda involved? How does rangeland council relate to the whole Borena traditional system? How is the rangeland council different from what was in the Borena traditional system? How does the decision making structures/processes for the rangeland unit in Dirre?

| No. | Decision based on: | Rank | | | |
|-----|-----------------------|-----------|---------------------|--------|-------|
| | | Customary | Governmental/formal | Hybrid | Score |
| 1 | Customary institution | | | | |
| 2 | Governmental/formal | | | | |
| 3 | Hybrid | | | | |

- 34. Are there any hereditary or other customary leaders who are 'ex officio' automatically part of the leadership structure for the rangeland unit? 1. Yes 2. No (if yes please explain the process)
- 35. Is the main decision-making structure registered as a legal entity? 1. Yes 2. No (if yes please explain)
- 36. Are the decision-making structures or processes of the rangeland unit recognized and given legal mandate by a legislative framework? 1. Yes 2. No (if yes explain please)
- 37. How does the dheeda council interact with lower levels for more detailed planning? For example, there are ways that the council is starting to interact with the kebeles within it?
- 38. Specify who decided on the selection of the technology(ies)/Practice(s) to be implemented?
 - a. land users alone (self-initiative)
 - b. mainly land users, supported by sustainable land management specialists
 - c. all relevant actors, as part of a participatory approach
 - d. mainly sustainable land management specialists, following consultation with land users
 - e. sustainable land management specialists alone
 - f. politicians/leaders
 - g. Other (specify):
- 39. What is the basis of decisions on technical options?
 - a. evaluation of well-documented sustainable land management knowledge (evidence-based decision-making)
 - b. research findings
 - c. personal experience and opinions (undocumented)
 - d. Other (specify):
- 40. Is there a secretariat (e.g., paid staff working for the community organization in an office)? 1. Yes 2. No
- 41. Are there paid field staff (e.g., rangers, rangeland managers, etc.)? 1. Yes 2. No
- 42. Does the rangeland unit hire professionals (e.g. rangeland ecologists, tourism managers, etc.) 1. Yes 2. No
- 43. How is/was the geographic extent of the rangeland unit defined?

-
- a. Predefined
 - b. Negotiated
 - c. Undefined
44. What criteria are/were used to define it?
- a. Watersheds
 - b. Other biophysical criteria
 - c. Pre-existing administrative boundaries
 - d. Traditional territories
 - e. A mix of the above
45. Are there clearly defined territories and associated institutions nested within the rangeland unit structure (e.g., zones, reeras, wards, etc. within the rangeland unit)? 1. Yes 2. No (please explain)
46. Is the rangeland unit formally nested within a larger structure (e.g., conservancies within clusters, dheedas within Gada system)? 1. Yes 2. No
47. Tell how the rangeland planning has been done. Were there any workshops or other kinds of planning meetings? For the whole dheeda? Is any grazing planning or other kinds of rangeland planning done at lower levels as well—in other words, at the arda level or the kebele level? In your planning were you seeing how to implement any sort of plans from the government? Or plans from the Gada system for all of lafft Borana (Borana land)? How does resource planning at the rangeland unit level relate to planning at levels above and below?
- a. Primarily at the rangeland unit level and then further details and planning are done at lower levels
 - b. Primarily at the rangeland unit level and then little to no further planning is done at lower levels
 - c. Primarily at lower levels, then lower level plans are amalgamated at the rangeland unit level
 - d. Primarily at a level higher than the rangeland unit and then implemented at rangeland unit and lower levels
48. How are governance powers allocated?
- Does the rangeland council have sufficient authority? Has it been able to make decisions and plans, and then enforce them? What kinds of things does the rangeland council decide itself? What kinds of decisions can it not take, or need to refer to other decision makers? If the committee wanted to change some of the grazing zones, could they do it themselves, or would some other institution have to approve? Where does decision-making authority for things like grazing plans and control on livestock movement generally lie? With the dheeda council? With kebeles? With the traditional system?

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