

Participatory rangeland condition assessment in Gomole and Dirre dheedas of Ethiopia

Taking successes in land restoration
to scale project



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ILRI PROJECT REPORT



Participatory rangeland condition assessment in Gomole and Dirre dheedas of Ethiopia

Taking successes in land restoration to scale project

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Abbreviations and acronyms

| | |
|-------|---|
| AFD | Action for Development |
| CBRM | Community-based rangeland management |
| FGD | Focus group discussion |
| ICRAF | World Agroforestry Centre |
| IFAD | International Fund for Agricultural Development |
| ILRI | International Livestock Research Institute |
| NGO | Nongovernmental organization |
| PRIME | Pastoralist areas Resilience Improvement and Market Expansion |

I. Introduction

The Borana zone of the Oromia region of Ethiopia supports a large population of livestock and pastoralism is the main livelihood source. Rangelands serve as the main feed base for the livestock in this area but have lately been under threat from diverse challenges such as the changing climate, degradation and bush encroachment. These challenges are responsible for the continued decline in rangeland productivity and pose a threat to pastoralists' livelihoods.

Borana pastoralists have traditionally used their indigenous knowledge and structures to manage the rangelands. For example, the rangeland of the Borana is divided into five grazing units called dheeda, based on differences in physical characteristics. The leader of the Borana is known as *Aba Gada* in the local language. The hierarchy of the customary structure in the Borana system is based in part on the rangeland units. The five main grazing units are led by an elder called the *Aba Dheeda* (literally, father of the dheeda). Dheedas are further subdivided into smaller grazing units called *reeras*.

Recognizing the continual decline of rangeland conditions, pastoralists led by their range heads sought to implement measures to try and curb this problem. The government extension system together with nongovernmental organizations (NGOs) also provided technical support on sustainable rangeland management. The Pastoralist Areas Resilience Improvement and Market Expansion (PRIME) project implemented by Mercy Corps, CARE International and other partners has been key in implementing rangeland management training and restoration activities under one of its core objectives, enhancing pastoralists' adaptation to changing climate. The Rural Land Administration and Use Directorate in collaboration with the Land Administration to Nurture Development project worked to formalize the land rights of the pastoralists in this region by granting them communal land holding certificates clearly showing the area size and boundaries of the rangeland under their jurisdiction.

This report is based on the perceptions of pastoralists on the status of the rangeland before and after range management activities were implemented. It is a qualitative approach to assess the progress made since the community-based rangeland management structures were implemented.

I.1 Objective

- To assess the changes in rangeland condition before and after the rangeland management initiatives were implemented

2. Methodology

The rangeland condition assessment was done at the dheeda level with three focus groups. One FGD was held in Gomole dheeda with 13 participants; two were held in Dirre dheeda from two different reeras (Dubluk, 15 participants and Soda, 8 participants). The participants included rangeland council members and some elderly villagers knowledgeable about the rangeland management issues at the dheeda level. The discussions began with an emphasis on defining the geographical area under consideration, the dheeda, and asking the participants to give an account of the institutions that govern their rangeland, when these were formed, and a description of the activities carried out. The participants were asked to clarify the organizations that they worked with on these issues. Clarification was also sought regarding PRIME project activities.

After defining the period under consideration, the participants were then asked to assess the overall changes in rangeland condition for the whole dheeda. The discussions tried to capture the aspects of the changes attributed to the interventions other than rainfall.

Before scoring, indicators to be used were identified within the group discussions. The pastoralists were asked to define the characteristic of a good and bad rangeland, from which a list of indicators to be used for the scoring was derived. The indicators were framed so that a higher score meant a better condition. For example, one indicator of rangeland quality relates to bush encroachment and invasive species. In this case, the indicator was phrased 'freedom from bush encroachment and invasive species'. For this exercise, a score of '1' meant a worse condition while '5' meant a very good state. For each score given, an explanation was provided.¹

The meetings concluded with a brief discussion on the implications of communal land certification on rangeland related issues like governance and community-based rangeland management (CBRM).

1. For a more detailed explanation of the methods, see pp. 19–21 in Robinson, L.W., Abdu, N.H., Nganga, I. and Ontiri, E. 2018. Protocol for characterizing community-based rangeland management cases. Restoration of degraded land for food security and poverty reduction in East Africa and the Sahel: Taking successes in land restoration to scale project. ILRI Manual 33. Nairobi, Kenya: International Livestock Research Institute (ILRI). URL: <https://hdl.handle.net/10568/97916>.

3 Findings

3.1 Gomole dheeda

Just like any Borana community, the people of Gomole dheeda have always been reliant on the rangeland and heavily involved in its governance. The pastoralists who participated in the FGDs highlighted that there has been a lot of outside interference within their systems that has weakened the traditional rangeland management structures.

Participants elaborated that in the past, the Aba Reeras were very instrumental in managing and enforcing bylaws regarding rangeland use. Over the past few years, local administrative structures of the *ganda* (kebele) have become more influential and taken over the role of the Aba Reeras. The rangeland condition started deteriorating at an alarming rate, coinciding with the time of the Aba Gada Liban Jaldesa (Borana leader between years 2001 and 2008). This raised concerns among the pastoralists and a meeting was called to try and address this issue.

During the time of Aba Gada Guyo Goba, rangeland management councils were formed. Thereafter, other stakeholders like the PRIME project started working with the community to try and assist in improving the rangeland condition. The PRIME project contributed interventions such as demarcation of rangeland boundaries within the five grazing units.

Mercy Corps helped in the rehabilitation of the largest water pond in the Borana zone, at Bake market. Over the last 18 years, the community has been alarmed and vocal about the deteriorating rangeland condition which was said to be mainly because of lack of land certification; of the five dheedas, only three have been issued land certificates.

The activities carried out in the rangeland thus far include soil and water conservation works (contouring) and the installation of kalos (enclosures).

The rangeland councils have always existed in some form but were reinforced about ten years ago when concerns about the rangeland increased. At that time, the councils' main role became the identification and implementation of rangeland improvement activities. Implementation of these activities began about five to six years ago.

3.2 Dirre dheeda

Dubluk focus group

In explaining the history of rangeland use in the area, respondents pointed out that the settlements used to be far from grazing areas. Every settlement area had its specific wet season grazing area and a common dry season grazing area shared by all. For instance, in Dubluk, Madacho and Dhoqole, they had their own wet season grazing area but shared one dry season grazing area within Dirre dheeda. Regulations governing the use of the wet season grazing area are very strict. These areas are usually reserved for calves that are less than two years of age. Penalties for breaking these rules are as high as forfeiture of five cattle or 5,000 Ethiopian birr. The council was formed about 14 years ago at their own initiative but was supported by CARE and Action for Development (AFD) with regard to implementing

activities such as pond rehabilitation, gully reclamation, bush thinning, hay collection and conservation of important tree species like *Dadacha*. One of the most important activities that the council undertook was to reorder the settlements as they were becoming scattered around the rangeland. This resettlement was based on the locations of the two seasonal grazing areas to allow free movement of animals between grazing zones.

Soda focus group

During the Gada of Maadha (Borana leader between years 1993 and 2000), the rangeland condition was good. However, at the time of Gada Liban Jaldesa, that is 18 years ago, recurrent droughts caused pasture quantity to decline. Following this concern, a general meeting among the community, NGOs and government stakeholders was held to address this issue. The rangeland councils were formed to oversee the future use and management of the rangeland

The role of NGOs was to provide training on new and modern ways of improving and managing the rangeland. Some activities such as bush thinning were implemented with support from CARE International, the Agency for Cooperation and Research in Development, AFD and government extension services.

3.3 Indicators and criteria for rangelands

The focus group participants listed the characteristics of a good rangeland as follows:

1. Presence of abundant forage and water
2. Well defined settlements and grazing zones
3. Free from ticks
4. No conflicts in the area
5. No bare patches
6. With 'Finn' (vitality)
7. Shade availability for the animals
8. Free from bush encroachment
9. Allows free movement of animals (with minimal chances of them being lost)
10. Free from predators
11. Good soil that supports pasture growth and gives comfort during times of rest, including at night

The groups, however, also highlighted that to define a rangeland as either good or bad also depends on the animal species kept, e.g. one area can be good for camels and goats when it has a lot of bushes and shrubs but not good for cattle. A grassland was said to be good for cattle and sheep. In the past, they preferred keeping the rangeland free of trees to allow grass growth because cattle was the predominant species held. However, with climate change, they have diversified by keeping other livestock species like camels and goats, and this has implications on the rangeland species composition. A good rangeland, according the pastoralists in the focus groups, should also allow comfortable grazing by the animals, safe from predators and free of bushes that might prick the skin and udders. Good grazing was said to be found in clay soils that are conducive for the growth of desirable grasses (*Qayo, ilmo gora, Hidom mata gudesi, alchiso*) and good tree species (*siltacho, kumbi, ago baya, ilkan bukisa*).

Characteristics of bad rangeland as defined by all three FGDs

1. High soil erosion with gullies/degradation
2. High levels of bush encroachment (a certain level might be useful for other browsing animals) that suppress grass growth and conceal predators
3. Insufficient water and pasture
4. Habitat for many predators
5. High tick and mite infestation
6. Many bare patches
7. Lots of invasive species e.g. (in local language) *fulensa*, *sapaansa*, *jirime* and *hamesaa diro Anno*, *Dhununu*, *waanga*
8. Without 'Finn' (vitality)

Bush encroachment makes grazing very difficult and suppresses pasture growth, but of late there has been a change in species composition as a climate adaptation strategy; hence, some of these bushes are now useful for browsing animals like camels. The biggest concern with bush encroachment is the presence of invasive species which are not good feed for the animals and suppress pasture growth.

3.4 Activities and observed changes

Rangeland management activities carried out

- Soil and water conservation works (contouring)
- Gully reclamation
- Creation of more enclosures (kalos)
- Bush thinning
- Laying of branches and leaves on the cattle paths to reduce the hoof impact and hence erosion
- Pond excavation and rehabilitation
- Reordering of settlements and grazing zones

Observed changes

Table 1. Assessment of rangeland condition in Gomole and Dirre dheedas

| Gomole | | | | |
|--|--------------|-------------|--|--|
| Indicators | 10 years ago | 5 years ago | NOW | Comments |
| Abundant pasture | 5/5 | 1/5 | 2/5 | Ten years ago, pasture was sufficient and drought frequency was low. Five years ago, pasture disappeared and some resorted to buying supplementary feed. Currently, the condition is improved a little because of the previous good season. |
| Free from ticks | 1/5 | 2/5 | 1/5 | Good rains occurred 10 years ago, but this promoted tick growth. Ticks declined slightly because of the drought which caused pasture bare patches, but animals were in poor body condition and hence prone to ticks. The recent good rains caused an increase in ticks but not as severe as 10 years ago because of acaricide use. |
| Free from bush encroachment and invasive species | 3/5 | 2/5 | 1/5 | Ten years ago, bushes were beginning to appear in the rangeland, and the situation has deteriorated over the years because consistent bush clearing activities did not occur. This encouraged coppicing and hence the intense bush encroachment observed now. |
| No gullies/degradation | 4/5 | 1/5 | 2/5 | Five years ago, bare patches increased and so did the gullies. A few gully reclamation activities were implemented like protecting cattle paths with bush laying and soil trapping, but the situation has not improved much. |
| Free from predators | 4/5 | 2/5 | 1/5 | Originally, bush encroachment was low and predators were few but have since increased, hiding in the bush. The drought also spurred increased predator attacks on livestock. Predators also hide in the gullies that have increased over the years. |
| No bare patches | 3/5 | 1/5 | 2/5 | Bare patches are beginning to be seen. An increase in the number of livestock caused overgrazing and hoof impact killed the grass in some areas. This became worse as there was no rain in the last five years. There were a few pockets of rangeland management activities, but impacts were slowed down by the drought. |
| Dubluk (Dirre) | | | | |
| Indicators | 14 years ago | Now | Comments | |
| Abundant pasture | 4/5 | 1/5 | Fourteen years ago, rainfall was good and there was sufficient pasture. Now in Dubluk, pasture is still insufficient despite the good rains because there are too many animals. Sometimes traders buy and leave their animals in the area for a long time, hence depleting the pasture. | |
| Good water availability | 2/5 | 4/5 | Water points were limited but the situation has improved because of improved water extraction, such as with mechanized pond excavation and motorized water pumps. | |
| Free from bush encroachment | 3/5 | 1/5 | Bush encroachment had already started but was not as bad as now, and this has been worsened by inconsistent bush thinning activities. | |
| Free from predators | 5/5 | 1/5 | In the past, hiding places for predators were limited but now this has increased and hence predators have increased. The increased water points have also contributed to the increase in predators. In addition, wild herbivores have increased in the rangeland, further attracting predators which end up attacking livestock. | |

| Indicators | 14 years ago | Now | Comments | |
|--|--------------|---------------|--|---|
| Free from tick and mites | 3/5 | 1/5 | The Borana had a tradition of burning the rangeland and this was very important for tick and mite control. Even when there were good rains, the burning kept the tick population in check, but now ticks are high in the rangeland. | |
| No gullies/degradation | 3/5 | 1/5 | Gullies increased when there was a lot of rain and many animals, but now they have become worse because efforts to reclaim or stop them have not kept pace with their formation. This is coupled with an increase in bare patches. | |
| No bare patches | 4/5 | 1/5 | Rainfall was enough and livestock herd sizes were lower in the rangeland, but the herd size increase coincided with drought and hence overgrazing. | |
| Free from invasive species | 4/5 | 1/5 | The number of invasive species was lower and there were more desirable tree species. Pastures were overgrazed, and this left bare patches where these invasive species have started to colonize and expand to other parts of the rangeland. Some of these species are difficult to control and spread very fast. | |
| With 'Finn' vitality | 4/5 | 2/5 | There was generally good rainfall and even with no vaccination animals thrived. But now it seems that overall vitality has decreased even when there is good grazing and veterinary care. | |
| Soda (Dirre) | | | | |
| Indicators | 18 years ago | 5–6 years ago | Now | Comments |
| Good pasture availability | 5/5 | 2/5 | 5/5 | Enough rainfall and burning to minimize bush encroachment allowed the range to regenerate but as this stopped, the feed availability decreased. Currently, there is sufficient pasture because the long rains were good, and the short rains came when the range condition was still good. |
| Free from bush encroachment and invasive species | 4/5 | 1/5 | 1/5 | The community burned the rangeland, but when the use of fire was banned, the bush encroachment increased, and this altered even the livestock species kept. There are a few areas where thinning was carried out, but the overall impact is that bush encroachment has increased significantly in the dheeda. |
| No bare patches | 5/5 | 1/5 | 5/5 | Eighteen years ago, rainfall was sufficient to support growth and there were no bare patches. However, bare patches started appearing about 5–6 years ago, as there was no rain and the little forage that was there was overgrazed. However, there has been a dramatic change in the last season as the rain was good and former bare patches now have some grass. |
| Free from ticks and mites | 5/5 | 3/5 | 1/5 | Pastures were burned, but 5 or 6 years ago the use of fire was banned and more animals in poor condition increased the number of ticks. That is when acaricide use became common, but now it's even worse despite the use of acaricides. |
| Good shade availability | 5/5 | 5/5 | 5/5 | There have always been good shade trees, and these have remained good, because there are strict bylaws which ban the cutting of these trees. Hence, these trees have increased in the rangeland. |

The scores given by the FGDs indicate that for both Dirre and Gomole, the pasture availability declined over the years despite the interventions (Table 2). This was mainly attributed to reduction in the amount of rainfall over the years coupled with increased land degradation. There is, however, an interesting observation within Dirre dheeda as far as the pasture availability is concerned; one reera, Soda, seems to have had an improvement while there has been

a huge decline in Dubluk. This could be a case of isolated success of rangeland restoration activities. In as much as the scoring was for the whole dheeda, it is possible that both groups focused on the rangeland they use most. The Dubluk group is the only dheeda that mentioned water availability as an important attribute of a good rangeland. Bush encroachment and the presence of invasive species in both dheedas has increased and is now classified as severe. This was said to have exacerbated the presence of predators. In Gomole, the presence of ticks in the rangeland has always been severe, but in Dirre, the presence of ticks has drastically increased. The increase in ticks is mainly attributed to the ban on burning, viewed as an effective tick deterrent by participants. Despite being said to be fairly flat, Dirre was scored to show worse degradation than Gomole. 'Finn' (vitality), emphasised by the Dubluk FGD, was said to have decreased over the years.

Table 2. Summary of the scores between the two dheedas

| Indicator | Gomole | | Dirre (average score) | |
|-----------------------------|---------------------|-----|--------------------------|-----|
| | Before intervention | Now | Before intervention | Now |
| Abundant pasture | 5 | 2 | 4.5 | 3 |
| Free from bush encroachment | 3 | 1 | 3.5 | 1 |
| Free from ticks | 1 | 1 | 4.5 | 1 |
| No gullies/degradation | 4 | 2 | 3 | 1 |
| Free from predators | 4 | 1 | 5 | 1 |
| No bare patches | 3 | 2 | 4.5 | 3 |
| Free from invasive species | 3 | 1 | 4 | 1 |

3.5 Perceived implications of land certification on rangeland management

Some participants believe that the certification will help control the rampant increase of cropping on prime land. The general consensus, especially in Gomole which has not received the certification, was that this would help the Aba Dheedas to be empowered to mobilize people to work on the rangeland. It is also perceived that the certificate will be useful in managing conflicts regarding grazing access and boundaries.

In Dubluk, some participants believe that certification will not change much with regards to rangeland management but maybe in the long run will help the pastoralists to receive compensation for activities that occur on their land. The council felt that they have a lot of expertise and authority but need the financial resources to mobilize people in their area to participate in CBRM. They highlighted that this is currently difficult as people now demand some incentive to invest time on rangeland management activities. The certificate was also seen as being important for controlling the influx of people into their area and hence causing an increase in the number of settlements on the rangeland.

4. Discussion and conclusion

The FGDs tried to capture the aspects of the rangeland that have changed because of the interventions, but the pastoralists attributed most changes to variations in rainfall. The construction of kalos has always been a common phenomenon in the Borana zone but it appears that in the past years they increased investment to improve the condition in these kalos. In some areas, like Gomole, the pastoralists appreciated the soil and water conservation works as they could see the differences in range condition before and after implementation. A closer analysis of the responses indicates that 14 to 18 years ago, there were good rains and hence good rangeland condition, leading to a boom in livestock numbers. This led to increased land degradation especially in the last five years of drought.

The participants were able to pinpoint a few pockets of success where the CBRM was implemented and highlighted the challenges with the overall progress across the dheeda. In comparison with Gomole, Dirre seems to have deteriorated despite the rangeland management activities and this was attributed to local ecological factors. Dirre has unique physical features and hence needs more customized intervention options. No changes in bush encroachment were visible in Dirre because there was no consistent control and bush encroachment spread at a fast rate because of coppicing. There seemed to be a narrow understanding of the difference between bush encroachment and invasive species among the pastoralists, which could be due to translation, with both concepts given the same name in the local language. This requires further exploration. Gully formation was low in Dirre which is a flat area with minimum runoff even on bare patches.

In summary, pastoralists acknowledge the importance of continued investment in rangeland management as they have seen that these interventions make a difference. They are also very much aware of the changing climate and that they need to come up with drastic rangeland use and management activities in order to cope with these changes now and in the future.

Annexe: Focus group participants

Gomole

1. Malicha Halake
2. Guyo Boru
3. Doyo Dulachaa
4. Malicha Dida
5. Galgalo Wario
6. Subo Dida
7. Tura Godana
8. Malicha Galgalo
9. Goliche Dida (female)
10. Bidu Halake
11. Kuba Duba
12. Kabale Jatani (female)
13. Boru Golicha

Dubluk

1. Guyo Galgalo
2. Charfi Jilo
3. Sora Dida
4. Tadi Jirimo
5. Kabele Shabo
6. Jilo Abduba
7. Bagaja Dida
8. Dalacha Huka

-
9. Loko Jarso (female)
 10. Duba Gufu
 11. Godana Wako
 12. Abdala Gayo
 13. Rufo Hassan (female)
 14. Tura Duba
 15. Jaro Godana

Soda

1. Kullu Galgalo
2. Gababo Kaaru
3. Boku Diida
4. Kashanda Guracha
5. Gababa Diida
6. Did Jatani,
7. Jarso Duuba,
8. Jaarso Galgalo

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