

Status, management, and governance of the communal grasslands of Ethiopia's highlands: a disappearing asset for mixed crop-livestock livelihood systems

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Key words: Ethiopia, highlands, communal grassland, governance, management, restoration

Abstract

There is little documentation about the status, management, and governance of the communal grasslands of Ethiopia's highlands. However, research being carried out by ILRI (International Livestock Research Institute) in northern Shewa, Amhara region, is highlighting their importance as a critical resource for those farmers engaged in mixed crop-livestock livelihood systems across the highland areas. These grassland areas range from 2 to 200 hectares and can be used by up to four different villages or 'kebele' and providing on average 10-20% of livestock feed for local farmers. However, this important resource is rapidly disappearing with encroachment of farming and tree-planting with species such as *Eucalyptus* spp. that kill grasses. The remaining grassland is often degraded through poorly organized grazing and overuse. In the past these communal areas made up around 50% of village areas, but this has now significantly reduced. Most of these communal grasslands have effectively no management and governance system, and rather are open access for all the local population with livestock to use. This situation results in almost no resting of pastures from grazing. Unlike individual lands in the area, landholding certificates are not provided for these highland communal grazing lands. Though in other parts of the country including in Amhara region, some of these lands have been registered to community user groups, this is not the case in most of northern Shewa. These findings show the need to improve the management/governance of these important communal resources with available opportunities through engagement and participation of the communities and stakeholders. Finally monitoring systems would be useful to detect changes in the communal grasslands condition, whether management adjustments should be made, and to provide recommendations for communities throughout the highlands on practical and effective grazing management strategies.

Introduction

The constitution of Ethiopia validated, and confirmed state ownership of land and farmers only receive usufruct rights to plots of land without transfer rights and unclear tenure security (Crewett et al., 2008), and this resulted in exacerbated the problem of land degradation with coupled the subsistence nature of farming (Gebremedhin and Nega, 2005; Gebreselassie, 2005). There is an attempt of providing systems of land registration through certification, may be one route to providing such assurances, but the process of certificate issuance is not completed in most areas (Gebreselassie, 2006) and, for example, from 21 communal grasslands, only two have legal certificate for the users (Eba and Sircely, 2020).

The grasslands of Ethiopia are found in Afro-montane and Afro-alpine grasslands regions, which covers around 490,000 km² (Mengistu and Mengistu, 2015). Several types of grasslands provide livestock grazing in the highlands of Ethiopia. These include privately owned grazing areas, and communal grazing areas such as riverside and lakeshore grazing areas, roadside grazing areas and in some cases dry season grazing reserves (Zewdu 2005). Communal grazing lands have been important sources of livestock forage (Haileselassie et al. 2012) and are integral to the maintenance of the environment, requiring efficient use and conservation of grasslands. However, it is one of the most threatened land use types, mainly due to conversion of land to other land uses, like cropland and plantation of trees (Tsfay 2010; Yadessa 2015; Tsfay et al, 2016), and hence unregulated use and heavy grazing causes degradation (Gebremedhin et al. 2002). The underlying causes of land degradation include incomplete property right systems that may create

a perception of tenure insecurity. In the mixed crop-livestock production system, production of both crops and livestock will benefit from efficient utilization of grasslands and small plots of land. In the higher altitude zones, despite enduring efforts, intensive crop production has been constrained by frost and poor soil fertility (Gebre 2009). This has shaped the degree of dependency on livestock as well as crop enterprises. In the study area, farmers are limited to barley production and sheep farming. In Menz Gera woreda about 90% of the feed for the sheep comes from grazing lands (Haileselassie et al. 2012). Despite the importance of communal grazing lands, a comprehensive assessment of current communal grassland status, management, and governance, how these vary among communities, and their implications for effective investments are generally lacking. In discussions on these grasslands, attention is more often focused on how to convert the grasslands to other uses rather than on their important role in the integrated crop-livestock system (Mekoya et al. 2009). As such there is a need for better understanding these grasslands, their status and changes taking place. With this improved understanding it is anticipated that the protection will be better appreciated. In the presence of communal action, institutional and organizational development, positive impact on communal resources is more likely to be realized. The success of public policies to improve natural resource management depends to a large extent on the presence and effectiveness of local level institutions and organizations (Jabbar et al, 2000). And devolving rights to local communities to manage resources, establish use rules and regulations, and enforce the rules is a necessary condition for successful community resource management.

1.0 Methods

2.1 Study area description

In response to the above, this study aimed to assess the communal grasslands resources in the Menz area of Ethiopia, together with their importance, management, governance and access. More specifically, the study was conducted in Menz Gera and Menz Mama woreda of North Shewa Zone of Amhara Region, in the Central Highlands of the country (1,669–3,563 metres above sea level). In this area agriculture is characterized mainly by mixed crop-livestock production systems (Gebre 2009). The mean temperature ranges from 6.7°C to 17°C and mean annual rainfall is 896 mm. Sheep is the major component of livestock herd composition in Menz Gera and Menz Mama.

2.2 Method of data collection

Data were collected from a combination of field observation, biophysical data collection, focus group discussion (FGD) with farmers (8-11 from different member of communities), key informant interviews (KII) with kebele and woreda leaders, and secondary data from woreda and zonal Agricultural Offices. Ranking of livelihood strategy and feed sources in terms of importance were also used. Eleven communal grasslands from the two woredas were selected for the study with the involvement of woreda and their respective kebele agriculture experts. Among the communal grasslands selected, four were selected for quantitative spatial grassland monitoring. In each of the four communal grassland six sampling points using LandPKS (Riginos et al. 2011) were established. The Land-Potential Knowledge System (LandPKS; landpotential.org) is a new, innovative technology that collects spatial data about soils and vegetation with mobile phones to strengthen and enhance sustainable land-use planning, and support sustainable land management (Quandt et al., 2018). Data were collected in November 2019, after the rainy season. Descriptive analysis of FGD and KII data were used to identify the nature and status of community management on grazing lands, the role of local and external organizations, the institutions that evolved to manage communal grasslands, and their management and enforcement mechanisms.

3.0 Results

3.1 Status of communal grassland and its importance

Communal grazing areas were very common in Menz, but now becoming shrinking in many areas. The grasslands are grazed by all livestock species (cattle, sheep, goat, and equines) throughout the year without

any rest though the intensity of grazing differs. This may result in the depletion of palatable species, and in some areas results in invasion by less palatable weedy and shrubby species. The estimated area of the communal grasslands ranges from 2 ha to 200 ha, with the number of households using each grassland between 15 and 800. The number of users of the grassland have increased over time as population has grown. The communal grassland contributes to average around 13% of annual feed sources of the livestock (ranging from 10-20%) and placed 3rd among feed sources. In four communal grasslands the respondents prioritize livestock first as their main livelihood strategy. In areas where people perceive livestock as more important, especially sheep are used as ‘cash’ because they can be sold to meet urgent monetary needs. Other uses include stone extraction, collection of dung and in a few communal grasslands there is wood collection for fuel, water sources, and collection of plants. Today these communal grassland resources tend to be open access with no management or plan for use. No restoration interventions have been undertaken on most communal grasslands, but gradual conversion to other land uses such as for crop cultivation or woody plantation is common. Most communal grasslands were used for varied purposes, such as for grazing, stone extraction, collection of dung and, in few communal grasslands, wood collection for fuel, household water sources, and spices such as thyme (*Thymus vulgaris*). Some of these resources are especially important for local livelihoods, such as stones for house construction (usually dug from unproductive areas) and clay for making pottery. A few communal grasslands had salt licks and were sources of grasses for thatching and making household equipment. All community members including women and youth used these resources. In areas where the communal grasslands were large and used by people in multiple villages, their resources were shared with neighbors including those that were not members of the community. But where the area of communal grassland was small it was used by the residents only. In some communal grasslands, especially the small ones, the users have the responsibility of protecting them from outsiders specially to make sure outsiders do not graze their animals on them when the pasture is not in a good condition. The situation was, however, different during dry seasons, when access was not restricted, even for outsiders. Access tends to be more restricted during the rainy season when the farmland tends to be covered with crops and the private grazing land is protected from livestock: at this time, the livestock keepers use their respective communal grasslands to support their livestock. In a few communal grasslands, users are responsible for protecting the areas from encroachment—by ensuring that trees are not planted, and by preventing privatization and expansion of cultivation and settlements within the grassland. One woreda expert said that ‘near one communal grassland, there was a communal grassland developed for [integrated] watershed [management]. In this watershed, trees like eucalyptus were planted that through time suppress the herbaceous vegetation.’ Such a case calls into question how the feed base is considered when planting browse trees as a way of improving communal grasslands, because all trees will compete with grass if their growth is uncontrolled. In another site the respondents were wary of getting involved in this study as they were highly suspicious of any discussion on the issue of the communal grasslands following a past attempted intervention by the woreda forest enterprise trying to convert the communal grasslands to a tree plantation, which had started as a similar conversation. The size of most communal grasslands has decreased over time due to the conversion of some of the land for cultivation and tree planting as described above. This has increased grazing pressures on other areas. Access to the grasslands is not negotiated individually but rather it is open for all to use with informal ‘rules’ often just ‘known.’ Community members are consulted by the government when land is needed for giving to the youth for crop farming for example, and generally they agree to this change of use, as the youth need land. Youth who do not have access to cropland may use the communal grasslands for livestock breeding and fattening. Different user groups tend to have the same access to the areas, with no advantages or disadvantages experienced by women and youth. The respondents indicated that the livestock productivity, such as milk yield had decreased. The respondents indicated that around all communal grasslands, the

current livestock number was not balanced with the available communal grassland for grazing throughout the year.

3.2 Management and governance of communal grassland

According to the clear majority of respondents, there was no established management or governance body that was responsible for managing access and use of the communal grassland areas in this study. In one communal grassland, there was a traditional association known as 'edir' at the village level, which plays some role in management. Traditionally, this association helps members in covering costs of different social events (e.g. funerals and weddings), but in this village the community also use the edir for communal grassland management. However, in general there was no management planning for the areas themselves. In some cases, the areas fall under broader watershed management programs. Especially in Menz Mama woreda, most of the communal grasslands there fell under watershed management programs and this had resulted in significant tree planting in these areas. In Menz Mama, the community using the grazing land studied had a certificate of user right for the communal grassland that had been issued by the woreda administration. The data from Menz Mama woreda also shows that 340 communal grasslands that cover of 1659.6ha were given certificates. The kebele and woreda land administration heads signed on the ownership certificate. All households head that have access to communal grassland were included on the user right certificate. This communal grassland not shared to outsiders specially during rainy season, where this season is the critical feed shortage. All household members (men, women, and youth) who have got user right certificate in common have access to resources of communal grassland. However, in Menz Gera woreda, all but one of the communal grasslands assessed had no certificate of user right for communal grasslands, and in nineteen kebeles of Menz woreda there are about 153 communal grasslands that encompass about 5749.31ha. For these communal grasslands there were no clear data of woreda that reveals the certificate ownership given to them. The data from focus group discussions shows that only around 10% of the communal grassland studied have certificate of ownership. For the one of the communal grasslands in Menz Gera, the community had a certificate of ownership from the kebele administration with names of two representatives out of a total of 42 users of the grazing land that represent their household. These rights included anyone who marries among the users. Certification process was initiated through discussions among the users who then put the request to the kebele administration. The respondents indicated that when the watershed management was implemented on the communal grassland most of the users of the communal grassland did not agree and resisted implementation. This disagreement resulted in users asking for certificate. The respondents indicated that once the community received a certificate, users gained a sense of 'ownership' and could now start improvement programs, like terracing because they gained confidence that the land would not be put to other uses (e.g. crop cultivation), showing a clear improvement in perception of tenure security over the communal grassland. In general, data from North Shewa zone of rural land administration indicated that communal grazing lands which have certificate was 76% (17,864 ha with 10436 users (male 8644 and female 1792)), but in some woredas like Menz Gera the available certificate was very few. This is because of lack of initiative and responsible users to process for getting certificates. Though the users here are known their security of access is poor as they have no proof of right of use. In all the communal grasslands there are no rules or bylaws controlling use, access, control, and improvements of the communal grasslands. All the respondents indicated that the grassland will only be improved if the government gives support through such as cash-for-work. The communities did not feel capable of organizing themselves but require assistance for improving management, controlling unwanted weed plants, creating proper use plans and management plan etc. So far, almost no interventions have been done to improve the productivity and quality of the pasture in the studied communal grasslands.

3.3 Vegetation status of communal grassland

The respondents indicated that the vegetation regeneration ability, availability, and quality on communal grassland has decreased significantly in the last 10 years. This is because of an increase in the livestock population, overgrazing, lack of proper management and improvement of the grassland, and stone excavation. Due to these factors, the respondents said the communal grasslands were of poor quality. The

condition of erosion was placed at moderate, but they said there was high degradation in terms of forage production decline. In the grasslands studied foliar cover ranged from 83.8% to 96.2% with bare ground cover ranging from 2.2% to 14%. Most plant cover comes from plant base cover (62.3 % to 83.3%) and perennial grass cover (68.8% to 91.5%). Though not constant throughout the grasslands, sub-shrubs and perennial forbs cover ranges from 14% to 36.7%. In all communal grasslands assessed, the canopy height of all vegetation was <10cm. The respondents indicated that there were about eight plants (grasses and browses) that important in the area, of which *Cynodon dactylon* is most resistant to heavy grazing according to respondents in the study.

3.4 Discussion

Communal grasslands have been one of the most important feed sources for livestock in the study area, but they now facing many challenges that have resulted in their degradation. Competition over communal land resources has grown over the years (eg. cultivation, woody plantation etc.). For example, through the agreement of the users, some part of the communal grasslands have been set aside for cultivation by landless. The respondents also indicated that size and productivity has decreased over last the 10 years in most communal grasslands. In most communal grasslands there is no established management or governance body responsible for managing access and use. The users of most of communal grasslands have no responsibility beyond using it. In some cases, attempts have been made to protect the communal grasslands from privatization and exploitation by outsiders. Certification does not exist in most of the studied communal grasslands. Livestock productivity, (eg. milk) decreased over last ten years, but the number of livestock that using the communal grasslands have been increasing. Grasslands condition has declined in recent years, although sever degradation remain uncommon for large areas. It has been clearly indicated that the communal grasslands in the highlands of Ethiopia are an important source of grazing for livestock and for maintaining other significant ecosystem services. The communal grasslands' importance as feed sources ranked 3rd in this study (13.6% of feed), however, Benin and Pender (2002) found that communal grazing lands ranked 1st in the importance of feed sources in the highlands of Amhara region, while Haileselassie et al. (2012) depicted that 20% feed source is from communal grassland. This disagreement shows that communal grazing lands are dwindling over time in terms of importance, area, and productivity. The study area, being sheep production dominated, largely confirms Haileselassie et al. (2012). However, grazing management in communal grasslands could play a stronger role in sustaining livestock production. The status of the vegetation cover was generally good, but the canopy height of the vegetation was less than 10 cm in all communal grassland assessed, showing heavy use. In some cases, bare soil and unpalatable species encroachment indicate degradation due to heavy grazing. Livestock is vital for Ethiopian farmers' livelihoods. As land is becoming scarce and most rainy season feed intake by livestock occurs during grazing on communal grasslands, degradation from heavy grazing negatively affects the livelihoods of farmers through decreasing livestock productivity. Well-managed grasslands reduce degradation by improving feed provision, which alleviates the grazing pressure on land. The grasslands that remain need to be protected for both socio-economic and environmental reasons. Good management is required to conserve these. To be most cost-effective this management needs to be the responsibility of the local communities – the grassland users. Incentives such as external support might be required in the initial stages, but it is anticipated that when users see the benefits of management, they will be more motivated to invest their own resources into this. Planting trees in these areas is not the solution. To achieve good grassland management, it is important to have a comprehensive management plan especially aimed at grass and other vegetation restoration. Stocking rates of livestock should also be considered and monitored. Respondents have also indicated that having certificates strengthening their security of access to the grasslands will increase incentives to invest in better management and raising productivity. As described, to date, most of the communal grasslands have no certificate of ownership. A community-based management system is required. This needs to be inclusive bringing in the different land and resource users,

their positions, interests and needs. Agreement will need to be negotiated. Further understanding of the status and current management and governance (if any) is an important starting point. Local institutions for taking up these roles may include *edir* along with government-formed groups, among other models. A process such as participatory rangeland management (PRM) (e.g., Flintan and Cullis 2010) provides a strong framework for this. A review of PRM (Flintan et al 2019) concluded that PRM can improve rangeland productivity and strengthen governance and management of rangelands, including women's empowerment. Hence, this study argues that where there is no proper management and governance in place for communal grasslands, these lands are likely to be much less productive than their potential and may lastly end up disappearing entirely.

Conclusion

The communally used grasslands of highland Ethiopia play an important role in the mixed livestock-crop livelihoods that are the norm. However, the grasslands are disappearing at an alarming rate due to change of use to agriculture or tree plantations amongst other. Those that remain are often heavily degraded, unmanaged and access uncontrolled. Very few of these grasslands are protected through land registration and certification. Where grasslands have been lost, grazing pressure increases elsewhere. There is an urgent need for protection of the remaining grasslands and the introduction and/or strengthening of good governance and management. Most importantly the governance and management of the grasslands needs to be led by community members, whose capacity, roles and responsibilities will need to be built. This will require external facilitation and support.

Acknowledgment: This work was made possible through funding from the CGIAR Research Program on Livestock. We also thank woreda experts from agriculture offices in Menz Gera and Menz Mama for their facilitation and involvement in site selection.

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