RESEARCH PROGRAM ON Livestock

More meat, milk and eggs by and for the poor

Report of community conversations on animal feeds

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Introduction

Ethiopia's economy is heavily dependent on agriculture, including livestock, for employment, export earnings, and food security. Livestock contributes to economic growth and poverty reduction and offers employment opportunities (NBE 2018). Ethiopia is home to a large and diverse livestock population and favorable production environments (Gizaw et al. 2010). Small ruminants serve as sources of food and non-food products, risk mitigation during crop failures, property security, monetary saving, investment, and other benefits (Shenkute 2009; Gizaw et al. 2010).

Feed is very critical to improve the production and productivity of sheep. Sheep are mainly kept in the highland areas, which are highly populated and have seen critical competition over land resources for crop and livestock production. Hence access to and availability of both high quality and sufficient quantity of feed resources is critical. Sheep are prioritized second to cattle in access to feed resources. Their main feed sources are natural pasture grazing on poor pasture areas and crop residues.

Poor quality and the limited quantity of feed has been identified as a major constraint to improving the production and productivity of animals (Birthal and Jha 2005; Herrero et al. 2009). During the dry seasons, there are acute feed shortages and forages are of poor nutritive quality (i.e. low in crude protein and high in fiber), which results in low intake and low digestibility (Katiku et al. 2013). Low pasture quality and limited availability of water are reflected in low productive and reproductive performance, as well as slow growth in ruminants, especially when grazing is the main source of feed (Oteino et al. 1992). The quality and quantity of the main product – meat – is determined by the feed that the animals eat, and therefore the quality of people's animal-source foods is determined by the quality of animal feed. In Ethiopia, livestock feed is among the main determinants of production and productivity improvement. Research outputs on feeding practices of small ruminants have benefited farmers by helping them fatten their animals for target markets and generate more income (Mekonen et al. 2018).

Good feeding practices and care of animals maintain good health conditions for livestock. Feed shortage, low productivity, and lack of knowledge on improved health management are common challenges to livestock production.

Male and female community members were engaged in a participatory process to explore their views, knowledge, and practices about animal feeds and feeding management. Through community conversations, community members explored the potential and gaps in livestock feeding practices, attitudes about feed resources, and knowledge about livestock feeding systems. Community conversations are facilitated discussions and social learning processes that engage male and female community members and service providers in dialogues about issues that matter most to them, leading to changes in the mindset of community members and facilitating the adoption of improved animal feeding practices.

The community conversation aimed to explore perceptions of female and male community members about the importance of animal feeds and identify their knowledge, attitudes, and practices on animal feeding. The conversations further aimed to create awareness, facilitate learning from each other and change attitudes about improved feeding management practices and their effects on animal health and productivity through facilitating community actions. The sessions also helped identify available feed resources in their localities and how to use the feed resources and improve their nutritive quality.

Approach and methodology

We facilitated community conversations in two CGIAR Research programs on Livestock sites: Menz Mama, and Doyogena districts. The community conversations about animal feeds were held in the Menz Mama district on 11 December 2020 at the Zeram community, and in the Doyogena district on 17 December 2020 at the Limu Suticho community. The Zeram area is characterized as a dry highland, cold air, and frost-prone area with long coverage of dry periods. It is a very constrained agro-ecology in which to adopt different feed resources. The area has limited access to and potential to adopt improved forage resources. The major crops grown are barley, faba bean, and wheat. Almost all people in the area are followers of the Ethiopian Orthodox Church. Both men and women take part in productive and reproductive roles depending on the family structure and workloads. The people mainly depend on livestock farming of sheep and cattle. People collect feed resources once a year. On the other hand, Limu Suticho is characterized as a wet highland area, conducive to adopting different feed resources but with a very constrained land availability to grow different feed resources. The community predominantly follows Protestant denominations. Men and women have distinct divisions of labour. Men mainly work and spent their time outside of the home while women work in and around their residences, including in livestock husbandry activities. Thus feed collection is purely the responsibility of men while feeding animals and cleaning feeding areas and barns are tasks of women.

In both sites, we worked with research and development partners who mobilized community members based on developed criteria and facilitated and documented the community conversations. Before the start of the sessions, we had a team learning and alignment session to familiarize local partners with the methodology, facilitation agenda, and process. We went through a facilitation process guide checklist with research and development partners to align expectations and develop a common ground for how to facilitate each discussion point. This team co-learning process was very rewarding for the team.

We also conducted a preliminary knowledge, attitudes, and practices (pre-KAP) survey before the community conversation with a sample of participating community members. In addition to establishing the baseline to measure the impact of the intervention, this helped the team familiarize itself with the community and the issues they have with animal feeds. We held team reflections at the end of the pre-KAP survey which helped us get well prepared for the community conversations. Similarly, we held after-event team reflections and learning sessions to reflect on the community conversation process and capture observations, feedback, insights, emerging issues, and community actions. This reflective learning and insight session facilitated deeper learning and helped capture key outcomes and actions of the community conversation process into the report. Research and development partners reflected on their experiences and how they would apply the approach in their work. A total of 90 (41% female) participants were engaged in the two sites of Menz Mama and Doyogena districts.

Table 1: Categories and number of participants in two community conversations.

Category	Number of participants		
	Male	Female	Total
Research partners	2	-	2
Development partners	4	1	5
Organizers	3	-	3
Community members	44	36	80
Total	53	37	90

The overall approach was participatory through proving and deep learning. All issues on quality, contents, and quantity of animal feed were explored and discussed. Participants came to a consensus after rich dialogues and explorations of divergent views among themselves.

Setting the scene

Before starting the discussions, participants sat in a circle in an open space, maintaining social distance out of an awareness of COVID-19 concerns. Facemasks were distributed and participants used these to cover their mouths and noses to avoid COVID-19 transmission. Participants were informed of how the discussions would take place and what was expected from them and the facilitators. Local development and research partners were involved and aware of the importance and approaches of the community conversation process. We used to feed and nutrition researchers from the agricultural research centers and animal production experts from livestock and fishery development offices. The researchers took the leading roles of facilitation while the development partners took minutes and were responsible for monitoring community actions.

Capacity development of local research and development partners, both to support and take up participatory, gender-responsive community engagement approaches, was a central objective of the community conversation intervention. The collaborative work of the CGIAR research program with research and development partners also helped create the integration of the interventions at the site level. The local partners are well familiarized with the communities and have a better understanding of their issues. This helped contextualize and localize the discussions, drawing on the experiences and local knowledge of partners.

Telling stories

Initially, questionnaires were prepared to understand the production system, and some community members were invited for interviews. This helped the researchers understand the situations and get introduced to the communities. The interview participants talked about their experiences, what knowledge they had acquired about livestock feed, their attitudes on the importance of livestock feed, and their practices in livestock feeding. Participants explained that they allocated different feed resources to different livestock based on the availability of feed resources, animal types, age groups, and production purposes.

The interactivity of the participants

In both sites, there was good interaction of community members. We used open space circular seating arrangements to allow ease of interactions, and women sat comfortably with men. We encouraged women participants as much as possible to share their views.

Most of the time, men tended to dominate the discussions, and we made sure that every participant got the opportunity to share their views and stories.

Male and female participants were encouraged to talk freely and share their experiences with others. Participants were given adequate time to reflect and share their views on debatable issues. Finally, facilitators summarized the discussions and encouraged participants to reach agreements.

Figure 1: Community conversation in Zeram.

Figure 2: Community conversation in Limu Suticho.

Emerging issues and community actions:

Menz Mama district

Observations

In Menz Mama, the community members were interested to learn new things and acquire new knowledge. Women's participation was good and they were confident to explain their feelings and views. Livestock production, especially sheep production, is very important to the livelihoods of the community. Feed is very critical to improve the production and productivity of their livestock. The area has limited access to feed resources and is characterized as dry highlands. It has a very constrained agro-ecology to adopt different feed resources.

Issues discussed pet

The community conversation went through four stages: 1) exploring existing knowledge, attitudes, and practices of community members; 2) introducing new knowledge to supplement existing knowledge or address knowledge gaps; 3) integration of learning through communicating key messages; and 4) community action planning.

Exploring community members' perceptions about feed resources

Using interactive methods such as strategic questioning and storytelling, the facilitators engaged community members in active discussions to explore various locally available feed resources. Most of the available feed resources are seasonal and maintained using different techniques during scarcity. The feed resources are allocated for different classes of animals based on preference and availability. Farmers keep feed quality through early harvest, placement in dry and clean areas, and mixing of feed resources like crop residues, hay, salt, and green leaves of improved forages during the dry seasons. Farmers have good feed management practices for available resources like mixing, feed through cleaning, timely harvest, and purposive feeding. Feed management practices varied from household to household depending on household composition, past experiences, access to training, and resource availability.

The conception of animal feeds

The community conversation was started by asking what community members understand by animal feeds. Some farmers said that animal feed is any edible feed resource that benefits animals to increase production and productivity. Some farmers even demonstrated indications of their understanding of the nutritive values of animal feeds. However, even if they mentioned terms like proteins and vitamins in their discussion, they did not know the correct meanings of those terms. Lastly, they agreed on the concept that animal feed is any feed resource, including water, given to livestock that contains different nutrients and is important for their growth, health, production, and productivity improvement.

Available feed resources

The main feed resources available in the area include straw composed of barley, wheat, and faba bean, and hay collected mainly from natural pasture and sometimes from fallow lands. The other feed resources mentioned by the participants included legumes of *Trifolium* species locally named as 'maget' and 'wajima', which are mainly used for sheep and calves. Hay is primarily allocated for dairy cows and oxen during plowing time. Some of the farmers use improved forages of tree lucerne for sheep during the dry season, but most people do not use it as a feed resource.

Most of them provide salt during the dry season when their animals show less interest in eating crop residue. Crop aftermath, locally called 'qarmiya', is the important feed resource for two to three months. Between October and January sheep get enough to feed from the crop aftermath and farmers do not provide any additional feed for sheep if not fattened.

The listed animal feeds were:

- Grazing of natural pasture and crop residues
- Cut and carry of crop weeds
- Improved forages such as vetch, tree lucerne, and 'sinar' (oat)
- Hay, including the leguminous trifolium plants maget and wajima and grass
- Industrial by-products such as 'fagulo' (oilseed cake) and 'frushka' (wheat bran)
- Local beverage residue 'attela'
- Different straws and residues of wheat, barley, and faba bean
- Mineral salt
- Water

Quality and quantity of animal feeds

Another term that was discussed during the community conversation was the quality of animal feeds. The farmers were only listing the names of feed types which they believed to be quality feeds. The farmers understood about quality feeds by looking at their animals for bodily conformation, milk yield, and hair condition when the animals eat those feeds. However, they did not mention criteria such as contamination, cleanliness, and palatability of feeds.

Farmers' conception of feed quality is related to feed collection, storage, and feeding, that is timely harvest and storage in dry and clean areas. While this is an important aspect, it was not obvious for farmers to evaluate feed quality based on the nutritive value of feeds. In terms of the balanced feeds provided to their animals, they consider and observe the changes in animals' bodies for confirmation. Farmers have a good practice of mixing straws from cereal and legume crops and providing this ration to their animals. They practice this mainly to increase feed intake and palatability of straws, mainly from cereal crops.

Adequacy of animal feeds

When the farmers were asked whether locally available feeds were adequate for their animals, they believed that the available feeds are 'adequate' for their animals. However, on further probing and discussion of feed requirements of different animals, they came to recognize that their perception of adequacy was relatively based on availability and cost of feeds. Community members then identified feed shortage as a major constraint and mentioned that they did not have access to improved forages. The available collected feeds were not enough for the whole year-round, especially during the dry periods. Collected feeds are not sufficient if farmers give the amounts of feed the animals require, and they often supplement feed through purchasing, spending about 5,000 Birrs on average.

Farmers perceived that they have enough feed available for their animals given their resources, but this does not mean they provide the required amount of feed for their animals. Therefore, farmers' perceptions of feed adequacy all year-round are relative to their resources and the cost of feed.

Exploring community members' on feeding and feed management

Participants mix different types of feeds in different forms and provide these to different animals based on their ages and production purposes. Farmers maintain the quality of feed resources using proper harvesting time, placement in clean and dry places, and proper mixing of different feed resources when providing these to their animals. mixing different feed resources helps to improve the palatability and intake of locally available feeds. The balanced feed combines protein, energy, minerals, and vitamins found in different feed resources.

Though farmers made indications of their knowledge of the effects of different feeds on animals, they did not know the nutrient contents of the available feed resources they provided to their animals. Farmers provide salt for their livestock including sheep to increase the palatability of straw during the dry period. However, they do not recognize salt as an important nutrient and do not give salt to their animals all year round. Most farmers do not get green feeds for their livestock during the dry season. Few of them use tree lucerne as green fodder for their sheep mixed with straw during the dry seasons.

During the dry period's feed shortages become critical for sheep and the animals suffer from these feed shortages. Farmers do not efficiently collect feeds during abundant time. They collect only straw and hay but not from improved forage feed resources like tree lucerne. A few farmers plant tree lucerne and even these farmers do not use it as feed; they use it to make farm implements. Lastly, they understand the feed quality concepts as the capacity of a feed to supply animals with nutrients and that it contains criteria such as palatability (acceptability), chemical composition, and digestibility.

While water is not a problem in the area, the community members provide water only once a day for sheep versus twice a day or more for cattle. They have the perception that it is not good for sheep to have access to water at all times. Through the community conversations, farmers recognized that water is important for all animals all the time, as it influences feed intake, facilitates digestion, and regulates the body temperature of animals.

Gendered perceptions of animal feeds and feeding practices

We asked community members to reflect on what animal feeds meant if they meant that men are more knowledgeable than women and what this implies. This encouraged heated discussions.

The community members initially perceived that men have more knowledge than women about feed quality, as it is men who mostly do the task of feed collection while women make other important contributions to small ruminant production activities. Women mostly manage feed and allocate feed resources for their animals. However, the perception of men being more knowledgeable about feeds was debated, and female participants claimed that this differs across households; in some households' women are more knowledgeable.

In Menz Mama, there are more women's tasks on feeding activities. In contrast, men have more access to training and workshop and are knowledgeable than women in feed collection and animal feeding.

Table 2: Animal husbandry divisions of labour in Zeram.

Animal husbandry activities	Responsibility
Feeding animals	Women
Collecting feed	Men
Watering animals	Both
Cleaning feeding and watering troughs/areas	Both, mostly women
Cleaning barns	Women

Finally, they agreed that both men and women have knowledge about animal feeds, and this differs by household. They also appreciated the knowledge of men and women and the need to share information and work and make decisions collaboratively at the household level.

Key messages and community actions

Learning integration, action planning, and follow-up strategies

During the conversations, community members came to add new knowledge. They explored their knowledge, attitudes, and practices and then understood their gaps. The major knowledge gaps identified were around the needs of their animals for balanced feeds to improve production and health status, sufficient water, mineral availability, and the proper utilization of available feed resources of fodder tree lucerne. Alternative feed availability is critical in this area. Lack of vetch seed access and other protein-source feeds challenged them to supply balanced feed.

Based on these discussions the community plan to implement the following actions.

- Ensure that participants and the CBBP members provide mineral salt at least once a week.
- Plant at least five fodder trees in the coming rainy season. Farmers having adaptive fodder trees and others can collect feed from trees during the abundant season for shortage periods.
- Share lessons gained from the conversation with family, neighbors, and the community.
- Give animals access to water at least twice a day.

Reflections of local partners

At the end of the session, we held a reflection and learning session about the community conversation process. Local partners reflected on their takeaways and insights into the approach and reflected on the main issues arising in the conversations for each discussion question.

The research and development partners found an approach different from their conventional practices. They reflected that the approach helped to identify farmers' practices and existing gaps. They found it suitable to explore farmer attitudes and practices and increase collaborative learning, understanding, and knowledge retention. The approach allowed the community to interact and discuss the issues with the partners and deepen their knowledge.

Doyogena district

Observations

Livestock production and especially sheep production is very important to the livelihoods of the community. Feed is a very critical concern of the community to improve the production and productivity of their livestock. The area, characterized as wet highlands, is conducive to adopting different feed resources. However, a land shortage is constrained to grow different feed resources.

In Doyogena, the community conversation started with the blessing of participant elders. A research partner from Areka Agricultural Research Center, supported by a development partner, facilitated the conversation. The development partners also provided facilitation, as the CGIAR research team did not have a comprehension of the local language.

When introduced to the subject of the community conversation, initially the men in the group tended to portray themselves as being highly knowledgeable about animal feeds, as feeding is a practice they learned from their forefathers. They asserted that they took good care of their animals. However, as the discussion progressed and people started telling their stories, community members came to appreciate their knowledge and practice gaps in animal feeds.

Women's participation was challenging. Despite their good representation in terms of numbers and the efforts the facilitators made to encourage women's engagement, women did not feel confident to speak up. It may be helpful to have single-sex discussion groups in the future.

Issues discussed

Exploring community members' perceptions and knowledge about feed resources

Concept of animal feed

When the participants were asked about the concept of animal feed, most of them listed the available animal feeds resources instead of defining the term. Some farmers tried to explain feed as any feed edible by animals that has benefits to them and increases their production and productivity. Some farmers also raised the nutrition value of animal feeds as proteins and vitamins. However, they did not know the correct concepts of animal feed. Lastly, they agreed on the concept that animal feed is any food resource given to domestic animals which have good standard quality and contains nutrients values, and is important for growth, health, and improvement of production and productivity.

Availability and adequacy of feed resources

Available feed resource management and utilization were good. During the discussion, male and female participants explored different types of locally available feed resources. The available feeds are seasonal and maintained using different techniques during scarcity. The feed resources were allocated for different animals based on preference and availability. Participants maintain feed quality using early harvest, storage in dry and clean areas, and mixing of available feed resources. They provide additional feeds like straw, hay, salt, and green leaves of improved forages during the dry seasons. They have good feed management practices, though varied from farmer to farmer depending on household composition, past experiences, training access, and resource availability.

Participants listed the locally available feed resources they know and which are found in their locality. They know all the available feeds and listed these. The facilitators found this part of the discussion to be strong and were impressed by the farmers' listings.

The listed animal feeds were:

- Natural pasture for grazing and cut-and-carry
- Improved and adaptable forages such as vetch, oat, 'desho grass', and 'sasbania'
- Industrial by-products such as fagulo and frushka
- Different straws and aftermaths of maize, teff, wheat, and barley
- Enset (false banana) leaf, stem, and corm
- Cereal grains
- Water

In this part of the discussion, they did not list salts or minerals, but these were raised later in discussing the palatability and digestibility of available animal feeds.

When participants discussed the availability of improved forages, most of the improved forages are available in their area. They plant them around homesteads and terraces. However, the availability of improved forages was not adequate and every farmer has not yet planted the forages due to the high population densely and shortage of land size per household.

At the beginning of the discussion, participants believed that the available feeds are adequate for their animals. But when the facilitators asked again if the feeds are enough for the year-round and if they own a greater number of animals, they immediately realized that the available feeds are not enough. They also raised that the feed is not adequate if they give enough amount to their animals. Thus, while farmers perceived that they have enough feed available for their animals, that did not mean they can provide the required amount of feed to their animals.

Exploring community members' perceptions on feed quality and feed management

Community members provide different types of feed for different animals based on the ages and production purposes of their animals. The balanced feed contains protein, energy, minerals, and vitamins found from different feed resources. Farmers did not know the nutrient contents of the available feed resources mentioned by the participants as those provided to their animals.

The participants easily understood the concept of the palatability of animal feeds. They said that the grasses are palatable when they are young, but when they become older their palatability decreases. Animals prefer to eat the young grasses over older ones and straw or crop residues. The farmers said that when they add 'bole' (salty soil, which is used as a supplementary spice for animal feeds) the animals will eat those feeds which are not palatable. They also add the leftovers of coffee on the feed so that the animals will eat it. Other times, animals will eat non-palatable feeds when they are mixed with palatable feeds. When the animals drink water it also increases their appetite for feed.

Quality of animal feeds

the quality concerns of animal feed types listed by the participants who believed quality feeds were enset parts and industrial by-products. when animals ate those types of feeds, they will achieve weight gain. However, they did not mention criteria such as contamination and palatability of feeds. After discussion, they understood quality as the capacity of a feed with nutritive values, with criteria include palatability (acceptability), chemical composition, and digestibility.

Feed allocation to different livestock species

The participants allocate different types of feeds to different livestock species and age groups.

Table 3: Available feed resources and allocation to animals in Limu Suticho.

Feed type	Livestock species
Enset	Cattle, sheep
Natural grass (cut and carry)	All
Straw/crop residues	Cattle, equines
Desho grass	All except young animals such as calves
Industrial feeds	Dairy and fattened animals
Grazing	All
Vetch and other improved forages	Dairy animals
Cereals	Oxen, horses

Gendered perceptions of animal feeds and feeding practices

Community members have the perception that men have more feed quality knowledge than women. This is due to the distinct gender division of labour in feed collection and animal feeding activities.

This part of the community conversation was the most debated section by participants. At the start, some participants said that both men and women in households share all the work of animal husbandry and there is no special workload for women; they wanted to close or just pass over this section. On further probing and some provocative questioning, community members listed the animal husbandry activities and who does what. Women make important contributions to small ruminant production activities: they manage, feed, and allocate feed resources for their animals.

The participants said that before going out of the home, the male household head decides the type and amount of feed to be given to the animals and instructs the women. The reason for this is that they believe that men know more than women. When they were asked about access to information, they said both men and women have access to information. Regarding different sources and prices of industrial feeds, the women get this information because they purchase these feeds for their dairy animals. The men get information about the improved forages. But the trend of sending women for training at the kebele level is still low.

Table 4: Animal husbandry divisions of labour in Limu Suticho.

Animal husbandry activities	Responsibility
Feeding animals	Women
Collecting feed	Men
Watering animals	Women
Cleaning feeding and watering troughs/areas	Women
Cleaning barns	Women

Key messages and community actions

Learning integration, action planning, and follow-up strategies

During the conversation, participants came to add new knowledge. They explored their knowledge, attitudes, and practices and then came to understand their gaps. The major gaps identified were the needs of their animals for balanced feeds to improve production and health status, on supply of sufficient water, and the availability of minerals.

After listing their animal husbandry activities and agreeing on who does what, the farmers realized that there is a higher workload on women than on men. The farmers also discussed the relationship between animal nutrition, animal health, and productivity. After the session, the participants understood how nutrition, health, and productivity are interrelated.

The community members developed action plans to address the gaps include:

- Add mineral salt in addition to bole in their animal feed throughout the year.
- Feed their animals with different feed types and mix balanced feed.
- Share the workload of women with men.
- Plant different types of adaptable improved forages.
- Share the information with neighbors and family members about the feed and its management issues.

Reflections of local partners

After finishing the community conversation, the local partners expressed their impressions of the community conversation process and issues raised by the participants. They found the community conversation approach to be different from their conventional practices and suitable to explore farmers' practices and knowledge. The approach allowed the community to interact and discuss their issues with the partners and fostered deeper knowledge. The participant community members strongly believed that they would act on the animal feed issues. The development and research partners assured that they will insert this method into their extension system and institutional plans.

Analysis and lessons learned

The agro-ecology of the Doyogena is suitable to produce different livestock feed resources except for land shortage, while the Menz area is difficult to produce various improved feed resources due to dry conditions and frost hazards. The average herd size of livestock holding per household is greater in Menz than Doyogena. The available feed resources are also different in the intervention sites. Barley, faba bean and wheat straw, and hay are the main feed resources in Menz, while improved forages are the main ones in Doyogena.

Grazing of natural pasture and crop residues is the main feeding system for sheep in Menz, while in Doyogena the feeding system centers on the cut and carry of available feed resources. Availability of improved forage and utilization of feed resources is better in Doyogena than in Menz.

Women's participation and encouragement were stronger in Menz than Doyogena. Though women were involved in many livestock production activities in both communities, their participation was not explained easily.

Water resources are available in nearby places and animals get good access in Menz, but water is carried long distances to be delivered to livestock in Doyogena. Mineral salt is provided to animals in Menz during the dry seasons to improve animal intake of less palatable feed resources, not considered as nutrients. In Doyogena animals are not accessing enough mineral salt in their feed. Green feed availability and access are better in Doyogena, where particularly desho grass, enset, and sasbania are available, while only tree lucerne was found in the Menz.

The utilization of available feed resources needs further interventions in both sites. Commercial feed resources of wheat bran, oilseed cake, and concentrates are used only for production purposes (dairy cows and fattening of sheep and oxen) in both areas.

In both sites, community members practice feeding their animals' mixed feeds. In Menz, farmers mix different straws to improve their palatability. After removing crops, they collect different types of straw in one place and thresh it to reduce the particle size, and mix the different types of straw properly. After this, the straw becomes fine and smaller in size and is liked better by animals.

In both sites feed resources are put in dry and clean areas to protect them from contamination and moisture. Men agreed to provide feed to the animals and clean the feeding and watering troughs when they are at home and share other activities with women.

In Menz, the proper utilization of tree lucerne feed resources and evaluation of the feed quality of mixed straw needs further intervention. Most participants implemented purposive feeding practices for milking and fattening purposes.

In Doyogena, various improved forages are available and livestock keepers collect fresh feed and provide for their animals through cut-and-carry systems. Sheep flock size is small, a result of feed shortage and limited land for feed production. Women have the largest share of the responsibility to take care of livestock. Water access is limited to provide for their animals as required. Mineral salt was not considered as a feed and there were misconceptions about its importance.

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Annexes

Annexe 1: Discussion checklist

Activity 1. Exploring community members' perceptions and knowledge of quality, seasonality and utilization of locally available feed resources

- Conception of animal feeds
- Types of animal feeds
- Locally available feed resources: Adequacy, quality, utilization, palatability and digestibility
- Availability and use of improved forages
- Feed selection and allocation to different animals
- Gender roles in animal feeding: Workload, decisions, better care for animals, knowledge and access to information
- Relationship of good animal nutrition, health and productivity

Activity 2. Exploring community members' perceptions, knowledge and practices about feed quality, feeding and feed management

- Nutrient content of locally available feed resources
- Enriching locally available feed resources
- Feeding and feed management practices
- Clean and uncontaminated feeds
- Cleaning feeding and watering places

Activity 3. Learning integration, action planning and follow-up strategies

- Reflection and feedback on key learning and takeaway messages
- Community action
- Benefits of acting

Reflection and commitment of local partners

Annexe 2: The community conversation process in pictures

Doyogena community conversation.

Menz Mama community conversation.