

A gendered analysis of community profiles of target sites for small ruminant value chain interventions in Ethiopia



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A gendered analysis of community profiles of target sites for small ruminant value chain interventions in Ethiopia

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Contents

Tables	v
Acronyms	v
Acknowledgements	2
Executive summary	3
Introduction	5
Methods/Approaches	6
Reflections about the exercise	7
Results of the study	8
Community profiles of Elweye and Dharito PAs of Yabello-Borana zone	8
Community profiles of Leku Iggu and Gitilo PAs of Horro district	17
Community profiles of Hadinet PA, T/Abergelle district of Tigray region	23
Community profiles of Saka PA, Abergelle district of Amhara region	29
Community profiles of Ancha Sadicha, Serara Bokata and Hawora Arara PAs, Doyogena districts	36
Community profiles of Molale and Mehal Meda PAs, Menz Gera Midir district of Amhara region	49
Community profiles of Gaad and Dhegah-Jabis PAs in Shinelle district of Somali region	57
Conclusion	65
References	67
Annex	68

Tables

Table 1:	Number of participants in the group discussion across the study sites	6
Table 2:	Daily activity clocks for women during wet and dry seasons, Elweya PA, Borana zone	9
Table 3:	Daily activity clocks for men during wet and dry seasons, Elweya PA, Borana zone	10
Table 4:	Daily activity clocks for youths during wet and dry seasons, Elweya PA, Borana zone	10
Table 5:	Daily activity clock for women during wet season, Dharito PA, Borana zone	11
Table 6:	Daily activity clocks for men during wet and dry season, Dharito PA, Borana zone	11
Table 7:	Daily activity clocks for youths during wet and dry season, Dharito PA, Borana zone	12
Table 8:	Seasonal activity calendar of Elweya PA, Borana zone	14
Table 9:	Seasonal activity calendar of Dharito PA, Borana zone	15
Table 10:	Access to and control over resources by men and women in Elweya PA, Borana zone	16
Table 11:	Daily activity clock for women during wet and dry seasons, Leku Iggu PA, Horro district	17
Table 12:	Daily activity clocks for men during wet and dry seasons Leku Iggu PA, Horro district	18
Table 13:	Daily activity clock for youth during wet and dry seasons, Leku Iggu PA, Horro district	19
Table 14:	Seasonal activity calendar for Leku Iggu PA, Horro district	20
Table 15:	Seasonal activity calendar for Gitilo PA, Horro district	21
Table 16:	Access to and control over resources, Leku Iggu and Gitilo PAs, Horro district	22
Table 17:	Gender relations and division of labour in sheep fattening, leku Iggu and Gitilo PA, Horro district	23
Table 18:	Seasonal calendar for sheep fattening, Lekku Iggu and Gitilo PAs, Horro district	23
Table 19:	Daily activity clocks for women during wet and dry seasons, Hadinet PA, T/Abergelle district	24
Table 20:	Daily activity clocks for men during wet and dry season, Hadinet PA, T/Abergelle district	25
Table 21:	Daily activity clocks for youth during wet and dry season, Hadinet PA, T/Abergelle, district	26
Table 22:	Seasonal activity calendar for Hadinet PA, T/Abergelle district	27
Table 23:	Access to and control over resources by men and women, Hadinet PA, T/Abergelle district	28
Table 24:	Gender relations and division of labor small ruminant fattening, Hadinet PA, T/Abergelle district	29
Table 25:	Daily activity clocks for women during wet and dry season, Saka PA, A/Abergelle district	30

Table 26:	Daily activity clocks for men during wet and dry season, Saka PA, A/Abergelle district	31
Table 27:	Daily activity clocks for youths during wet and dry seasons, Saka PA, A/Abergelle district	32
Table 28:	Seasonal activity calendar for Saka PA, A/Abergelle district	33
Table 29:	Access to and control over resources, Saka PA, A/Abergelle district	34
Table 30:	Gender relations and division of labour in goat production, Saka PA, A/Abergelle	35
Table 31:	Goat fattening calendar in Saka PA, A/Abergelle district	35
Table 32:	Daily activity clocks for women during wet and dry season, Ancha Sadicho PA, Doyogena district	36
Table 33:	Daily activity clocks for women in Serara Bokota and Hawora Arara PAs, Doyogena district	37
Table 34:	Daily activity clocks for men in wet and dry seasons in Ancha Sadicho, Sarara Bokota and Hawora Arera PAs, Doyogena district	38
Table 35:	Daily activity clocks for youth during wet and dry seasons, Ancha Sadicho, Serara Bokota and Hawora Arara PAs, Doyogena district	40
Table 36:	Seasonal activity calendar for Ancha Sadicho PA, Doyogena district	42
Table 37:	Seasonal activity calendar for Serara Bokota and Hawaro Arera PA, Doyogena district	43
Table 38:	Access to and control over resources in Ancha Sadicho, Serara Bokota and Hawaro Arera PAs, Doyogena district	44
Table 39:	Seasonal calendar for sheep fattening, Ancha Sadicho, Serara Bokota and Hawaro Arera PAs, Doyogena district	45
Table 40:	Daily activity clocks for youth during wet and dry seasons, Habes and D/Kidan PAs, Doyogena district	45
Table 41:	Daily activity clocks for men, Habes and G/Kidan PAs, Atsbi district	46
Table 42:	Daily activity clocks for youth, G/Kidan PA, Atsbi district	47
Table 43:	Seasonal activity calendar for Habes PA, Atsbi district	49
Table 44:	Daily activity clock for women during growing and dry seasons in a typical day	50
Table 45:	Daily activity clock for men in a typical day during growing and dry seasons, Molale PA	51
Table 46:	Daily activity clock for youth male and female in a typical day during wet and dry seasons, Molale PA	52
Table 47:	Seasonal calendar, Molale PA, Menz Gera Midr, mixed group	54
Table 48:	Seasonal calendar, Sena amba PA, Menz Gera Midr district	54
Table 49:	Sheep fattening calendar, Molale and Mehal Meda PAs, Menz Gera Midr, mixed group	55
Table 50:	Access and control, Molale and Mehal Meda PAs, Menz Gera Midr district	56
Table 51:	Who does what in sheep fattening, Menz Gera Midr district	57
Table 52:	Daily activity clock for women, men and youth in a typical day during growing seasons, Gaad and Dhegah Jabis PAs, Shinelle district	58
Table 53:	Daily activity clock for women, men and youth during dry season in a typical day, Gaad and Dhegah Jabis PAs, Shinelle district	60
Table 54:	Seasonal calendar, Gaad PA, mixed group.	62

Table 55:	Seasonal calendar, Dhegah-Jabis PA, Shinelle district	62
Table 56:	Access and control, Gaad PA and Dhegah-Jabis PAs, Shinelle district	63
Table 57:	Who does what in small ruminant activities, Gaad and Dhegah Jabis PAs	64
Table 58:	Sheep fattening calendar, Gaad PA and Dhegah Jabis PAs, Shinelle district	64

Acronyms

BoA	Bureau of agriculture
CG	Consultative Group
PA	Peasant associations
PRA	Participatory rural appraisal

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Executive summary

Community profiling was conducted to provide an in-depth gendered understanding of the characteristics of the small ruminant value chain intervention sites in Ethiopia. Gender analysis tools and participatory rural appraisal (PRA) techniques were used to capture detailed information about the situation within the communities—using daily activity clocks, seasonal calendars, and access to and control over resource profile. The assessment was conducted in fourteen target peasant associations (PAs), in seven woredas (districts) where the livestock and fish CGIAR research program operates. Overall, 137 men, 114 women, 115 youth (73 male and 42 female) participated in the group discussions.

The study shows that, although there are differences amongst the communities within the target sites, most of the activities are common for all household members and are jointly carried out. However, there are gender specific activities observed across the study sites. Women engaged in various activities- productive, reproductive and community roles and responsibilities. Water is one of the key constraints to rural livelihoods in the drier study areas. Women spent much of their scarce time (3–5 hrs during the dry season) on fetching water since this activity is primarily considered a woman's role. In the drier areas the rainy season is very short and during this season all household members are busy with agricultural activities and women and youth are found working for longer hours in a day than men. Similarly, livestock feed becomes a serious problem in the dry season. In Shinelle district, during the dry season, women spent about half of their time collecting feed for small ruminants while men entirely invest their time on this activity for camel. These activities change as seasons change in different farming systems and women's workload almost remains the same or even increases during the dry season. Men's workload reduces during the dry season except in pastoral communities (Shinelle and Yabello).

Across the study sites, men concentrate on a few productive activities in a day whereas women carryout multiple activities- done in conjunction with others. Activities such as herding, taking sick animals to vet clinic and marketing are usually done by adult men and young boys, culturally rewarded, and of high status. As a result, women observed having less sleeping and leisure time as compared to men. Across the study sites, it is also observed that activities are gendered between male and female youths in most of the study communities. Young girls share activities of women whereas young boys share those of men but are more likely to participate in other activities considered feminine e.g. fetching firewood.

Generally, in most cases, regardless of region and farming system, men and women have access to most of the resources perceived by men and women as productive. But when it comes to control over these important household resources which include decision making power over their disposals and control over the benefits, most women tend to have less voice. On the other hand, resources like animal products are under the control of women in general in the study areas. Women also have equal control over food crops in Abergelle districts (of both Amhara and Tigray) and on both livestock and food crops in Menz and Shinelle districts. Participation in community training and politics is considered to be the role of men across the study areas.

It is evident that any interventions aiming at improving the livelihoods of households in the study communities need to take into account these gender based roles and responsibilities of community members within the target sites and their time allocation. Proper understanding of cultural norms that govern allocation of roles, access to and control

over resources, and women mobility is a necessity to project success. The results of this rapid assessment suggest that site specific detailed gender analysis is essential in order to identify gender based constraints and opportunities so that the benefits of all communities' members are ensured through better targeting of interventions.

Introduction

Community profiling was conducted to provide an in-depth gendered understanding of the characteristics of the small ruminant value chain intervention sites, one of the value chains under the CGIAR Livestock and Fish research program, in different regions of Ethiopia to aid planning and targeting. Accordingly, the profiles provide characteristics of the target peasant associations (PAs). Information captured during the process included but not limited to:

- Roles and responsibilities of community members—men, women, boys and girls
- Time allocation
- Access to and control of resources
- Seasonal activities calendar and related information

A daily activity clock is used to illustrate the different kinds of activities carried out in one day. It is particularly useful for looking at relative work-loads between different groups within the community. Comparisons between clocks show who works the longest hours, who concentrates on a few activities and who does a number of tasks in a day, and who has the most leisure time and sleep. For this purpose daily activity clocks were conducted for, men, women, and youth (boys and girls) in the community.

Gender differentials at household and community level can be manifested through various dimensions. One of such gender differentials can be assessed by looking at power dynamics within a household and community by analysing access to and control over key resources and who is in charge of managing those resources.

In order to explore seasonal changes in gender specific activities a participatory tool called seasonal calendar was employed. The objective was to learn about changes in livelihoods over the year and to show the seasonality of gender-specific agricultural and non-agricultural workload, food availability, income and expenditure, availability of water, forage, access to credit and holidays.

Methods/Approaches

Gender analysis and participatory rural appraisal techniques were used to capture detailed information about the situation within the communities including daily activity clocks, seasonal calendars, and access to and control over resources. To generate the 24hr activity clocks, separate group discussions were conducted with men, women, and male and female youths within the target PAs (Table 1). Since the number of male and female youth was small in most cases, they formed one group but activities that applied to a specific group were specified during discussions. Before the group discussions were conducted, men, women and youth were briefed about the purpose of the activity, given instructions about the activity and then asked to split into groups. The groups agreed to plot clocks for the peak and slack seasons represented by the wet and dry season. During the plenary session the groups shared their results with the rest of the participants and received feedback. A team of researchers from ILRI, National Research Systems, and extension facilitated the group discussions. The whole activity took about 3-4 hours.

Table 1: Number of participants in the group discussion across the study sites

Region	Woreda	Target PAs	Number of participants on the group discussion			
			Men	Women	Youth	
					Male	Female
Oromia	Yabello	Elweye	10	8	6	3
		Dharito	15	12	5	2
	Horro	Leku Iggu	12	8	6	5
		Gitilo	11	9	3	3
Tigray	T/Abergelle	Hadinet	11	6	7	4
	Atsbi	Habes	7	9	3	-
		G/ Kidan	6	8	5	-
Amahara	Abergelle	Saka	10	9	6	3
	Menz	Mehal Meda	11	10	9	2
SNNP	Doyogena	Molale	9	8	8	2
		Serara Bokata	11	5	4	7
		Hawora Arara	9	6	4	4
		Gaad	9	10	4	4
Ethio-Somali	Shinelle	Dhegah-Jabis	6	6	3	3
Total			137	114	73	42

Reflections about the exercise

What went well?

- The research team was very hardworking, committed and cooperative across the regions.
- Active participation of community members in the group discussions and plenary sessions. Women and men critiqued each other's clocks and they were adjusted accordingly.
- Men acknowledged women's workload and actually made additions to the clocks, highlighting the activities omitted. Men in all the sites were overwhelmed by the number of activities done by women.

What did not go well?

- Mobilization of female participants particularly that of pastoralists in Elweye was quite challenging. Thursday 27 February was market day and we hardly got any pastoralists to participate in group discussions. However, the community mobilizer persistently searched for them and successfully got five women and five men. Since the number obtained was small for a group discussion, the exercise was postponed to the next day. Mobilization on day two was still a challenge but we sought help from the Development Agent who successfully mobilized the pastoralists. In total, about 30 pastoralists participated.
- In Dharito, male pastoralists came on time but the women and youth came very late. Hence the activity started late.
- In Doyogena district, there was heavy and continued rainfall that interrupted the exercises. As a result it took us more time than anticipated.
- It was peak time (harvesting time), for farmers in Abergelle district of Tigray region. As a result, site development agents took much time to mobilize farmers for the group discussion.
- In Tigray and Somali regions, we entirely depended on local researchers for language reasons to facilitate and collect the information and as a result we were not able to take control over every information generated. Since farmers were very busy, translating the discussion was not possible.

Results of the study

This section presents the results from the six districts, comparing activities of men, women, and youths across the peak and slakes seasons.

Community profiles of Elweye and Dharito PAs of Yabello-Borana zone

Brief description of Yabello-Borana zone

The pastoral range land of Borana is located in the southern part of Ethiopia in Oromia regional state. The Borana rangeland is semi-arid with highly variable rainfall between 300 and 900 millimeters (mm) a year, with high spatial and temporal variability. The actual length of the rainy season is getting shorter over time and the area is prone to drought. Variable rainfall results in greater variability in forage productivity. Shortages of forage and feed occur during periods of low rainfall leading to lower livestock productivity and higher production losses (Hussen et al. 2013). Livestock production is the main stay of the pastoral and agro-pastoral communities of the Borana people. The major livestock raised are cattle, camels, goats and sheep. The average stocking rate in Borana rangelands is approximately 15.6 TLU/km² where the average population of goats and sheep in the area is estimated at nearly 1.5 million (Hussen et al. 2013). Although livestock farming is the dominant mode of production, crop production is also practiced and is expanding from agro-pastoral to pastoral areas. Unpublished reports from the Borana zone Rural and Agricultural Development Coordination Office show that cultivated land constitutes 16% of the total land area of the zone (*ibid*).

The study sites, Elweya and Dharito PAs in Borana Zone, are drier and water in these sites is usually drawn from ponds and wells. The distance of fetching water for domestic use depends on seasons; during wet season water is fetched around the homesteads from temporarily created ponds as a result of rain. However, during the dry season, daily traveling of long distances in search of water points for livestock and other purposes is part of the livelihood of the people in these areas.

24 hours daily activity clocks

The daily activity clocks show that different members (men, women, boys and girls) of a given family within the study area do have multiple roles to carry out in day. Although, most of the activities are common for all and jointly carried out, there are gender specific activities. In Elweya PA activities like cooking, collecting feeds, feeding small and weak animals left at home, cleaning barns, collecting firewood, fetching water, crafting, marketing food items, churning milk and managing churning equipment, and caring for children are primarily the work of women although supported by young females. On the other hand, activities like feeding and watering oxen, plowing, and cleaning plowing equipment are done by men although supported by young boys in the household. Young boys, in this study site, are particularly responsible for clearing farmlands and guarding fields and harvested crops.

Table 2: Daily activity clocks for women during wet and dry seasons, Elweya PA, Borana zone

Women group, wet season, Elweya site		
Time	Activities	Hours
6:00–7:00	Wake-up, churning milk, preparing firewood	1
7:00–8:00	Cooking, feeding calf, eating breakfast	1
8:00–9:00	Taking animals for grazing, cleaning barn	1
9:00–11:00	Collecting feed	2
11:00–13:00	Fetching water, collecting firewood, milking	2
13:00–14:00	Washing clothes, cooking	1
14:00–15:00	Preparing milking equipment, feeding	1
15:00–16:00	Crafting	1
16:00–18:00	Making tea and cooking	2
18:00–19:30	Gathering animals and feeding	1.5
19:30–20:00	Milking	0.5
20:00–21:00	Dinner preparation, milking equipment cleaning	1
21:00–6:00	Sleeping	9
Women group, dry season, Elweya site		
Time	Activities	Hours
6:00–8:00	Wake-up, prepare breakfast, churning milk, milking, feeding calf, kids/lambs, cleaning, sending cattle for grazing	2
8:00–13:00	Collecting hay for calf/kids/lambs and sick/pregnant animals	5
13:00–16:00	Prepare dinner, collect fire wood, fetching water, go to market, crafting, cleaning milk equipment(smoking)	3
16:00–19:00	Gathering animals, feed calf/kids/lambs and sick animals	3
19:00–21:00	Milking, cooking, caring for children	2
21:00–6:00	Sleep	9

In Elweya PA it is observed that women carry out multiple activities simultaneously whereas men concentrate on few activities in a day (Table 2). Women involved in both household chores and farm operations unlike men. However, women seem to have the same sleeping time as men do. Moreover, it is also evident that men have leisure time in the course of the day (Table 3) while women do not have any time to rest. This is because of the fact that women work a number of activities in a day.

Table 3: Daily activity clocks for men during wet and dry seasons, Elweya PA, Borana zone

Men group, wet season, Elweya site		
Time	Activities	Hours
6:00–7:00	Wake-up, go to toilet and washing hand and face	1
7:00–8:00	Milking	1
8:00–9:00	opening kraal, eating breakfast, preparing plowing equipment, going to farm land	1
9:00–14:00	plowing	5
14:00–15:00	cleaning plowing equipment, having lunch	1
15:00–16:00	Watering oxen	1
16:00–18:00	feeding oxen, remove bush and weeds	2
18:00–19:00	Relaxing time	1
19:00–20:00	Milking	1
20:00–21:00	gathering livestock, having supper	1
21:00–6:00	Sleeping	9
Men group, dry season, Elweya site		
Time	Activities	Hours
5:00–6:00	Wake-up, releasing the calf	1
6:00–7:00	Letting out the animals	1
7:00–8:00	Having breakfast, visit livestock	1
8:00–11:00	collecting plant leaves	3
11:00–12:00	watering livestock	1
12:00–14:00	feeding the livestock with the collected leaves	2
14:00–15:00	Relaxing time	1
15:00–19:00	Keeping livestock for grazing/browsing	4
19:00–20:00	Return back to home, allowing calves/kids/lambs for milking	1
20:00–5:00	Sleeping	9

Although women are busy all the day, it seems that both women and men have the same time for sleeping. However, young boys have the shortest time for sleeping in this community as compared to men and women and young girls. This is because of their responsibility to stay outside to guard crop fields and harvested crops. As a result they come home and sleep latter than all the members of the household and have the shortest sleeping time particularly during growing and harvesting seasons.

Table 4: Daily activity clocks for youths during wet and dry seasons, Elweya PA, Borana zone

Mixed youth group, wet season, Elweya site		
Time	Activities	Hours
3:00–7:00	Wake-up, Open kraal, feeding animals, preparing breakfast (F), milking (F), cleaning house (F)	4
7:00–8:00	Having breakfast	1
8:00–9:00	Farm land preparation, clearing bushes from farm land (M)	1
9:00–14:00	Plowing (M), Cooking lunch (F), weeding (M&F), Sawing (M), lunch	5
14:00–18:00	Weeding (M&F), feeding livestock (M), watering oxen (M), harvesting (M), Storing harvested crop (M)	4
18:00–19:00	Animal gathering	1
19:00–20:00	Eating supper, Girls go to bed	1
20:00–22:00	Guarding crop at farm, return back home (M)	2
22:00–3:00	Sleep	5
Mixed youth group, dry season, Elweya site		
Time	Activities	Hours
3:00–7:00	Wake-up, light fire, cooking, milking	4
7:00–12:00	Fetch water, clean house and kraal	5
12:00–13:00	Prepare Lunch, wash cloths, care for children	1
13:00–16:00	Collect firewood, collect plants and leaves for calves, kids and lambs	3
16:00–17:00	Clean milk equipment, cook dinner	1
17:00–18:00	Let kids, lamb and calves into kraal	1
18:00–20:00	Milking, churning milk, serve dinner	2
20:00–21:00	Relax	1
21:00–3:00	Sleep	6

Similarly, as it was observed in Elweya PA, although, most of the activities are common for all and jointly carried-out, there are gender specific activities. In Dharito PA, activities like cooking, collecting feeds, feeding small and weak animals left at home, cleaning barn, collecting firewood, fetching water, churning milk and cleaning churning equipment, and caring for children are primarily the work of women although supported by young girls.

Table 5: Daily activity clock for women during wet season, Dharito PA, Borana zone

Women group wet season		
Time	Activities	Hours
5:00–6:00	Wake-up, open the door, ignite fire	1
6:00–8:00	Milking, boiling tea	2
8:00–9:00	Letting the livestock for grazing, preparing seed, weeding	1
9:00–10:00	Letting out the calves/kids/lambs, cooking food for lunch	1
10:00–13:00	Cleaning paddock and house, taking water and food for husband	3
13:00–14:00	Help ploughing the farm land, collecting fire wood	1
14:00–15:00	Fetching water for the household	1
15:00–16:00	Prepare supper	1
16:00–17:00	Giving water for farmer	1
17:00–18:00	Cleaning milking equipment, gathering calves ,kids and lambs	1
18:00–19:00	Milking	1
19:00–20:00	Providing food for children and herders	1
20:00–21:00	Providing food for other family members	1
21:00–22:00	Churning milk	1
22:00–23:00	Preparing for bed	1
23:00–5:00	Sleep	6

Table 6: Daily activity clocks for men during wet and dry season, Dharito PA, Borana zone

PRA men group dry season, Dharito site		
Time	Activities	Hours
6:00–8:00	Wake-up, open barn, milking, clean barn, take animals to grazing	2
8:00–12:00	Farm equipment preparation	4
12:00–13:00	Having lunch	1
13:00–14:00	Take rest	1
14:00–16:00	Go to farm land, farm land preparation, watering animals	2
16:00–19:00	Gather animals home, feeding	3
19:00–21:00	Milking, having dinner	2
21:00–22:00	Discuss animal watering for the coming day	1
22:00–6:00	Sleep	8
PRA men group, wet season, Dharito Site		
Time	Activities	Hours
5:00–9:00	Open barn, grazing oxen, feeding, having breakfast	4
9:00–10:00	Taking oxen to farm land	1
10:00–16:00	Ploughing, weeding, herbicide application	6
16:00–20:00	Grazing oxen, gathering animals back home, milking	4
20:00–21:00	Having dinner	1
21:00–23:00	Community discussion/development issues	2
23:00–5:00	Sleep	6

On the other hand, activities like feeding and watering oxen, plowing, cleaning plowing equipment, and participating in community discussions are in the domain of men. There are also distinct gender roles between young boys and girls in this community. Young boys, in Dharito PA, are involved in all activities men carry out except participating in community discussions. In the same way young girls also involve in multiple activities that women carry out in support of their mothers. There is also variation in activities across the seasons with men participating more in crop related activities during the wet season and livestock related activities during the dry season.

Table 7: Daily activity clocks for youths during wet and dry season, Dharito PA, Borana zone

PRA youth group wet season, Dharito, site		
Time	Activities	Hours
6:00–7:00	Wake-up, opening coral (M), milking (M&F)	1
7:00–8:00	Take livestock for grazing	1
8:00–9:00	Having breakfast, fetching water(F), leaving home for plowing	1
9:00–12:00	Herding livestock, cooking food(F), Plowing(M), weeding, sawing	3
12:00–15:00	Lunch, collect fire wood (F), fetching water (F), ploughing, weeding, sowing,	3
15:00–16:00	Watering and feeding oxen	1
16:00–18:00	Managing, calves/kids/lambs (F), feeding oxen, cleaning milk equipment (F)	2
18:00–20:00	Feeding oxen, milking(F), bring Oxen home	2
20:00–21:00	Prepare supper (F), have dinner	1
21:00–6:00	Sleeping	9
PRA youth group, dry season, Dharito site		
Time	Activities	Hours
3:00–6:00	Wake-up, cooking and milking	3
6:00–12:00	Fetching water, cleaning house and coral	6
12:00–13:00	Lunch preparation, wash cloths, caring children	1
13:00–16:00	Collecting firewood, collecting plant leaves for calf/lambs	3
16:00–17:00	Cleaning milk equipment, cooking dinner	1
17:00–18:00	Letting calves/lambs to coral	1
20:00–22:00	Milking, churning milk, providing supper for family	2
22:00–23:00	Relaxing time	1
23:00–3:00	Sleep	6

As in Elweya PA, it is observed that women carry out multiple activities simultaneously whereas men concentrate on few activities in a day in Dharito PA. Women are involved in both household chores and farm operations unlike men. As a result women carry out several activities as compared to men. Men concentrate on few activities related to plowing. However, both men and women seem to have the same time for sleeping but youth girls and boys, do have more sleeping time as compared to women and men unlike those in Elweya's PA.

In general, daily life in both PAs centres is on cattle keeping and crop farming. This, of course, depends on the seasons as depicted by the activity clocks - communities are mostly busy with crop production activities during the rainy season whereas in the dry season livestock related activities constitute their primary work. Both men and women cooperate in feeding and watering their animals. Women and young girls are responsible for multiple tasks as well. Women are loaded with multiple activities- productive and reproductive activities. Although, most productive roles such as livestock watering, milking, herding, and processing of dairy products, keeping kids/calves or lambs and weak animals left at home, livestock health care, and kraal cleaning are in the domain of the women and daughter, men and young boys participate in fewer activities like feed collection and feeding, watering animals and milking. Most reproductive roles such as house cleaning, child care, food preparation, fetching water, firewood collection, shopping food items, feeding household members, and barn cleaning are mainly done by women supported by young girls.

Moreover, women are particularly responsible for caring after their children and weak animals in addition to carrying out all the household chores. In Elweya PA, the minimum and maximum time spent on agricultural tasks (animal housing, watering and feeding, farming, sowing, weeding, harvesting, storing and etc.) during the wet season is about six and 10 hours per day for women, which is closer with that of men although the exact figure varies widely over the agricultural season and between villages.

Women and the young girls are responsible for the daily processing and cooking of grains for household meals and also prepare the harvested grains for storage. Cooking and collection of firewood is particularly regarded as the work of women and young girls and roughly it takes two to four hours a day. The male youths in both PAs participate in collecting fire wood. Adult women and girls from the age of about twelve are responsible for fetching water, a task that takes roughly about one to three hours per day during the wet season and longer during the dry season. Adult women and girls also responsible for the caring of younger children and infants, generally in conjunction with other tasks.

Men and boys usually herd, graze and feed the oxen and other animals. In both PAs, men and young boys occasionally milk the cows. Women carry out the bulk of the milking, cleaning barns/sheds, and feed the animals particularly the milking cows, calves, small ruminants and sick animals at home. In Elweya PA, the care and feeding of stall-fed animals takes roughly between two and four hours per day; herding animals outside the homestead involves roughly about six hours a day.

Time hunger is a significant problem for women in these communities because of their multiple responsibilities. For example in Elweya PA, on a typical day during the growing season, a woman wakes up while it is still dark, a little before sun rise. She goes to the river or nearby water points to fetch water, prepares firewood and breakfast, cleans up the homestead and milks the cows. Before she gets to the farm between 10:00 am to 13:00 pm, she lets the animals out for grazing, prepares lunch which she takes with her to the farm. Then she works up to 15:00 pm with her husband. After working for about two to five hours on the farm, she returns home collecting firewood along the way and she goes to the river/water point to fetch water to prepare dinner. In the evening, she goes out to gather calves, kids and lambs and collects grass for these animals and milks cows while feeding them. At around 21:00 pm, she provides dinner to family members and starts churning milk, and goes to bed around mid-night.

On the other hand, in the same PA, during the same season, a man typically wakes up around sunrise, assists milking, takes breakfast, tethers the livestock, prepares farming equipment, and reaches the farm around 9:00 am. He stays there until 14:00 pm, then he rests for about 1 hour after eating lunch. In the afternoon, he continues working on the farm until 18:00 pm, then returns home in the evening to relax with friends and/or he may go to the neighbouring village to meet with his peers for about one hour. In the late evening he helps in gathering animals and milking, and eats his dinner and goes to bed early at around 21:00 pm.

Boys and girls also have multiple responsibilities particularly during the growing season. On a typical day, a girl wakes up earlier than the boys at around 3:00 am before her mother to clean house, milking, prepare breakfast, feed animals, and open kraal to let out animals for grazing. Before she joins her mother going to the farm at around 9:00 am, she does the work of lunch preparation. Then she works on the farm carrying out activities like weeding until 18:00 pm. In the late evening, she returns home and assists in gathering calves, kids and lambs, and collects grass for these animals and milk cows while feeding them. She also helps in preparing and serving dinner. At around 20:00 pm, she helps in providing dinner to family members and goes to bed two hours earlier than the boys and her mother while the boys go out to watch animals and guard crop fields particularly during harvesting period. On the other hand, the boy wakes-up later than girls and feeds the animals, goes to the farm to help with land preparation- clearing bushes from farm land, sowing, weeding, harvesting, and storing. In the late afternoon, he goes out to gather animals to the barn. After having his dinner, he goes out to watch the animals and guard fields as a result stays longer and goes to bed at around 22:00 pm, later than all the family members particularly during harvesting time.

Seasonal activities and gender specific changes

Seasonal activity calendar of Elweya PA, Borana zone

Most households in the study areas both farm and keep livestock to supply themselves with milk and meat, occasionally selling surplus to the local market. In order to explore seasonal changes in gender specific activities, a participatory tool called seasonal calendar was employed. The objective was to learn about changes in livelihoods over the year and to show the seasonality of gender-specific agricultural and non-agricultural workload, food availability, income and expenditure, availability of water, forage, access to credit and holidays. According to the information from the PRA, March, April, May are months of the longest rainy season whereas August, September and October are months of the short rainy season in this PA. During these seasons, availability of water for their livestock and agricultural activities is not a problem. But it is evident that in the remaining months of the year water is scarcely available within the community. In Elweya PA, food is also scarce almost for half of the year.

Households within the community of Elweya PA entirely depend on open grazing and cut and carry system to feed their animals. Kids, lambs, calves and sick animals are kept around the homestead and fed using the cut and carry system. November to February are the months that communities in Elweya PA face shortage of forage for their animals.

Source of income for most of the households is through sale of livestock and occasionally crops during certain months of the year. The seasonal calendar exercise indicated that men's income sources are from key commodities (such as sales of livestock and crops), produced by the household showing that they are in charge of sales and control of incomes from these commodities. Indeed, the discussion about access to and control of income revealed that men controlled income from sell of crop and livestock. On the other hand, besides household's income from sales of livestock and crops, women earn extra income from wages by participating in activities like weeding, harvesting and threshing, and sales of locally made alcohols.

Table 8: Seasonal activity calendar of Elweya PA, Borana zone

		Months in a Year											As of 28 February 2014	
Main activities		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep	Oct.	Nov.	Dec.	Remark
Rainfall				*	***	**			*	*	**			
Food scarcity		**	***	***	**	*								
Income	M						***							From sale of livestock and crop Income from labour- weeding, harvesting and threshing respectively and sale of local alcohol
	W			**	***	*		***	**					
Expenditure	M			***	***		***							
	W	***	***											
Water availability				**	***	**				**	**			Long and short term rainy season respectively
Forage availability				**	***	**	*	*	*	**	**			
Credit availability														
Holidays								***		***				
Agricultural workload	M	*	**	**	**		*		*	**				
	W			*	*						*			
Non-agricultural work load	M	*	*	*	*	*	*	*	*	*	*	*	*	
	W	*	*	*	*	*	*	*	*	*	*	*	*	
Migration for labour		***	***	***	***	***								
Favourable season for additional work						***	***			***	**	*	*	

Notes: Number of "*" denotes intensity/severity/frequency of activates/events as appropriate; M=Men, W=Women.

In Elweya PA, according to the seasonal calendar, both men and women do not have any credit access throughout the year for their agricultural and livelihood activities. Therefore, their only source of income is from sale of agricultural commodities, locally made alcohols, and wages. In spite of their only involvement in sale of livestock and crops produced by the household for income generation, the number of months of men's (household head) expenditure is more than that of women. Both male and female have responsibility to expense part of their income from different sources to fulfill their household needs such as buying grain (beans, maize), tea etc. Men and women go to the market to buy different items. Men spend on clothes and shoes while wife usually spend on items like coffee, tea, sugar and salt. During December, January and February women have high expenses on food due to the problem of food scarcity. Whereas for men it's during March, April and May in order to buy inputs for agricultural work (seed for sowing) and to pay tax for their asset (cattle, land).

Although, the seasonal calendar indicated that both men and women are overloaded during certain months of the year, February, March, April, and September, with their agricultural work and throughout the year with non-agricultural work. The daily activity clock analysis showed that women spent more time working than men indicating that they relatively bear more workload than men. Women are not only engaged in agricultural activities but also work on other farms as labourers to earn additional income for their household. Migration out of the community for various purposes is seen from January to May in the study area, Elweya PA.

Seasonal activity calendar of Dharito PA, Borana zone

Most households in the study areas both farm and keep livestock to supply themselves with milk and meat, occasionally selling surplus to the local market as in the other site. According to the information from the PRA conducted for Dharito PA, there are two rainy seasons. The first one is from March to May and the second one is from August to October. In this PA, during the rainy months including June and July, availability of water for their livestock and agricultural activities is not a problem. But it is evident that in the remaining months of the year water is scarcely available within the community. In Dharito PA, food is scarce only for three months, January, February and December, as opposed to Elweya PA where the scarcity of food was reported almost for half of the year.

Households within the community of Dharito PA entirely depend on open grazing and cut and carry system to feed their animals. Kids, lambs, calves and sick animals are kept around the homestead. Animals are fed using the cut and carry system. In Dharito PA, August to February is the months that communities face shortage of forage for their animals.

Income for most of the households in Dharito PA comes from sale of livestock and occasionally crops particularly in the month of January. The seasonal calendar exercise indicated that men's income sources are from key commodities (such as sales of livestock and crops), produced by the household showing that they are in charge of sales and control of incomes from these commodities as also seen in Elweya PA. On the other hand, besides household's income from sales of livestock and crops, women in Dharito PA also earn extra income for their households.

Table 9: Seasonal activity calendar of Dharito PA, Borana zone

As of 28 February 2014													
Main activities		Months in a year											Remark
		Jan.	Feb.	Mar	Apr.	May	Jun.	Jul.	Aug	Sep.	Oct	Nov	
Rainfall				***	**	*			*	**	*		
Food scarcity		***	***										*
Income	M							***					
	W			**	***	*		*	**	*			
Expenditure	M	***	***										
	W	***	**										
Water availability				***	**	**	*	***	***	***	*		
Forage availability				***	***	**	*	*					
Holidays						***							***
Agricultural work load	M				***	***	**	**	*	**	*		
	W				***	***	**	*		**	*		
Non-agricultural work load	M												***
	W												
Migration for labour					***								
Favorable season and time constraint													
Favorable season for additional work													
Time constraint		***	***				*	*	**				

Notes: Number of "*" denotes intensity of activities; M=Men, W=Women.

Both men and women have the responsibility to spend part of their income from different sources to fulfill their household needs. Men and women go to the market to buy different items. Men spend on agricultural inputs like seed while women usually spend on household items like coffee, tea, sugar and salt. Participants reported that January and February are months of expenditure for the community.

The seasonal calendar indicated that men and women are equally overloaded with agricultural activities for more than half a year. Moreover, although, during the month of December men do have non-agricultural work overload, women are believed not to be overloaded with non-agricultural work throughout the year by the respondents. However, the daily activity clocks have shown that women have multiple roles and busy throughout the year with productive and reproductive work. In addition to that women also engaged in other income earning jobs to generate extra money

to meet the needs of their household as depicted by the activity calendar analysis. Migration out of the community for various purposes is observed in April in Dharito PA.

Access to and control of resource profile

Gender differences at household level can be manifested through various dimensions. One of such gender differences can be assessed by looking at power dynamics within a household through analysing access to and control over key household resources and who is in charge of managing those resources. The access to and control over resources exercise was conducted in the target community of Elweya PA. Accordingly, the results shown that there are gender differences in control over most of the household resources while access to resources is not as such (Table 10).

Although, women have access to most of the important resources owned by the household, they lack control over key economic resources like deep wells, food crops, livestock, land, cash, farm equipment, training, and house over which men have control. These resources are key and most likely limit women's access to and control over income, which ultimately affects their empowerment. Moreover, decision making with regard to participation in community events including decision making on political issues beyond their household is also in the domain of men. However, it is evident that women have not only access to but also control over animal products like butter and milk.

Table 10: Access to and control over resources by men and women in Elweya PA, Borana zone

Resources	Access		Control	
	Women	Men	Women	Men
Water	√	√	√(household use)	√ (control deep wells)
Firewood	√		√	
Food crops				
Beans	√	√√		√
Maize	√√	√		√
Teff		√		√
Food relief	√	√	√	
Livestock including sheep and goats	√	√		√
Land	√	√	√	√
Remittances				
Cash	√	√√		√
Education/Training	√	√		√
Equipment (farm implements, pangas, knives etc.)	√	√		√
Labour (production and reproduction)	√	√	√	√
Houses	√	√		√
Other resources				
Energy	√√	√	√	
Food	√	√√	√	
Basic needs (shelter etc)	√√	√	√	√
Livestock products	√ (milk and butter)	√ (sell of live animals and meat)	√ (milk and butter)	√ (livestock and income)
Others				
Political power/prestige/decision making	√	√	√	√

Notes: Number of "√" denotes intensity of access and control over resources.

Small ruminant fattening- gendered activities

In Yabello, concerning small ruminant fattening, due to feed shortage and lack of market access pastoralists have no habit of fattening practice for marketing purpose. They simply select and sell better animals within their flock during times of cash needs. As a result, they usually sale animals during rainy season when animals gain better weight due to the availability of forage during this season. Hence, there are no special management practices for animal fattening such as supplementation of agro-industrial by- products provided to animals kept for marketing.

Community profiles of Leku Iggu and Gitilo PAs of Horro district

Brief description of Horro district, the study area

Horro district is located 315 km from Addis Ababa in the Oromia regional state in western Ethiopia. The districts have two major agro-ecologies; highland and midland. Mixed crop livestock agriculture is the mainstay of the farming communities. Livestock species raised in the district include cattle, sheep, horses, poultry, goats, donkeys and mules. Major crops grown in the area are wheat, barely, teff, field peas and faba beans.

According to the information from Horro district office of agriculture, the human population of the district is 103,707 (61,553 males and 42,154 females). There are 12,805 male-headed and 3,236 female-headed households in the district. Total land area of the district is 77,998 hectares of which 6,458 ha (8.3%) is allocated for grazing. The proportion of highland, mid-highland and lowland areas in the Horro district are 49.8%, 48.9% and 1.24%, respectively. The district has one long rainy season that extends from March to mid-October with mean annual precipitation of about 1800 mm (Olana 2006 cited in Duguma 2013). The mean, average maximum and average minimum temperatures of the area are 22°C and 27°C respectively.

Total livestock population of the district is 351,305 heads, of which cattle and sheep accounted for 60% (cattle 43% and sheep 17%). Sheep are the second most important livestock species in the area. Horro sheep is the only breed raised in the district. Mean flock size of the breed was about 15 heads of sheep per household, ranging from two to 70 heads per household. Sheep are owned and managed by smallholder farmers under an extensive production system in which producers follow broad production objectives that are driven more by their immediate subsistence needs than market demands (Duguma, et al. 2013).

24 hours daily activity clocks

In Leku Iggu and Gitilo PAs, Horro district of Oromia region, daily life in the community for most adults' centre on farming and cattle keeping as observed in other target sites. In the target sites, community members farm for both home consumption and sale to local markets. In these particular study villages, communities produce staple food and cash crops such as wheat, barley, teff, faba bean, field pea and potato. These PAs are located in a relatively fertile and well drained plain that has relatively adequate water for agricultural and livestock production in all but the worst drought years. As a result, water in these communities is usually drawn from streams and nearby rivers that are closer and it takes few hours to trek.

The results of our study in the target PAs shows that different members (men, women, boys and girls) of a household do have multiple roles to carry out in a day. Although, most of the activities are common for all and jointly carried out, there are gender specific activities as well (Table 11).

Table 11: Daily activity clock for women during wet and dry seasons, Leku Iggu PA, Horro district

Activity clock, women, wet season, Leku Iggu PA, Horro		
Time	Activities	Hours
6:00–8:00	Wake-up, clean house, prepare breakfast	2
8:00–9:00	Milking, feeding animals	1
9:00–13:00	Weeding and hoeing	4
13:00–14:00	Prepare and serve lunch and coffee	1
14:00–18:00	Prepare firewood and dinner, fetch water,	4
18:00–18:30	Milking	0.5
18:30–20:00	Clean household utensils and wash children	1.5
20:00–21:30	Serving dinner and clean dishes	1.5
21:30–23:00	Churning milk	1.5
23:00–24:00	Clean churning equipment and baking	1
24:00–6:00	Sleep	6

Activity clock, women, dry season, Leku Iggu PA, Horro

Time	Activities	Hours
6:00–8:00	Wake-up, prepare breakfast	2
8:00–8:30	Milking	0.5
8:30–9:00	Take cattle to field	0.5
9:00–15:00	Manage harvested crops	6
15:00–15:30	Fetching water	0.5
15:30–16:30	Collect firewood	1
16:30–16:30	Firewood preparation, baking Injera	2
18:30–19:00	Milking	0.5
19:00–20:30	Clean household utensils and wash children	1.5
20:30–21:30	Serve dinner	1
21:30–23:30	Churning milk and baking for next day	2
23:30–24:00	Clean and fumigate churning milk	0.5
24:00–6:00	Sleep	6

The daily activity clock comparison among women, men and youth shows that women in the study PAs have the shortest time for sleeping hours (about six hours a day) followed by youth (about seven and half hours a day) in both seasons showing that women works the longest hours in these communities. Men and young boys observed having resting/leisure times in a day across the seasons whereas women and young girls do not have at all in the study communities. Women and young girls carryout multiple activities which include both productive and reproductive activities while men and young boys concentrate on few activities related to productive roles. When season changes from wet to dry seasons across the study PAs in Horro district, the work of men shifts from more of crop farming to more of livestock related activities giving men some space of time for leisure. But when the same observation is made for women and youth in these communities, it seems that the works load and number of activities remains the same from season to season across the study communities in the target PA.

Table: 12 Daily activity clocks for men during wet and dry seasons Leku Iggu PA, Horro district

Activity clock, men's group, wet season, Leku Iggu PA, Horro

Time	Activities	Hours
6:00–8:00	Letting out Horses and herding	2
8:00–9:00	Letting out cattle and sheep	1
9:00–9:30	Eating breakfast	0.5
9:30–15:00	Ploughing and weeding	5.5
15:00–16:00	Having lunch, coffee and rest	1
16:00–18:00	Herding animals	2
18:00–18:30	Gather animals to barn	0.5
18:30–19:00	Give supplements to fattened animals	0.5
19:00–20:30	Having dinner and prepare to sleep	1.5
20:30–21:30	Family gathering and checking barn	1
21:30–6:00	Sleep	8.5

Activity clock, men's group, dry season, Leku Iggu PA, Horro

Time	Activities	Hours
6:00–8:00	Letting out Horses and herding	2
8:00–9:00	Letting out cattle and sheep	1
9:00–9:30	Having breakfast and coffee	0.5
9:30–14:00	Fencing, firewood preparation for rainy season	4.5
14:00–15:00	Having lunch and resting time	1
15:00–18:30	Gather animals and herding	3.5
18:30–19:00	Give supplements to fattened animals	0.5
19:00–20:30	Having dinner and prepare to sleep	1.5
20:30–21:30	Family gathering and checking barn	1
21:30–6:00	Sleep	8.5

In the study sites, both men and women cooperate in farming. With regard to cropping, adult men are responsible for preparing the fields primarily with oxen drawn plows and hoes. Plowing with oxen drawn plows is the work of men while hoeing is done mostly by women during land preparation. Moreover, women are particularly responsible for the management of harvesting and harvested crops apart from weeding. While men and young sons primarily do the work

of feeding oxen and plowing, women and young girls mainly do the work of weeding during growing season. With regard to livestock rearing, all household members are involved in the activities of herding and feeding. However, from the analysis of daily activity clocks, it seems that management of small animals including sheep and goats is primarily the work of youth in the household.

Table 13: Daily activity clock for youth during wet and dry seasons, Leku Iggu PA, Horro district

Activity clock, youth mixed group, wet season, Horro, Leku Iggu PA		
Time	Activities	Hours
6:00–7:30	Wake-up and release sheep	1.5
7:30–8:00	Sheep herding (M); clean house and prepare coffee (F)	0.5
8:00–8:30	Prepare breakfast (F), have breakfast	0.5
8:30–15:00	Prepare lunch (F), go market (F), weeding (F&M), Firewood collection (F), animal grazing (M)	6.5
15:00–15:30	Lunch (M&F) and relaxing time (M)	0.5
15:30–18:00	Prepare firewood, oxen feeding, and fencing(M); prepare dinner, fetch water and collect firewood (F)	2.5
18:00–21:00	Gather animals (M), provide dinner, coffee and bake for tomorrow (F), sleep (M)	3
21:00–22:30	Clean equipment	1.5
22:30–6:00	Sleep(F)	7.5
Activity clock, youth mixed group, dry season, Horro, Leku Iggu PA		
Time	Activities	Hours
6:00–7:00	Wake-up, clean house and prepare breakfast and coffee(F); release animals(M)	1
7:00–8:00	Go to school	1
8:00–13:00	Stay at school (schooling)	5
13:00–13:30	Back to home	0.5
13:30–15:00	Have lunch (F&M) and relax (M)	1.5
15:00–18:00	Prepare dinner, fetch water and collect firewood(F); herding cattle, horse, sheep and fencing (M)	3
18:00–20:00	Gather animals to barn (M); serve dinner (F),	2
20:00–23:00	Clean house (F), doing homework and studying (M&F)	3
22:00–6:00	Sleep	7

Concerning the reproductive roles, women and young girls are primarily responsible for household chores in addition to participating in field work. Household activities like fetching water, collecting firewood, cooking, milking, churning and care for children and family members constitutes the primary work of women and young girls although men and young boys participate in firewood collection as depicted by the daily activity clocks analysis.

It is observed that young boys and girls have different roles and responsibilities in the study communities. The reproductive activities like cleaning house, cooking and serving meal, fetching water, and firewood collection are regarded as young girls' task in addition to productive activities like weeding and marketing groceries whereas young boys are responsible for only productive activities such as herding, weeding, feeding oxen, and fencing.

Women work longer in this community as shown by the activity clock analysis. For example, on a typical day in wet season, a woman wakes up at around 6:00 am. Then she cleans the house, prepares breakfast and feeds animals. At around 9:00 am she goes to farm and do the work of weeding and hoeing until 13:00 pm. Then she prepares lunch and coffee and serves the whole family participating on field work. At around 14:00 pm along her way back home, she collects firewood. She then goes to the river to fetch water and prepares food for dinner. In the late evening, she does the work of milking, churning, cleaning and preparing children to sleep. At around 20:00 pm, she prepares and serves dinner and bakes food for tomorrow. Then she goes to bed at around midnight after all the family members.

On the other hand, in a typical day in wet season, men wake-up at around 6:00 am in the morning and let out animals for grazing. After having breakfast, he goes to the farm at around 9:00 am for plowing. After working for about six hours until 15:00 pm, he eats his lunch and coffee on the farm and rests for a while. In the afternoon, he will stay outside herding animals for about two hours and gather animals back to the barn and does the work of feeding in the late evening. Then after he has had dinner, he goes to bed early at around 21:00 pm after inspecting the barn.

In the same season in a typical day, youth (young boys and girls) wake up at around 6:00 am as men and women do. While a young boy herds sheep and goats, the girl cleans the house, prepares breakfast and coffee. From around 8:30 am until 15:00 pm, while a boy participates in weeding and grazing animals, the girl in conjunction with participate in

weeding, collects firewood, goes to the market and prepares lunch. After taking rest for a while, a boy performs the work of feeding oxen and fencing after lunch. The girl continues carrying out activities like water fetching, fire wood collection for dinner preparation without any rest. In the late evening, a boy gathers animals to the barn while a girl prepares dinner, coffee and bake food for the next day. A boy sleeps at around 19:00 pm after having dinner while she continues working until midnight and sleeps later than boys.

Seasonal activities and gender specific changes

In the study PAs, communities are engaged in both farming and keeping livestock. They produce crop and rear animals to supply themselves with crop, milk and meat, occasionally selling surplus to the local market. In order to explore seasonal changes in gender specific activities in Horro district, we employed a seasonal calendar analysis tool. Accordingly, the PRA result shows that Leku Iggu PA has one longest rainy season which begins in March and ends in November. As a result the communities experience the dry season only for three months in which members face water shortage for two months. Similarly Gitlo PA has only one longest rainy season which extends from May to December with three months of dry season. As in Leku Iggu PA, water shortage is not as such a problem except during the three months (March–May) during which participants also reported that forage for their livestock is a problem in both PAs.

According to the seasonal calendar analysis results, during the months of June through September in Leku Iggu and July through November in Gitlo PAs communities face food shortage. However, it is evident from the seasonal calendar that households generate income from their agricultural activities throughout the year part of which is used to fill their food gap through buying from the market. The seasonal calendar exercises indicated that men's income sources are from commodities like sales of crops and livestock produced by the household and from labour used for weeding, harvesting and threshing whereas women generate additional income from locally made alcohol trading. This shows that men are in charge of sales and control of incomes from key household commodities like crop and animals. With regard to expenditure, men and women spend differently in this community as well. While men's expenditure is mainly on agricultural inputs women spend particularly on the purchase of household items.

Table 14: Seasonal activity calendar for Leku Iggu PA, Horro district

As of September 2014														
Main activities		Jan.	Feb.	Mar	Apr.	May	Jun.	Jul.	Aug.	Sep	Oct	Nov	Dec	Remark
Rainfall				√	√	√	√√	√√√	√√√	√√	√	√		
Food scarcity							√	√	√	√				
Income	M	√√	√√	√√	√√	√	√	√	√	√	√	√	√	From sale of crop, animals and labour for weeding, harvesting and threshing
	W	√√	√√	√√	√√	√	√	√	√	√	√	√	√	
Expenditure	M			√	√	√√	√√	√	√	√√				Expenditure for input purchase
	W	√		√	√	√√	√√	√	√	√√				Expenditure for purchase of food items
Water availability		√	√	√			√√	√√√	√√√	√√√	√√√	√√√	√√	Long and short term rainy season respectively
Forage availability		√√	√				√√	√√√	√√√	√√√	√√√	√√√	√√√	
Credit availability		√	√	√	√	√	√	√	√	√	√	√	√	Used by few men members of the community
Holidays					√					√√			√	
Agricultural workload	M	√√	√√	√		√√	√√	√√	√√	√√	√	√√	√√	
	W	√	√√	√		√√	√√	√√√	√√√	√√	√√	√√	√√	
Non-agricultural workload	M				√	√								
	W				√	√							√	Off farm work

Notes: Number of “√” denotes intensity of activities as appropriate; M=Men and W=Women.

Credit services are available to the communities in both PAs during the whole year but participants mentioned that the use of existing credit opportunities is very limited due to several factors and if it is used only few men members of the community are using the services.

It is reported that both men and women are overloaded with agricultural workload throughout the year. However, there is a gender difference in this regard between men and women and across communities. In Leku Iggu PA, it seems that both men and women are equally overloaded with both agricultural and non-agricultural activities throughout the year. But in Gitilo PA, although both men and women are overloaded with agricultural work, men are observed to be overloaded with agricultural workload throughout the year. But, in contrary, women are observed to be more overloaded with non-agricultural workload as compared to men. Migration out of the community as casual labourers in search of off-farm activities during the months of May, October and November is observed in Gitilo PA.

Table 15: Seasonal activity calendar for Gitilo PA, Horro district

As of September 2014														
Main activities		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep	Oct.	Nov.	Dec.	Remark
Rainfall						√	√√	√√√	√√√	√√	√	√	√	
Food scarcity								√	√	√	√	√		
Income	M	√	√√	√√√	√√	√√	√	√	√			√	√	From sale of crop, animals and labour for weeding, harvesting and threshing
	W	√	√√	√√√	√√	√√	√	√	√			√	√	Income from sale of local alcohol
Expenditure	M	√√√		√		√√	√	√	√	√√				Expenditure for input purchase
	W	√√√						√	√	√√	√	√		Expenditure for purchase of food items
Water availability		√	√				√	√√√	√√	√√	√√	√	√	Long and short term rainy season respectively
Forage availability		√	√				√	√√	√√	√√	√√	√√	√√	
Credit availability		√	√	√	√	√	√	√	√	√	√	√	√	Accessed by mostly men
Agricultural workload	M	√√	√√	√√	√√	√√	√√	√√	√	√	√	√	√√	
	W	√√	√√	√√	√√	√√	√	√	√	-	-	-	√√	
Non-agricultural workload	M	-	-	-	√√	-	-	-	-	-	√√	-	-	
	W	√√	√√	√√	√√	√√	√√	√√	√√	√√	√√	√√	√√	
Migration for labour		-	-	-	-	√	-	-	-	-	√√	√√	-	

Notes: Number of "√" denotes intensity of activities as appropriate; M=Men and W=Women.

Access to and control over resources profile

Gender differences within the community can be manifested through various dimensions and one way of assessing this can be by analysing access to and control over these household resources. In order to determine how decisions are made over household resources, participants were asked to list key household resources and how these resources are being accessed and controlled within the household. Accordingly the results show that control over most of the household resources is gendered while access to resources is not as such in both study PAs (Table 16). Although, women have access to most of the important resources owned by the household, they lack control over key economic resources like irrigation water, important food and cash crops, most of the livestock species, land, cash, training, and farm equipment. Moreover, women lack control over of the decision on who should participate in community affairs. However, it is evident from Table 16 that women jointly own few resources and has entire control over specific resources like poultry and animal products except honey.

Table 16: Access to and control over resources, Leku Iggu and Gitilo PAs, Horro district

Resources		Access		Control	
		Female	Male	Female	Male
Irrigation water		√	√	√	√
Firewood		√	√	√	
Food and cash crops	Wheat	√	√		√
	Barley	√	√		√
	Teff	√	√		√
	Faba bean	√	√		√
	Field pea	√	√		√
	Potato	√	√		√
Livestock	Cattle	√	√		√
	Horse	√	√		√
	Mule	√	√		√
	Donkey	√	√		√
	Sheep/goat	√	√		√
	Poultry	√	√	√	√
	Bees	√	√		√
Land		√	√		√
Remittances		√	√	√	√
Cash from sale		√	√		√
Animal products	Animal meat	√	√		√
	Milk	√	√	√	
	Butter	√	√	√	
	Egg	√	√	√	
	Honey	√	√		√
Training		√	√		√
Labour		√	√		√
Farm equipment		√	√		√
House equipment		√	√	√	
House		√	√	√	√
Political participation		√	√		√

Gender relations and division of labour in sheep and goat fattening, Leku Iggu and Gitilo PAs, Horro district

Small ruminants particularly sheep is one of the major livestock component of the community in the study area. In the study community, households traditionally practice fattening of their animals targeting certain months in the year, main holidays, although improved ways of fattening system are not common in the community. In fattening sheep, the question of who does what within the household was assessed using PRA with selected members of the community comprising a group of male, female and youth. Although, men, women and youth participate in fattening practices, there are gender differences in the communities where the PRA study was conducted.

According to the respondents, the work of selection/purchasing and marketing is done solely by men in male headed household. On the other hand, supplemental feed preparation is carried out by women. Most of the sheep fattening activities such as the work of barn cleaning, feeding, watering, health management, and management of income from sale of fattened sheep are jointly carried out by all members of the household. However, watering is mainly done by women whereas herding is the work of young boys. Although marketing is usually done by the men, women also participate in selling the fattened animal. But the decision on how to manage and use the income belongs to men.

Table 17: Gender relations and division of labour in sheep fattening, Ieku Iggu and Gitilo PA, Horro district

Activities	Family members					Remarks
	Husband	Wife	Son	Daughters	Others	
Selection/purchase	√					Selection here involves decision on which animal to fatten
Feed		√				
preparation		√				
Grazing			√√			
Watering		√√	√	√		
Cleaning barn		√√		√		
Washing animal at sale time			√√	√		
Deworming	√√		√			
Marketing	√√	√				
Income management	√					

Small ruminant fattening calendar

In the study PAs, although, households do not practice improved ways of sheep and goat fattening, the traditional way of fattening sheep is common within the two communities where the PRA was conducted. However, there is no special management done for sheep kept for the purpose of fattening except certain management practices which include castration and separating from flock by tying around home for better follow up and feed on locally available feeds like crop straws, home left-overs, plant leaves and grasses by cutting and carry systems. Participants reported that they take about six months to fatten their sheep to make it ready for marketing.

Table 18 shows that the communities within the study area target two main months (April for *Easter* and December for *Christmas* holidays) in which there are known public holidays for fattening. Accordingly, households begin the work of fattening six months prior to these public holidays. For example, in order to get a fattened sheep ready for *Easter* holy day in April, a given household starts shelter preparation (if needed) and feed preparation in October; selection, castration, deworming and start feeding/supplementation in November so as marketing will be done in April. The next cycle will start in June so that the sheep selected for fattening will get ready for marketing in December.

Table 18: Seasonal calendar for sheep fattening, Lekku Iggu and Gitilo PAs, Horro district

Activities	Months in a year												Remark
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
Selection			x										
Shelter preparation		x											
Feed preparation		x											
Castration			x										
Deworming			x										
Feeding/supplementing			x	x	x	x	x	x					
Selling of fattened animal				x				x					Targeted months

Community profiles of Hadinet PA, T/Abergelle district of Tigray region

Brief description of Abergelle district, the study area

T/Abergelle district is located in the central zone of Tigray Regional State, Ethiopia. The study area is about 120 km west of Mekelle, the Capital city of Tigray Region. It is situated at 13° 14' 06" N latitude and 38° 58' 50" E longitudes. The district has a total population of 92,844, with an annual growth rate of 2.7% and a population density of 64.22 people per km² (CSA 2007). Of the total population, 92.43% lives in rural areas, while 7.57% lives in urban areas. The total number of farm households is estimated at 20,211 and average land holding per household ranges from 0.75–2 ha (WTAOoARD 2011 cited in Desta et al. 2013).

The district is characterized as a hot to warm sub-moist lowland (SMI-4) sub agro-ecological zone. The altitude ranges from 1300–1500m above sea, with mean annual rainfall ranging from 400 to 600 mm and rainfall patterns characterized as low, erratic and unpredictable. The mean annual temperature ranges from 28–42°C. There are four seasons in the study Woreda: Meher from September–November, Bega from November–March, Tsedey from March–June and Kiremt from June–September.

There are a total of 264,596 goats, 78,245 sheep, 81,649 cattle, 15,732 equines, 104,496 poultry and 11,220 hives of honey bees (WTAOoARD 2011 cited in Desta et al. 2013). The dominant soil types are vertisols (50% of land area); clay (25%) and silt loam (20%). The total land area is about 144,564 ha (1,445.64km²), of which 29,466 ha is cultivable land, 15,381.7 ha is enclosed and the remaining 99,716 ha is uncultivated (includes bare lands, marginal lands, rocky, roads and very steep and unproductive land) (*ibid*).

The major crops grown in Abergelle district include sorghum, maize, cowpea, groundnut and sesame. Crops are grown mainly for their grains and to make use of crop residues as animal feed and house construction. As yet, there is no irrigation scheme in the study area.

24 hour daily activity clocks

In this PA, daily life for most households centers is on farming and cattle keeping. Majority of the households in the project target community farm for both home consumption and sale to local markets. They produce staple food crops such as sorghum, cowpea, groundnut, maize and teff. However, due to shortage of irrigation water, production of vegetables like onion, cabbage and others is not common in these communities. This PA is one of the drier PAs and water in these sites is scarce and usually drawn from a river that is approximately three to five hours travel on foot away from the villages. However, the situation is worse in dry season and can take up to 8 hours travel per day.

According to the results of the daily activity clocks conducted for the different household members of the community, men have relatively more time for sleeping during the dry season/slack season as compared to women and youth in this community. However, during the wet season all family members have equal time for sleeping which is less than that during dry season as members are relatively engaged in farming activities. Table 19 also shows that the different members (men, women, boys and girls) of a household do have multiple roles to carry out in a day. Although, most of the activities are common for all and jointly carried out, there are gender specific activities as well.

Table 19: Daily activity clocks for women during wet and dry seasons, Hadinet PA, T/Abergelle district

Activity clock, women, wet season, Hadinet PA, T/Abergelle		
Time	Activities	Hours
5:00–6:00	Wake-up	2
6:00–9:00	Collect firewood, fetch water, prepare food	3
9:00–16:00	Hoeing, cultivation, weeding	7
16:00–18:00	Firewood collection, food preparation and animal feeding	2
18:00–19:00	Milking	1
19:00–21:00	Serving dinner	2
21:00–5:00	Sleep	7
Activity clock, women, dry season, Hadinet PA, T/Abergelle		
Time	Activities	Hours
6:00–7:00	Wake-up	1
7:00–9:00	Collect firewood, food preparation	2
9:00–14:00	Farm management, soil and water conservation	5
14:00–18:00	Fetch water	4
18:00–19:30	Collect firewood, food preparation and serving dinner	1.5
19:30–21:00	Animals feeding and milking	1.5
21:00–6:00	Sleep	9

Within this community, adult men are responsible for preparing the fields, primarily with hoes and oxen drawn plows. Plowing with oxen drawn plows is the work of men while hoeing is done mostly by women during land preparation.

Both men and women cooperate in clearing farm land, planting, weeding and harvesting. Women are responsible for preparing and providing food for household members participating in field work in addition to their participation in farming. Moreover, women are particularly responsible for weeding while the whole family participates in harvesting.

In this community, the minimum and maximum time spent on agricultural tasks (animal housing, watering and animal feeding, hoeing, sawing, weeding and etc.) is about seven to nine hours per day for women during growing season while men spent about 11–13 hours a day, although the exact figure varies widely over the agricultural seasons and among communities.

In the study site, women (and young girls) have the responsibility for the daily processing and cooking of grains for household meals. Cooking and collection of firewood is particularly regarded as the work of women and young girls. Although men occasionally support in collecting and chopping firewood, women spent about four hours a day collecting firewood in conjunction with other tasks. Adult women, girls and sons from the age of about 12 are responsible for fetching water, a task that takes roughly up to four hours a day during the dry season as water points are scarce and located faraway from most villages. Water for household chores is usually fetched by women, young girls and boys while water for animals is mostly done by men and young boys. Although it varied widely, women and girls took about three to four hours per day to fetch water while men spent up to four hours watering livestock during the dry season.

Table 20: Daily activity clocks for men during wet and dry season, Hadinet PA, T/Abergelle district

Activity clock, men, wet season, Hadinet, T/Abergelle		
Time	Activities	Hours
4:00–6:30	Wake-up, oxen feeding, breakfast	2.5
6:30–12:30	Plowing	6
12:30–13:30	Lunch	1
13:30–17:30	Plowing	4
17:30–18:00	Oxen feeding and dinner	0.5
18:00–19:00	Preparation for tomorrow's work	1
19:00–4:00	Sleeping	9
Activity Clock, Men, Dry season, T/Abergelle, Hadinet PA		
Time	Activities	Hours
6:00–7:00	Wake-up feeding and watering	1
7:00–9:00	Animals, breakfast	2
9:00–10:00	Clean barn	1
10:00–12:00	Conservation, manure collection and disposal on farm land	2
12:00–14:00	Lunch and resting time	2
14:00–16:00	Watering animals, feed	2
16:00–20:00	Collection and feeding	4
20:00–6:00	Sleep	10

The men and women in this area wake-up early before sunrise particularly during growing seasons in order to feed the oxen early and be able to plow for longer hours since the duration of the rainy season is too short. In order to maximize the use of scarce moisture and catch up with the growing season they do farming quickly as much as possible because farmers know that a short delay in planting time certainly results in no harvest. The other reason why men and women wake-up very early is to fetch water (for both household and livestock purposes) particularly during the dry season as they trek longer distances in search for water points which on average takes about four hours.

Table 21: Daily activity clocks for youth during wet and dry season, Hadinet PA, T/Abergelle, district

Activity clock, youth, wet season, T/Abergelle		
Time	Activities	Hours
4:00–4:30	Wake-up	0.5
4:30–8:30	Feed oxen and preparation for plowing(M)	4
8:30–9:00	Prepare (F) and have breakfast	0.5
9:00–12:00	Plowing (M)	3
12:00–13:00	Lunch	1
13:00–16:30	Plowing	3.5
16:30–19:00	Feeding oxen and fencing (M), milking (M&F)	2.5
19:00–21:00	Dinner preparation(F) and having dinner	2
21:00–4:00	Sleep	7
Activity clock, youth, dry season, T/Abergelle, Hadinet PA		
Time	Activities	Hours
6:00–6:30	Wake-up	0.5
6:30–8:00	Feeding animals and milking(M&F)	1.5
8:00–9:00	Breakfast	1
9:00–17:00	Tracking animal to water points and grazing(M)	8
17:00–18:00	Feeding cows with supplements(F)	1
18:00–19:00	Milking (M&F)	1
19:00–22:00	Dinner and rest time	3
22:00–6:00	Sleep	8

All household members are involved in herding, feeding and grazing animals. However, although feeding additional supplements by cut and carry system is mostly the work of men; women participate in this work as well. Women carry out the bulk of the milking and churning and do it in conjunction with other household tasks. They also cut grass for the stall-fed animals, clean their barns/sheds, and feed the animals particularly the milking cows, calves, small ruminants and sick animals at home which takes various time spans on a daily basis. Men concentrate on few activities related to plowing and oxen feeding whereas women and young children are involved in multiple activities.

Both men and women relatively work longer in this community. During growing season, men and youth wake-up and go to bed early than women. However, women go to bed late because of their multiple responsibilities. For example, on a typical day, a woman wakes up while it is still dark at around 5 am just about one hour after men wake-up. Then she goes to the river or nearby water points to fetch water, prepares firewood and breakfast. She goes to farm at around 9:00 am taking a meal with her for men and does the task of hoeing and weeding up to 16:00 pm with her husband. In the late afternoon, when she returns back from the farm, she prepares food for dinner in conjunction with feeding animals and milking. After working for about six hours, she goes to bed around mid-night after all the family members.

Looking across the seasons, women still get involved in farm and community activities. During the growing season all households cooperate and get involved with crop farming whereas during dry season women also participate in community activities like soil and water conservation as depicted by the activity clock analysis in addition to their multiple reproductive work. It is also evident that the activities for all the household members varies across season and shows that men concentrate on few activities related to farm management which women and youth share as well. Moreover, men are observed to have leisure times in a day while women do not have at all. As the seasons change, the shift in activities from crop to livestock and natural resource management across seasons takes place in this community. When the season changes from wet to dry, the men noted having more time to sleep and rest as compared to women and youth in the study area although the latter have more time for sleeping during the dry season as well.

Seasonal activities and gender specific changes

Most households in T/Abergelle district of Tigray region are engaged in both farming and keeping livestock to supply themselves with crop, milk and meat, occasionally selling surplus to the local market. In order to explore seasonal

changes in gender specific activities in this district, seasonal calendar was used. Accordingly, the PRA results shows that, in this district, there is only one rainy season which begins in June and ends in August (Table 22) affecting the availability of water in the area. Following the rainy season, forage is available only for few months in a year, from June to September. It is during these months that availability of water for their livestock and agricultural activities is not a problem. But it is evident that in the remaining months of the year except September, availability of water for their own consumption and agricultural activities is a problem for the community. Almost in the same months, households also experience food shortage in this community.

With regard to animal feeding, households in the community entirely depend on open grazing and cut and carry system to feed their animals. Kids, lambs, calves and sick animals are kept around houses and fed based on cut and carry system. In the community where the study was conducted, households face critical feed shortage from the month of March to July for their animals which is associated with water availability in the area.

Income for most of the households comes from sale of livestock, honey and occasionally crops during certain months of the year. The seasonal calendar exercise indicated that men's income sources are from commodities like sales of livestock, honey and crops produced by the household showing that they are in charge of sales and control of incomes from these key commodities. On the other hand, in addition to the limited household's income from sale of livestock and crops, women generate income from sale of alcohol made locally.

Table 22: Seasonal activity calendar for Hadinet PA,T/Abergelle district

Main activities		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep	Oct.	Nov.	Dec.	Remark
Rainfall availability		-	-	-	-	-	√	√√	√	-	-	-	-	
Food scarcity		-	-	-	-	-	-	√	√	√	-	-	-	
Income	W	√	-	-	-	-	-	-	-	-	-	√	√	Income from sale of local alcohol
	M	√	-	-	-	-	-	-	-	-	-	√	√	From sale of livestock, honey& occasionally crops
Expenditure	W	√	-	-	-	-	-	-	√	√	-	-	√	Expenditure for purchase of food for critical times
	F	√	-	-	-	-	√	-	-	√	-	-	-	Expenditure for input purchase and animals feed
Water availability		-	-	-	-	-	√	√	√	√	-	-	-	
Forage availability		√	√						√	√	√	√	√	
Credit availability		√	√	-	-	-	-	-	-	-	-	-	√	Mostly from friends or neighbours
Holidays		-	-	-	√	-	√	-	√	-	-	-	-	Work on others farm land as casual labourers
Agricultural work load	M	-	-	-	-	-		√	√	√	√	√	√	"
	W	-	-	-	-	-	√	√	√	√	√	√	√	
Non-agricultural workload	M	√	√	√	√	-	-	-	-	-	-	-	-	
	W	√	√	√	√	-	-	-	-	-	-	-	-	
Migration for labour		-	-	-	-	-	-	-	√	√	-	-	-	For weeding and harvesting

Notes: Number of "√" denotes intensity of item for which it stands for; M=Men,W=Women.

Access to credit services is limited to certain months of the year, December, January and February, for most women, men and youth in this community. If access to credit services is available for them for their agricultural and livelihood activities, in most cases, it is from the informal source that is either from friends or neighbours. Although household's income generation is limited to few months, the number of months that involve expenditure is higher than the number of months in which they generate income. Gender differences for expenditure can be observed from the activity calendar in this community. While purchase of input and animal feed constitutes the major expenses for men, women's entire expense is on food purchase during critical months of the year in this community.

Although, the seasonal calendar indicated no gender differential for both agricultural and non-agricultural work overload, almost both men and women are busy across the year except for May. However, the daily activity clock tells us that women take care of all the household chores in addition to agricultural and non-agricultural works, it can

be noticed that women are busier than men. Migration out of the community as casual labourer in search of off-farm activities during August and September was observed in the community.

Access to and control over resources profile

Gender differences within the community can be manifested through various dimensions. One of such gender differences can be assessed by looking at power dynamics within a household through analysing access to and control over key household resources and who is in charge of managing those resources. Access to and control over resources exercises was conducted in the target community of T/Abergelle district of Tigray region using the modified Harvard model. The result has shown that control over most of household resources is gender difference while access to resources is not as such (Table 23). Although, women have access to most of the important resources, they lack control over key economic resources like irrigation water, livestock, land, training, and farm equipment which most likely limits their access to and control over income which ultimately affects their empowerment. Moreover, women lack control over the decision on who should participate in community affairs in this community as well. In regard to livestock, women have more control over poultry and livestock products.

Table 23: Access to and control over resources by men and women, Hadinet PA, T/Abergelle district

Resources		Access		Control		Management	
		Male	Female	Male	Female	Male	Female
Water(irrigation)		√	√	√		√	
Firewood		√	√		√		√
Food crops	Sorghum	√	√	√	√	√	√
	Cowpea	√	√	√	√	√	√
	Groundnut	√	√	√	√	√	√
	Maize	√	√	√	√	√	√
	Teff	√	√	√	√	√	√
Livestock	Cattle	√	√	√		√	
	Goat	√	√	√		√	√
	Sheep	√	√	√		√	√
	Poultry	√	√		√	√	√
	Donkey	√	√	√		√	√
	Bees/hives	√		√		√	
Land		√	√	√		√	√
Remittance		√	√	√		√	√
Cash crop		√	√	√	√	√	√
Training		√	√	√		√	
Labour		√	√	√	√	√	√
Farm equipment		√	√	√		√	
Household equipment		√	√		√		√
House		√	√	√	√	√	
Political participation		√		√		√	
Animal product	Butter	√	√		√		√
	Milk	√	√		√		√
	Egg	√	√		√		√
	Honey	√	√	√		√	√
Energy(fuel, ...)			√		√		√

Gender relations and division of labour in small ruminant fattening

Small ruminant particularly goats are one of the major livestock component of the community in the study area. In the study community, households traditionally practice fattening of their animals targeting certain months in the year, main holidays, although improved way of fattening system is not common in the community. In fattening goats/sheep, the question of who does what within the household was assessed using PRA with selected members of the community comprising a group of male, female and youth. According to the respondents, most of the goats/sheep activities such

as feeding, watering, castration, housing, cleaning, marketing, and management of income from sale of fattened goats/sheep are in the domain of the men although women and children participate in these activities in conjunction with other household chores. However, watering and barn cleaning is mainly carried out by women whereas income from the sale of fattened goats/sheep is controlled by household head, who is men in the male headed households.

Table 24: Gender relations and division of labour small ruminant fattening, Hadinet PA, T/Abergelle district

Activities	Men	Women	Son	Daughter	Remark
Feeding	√√	√	√	√	
Watering	√	√√√	√	√	Men do watering only if it is at water points
Castration	√				
Housing	√				
Cleaning	√	√√√	√√	√	Mostly done by women
Marketing	√				
Income management	√				

Note: Number of "√" indicates intensity of involvement.

Community profiles of Saka PA, Abergelle district of Amhara region

Brief description of Abergelle district, the study area

Abergelle district is located in the northeastern part of Amahara National Regional State. The district covers a total area of 166,086 hectar. The topography of Abergelle district is 10% plain, 20% undulated, 55% mountainous and 15% valley (AWOA 2012 cited in Abebaw et al. 2013). This shows the limited availability of land for crop agriculture and the potential for small ruminant production. The soil type is a mixture of sand and clay. The district's rivers are important sources of water, for domestic as well as livestock use. Some of these rivers are also becoming sources of water for irrigation. Recently, the Tekeze hydropower dam created an artificial lake. Some 90% of the Tekeze dam's water body is located in the district.

The district ranges in altitude from 1150–2500m. The temperature varies between 23 and 43C°. Annual mean rainfall ranges from 250–750 mm, illustrating the arid/semi-arid nature of the area. Generally, the districts agro-ecology can be classified as lowland (kolla). This covers about 85% of the district, with the remainder classified as mid-altitude (Weinadega).

In 2011/2012, Abergelle district has had a total population of 47,106, of which 23,964 were females and 23,142 males. There are 15 administrative kebeles in the district. With the exception of a few civil servants, almost all households depend on agriculture for their livelihoods. The farming system is mixed crop-livestock, dominated by livestock production (Belay 2008). Due to erratic rainfall and poor soil fertility, crop production is restricted to some pockets that have more fertile soils and moderate levels of moisture (Dereje 2004).

The district covers a total area of 166,086 hectar, of which 35,116 hectar has potential for crop production. Currently about 16,364 hectar of land is under cultivation. The district has about 87,601 and 9,895 hectar of grazing and bush land, respectively. The dominant crops grown are sorghum, sesame, teff and haricot beans. Crop production is mainly rain fed. However, irrigated agriculture is emerging in some areas along the river banks. With regard to livestock, the district has 261,544 heads of livestock, of which 147,557 are goats and sheep (AWOA 2012 cited in Abebaw et al. 2013). Goats producers in the district are exclusively smallholders. According to Abebaw et al. (2013), in Saziba village of Abergelle district, the per capita goatherds of poor, medium and rich farmers numbered 15–30, 60–80 and 200+ heads, respectively.

24 hour daily activity clocks

According to the results of the daily activity clocks exercise, daily life in the study community for most adults centres on farming and cattle keeping. In the target site, communities farm for both home consumption and sale to local markets. They produce staple food crops such as sorghum, teff and sesame. The study site, Saka PA, is among the drier target sites and water in these communities is scarce and usually drawn from a river crossing in the middle of the village that is closer and takes few hours of travel on foot to reach the river.

The study shows that the different members (men, women, boys and girls) of a household do have multiple roles to carry out in a day. Although, most of the activities are common for all and jointly carried out, there are gender specific activities as well.

Table 25: Daily activity clocks for women during wet and dry season, Saka PA, A/Abergelle district

Activity clock, women, wet season, Saka PA, Abergelle		
Time	Activities	Hours
2:00–4:00	Wake-up, fetch water	2
4:00–6:00	Milking, baking, cooking	2
6:00–8:00	Cleaning house	2
8:00–17:00	Hoeing, weeding	9
17:00–20:00	Collect fire wood, cooking and serving	3
20:00–20:30	Milking	0.5
20:30–23:00	Clean house, equipment and children	2.5
23:00–2:00	Sleep	3
Activity Clock, women, dry season, Saka PA, Abergelle		
Time	Activities	Hours
6:00–6:30	Wake-up, fetch water, milking	0.5
6:30–8:00	Cooking and feeding	1.5
8:00–9:00	Clean house	1
9:00–9:30	Prepare breakfast and serving	0.5
9:30–10:00	Prepare coffee and serve	0.5
10:00–15:00	Manage irrigation farm and harvested crop	5
15:00–17:00	Firewood collection	2
17:00–18:00	Goat and cattle feeding	1
18:00–20:00	Prepare and serve dinner	2
20:00–6:00	Sleep	10

According to the results of the daily activity clocks conducted for the different household members of the community, men have by far more time for sleeping during both seasons particularly in wet season as compared to women and youth in this community. However, the results of the exercises reveal that the different members (men, women, boys and girls) of a given family do have multiple roles to carry out in a day. Although, most of the activities are common for all and jointly carried out, there are gender specific activities as well.

Daily life in the community for most adults centers on farming and cattle keeping. Communities in the project target farm for home consumption and rarely sale to local markets. Although communities produce staple food crops such as sorghum, teff and sesame, they also practice irrigation farming on a small scale to produce vegetables like onion, cabbage and the like along the river that crosses the village where the study was conducted. However, as a result of the undulating topography of the area, irrigation is limited to certain places. Hence, production of vegetables is not widely practiced by farmers in the study site.

In the study site, adult men are responsible for preparing the fields primarily with oxen drawn plows and hoes. Both men and women cooperate in farming. Plowing with oxen drawn plows is the work of men while hoeing is done mostly by women during land preparation. While men primarily do the work of feeding animals, plowing and harvesting, women mainly do the work of weeding and storing. Women are responsible for preparing and providing food for household members working in field in addition to participating in field work. Moreover, women are particularly responsible for the management of harvesting and harvested crops apart from weeding. In the study

community, the minimum time spent on agricultural tasks (watering and feeding animals, plowing, sawing, weeding, harvesting, storing, etc.) during growing and dry season is about nine and six hours per day for women and about nine hours and eight hours per day for men respectively, although the exact figure varies widely over the agricultural seasons and among villages.

Table 26: Daily activity clocks for men during wet and dry season, Saka PA, A/Abergelle district

Activity clock, men, wet season, Saka PA, Abergelle		
Time	Activities	Hours
5:00–6:00	Wake-up	1
6:00–7:00	Milking and feeding oxen	1
7:00–8:00	Breakfast	1
8:00–13:00	Feeding oxen and plowing	5
13:00–14:00	Lunch	1
14:00–18:00	Plowing	4
18:00–19:00	Gather animals, milking	1
19:00–20:00	Dinner	1
20:00–5:00	Sleep	9
Activity clock, men, dry season, Saka PA, Abergelle		
Time	Activities	Hours
6:00–6:30	Wake-up	0.5
6:30–7:30	Feeding animals, Milking	1
7:30–12:00	Herding animals, Irrigation farming	4.5
12:00–15:00	Lunch and resting time	3
15:00–17:00	Irrigating, digging stone, herding	2
17:00–18:00	Gather animals to barn and Milking	1
18:00–20:00	Dinner	2
20:00–6:00	Sleep	10

Women including young girls are responsible for daily processing and cooking of grains for household meals as observed in other regions. Cooking is particularly regarded as the work of women supported by young girls and the maximum and minimum time she takes is roughly about four to five hours a day per household respectively in conjunction with other tasks. Women and young girls are responsible for fetching water and collecting firewood. Although it varied widely, girls took about two hours each day to fetch water.

Unlike women and youth in T/Abergelle of Tigray region, women and youth in this PA wake-up very early particularly during growing season because of the fact that they need to feed their oxen so that they can plow longer hours. Plowing period in this area is too short as a result of the short rainy season. In order to maximize the use of scarce moisture and catch up with the growing season, they do farm operation quickly as much as possible because farmers know that a short delay in planting time certainly result in no harvest.

All household members, although not equally, are involved in herding, feeding and grazing animals. However, feeding additional supplements to the cows and weak animals by cut and carry system is mostly the work of the housewife and young girls whereas feeding oxen is the work of men and young boys. Young boys are responsible to feeding oxen and making them ready for plowing. For this reason, they wake up very early and mostly at around 2:00 am so that oxen could be fed well.

Table 27: Daily activity clocks for youths during wet and dry seasons, Saka PA, A/Abergelle district

Activity clock, youth, wet season, Abergelle, Saka PA		
Time	Activities	Hours
2:00–3:00	Wake-up	1
3:00–6:00	Feeding oxen	3
6:00–12:00	Assist ploughing	6
12:00–13:00	Lunch	1
13:00–18:00	Assist ploughing	5
18:00–22:00	Herding and feeding Oxen	4
22:00–22:30	Dinner	0.5
22:30–2:00	Sleep	3.5
Activity clock, youth, dry season, Abergelle, Saka PA		
Time	Activities	Hours
6:00–7:00	Wake-up	1
7:00–8:00	Milking goats	1
8:00–12:30	Schooling	4.5
12:30–13:00	Lunch	0.5
13:00–15:00	Fetch water and collect firewood	2
15:00–17:00	Herding and gathering animals	2
17:00–19:00	Feeding cattle	2
19:00–19:00	Milking goats	1
19:00–20:30	Dinner	0.5
20:30–23:00	Studying and doing homework	2.5
23:00–6:00	Sleeping	7

Women carry out the bulk of the milking and churning although men are also involved in doing the work of milking. Cleaning barns/sheds, feeding the animals particularly the milking cows, calves, small ruminants and sick animals at home is in the domain of women, which takes various time span on a daily bases.

Both women and youth work longer in this community. During growing season, men go to bed early and wake-up later than women and youth since men are the ones who do the work of plowing- work which is regarded as labourious by the community. Women and youth go to bed late and wake-up early because of their multiple responsibilities in addition to preparing work conditions for men. For example, on a typical day, a woman wakes up at around 2:00 am together with young girls and boys who are supposed to feed the oxen. Then she goes to the river or nearby water points to fetch water, prepares firewood and breakfast, milks cows and cleans the house. She goes to farm at around 8:00 am taking a meal with her for the men and does the task of hoeing and weeding up to 17:00 pm. In the late evening, when she returns back from the farm, she gather animals and prepares food for dinner in conjunction with animal feeding and milking. After working for about six hours, she goes to bed around mid-night after all the family members.

Looking across the seasons, women still get involved in farm work although the type of work they are involved in slightly varies. During the growing season all household members cooperate and get involved in crop farming whereas during the dry season women are responsible for the management of both harvested crops and irrigation farming in addition to their multiple reproductive roles. It is also evident that the activities for all household members slightly vary across seasons and shows that men concentrate on few activities related to plowing and animals management which women and youth share as well. Moreover, men observed to have leisure times in a day particularly during the dry season while women do not have any at all. Men have more sleeping time in both seasons than women and youth. However, when the season changes from wet to dry, women are observed having more time to sleep and rest as compared to youth- girls and boys attending school as they take time doing homework and studying during the dry season.

Seasonal activities calendar and gender specific changes

Seasonal activity calendar, Saka village, Abergelle district of Amhara region

Most households in these communities are engaged in both farming and keeping livestock to supply themselves with crop, milk and meat, occasionally selling surplus to the local market. In order to explore seasonal changes in gender specific activities in this district seasonal calendar was used. Accordingly, the PRA results shows that, in this community, there is only one rainy season which begins in July and ends in August (Table 28). Although rain falls for two months only, in these communities, they face shortage of water only during the month of May due to the existence of a river in the community. However, water for their agricultural activities is a critical problem in the area. It is reported that from August to October communities face food shortage in this PA.

With regard to animal feeding, households in the community entirely depend on open grazing and cut and carry system to feed their animals. Kids, lambs, calves and sick animals are kept around the house and fed based on cut and carry system. In Saka where the study was conducted, communities face critical shortage of feed starting from the month of January to July since they experience lack of rain during these months.

Income for most of the households comes from sale of livestock, crop and labour for weeding, harvesting and threshing respectively during November and December. The seasonal calendar exercises indicated that men's income sources are commodities like livestock and crops, produced by the household showing that they are in charge of sales and control of incomes from these key commodities. On the other hand, in addition to the limited household's income from sale of livestock and crops, households generate income from non-farm activities like making local alcohols, tea and injera trading, stone digging and construction. Men usually engage in stone digging and construction whereas women engage in making local alcohols, tea and injera trading to generate extra income.

Table 28: Seasonal activity calendar for Saka PA, A/Abergelle district

													As of November 2014
Main activities	Jan.	Feb.	Mar	Apr.	May	Jun.	Jul	Aug	Sep.	Oct	Nov	Dec	Remark
Rainfall							√	√√					
Food scarcity								√	√	√			
Income	M										√	√	From sale of crop, livestock and labour for weeding, harvesting and threshing respectively
Expenditure	W										√	√	Income from sale of local alcohol
Water availability	M		√	√	√	√							Expenditure for input purchase and animal feed
Forage availability	W		√	√	√	√							Expenditure for animal feed and food
Credit availability	√	√	√	√		√	√	√	√	√	√	√	Water is available for the village almost through the year since it has a river
Holidays								√	√	√	√	√	No formal credit available for the village
Agricultural workload				√√	√	√	√	√√			√		
Non-agricultural workload	M	√	√	√			√	√			√		Men usually engage in stone digging and construction
Migration for labour	W	√	√	√						√	√		Making local alcohols, tea and injera trading
													In search of casual work during times of peak agricultural work

Notes: Number of "√" denotes intensity of activates, availability, times of income and expenditure etc. as appropriate; M=Men, W=Women.

In this particular study site, respondents reported that households in this community have no access to any credit services. If access to credit services is available to them for their agricultural and livelihood activities, it is from the informal source that is either from friends or neighbours. Although household's income generation is limited to few

months, the number of months that involve expenditure is higher than the number of months in which they generate income. With regard to expenditure, men and women spend differently. While men's expenditure is on agricultural inputs and animal feed, women spend on the purchase of food for household consumption and animal feed.

It is reported that both men and women are overloaded with agricultural and non-agricultural activities. However, the daily activity clock tells us that women take care of all the household chores in addition to agricultural and non-agricultural tasks. It is noted that women are busier than the men in both wet and dry seasons. Migration out of the community as casual labourer in search of off-farm activities during August, October and November was observed in the community for additional income.

Access to and control over resources profile, Saka PA, Abergelle districts

Participants were asked to list key household resources and how these resources are being accessed and controlled. Gender differences within the community can be manifested through various dimensions and can be assessed by analysing access to and control over these household resources and who is in charge of managing them. Accordingly the result has shown that control over most of household resources is gendered while access to resources is not as such (Table 29). Although, women have access to most of the important resources owned by the household, they lack control over key economic resources like irrigation water, key livestock, land, farm equipment, and training which most likely limit their access to and control over income that ultimately affect their empowerment. Moreover, women lack control over the decision on who should participate in community affairs.

Table 29: Access to and control over resources, Saka PA, A/Abergelle district

Resources		Access		Control	
		Male	Female	Male	Female
Water(irrigation)		√	√	√	
Firewood		√	√		√
Food crops	Sorghum	√	√	√	√
	Teff	√	√	√	√
	Sesame	√	√	√	√
Livestock	Cattle	√	√	√	√
	Donkey	√	√	√	
	Goat and Sheep	√	√	√	
	Poultry	√	√		√
	Bees/hives	√	√	√	
Land		√	√	√	
Cash		√	√	√	
Training		√	√	√	
Labour		√	√	√	
Farm equipment		√	√	√	
Household equipment		√	√		√
House		√	√	√	
Participation in local politics		√	√	√	
Animal product	Butter	√	√		√
	Milk	√	√		√
	Egg	√	√		√
	Honey	√	√	√	
Energy		√	√		√

Gender relations and division of labour in sheep and goat fattening, Saka PA, Abergelle district

Small ruminant particularly goats are one of the major livestock component of the community in the study area. In the study community, households traditionally practice fattening of their animals targeting certain months in the year,

main holidays, although improved ways of fattening system are not common in the community. In fattening sheep and goats, the question of who does what within the household was assessed using PRA with selected members of the community comprising a group of male, female and youth. According to the respondents, the work of sheltering and marketing is done solely by men in male-headed households. On the other hand, most of the sheep and goat fattening activities such as the work of barn cleaning, feeding preparation and feeding, watering, health management, and management of income from sale of fattened small ruminants are jointly carried out by all the members of the household. However, watering is mainly done by women whereas herding is largely the work of young boys. Although, almost all household members involved in all the activities carried out for fattening sheep and goats, the income generated from sheep and goats fattening activities is under the control of men (Table 30).

Table 30: Gender relations and division of labour in goat production, Saka PA, A/Abergelle

Main activities	Who does what?					Remark
	Male	Female	Son	Daughter	Others	
Sheltering	√					
Barn cleaning	√	√	√	√		
Herding			√	√	√	
Feed preparation	√	√	√	√		Although all members of the household participate in feed preparation, it is primarily the work of men
Feeding	√	√	√	√		
Watering		√	√	√		
Health management	√	√	√	√		
Marketing	√					
Income management	√	√				Women participate in the management of income by being consulted

Note: number of “√” shows the level of involvement.

Small ruminant fattening calendar

Although, households do not practice improved ways of sheep and goat fattening, traditional way of fattening sheep and goats is done in the community where the study was conducted. There is no special management done for sheep and goats kept for the purpose of fattening except certain management practices which include castration and separating from flock by tethering around the home for better follow up and fed on locally available feeds like crop straws, home left-overs, plant leaves and grasses by cutting and carry systems. Participants reported that they usually do these management practices few months prior to the decision to sell the animals. Some of the factors that influence households' decision to fatten and sell the animals include cash requirement for buying agricultural inputs; repay loans received from peers or any other sources and buy foods in time of shortage. Table 31 below shows roughly the timings of each activity involved in household's sheep and goats fattening practices as identified by the participants.

Table 31: Goat fattening calendar in Saka PA, A/Abergelle district

Main activities	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep	Oct.	Nov.	Dec.	Remark
Capital preparation	x	x	x									x	If to be purchased
Buying/raising			x										
Feed preparation										x	x		Mostly crop straws after harvest
Sheltering					x	x							
Feeding		x	x	x	x	x	x						
Health management		x											Deworming
Marketing								x					Targeted month

Community profiles of Ancha Sadicha, Serara Bokata and Hawora Arara PAs, Doyogena districts

Brief description of Doyogena districts, the study area

Doyogena district is located in Kambata Tembaro zone in the Southern Nation, Nationalities, and Peoples' region. The altitude of Doyogena is 1900–2300 meters above sea level (mas) and the agro ecologies of the district are classified as mid-land (30%) and highland (70%). Annual rainfall is 1200–1600 mm and the mean temperature varies 10–16°C (Bureau of Agriculture (BoA) 2012). The district has a total of 17,263.59 hectare of land. Of this, 86% is used for cultivating crops, 11.8% contains forest and bushes, 2% is used for grazing, and 0.2% comprises degraded land.

The district has favorable climatic condition for small ruminant production particularly sheep and known for its cattle and sheep production. According to the data from BoA (2012 cited in Ashenafi et al. 2013), the district has livestock populations of cattle (46,703), sheep (13,822), goats (1,444), horses (6,343) and poultry (27,253).

The major crops produced in the area include *enset*, faba bean, potato and wheat. Farmers also rear different types of animals, including cattle, sheep, goats, horses and poultry. As mentioned by farmers in the study, about 60% of household income is from crop production while 40% comes from ruminants and 10% from other species. Doyogena is a newly established district in the zone.

24 hour daily activity clocks

In these study PAs, daily life in the community for most adults centres on farming and cattle keeping as observed in the other study sites in different regions. In the target sites, community members farm for both home consumption and sale to local markets. They produce staple food crops such as wheat, barley, faba bean, and lettuce; root crops like *enset* and potato; vegetables like onion, cabbage, and others. These PAs are located in a relatively fertile and well drained plain that has relatively adequate water for agricultural and livestock production in all but the worst drought years.

The result of our study in the target PAs shows that different members (men, women, boys and girls) of a household do have multiple roles to carry out in a day. Although, most of the activities are common for all and jointly carried out, there are gender specific activities as well.

Table 32: Daily activity clocks for women during wet and dry season, Ancha Sadicho PA, Doyogena district

Activity clock, women, wet season, Doyogena, Ancha Sadicho PA		
Time	Activities	Hours
6:00–7:00	Wake-up, fetch water	1
7:00–9:00	Clean house, feed animals, prepare breakfast	2
9:00–10:00	Take breakfast to farm, help land preparation, weeding	1
10:00–12:00	Collect firewood and cook lunch	2
12:00–12:30	Clean equipment, wash cloth	0.5
12:30–14:30	Fetch water	2
14:30–15:00	Collect firewood	0.5
15:00–15:30	Collect animal feed	0.5
15:30–16:00	Marketing	0.5
16:00–18:00	<i>Inset</i> cutting and decortication, cooking	2
18:00–18:30	Feed animals	0.5
18:30–19:00	Prayer time	0.5
19:00–22:00	Prepare and serve coffee and dinner, milking	3
22:00–23:00	Family discussion	1
23:00–24:00	Prepare bed and clean house equipment	1
24:00–6:00	Sleep	6

Activity clock, women, dry season, Doyogena, Ancha Sadicho PA

Time	Activities	Hours
6:00–7:00	Wake-up, clean house, milking, feed cattle,	1
7:00–9:00	Cooking and coffee preparation, having breakfast	2
9:00–10:00	Travel to fetch water	1
10:00–12:00	Prepare, watering animals, clean barn	2
12:00–12:30	Lunch time	0.5
12:30–14:00	Collect firewood, wash equipment and cloths	1.5
14:00–15:30	Marketing	1.5
15:30–17:30	Collect animals feeds	2
17:30–12:00	Gather animals to home	0.5
12:00–19:30	Prayer program	1.5
19:30–20:00	Prepare and serve coffee	0.5
20:00–21:30	Cooking and serving dinner, milking,	1.5
21:30–22:30	Family discussion, prepare bed	1
22:30–23:00	Clean equipment	0.5
23:00–6:00	Sleep	7

In the study sites, men, women and youth are found having relatively the same period of time for sleeping during the wet season which is lower than that of the dry season. However, men were found to have more sleeping and leisure time during the dry season as compared to women and youth in all the study PAs in Doyogena district. As it can be observed from the results of daily activity clocks, women, men and youth sleep five to seven hours per day during wet season, whereas four to nine during dry season. Youth observed to sleep for about four hours only during dry season particularly in Serara Bokota PA showing that they work for longer hours in this community as compared to men and women.

Table 33: Daily activity clocks for women in Serara Bokota and Hawora Arara PAs, Doyogena district

Activity clock, women, wet season, Doyogena, Serara Bokota PA		
Time	Activities	Hours
6:00–7:00	Wake up, clean house and self	1
7:00–9:00	Fetch water, prepare coffee and take to farm	2
9:00–12:00	Collect animals feed, milking, weeding, sawing, planting cabbage, inset decortication	3
12:00–13:00	Prepare lunch, firewood collection, take lunch to farm	1
13:00–15:00	Fetch water, collect feed for cattle, collect firewood	2
15:00–18:00	Collect cabbage, cooking, gardening, inset cutting and decortication	3
18:00–19:00	Gather animals to home, feeding, prayer program	1
19:00–21:00	Prepare coffee and inset cooking	2
21:00–23:00	Milking, serve dinner, help children to sleep, prepare bed	2
23:00–24:00	Clean house equipment and self	1
24:00–6:00	Sleep	6
Activity clock, women, dry season, Doyogena, Serara Bokota PA		
Time	Activities	Hours
4:00–4:30	Wake-up, clean house	0.5
4:30–12:00	Travel to river to fetch water	7.5
12:00–14:00	Prepare coffee, lunch and take to farm; have lunch	2
14:00–17:00	Dung collection, feed preparation, collect firewood, transport grain to home	3
17:00–18:00	Cabbage collection, inset cutting and decortication, take grain to mill	1
18:00–19:00	Prepare coffee and cooking	1
19:00–21:00	Dinner preparation and serving, milking, feeding animals	2
21:00–22:00	Make husband and children sleep, clean house and equipment and self	1
22:00–4:00	Sleep	6

In the study sites, adult men are responsible for preparing the fields primarily with oxen drawn plows and hoes. Both men and women cooperate in farming. Plowing with oxen drawn plows is the work of men while hoeing is done mostly by women during land preparation. While men and young sons primarily do the work of feeding animals and plowing, women and young girls mainly do the work of weeding during growing seasons. Women are primarily responsible for household chores in addition to participating in field work. Moreover, based on the PRA discussion, women are particularly responsible for the management of harvesting and harvested crops apart from weeding.

Table 34: Daily activity clocks for men in wet and dry seasons in Ancha Sadicho, Sarara Bokota and Hawora Arera PAs, Doyogena district

Activity clock, men's group, wet season, Doyogena, Ancho Sadicho PA		
Time	Activities	Hours
6:00–7:00	Wake-up	1
7:00–9:00	Feed oxen, have breakfast	2
9:00–13:30	Plowing	4.5
13:30–14:00	Lunch and resting time	0.5
14:00–16:00	Feed preparation for animals	2
16:00–18:00	Help in preparing fuel wood and take rest	2
18:00–20:00	Feeding animals and housing them	2
20:00–24:00	Drink coffee, leisure time and dinner	4
24:00–6:00	Sleep	6
Activity clock, men's group, dry season, Doyogena, Ancha sadicho PA		
Time	Activities	Hours
7:00–8:00	Wake-up	1
8:00–10:30	Feed livestock, have breakfast	2.5
10:30–13:00	Livestock feed preparation (cut and carry)	2.5
13:00–14:00	Lunch time, go to market	1
14:00–15:00	Livestock watering	1
15:00–17:00	Resting time	2
17:00–19:30	Livestock feed preparation, feeding and housing	2.5
19:30–21:00	Leisure time	1.5
21:00–24:00	Coffee and dinner time	3
24:00–7:00	Sleep	7
Activity clock, men's group, wet season, Doyogena, Sarara Bokota PA		
Time	Activities	Hours
6:00–7:00	Wake-up and feed oxen	1
7:00–8:00	Have breakfast	1
8:00–14:00	Plowing and have lunch(on-farm)	6
14:00–15:00	Resting time	1
15:00–19:00	Feed oxen, prepare animal feed for tomorrow	4
19:00–20:00	Have coffee	1
20:00–22:00	Leisure time and discussion with family	2
22:00–23:00	Have dinner	1
23:00–6:00	Sleeping	7
Activity clock, men's group, dry season, Doyogena, Sarara Bokota PA		
Time	Activities	Hours
7:00–8:00	Wake-up, feed livestock	1
8:00–9:00	Breakfast	1
9:00–13:00	Animal feed preparation (cut and carry), watering animals, fencing	4
13:00–14:00	Have lunch	1
14:00–15:00	Resting time	1
15:00–17:00	Social activities, marketing	2
17:00–19:00	Livestock feed preparation and feeding animals	2
19:00–20:00	Coffee and leisure time	1
20:00–22:00	Relax and enjoying with family	2
22:00–23:00	Have dinner	1
23:00–7:00	Sleep	8
Activity clock, men's group, wet season, Doyogena, Hawora Arera PA		
Time	Activities	Hours
6:00–7:30	Wake-up, oxen feeding, go to farm	1.5
7:30–13:30	Have breakfast, Plowing	6
13:30–14:30	Lunch at home	1
14:30–18:00	Fencing, gardening, animal feed preparation	3.5
18:00–19:00	Social and leisure time	1
19:00–22:00	Have coffee, enjoy with family	3
22:00–24:00	Have dinner	2
24:00–6:00	Sleep	6

Activity clock, men's group, dry season, Doyogena, Hawora Arera PA

Time	Activities	Hours
8:00–9:30	Wake-up, feed livestock	1.5
9:30–13:00	Work on homestead activities, herding animals	3.5
13:00–14:00	Lunch time and rest	1
14:00–16:00	Social activities and marketing	2
16:00–18:00	Animal feed preparation, gather animals	2
18:00–20:30	Coffee and leisure time	2.5
20:30–23:00	Dinner	2.5
23:00–8:00	Sleep	9

Men concentrate on few activities whereas women and young children carry out multiple productive and reproductive activities at a time. When season changes from wet to dry across in the study PAs, the work of men shifts from more of crop farming to more of livestock related activities giving men some space of time for leisure. But when the same observation is made for women and youth in these communities, it seems that the works load and number of activities remains the same from season to season across the study communities in the target sites.

Women including young girls have the responsibility for daily processing and cooking of grains for household meals as observed in other regions. Cooking is particularly regarded as the work of women supported by young girls and takes various time spans across the study PAs in this district. Moreover, firewood collection also primarily done by women although men and youth participate in preparing, collecting and chopping it. However, fetching water is purely done by women and youth. Similarly the bulk of milking is under the domain of women in these sites although sometimes done by young girls. Men and young boys are observed not participating in milking activities in these communities.

In the study PAs, communities widely plant and use *enset* for various purposes (i.e. food, animals' feed and for construction). It can be processed and stored for future use such as insurance against unexpected household food shocks. It is processed during wet season. The work of *enset* cutting and processing is primarily done by women, a task which takes two to three hours per day during wet season.

It is observed that young boys and girls have different roles and responsibilities in the study communities. The work of reproductive activities like cleaning house and house equipment, milking, fetching water, *enset* decortication, cooking, serving meals and marketing household items are regarded as girl's task as they are supposed to engage in all the activities women do. Moreover, young girls are also responsible to perform productive activities like animal feed preparation, feeding and weeding although it varies across the study PAs. On the other hand, young boys are responsible for carrying out activities like collecting animal feeds, feeding oxen and livestock, herding, weeding, harvesting and fencing. Young boys are also observed participating in reproductive activities like firewood collection in these communities.

It is evident that the activities for all household members slightly vary across seasons and shows that men concentrate on few activities related to plowing and animals management which women and youth share as well. Moreover, men and youth are observed to have leisure times in a day particularly during the dry season while women do not have at all. Family prayer programs were noted in these communities, a task which takes roughly about one to three hours per day.

Both women and youth seem to work longer in this community. For example, on a typical day in a wet season, a woman wakes up at around 6:00 am. Then she cleans the house, goes to the river or nearby water points to fetch water, prepares coffee and breakfast and milks cows. She goes to farm at around 8:00 am and does multiple activities like animals feed collection, weeding and planting. At around 9:00 am along her way back to home, she collects firewood, cut and process *enset* to prepare lunch. She then brings lunch with herself and goes to farm in order to give lunch to family members working on the farm. After working for a while on the farm, in the late afternoon around 15:00 pm, she returns home collecting firewood along her way. She prepares dinner, gathers animals to the barn and does the work of feeding and milking. At around 19:00 pm, she prepares coffee and serves dinner. After having family prayer program, she prepares beds and then cleans dishes and the house. She goes to bed at around midnight.

On the other hand, on a typical day in a wet season, men wake-up at around 6:00 am in the morning and feed oxen to prepare for plowing. At around 9:00 am, men start plowing for about five hours before a short break. Then prepare

feed for animals and fuel wood, lay the fence and cultivate until 18:00 pm. In the late evening at around 18:00 am, the man goes out to gather animals back to the barn and have leisure time with friends. At around midnight after having dinner, men go to bed just as women do.

Table 35: Daily activity clocks for youth during wet and dry seasons, Ancha Sadicho, Serara Bokota and Hawora Arara PAs, Doyogena district

Activity clock, youth mixed group, wet season, Doyogena, Serara PA		
Time	Activities	Hours
6:00–7:00	Wake-up and wash self	1
7:00–8:30	Clean house, milking, prepare breakfast and coffee(F); feed livestock(M)	1.5
8:30–13:00	Animal grazing, cooking, fetch water and prepare lunch(F); weeding(M)	4.5
13:00–14:00	Lunch time	1
14:00–16:00	Collect animal feed (M); Inset preparation(F)	2
16:00–18:00	Cabbage collection and fetch water; leisure time(M)	2
18:00–20:00	Prepare coffee (F) and prayer time (M&F)	2
20:00–23:00	Serve dinner (F) and family gathering	3
23:00–24:00	Clean equipment, milking and prepare bed(F)	1
24:00–6:00	Sleep	6
Activity clock, youth mixed group, dry season, Doyogena, Serara PA		
Time	Activities	Hours
4:00–8:00	Wake-up and fetch water	4
8:00–9:00	Breakfast	1
9:00–12:00	Grazing and watering animals (M); clean house and cooking(F)	3
12:00–13:00	Lunch time	1
13:00–15:00	Rest time(M); prepare coffee (F)	2
15:00–16:00	Prepare firewood (M); fetch water (F)	1
16:00–18:00	Grazing animals (M); resting time (F)	2
18:00–21:00	Feeding animals (M); prepare food and coffee(F)	3
21:00–23:00	Rest time (M); cooking (F)	2
23:00–24:00	Dinner time	1
24:00–4:00	Sleep	4
Activity clock, youth mixed group, wet season, Doyogena, Hawora Arara PA		
Time	Activities	Hours
6:30–7:30	Wake-up and clean self	1
7:30–8:30	Prepare breakfast and coffee (F); feed animals and prepare fuel wood (M)	1
8:30–13:00	Weeding (M); fetch water, milking, clean house and prepare lunch (F)	4.5
13:00–14:30	Lunch time	1.5
14:30–15:00	Break/resting	0.5
15:00–18:00	Weeding, animal feed preparation, fencing, earthing-up potato (M); inset preparation, Fetch water, cook dinner (F)	3
18:00–19:00	Gather animals to barn and feeding (M); cabbage collection, cooking and coffee Preparation (F)	1
19:00–20:30	Prayer program	1.5
20:30–22:30	Serve dinner (F)& eating (M&F)	2
22:30–24:00	Clean equipment (F)	1.5
24:00–6:30	Sleep	6.5
Activity clock, youth mixed group, dry season, Doyogena, Hawora Arara PA		
Time	Activities	Hours
6:00–8:00	Wake-up, prepare coffee(F); feed animals (M)	2
8:00–9:30	Fetch water and serve coffee(F)	1.5
9:30–13:00	Farmland preparation (M); milking, grazing livestock, clean house& prepare lunch(F)	3.5
13:00–14:00	Lunch time	1
14:00–16:00	Rest (M); fetch water, prepare inset, and collect cabbage(F)	2
16:00–17:00	Collect Inset for livestock (M); marketing(F)	1
17:00–18:00	Gather animals home (M); cooking and coffee preparation(F)	1
18:00–19:00	Feed cattle (M); cooking (F)	1
19:00–22:00	Serve dinner (F), prayer (M&F) and Sleep (M)	3
22:00–23:00	Clean house equipment (F)	1
23:00–6:00	Sleep	7

In the same season in a typical day, youth (young boys and girls) wake up at around 6:00 am and young girls prepare breakfast and coffee while young boys feed animals and help preparing fire wood. At around 8:00 to 9:00 am young boys go to the field to help in plowing and weeding while young girls remain at home and do the work of cleaning the house, fetching water, milking, prepare lunch and do the work of weeding around the homestead. After lunch while young boys continue working in the field including activities like feed preparation, fencing and break for rest, young girls fetch water and prepare *enset* for dinner. In the late afternoon, young boys gather animals to barn while young girls prepare coffee, cook dinner and do the milking until around 20:00 pm. After having dinner together, young girls prepare beds for family members and help in cleaning dishes and both go to bed at around 24:00 pm in the same way men and women do in these communities.

Seasonal activity calendar and gender specific changes

Seasonal activity calendar, Ancha Sadicha, Serara Bokata and Hawora Arara PAs of Doyogena district in SNNP region

As it is observed in the other target sites, most households in these communities are engaged in both farming and keeping livestock. They produce crop and rear animals to supply themselves with crop, milk and meat, occasionally selling surplus to the local market. In order to explore seasonal changes in gender specific activities in Doyogena district, seasonal calendar was used. Accordingly, the PRA result shows that in Ancha Sadicho PA, rain begins in February and ends in October. As a result the community experiences non-rainy seasons for three months during which they face shortage of forage availability. Whereas in the target communities in Serara Bokata and Hawora Arara PAs, there are two rainy seasons observed. The first short rainy season is March to April and the longest rainy season is from June to September. As a result, in these study communities water availability for both household and agricultural activities is not a problem except for only two months, November and December. Similarly forage for their animals is relatively better during these rainy months as well. It is reported that during the months of October and November communities in Ancha Sadicho face food shortage. However, in Serara Bokata and Hawora Arera it is reported that communities face food shortage during the months of May, August and October.

Income for the communities come from sales of livestock, crop and labour from off farm work during February, March and October in Ancha Sadicho PA whereas in Serara Bokata and Hawora Arera communities, income comes from sale of main crops in January but in December and July it is from sale of vegetables- mainly from sale of potato and cabbage. The seasonal calendar exercises indicated that men's income sources are from commodities like livestock and crops produced by the household showing that they are in charge of sales and control of incomes from these key household commodities. On the other hand, in addition to the limited household's income from sales of livestock and crops, households generate income from off-farm activities like making of local alcohols and petty trading. Women involve in making and trading local alcohol as well as petty trading to fulfill household's income gap during critical cash shortages.

Table 36: Seasonal activity calendar for Ancha Sadicho PA, Doyogena district

													As of September 2014
Main activities	Jan	Feb	Mar	Apr.	May	Jun.	Jul	Aug.	Sep	Oct	Nov	Dec	Remark
Rainfall		√	√	√√	√√	√√	√√	√√√√	√√	√			
Food scarcity				√	√					√√	√		
Income	M	√				√						√	Sale of crop and animals
	W	√				√						√	Sale alcohols e of locally made
Expenditure	M	√				√	√						Purchase of input and payment for tax
	W	√				√	√						Purchase of household items for and cloth for children
Water availability	√√	√√	√√	√√	√√	√	√√	√√√	√	√			
Forage availability	√√	√√	√√	√	√	√	√	√√√	√	√			
Credit availability	√√												
Holidays	√√			√								√	
Agricultural workload	M	√	√√	√√√√	√√√	√√√	√√√√	√√			√√	√√	Nov=harvesting; May and June=land preparation, July=planting
	W					√√√	√√	√√					Peak months for women as they prepare inset for 'Meskel' holidays
Non-agricultural workload	M									√√	√		Labour work
	W								√√			√√	Petty trading
Migration for labour		√√	√√							√			Off farm work

Note: number of "√" denotes intensity of availability/scarcity as appropriate; M=Men, W=Women.

Credit services are available to the communities in Ancha Sadicho PA only during the month of January as reported by the respondents whereas in the other two PAs, Serara Bokota and Hawora Arera, it is observed that communities have access to credit services in the month of December in addition to during the month of January. Although household's income generation is limited to few months, number of months that involve expenditure is also found equal to the months in which communities generate income. With regard to expenditure, men and women spend differently. While men's expenditure is mainly on agricultural inputs women spends particularly on the purchase of household items.

It is reported that both men and women are overloaded with agricultural and non-agricultural activities. However, the daily activity clock tells us that women take care of all the household chores in addition to agricultural and non-agricultural roles, it can be noticed that women are busier than men in both wet and dry seasons. Migration out of the community as casual labourer in search of off-farm activities in October was observed in the community for additional income.

Table 37: Seasonal activity calendar for Serara Bokota and Hawaro Arera PA, Doyogena district

As of September 2014														Remark
Main activities		Jan.	Feb.	Mar	Apr	May	Jun	Jul	Aug.	Sep	Oct	Nov	Dec	
Rainfall				√	√√		√√	√√	√√√	√√		√		
Food scarcity						√			√√		√√			
Income	M	√√√						√√√					√√	In January from sale of main crops, but in December and July from sale of potato
	W	√√√						√√√					√√	In January from sale of main crops, but in December and July from sale of cabbage
Expenditure	M	√√						√√					√√	Expenditure on input
	W	√√			√√			√√					√√	Expenditure on household items
Water availability				√	√	√	√	√	√	√	√	√	√	
Forage availability				√	√	√	√			√	√	√	√	
Credit availability		√											√	
Holidays		√			√					√√			√	
Agricultural workload	M	√√	√	√	√	√	√√	√	√√	√	√	√	√√	March and June=potato planting; February= harvesting of potato; October=Enset planting
	W	√√	√	√	√	√	√√	√	√√	√	√	√	√√	June=Enset harvesting for 'Meskel' holiday
Non-agricultural workload	M	√	√	√	√	√	√	√	√	√	√	√	√	Labour work
	W	√	√	√	√	√	√	√	√	√	√	√	√	
Migration for labour											√			For off farm work

Note: number of "√" denotes intensity of availability/scarcity as appropriate.

Access to and control over resources profile in Doyogena PAs

Participants were asked to list key household resources and how these resources are being accessed and controlled by members within the household. Accordingly, the results show that control over most of household resources is gendered while access to resources is not as such (Table 38). Although, women have access to most of the important resources owned by the household, they lack control over key economic resources like irrigation water, important food and cash crops, most of the livestock species, land, cash, training, and farm equipment. However it is reported that women jointly own fewer resources and have entire control over hens, animal products except honey and manure.

Table 38: Access to and control over resources in Ancha Sadicho, Serara Bokota and Hawaro Arera PAs, Doyogena district

Resources		Access		Control Over		Remark
		Women	Men	Women	Men	
Water(for irrigation)		√	√		√	
Firewood		√	√	√		
Food and	Enset	√	√		√	
	Wheat	√	√		√	
Cash crops	F.bean	√	√		√	
	Lettuce	√	√		√	
	Vegetables	√	√	√	√	Jointly owned and controlled
	Potato	√	√		√	
Cattle		√	√		√	
Horse		√	√		√	
Mule		√	√		√	
Donkey		√	√		√	
Goat and sheep		√	√		√	
Hens		√	√	√		
Bees		√	√		√	
Livestock product	Milk	√		√		
	Manure	√	√		√	
	Meat	√	√	√		
	Cheese	√		√		
	Butter	√		√		
	Egg	√		√		
	Honey	√	√		√	
Land		√	√		√	
Remittances		√	√		√	
Cash		√	√		√	
Training		√	√		√	
Equipment	Farm equipment	√	√		√	
	House equipment	√	√	√	√	Jointly owned and controlled
House		√	√	√	√	>>
Labour		√	√		√	
Political participation		√	√	√	√	>>

Small ruminant fattening calendar in Doyogena PAs

In the study PAs, although, households do not practice improved ways of sheep and goat fattening. The traditional way of fattening sheep is common in the three communities where the PRA was conducted. As seen in the other CBB program sites, there is no special management done for sheep kept for the purpose of fattening except certain management practices which include castration and separating from flock by tying around home for better follow up and feed on locally available feeds like crop straws, home left-overs, plant leaves and grasses by cutting and carry systems. Participants reported that they take about five to seven months to fatten their sheep for marketing.

Table 39 shows communities sheep fattening calendar. Communities target three months (April for Easter, September for New Year, and December for Christmas) in which there are known public holidays. Therefore, households begin the work of fattening five to seven months prior to these public holidays. For example, in order to get a fattened sheep ready for Easter holiday in April, a household starts shelter and forage preparation in October; capital preparation, if not from own stock and to be purchased, in November; do the work of purchasing/animal selection, deworming and castration in December; and start feeding and supplementation in January and marketing is done in April. The next cycle starts in May so that sheep selected for fattening get ready for New Year's holiday market in September. Similarly, the third fattening cycle which targets Christmas holiday in December starts around June.

Table 39: Seasonal calendar for sheep fattening, Ancha Sadicho, Serara Bokota and Hawaro Arera PAs, Doyogena district

Activities	Months in a year												Remark
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
Shelter preparation		x											
Forage cultivation		x											
Capital preparation			x										
Selection/purchasing				x									
Deworming				x									
Castration				x									
Feeding/supplementing					x	x	x						
Selling of fattened animal								x					Targeted months

Targeted months =April (Easter holy day), September (New Year); December (*Christmas* holy day).

Community profiles of Habes and G/Kidan PAs of Atsbi district- Tigray region

Brief description of Atsbi district

The Atsbi district is found in the eastern part of Tigray 65 km from Mkelle city. The elevation of the district ranges from 2400 to 3000 meters above sea level at highlands, and from 1800 to 2400 above sea level at mid-highlands.

According to ARDO (2006 cited in Kidanu et al. 2013), the district has a total area of 1223 km². Generally the district has 70 and 30% highland and mid-highland agro-ecologies, respectively. The major types of land use are: 89,185 hectares of forest; 8,742 hectares grazing land; arable 35,305 hectares ; and 13,050 hectares cultivated. The climate ranges from cool to warm. The average temperature is 18 C°. Rainfall is usually intense and short, with an annual average of 668 millimeters.

According to the information from the district Agricultural and Rural Development office (2006), the district has a total population of 112,639, of whom 55,359 (49.2%) are males and 57,280 (50.9%) are females. The urban and rural populations are respectively 9609 and 103,030.

The dominant cereal crops of the area are barley, wheat, teff, maize and sorghum. The important marketable crop commodities are beans, field peas and lentils. The district has a livestock population of 30,588 cows; 82,950 sheep; 15,431 goats; 47,265 poultry; 9416 donkeys; 1333 mules; 79 horses and 54 camels. Despite the large population of livestock, especially sheep, livestock productivity is low. Dairy and horticultural products are important marketable commodities (*ibid*).

24 hours daily activity clocks

The daily activity clocks show that different members (men, women, boys and girls) of a given family in the study areas do have multiple roles to carry out in a day. Although, most of the activities are common for all and jointly carried out, there are gender specific activities in the study communities of Atsbi district as well. In Habes PA of Atsbi district, during wet season, women are primarily responsible for farm activities like furrowing, weeding, sowing/planting which took much of their time. During the same season, men primarily carryout the work of feeding oxen and plowing which took almost all their working hours.

Table 40: Daily activity clocks for youth during wet and dry seasons, Habes and D/Kidan PAs, Doyogena district

PRA women group, wet season, Habes PA		
Time	Activities	Hours
5:00–6:00	Wake up, prepare breakfast	1
6:00–12:00	Furrowing, weeding, providing seeds, feeding animals	6
12:00–13:00	Prepare lunch, feeding animals	1
13:00–18:00	Weeding, cleaning houses, baking Injera	5
18:00–21:00	Cooking, milking, prepare coffee, family gathering	3
21:00–5:00	Sleeping	8

PRA women group, dry season, Habes PA		
Time	Activities	Hours
6:00–9:00	Go to church, fetch water, clean house and barns, prepare coffee and breakfast, wash dishes, send children to school	3
9:00–12:00	Go to market, cooking, washing clothes, decorate house, grind cereals, hair dressing	3
12:00–13:00	Prepare lunch and coffee	1
13:00–18:00	Clean house, prepare dung caves, baking Injera, collect woods, participate in soil and water conservation activities (40 days/year)	5
18:00–20:00	Cooking, prepare coffee, washing children, feeding animals, milking	2
20:00–21:00	Serving dinner	1
21:00–6:00	Sleeping	9
PRA women group, wet season, D/Kidan PA		
Time	Activities	Hours
6:00–7:00	Wake up, clean house	1
7:00–8:30	Prepare breakfast and coffee	1.5
8:30–12:00	Weeding, feeding animals, cooking	3.5
12:00–13:00	Prepare lunch and coffee	1
13:00–18:00	Grinding, baking, washing clothes, fetching water, collecting fire woods, feeding animals and housing	5
18:00–9:00	Cooking and coffee preparation	1
19:00–21:00	Prepare dinner, milking, cleaning, family gathering	2
21:00–6:00	Sleeping	9
PRA women group, dry season, D/Kidan PA		
Time	Activities	Hours
3:00–6:00	Wake up, clean house, fetching	3
6:00–7:00	Go church, prepare breakfast and coffee	1
7:00–8:30	Clean house and barns, feed livestock, send children to school	1.5
8:30–12:00	Cooking, harvesting, attending social ceremonies, work in safety-net programs	3.5
12:00–13:00	Prepare lunch and coffee	1
13:00–18:00	Washing clothes, fetching water, clean houses and barns, feed animals	5
18:00–20:00	Cooking and prepare coffee	2
20:00–21:00	Prepare dinner, milking, washing dishes, family gathering	1
21:00–3:00	Sleeping	6

The work of reproductive activities in this study area is particularly regarded as the work of women and they conduct it in conjunction with other activities. As a result, women are involved in both household chores and farm operations unlike men. Although, in Habes PAs, women seem to have more sleeping time as compared to men during wet season, however the reverse is true for women in G/Kidan PA. Youth in these communities are responsible for harvesting and managing harvested crops and as a result have the shortest time for sleeping during growing season as compared to men and women. When looked for dry season in both study communities, relatively speaking, women work for longer hours as compared to men and youth.

Table 41: Daily activity clocks for men, Habes and G/Kidan PAs, Atsbi district

PRA Men group, Wet season, Habes PA		
Time	Activities	Hours
4:00–6:00	Wake-up and feed oxen	2
6:00–6:30	Breakfast	0.5
6:30–12:00	Plowing	5.5
12:00–13:00	Lunch, oxen feeding and watering	1
13:00–18:00	Plowing	5
18:00–20:00	Feed animals	2
20:00–21:00	Washing and rest	1
21:00–4:00	Sleep	7
PRA Men group, Dry season, Habes PA		
Time	Activities	Hours
4:00–6:00	Wake up, go church	2
6:00–9:00	Breakfast	3
9:00–9:30	Relax	0.5
9:30–13:00	Watering animals	3.5
13:00–18:00	Feeding animals, cleaning barns, having coffee	5
18:00–20:00	Dinner	2
20:00–4:00	Sleeping	8

PRA men group, wet season, Gebre Kidan PA

Time	Activities	Hours
6:00–7:00	Wake up, have coffee and breakfast	1
7:00–12:00	Weeding	5
12:00–12:30	Collection of weeds	0.5
12:30–13:30	Have lunch	1
13:30–18:00	Weeding	4.5
18:00–19:00	Feeding animals	1
19:00–20:00	Washing and dinner	1
20:00–6:00	Sleep	10

PRA men group, dry season, Gebre Kidan PA

Time	Activities	Hours
6:00–7:00	Wake up, feeding oxen,	1
7:00–8:00	Have breakfast and coffee	1
8:00–12:00	Plowing	4
12:00–13:30	Have lunch	1.5
13:30–17:00	Plowing	3.5
17:00–18:00	Feeding animals	1
18:00–19:30	Rest, drink, have dinner and coffee	1.5
19:30–6:00	Sleep	10.5

In both PAs it is observed that women carry out multiple activities simultaneously. Women are involved in both household chores and farm operations unlike men. As a result they do not have leisure time as men in both seasons. Since men concentrate on few activities in a day, they relatively have leisure times (Table 41).

In Habes PA, the minimum and maximum time spent on agricultural tasks (furrowing, weeding, planting, feeding animals, milking, cleaning and etc.) during the growing season is roughly about seven and nine hours per day for women, whereas 11–13 hours per day for men, although the exact figure varies widely over the agricultural season and between villages. In addition to the farm activities women and the young girls are responsible for the daily processing and cooking of grains for household meals and also prepare the harvested grains for storage. Fetching water, collecting firewood and cooking particularly regarded as the work of women and young girls which takes several hours a day.

Table 42: Daily activity clocks for youth, G/Kidan PA, Atsbi district

PRA youth group, autumn season, Gebre Kidan PA

Time	Activities	Hours
4:00–9:00	Wake up, mowing cereals	5
9:00–9:30	Breakfast	0.5
9:30–12:00	Mowing cereals	2.5
12:00–13:00	Have lunch	1
13:00–18:00	Mowing cereals	5
18:00–19:00	Cleaning and washing cloths	1
19:00–20:30	Have dinner	1.5
20:30–4:00	Sleep	7.5

PRA youth group, dry season, Gebre Kidan PA

Time	Activities	Hours
6:00–7:00	Wake up and have breakfast	1
7:00–12:00	Soil and water conservation activity	5
12:00–13:00	Lunch	1
13:00–18:00	Livestock feed preparation and feeding animals	5
18:00–20:00	Have dinner and coffee	2
20:00–6:00	Sleep	10

In general, daily life in both PAs centre on cattle keeping and crop farming. This, of course, depends on the seasons as depicted by the activity clocks- communities mostly busy with crop production activities during growing season whereas in the dry season livestock related activities constitute their primary work. Both men and women cooperate in farming crops and livestock. It is also observed that youth, both boys and girls, participate in both crop and animal

agriculture. They particularly participate in activities like mowing cereals during growing season and animal feed preparation and feeding including soil and water conservation activities during dry season.

Relatively speaking, women seem busy in both communities as they carryout multiple activities at a time for longer hours than other members of the household. For example in Habes PA, on a typical day during the growing season, a woman wakes up at around 5:00 am and prepares breakfast. Early in the morning after feeding animals she goes to farm to perform a task of furrowing, planting or weeding for about six hours until 12:00 pm. Then she return to home to prepare lunch for the family in conjunction with feeding animals left at home. She takes the lunch with her to the farm and continues weeding 18:00 pm. In the late evening after milking she prepares dinner and coffee and serves the whole family and goes to bed at around 21:00 pm.

On the other hand, in the same PA, during the same season, a man typically wakes up earlier at around 4:00 am to feed oxen and prepares for plowing. After having his breakfast, he goes to farm and plow for about six hours before having lunch at around 12:00 pm. In the afternoon, after he fed the oxen, he continues plowing until 18:00 pm. In the late evening, he feeds animals around homestead. Then after having his dinner, he goes to bed at around 21:00 pm relatively having less time for sleeping than that of men in G/Kidan PA.

Seasonal activity calendar and gender specific changes

Seasonal activity calendar for Habes PA, Atsbi district of Tigray region

In the study communities in the target areas of Atsbi district, most households both farm and keep livestock to supply themselves with milk and meat, occasionally selling surplus to the local market as observed in other target sites of CBB. Seasonal calendar was employed in order to explore the seasonality of gender-specific agricultural and non-agricultural workload and income and expenditures; food, water and forage availability; access to credit and holidays.

According to the information from the PRA exercises, June to September is months of the longest rainy season whereas February to April is months of the short rainy season in Habes PA. Although, there are certain months without rain in this PA, availability of water for their livestock and agricultural activities and forage for their animals is not a problem across all the seasons. In Hadinet PA, it is reported that the community experiences food shortage for two months- September and October. With regard to income, source of income for households is coming from sales of livestock and crops during certain months of the year- September to December, which is the same for both men and women. It is also indicated that credit is available to the communities only during the months of May and June.

Although, the seasonal calendar indicated that both male and women are overloaded throughout the year with both agricultural and non-agricultural activities, the daily activity clock analysis showed that women carryout multiple activities and spent more time working than men indicating that women relatively bear more workload than men. Migration out of the community for various purposes is seen from July to September for this PA in Atsbi district of Tigray region.

Table 43: Seasonal activity calendar for Habes PA, Atsbi district

As of January 2014														
Main activities		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Remark
Rainfall			*	*	*		**	**	**	*				
Food scarcity										**	**			
Income (cash and in-kind)	M									***	***	***	**	
	W									**	**	**	**	
Expenditure	M	**	*	*	**	***	**	**	**	**	**	**	**	
	W	***	*	*	*	*	*	*	***	*	*	*	*	
Water availability		*	*	*	*	*	**	***	***	***	***	***	***	
Forage availability		*	*	*	*	*	*	**	**	***	***	***	***	
Credit availability						*	*							
Holidays		**	*	*	**	**	**	*	**	**	*	*	*	
Agricultural workload	M	*	**	**	**	**	***	***	**	***	***	***	***	
	W	*	*	*	*	*	**	**	**	*	***	***	***	
Non-agricultural workload	M	*	*	*	*	***	***	**	**	*	*	*	*	
	W	**	**	*	*	*	**	**	**	**	**	**	**	
Migration for labour								**	***	***				

Notes: Number of “*” denotes intensity of activities.

Community profiles of Molale and Mehal Meda PAs, Menz Gera Midir district of Amhara region

Brief description

Menz Gera Midir district is located 283 km northeast of Addis Ababa on the road to Dessie. The district covers 1,644 km² of land and has a population of 121,676. The topography consists of flat plain (39%), mountain (25%), gorge (12.8%), undulated land (23%) and water bodies (0.2%).

Annual rainfall, which is distributed bi-modally, ranges from 9000 mm per year. The altitude ranges from 2800 to 3100 meters above sea level (masl). The major crops by coverage are barely (25%), wheat (23%), beans (15%) and others (10%). The district is known for its small ruminant population, having about 200,500 sheep and 63,500 goats (Beneberu et al. 2013).

Community profiling was conducted to provide an in-depth understanding of gender relations in the intervention sites in Menz Gera Midir district to aid planning and targeting. The profiles provide characteristics of Mehal Meda and Molale PAs, the two intervention sites for the small ruminant value chain, one of the value chains under the CGIAR's Livestock and Fish research program. Information captured during the process included but not limited to:

- Roles and responsibilities of community members – men, women, boys and girls
- Access to and control of resources
- Seasonal activities calendar and related information

24 hour daily activity clocks

In *Mehal Meda* and *Molale* PAs, daily life in the community for most adults' centres on farming and cattle keeping. Community members farm for both home consumption and sale to local markets. In these particular study villages, community members produce common staple foods such as wheat, barley, and beans in addition to rearing sheep, goats, cattle and other animals.

The result of our study in the target PAs shows that different members (men, women, boys and girls) of a household do have multiple roles to carry out in a day. Although, most of the activities are common for all and jointly carried out, there are gendered specific activities as well (Tables 44–46).

Table 44: Daily activity clock for women during growing and dry seasons in a typical day

Daily activity clock, Molale, women, wet season		
Time	Activities	Hours
5:00–6:00	Wake-up, prepare breakfast	1
6:00–8:00	Feed animals, send children to school	2
8:00–12:00	Weeding	4
12:00–13:00	Watering Animals	1
13:00–14:00	Prepare lunch	1
14:00–18:00	Weeding	4
18:00–19:00	Collect firewood, fetch water	1
19:00–21:00	Prepare dinner, coffee and serve	2
21:00–22:00	Spinning cotton	1
22:00–5:00	Sleep	7
Daily activity clock, Mehal Meda, women, wet season		
Time	Activities	Hours
5:00–8:00	Wake-up, prepare breakfast	3
8:00–8:45	Send children to school, clean house, fetch water, feed animals	0.75
8:45–9:30	Clean barn	0.75
9:30–11:00	Weeding	1.5
11:00–12:00	Water animals	1
12:00–13:00	Prepare lunch and coffee	1
13:00–14:00	Serve lunch and coffee	1
14:00–17:00	Animal grazing	3
17:00–18:00	Water animals and gather to barn, collect fire wood	1
18:00–20:00	Prepare dinner	2
20:00–21:00	Serve dinner	1
21:00–22:00	Spinning cotton	1
22:00–5:00	Sleep	7
Daily activity clock, Molale, women, dry season		
Time	Activities	Hours
6:30–7:30	Wake-up	1
7:30–8:00	Prepare breakfast and send children to school	0.5
8:00–9:00	Prepare coffee, clean house	1
9:00–11:00	Feed and water animals	2
11:00–13:30	Prepare lunch	2.5
13:30–18:00	Grazing animals	4.5
18:00–18:30	Gather animals to barn	0.5
18:30–19:30	Feeding animals (hay), fetch water and collect firewood	1
19:30–21:00	Prepare dinner	1.5
21:00–23:30	Clean household equipment	2.5
23:30–6:30	Sleep	7
Daily activity clock, Mehal Meda, women, dry season		
Time	Activities	Hours
6:00–7:30	Wake-up, clean house, prepare breakfast	1.5
7:30–8:00	Serve breakfast and send children to school	0.5
8:00–9:30	Feed animals, fetch water, clean barn	1.5
9:30–11:00	Lead animals to grazing	1.5
11:00–11:30	Water animals	0.5
11:30–13:00	Prepare and serve lunch	1.5
13:00–14:00	Fetch water and cleaning	1
14:00–17:30	Prepare dinner and spinning	3.5
17:30–18:00	Serve dinner to children and help them sleep	0.5
18:00–21:00	Cotton spinning	3
21:00–21:30	Serve dinner to others	0.5
21:30–22:00	Clean house	0.5
22:00–6:00	Sleep	8

The daily activity clock comparison among women, men and youth shows that women and youth in the two study PAs have relatively shorter hours for sleeping in both seasons indicating that women and youth work longer hours in these

communities than men. Men and young boys have leisure times in a day across the seasons whereas women and young girls do not have any leisure time. Women and young girls carry out multiple activities which includes both productive and reproductive roles while men and young boys concentrate on few activities related to productive roles.

As season changes from wet to dry across the study PAs in this district, the work of men shifts from crop farming to more of livestock related activities giving men more time for leisure. But when the same observation is made for women and youth (particularly young girls) in these communities, it seems that the workload and number of activities remains the same from season to season across the study communities.

Table 45: Daily activity clock for men in a typical day during growing and dry seasons, Molale PA

Daily activity clock, Molale PA, men, wet season		
Time	Activities	Hours
5:00–5:30	Wake-up, feed oxen	0.5
5:30–6:00	Prepare farm equipment, seed and have breakfast	0.5
6:00–13:00	Plowing/ Planting	7
13:00–13:30	Lunch time	0.5
13:30–14:30	Watering oxen	1
14:30–18:00	Plowing/ planting	3.5
18:00–19:00	Feeding oxen	1
19:00–19:30	Cleaning farm equipment	0.5
19:30–20:30	Dinner and coffee	1
20:30–5:00	Sleep	8.5
Daily activity clock, Molale PA, men, dry season		
Time	Activities	Hours
6:30–7:30	Wake-up, feed oxen	1
7:30–8:00	Breakfast	0.5
8:00–9:00	Leisure time	1
9:00–10:00	Watering livestock	1
10:00–12:00	Leisure time	2
12:00–12:30	Lunch time	0.5
12:30–16:00	Leisure time	3.5
16:00–17:00	Herding	1
17:00–18:30	Watering livestock	1.5
18:30–19:00	Gathering animals to barn and feeding hey	0.5
19:00–21:00	Discussion with family	2
21:00–22:00	Dinner and coffee time	1
22:00–6:30	Sleep	8.5
Daily activity clock, Mehal Meda, men, wet season		
Time	Activities	Hours
5:30–6:30	Wake-up, feed oxen	1
6:30–7:00	Breakfast	0.5
7:00–12:00	Plowing	5
12:00–12:30	Lunch, feed and water oxen	0.5
12:30–18:00	Plowing	5.5
18:00–20:00	Feed oxen	2
20:00–21:30	Have coffee and dinner	1.5
21:30–5:30	Sleeping	8
Daily activity clock, Mehal Meda PA, men, dry season		
Time	Activities	Hours
6:00–7:00	Wake-up	1
7:00–9:00	Have breakfast, feed livestock	2
9:00–11:00	Herding	2
11:00–12:00	Watering animals	1
12:00–12:30	Lunch time	0.5
12:30–14:00	Leisure time	1.5
14:00–17:00	Herding	3
17:00–18:30	Gathering to barn and feeding animals	1.5
18:30–21:00	Coffee and leisure time	2.5
21:00–21:30	Dinner time	0.5
21:30–6:00	Sleep	8.5

In these area, both men and women cooperate in farming. All family members share the work of livestock activities although some activities are gendered. Men and young boys primarily do the work of herding, feeding and mange oxen. In addition to herding, women and young girls mainly do the work of animal watering, feeding, and barn cleaning. However, with regard to cropping, adult men are responsible for preparing the fields primarily with oxen drawn plows and hoes, whereas women are particularly responsible for weeding during the growing season.

Table 46: Daily activity clock for youth male and female in a typical day during wet and dry seasons, Molale PA

Daily activity clock, Molale PA, youth, wet season

Time	Activities	Hours
5:30–6:30	Wake-up	1
6:30–9:00	Clean home, fetch water, prepare breakfast (F); herding (M)	2.5
9:00–9:30	Breakfast time	0.5
9:30–12:30	Herding and preparing lunch(F); collecting hey (F&M), plowing(M)	3
12:30–13:30	Prepare coffee (F); lunch time (M&F)	1
13:30–17:00	Herding, clean barn (F), collect hey and feed animals, plowing (M)	3.5
17:00–20:00	Prepare dinner(F); leisure time(M)	3
20:00–21:00	Dinner time	1
21:00–22:00	Spinning cotton (F); Sleep (M)	1
22:00–5:30	Sleep (F)	7.5

Daily activity clock, Mehal Meda PA, youth, wet season

Time	Activities	Hours
6:00–6:30	Wake-up, animal feeding (F)	0.5
6:30–8:00	Clean house, fetching water, prepare breakfast(F)	1.5
8:00–12:00	Plowing (M), prepare lunch and coffee (F)	4
12:00–13:00	Lunch	1
13:00–18:00	Herding (F), plowing (M)	5
18:00–20:00	Feeding animals(M); prepare dinner and coffee(F)	2
20:00–21:30	Dinner	1.5
21:30–22:30	Leisure time(M); baking (F)	1
22:30–6:00	Sleep	7.5

Daily activity clock, Molale PA, youth, dry season

Time	Activities	Hours
6:00–7:00	Wake-up (M&F), fetch water and clean house (F); herding (M)	1
7:00–8:00	Prepare breakfast and serve(F)	1
8:00–9:00	Herding (M); break (F)	1
9:00–12:30	Plowing(M); prepare lunch and coffee (F)	3.5
12:30–13:30	Lunch	1
13:30–18:00	Plowing (M); herding and prepare dinner (F)	4.5
18:00–20:30	Feed animals(M); continue preparing dinner (F)	2.5
20:30–21:30	Diner time	1
21:30–23:30	Break time for both and boys sleep	2
23:30–24:00	Clean dishes(F)	0.5
24:00–6:00	Sleep (F)	8

Daily activity clock, Mehal Meda, youth, dry season

Time	Activities	Hours
7:00–7:30	Wake-up(M&F), clean house(F)	0.5
7:30–8:30	Fetch water and prepare breakfast(F), feeding(M&F)	1
8:30–9:00	Breakfast	0.5
9:00–10:00	Clean barns (F), herding (M)	1
10:00–12:00	Herding (M), prepare lunch	2
12:00–13:00	Prepare coffee(F), lunch (M&F)	1
13:00–18:00	Herding (M), irrigating (M&F), cleaning, spinning (F)	5
18:00–20:00	Animal feeding (M), prepare dinner and coffee (F)	2
20:00–22:00	Leisure time (M), spinning cotton (F)	2
22:00–23:00	Sleep (M); cotton spinning(F)	1
23:00–7:00	Sleep	8

Concerning the reproductive roles, women and young girls are primarily responsible for household chores in addition to participating in field work. Household activities like fetching water, collecting firewood, cooking, milking, churning, cleaning and care for children constitutes the primary work of women and young girls as depicted by the daily activity clock analysis.

It is observed that young boys and girls have different roles and responsibilities in the study communities. The reproductive activities like cleaning house, cooking and serving meal, fetching water, and firewood collection are regarded as young girls' task in addition to productive activities such as weeding, feeding and herding animals whereas young boys are responsible for only productive activities such as herding, feeding animals and plowing.

Relatively speaking, women and young girls work longer in this community as shown by the activity clock analysis. For example, on a typical day in the wet season in Molale PA, a woman wakes up between 5:00 to 6:00 am. Then she prepares breakfast, feeds animals and prepares children for school. At around 8:00 am she goes to farm and do the work of weeding for about four hours. Between 12:00 am and 13:00 pm, she waters animals and goes back home to prepare lunch. In the afternoon, she continues weeding until 18:00 pm. In the late evening, she collects firewood and fetches water for coffee and dinner preparation. After serving dinner between 19:00 to 21:00 pm, she continues spinning cotton and goes to bed at around 22:00 pm.

On the other hand, in the same season and community, men wake-up between 5:00 and 5:30 am to feed oxen. Until breakfast is prepared, he prepares farm equipment and seeds and have his breakfast at 6:00 am. Then he goes to the field to plow/plant and stays on the farm for about seven hours and have lunch at around 13:00 pm. In the afternoon, after watering the oxen, he continues plowing/planting for three and half hours. In the late evening, he feeds oxen and cleans farm equipment and is back home at 19:30 pm. After having dinner and coffee he goes to bed at around 20:30 pm earlier than women and young female.

In the same season in a typical day, young boys and girls wake up between 5:30 and 6:30 am. Young girls clean the home, fetch water, and help in preparing breakfast while young boys release animals and herd them. After having breakfast, both cooperate in herding and collecting hay for feeding livestock. Throughout the day, as young girls concentrate on domestic work supporting her mother, young boys concentrate on feeding and plowing. Young girls go to bed at around 22:30 pm later than young boys after doing the work of spinning cotton.

Seasonal activities and gender specific changes

In the study PAs, communities are engaged in both farming and keeping livestock. They produce crop and rear animals to supply themselves with crop, milk and meat, occasionally selling surplus to the local market. Seasonal calendar analysis was conducted in order to explore seasonal changes in gender specific activities in Menz Gera Midir district. Accordingly, the PRA result shows that both study areas have two rainy seasons with the longest rainy season which begins in June and ends in September. Although, communities experience the dry season for five months, water shortage is not as such a problem except during the two to three months (May to July) during which participants also reported that forage for their livestock is a problem in both PAs.

Participants noted that communities experience prolonged food shortage in both PAs (from November to July and from October to April in Molale and Mehal Meda respectively). However, it is evident from the seasonal calendar that households generate income from their agricultural activities in most of the months part of which is used to fill their food gap through buying from the market. Men's income sources are from commodities like sales of sheep and horticultural crops whereas women generate additional income throughout the year from the sale of local drinks, chickens and animal products such as eggs and butter. This indicates that men are in charge of sales and control of incomes from key household commodities like livestock/sheep and cash crops. With regard to expenditure, men and women spend differently in this community as well. While men's expenditure is mainly on agricultural inputs, tax and holidays, women spend particularly on the purchase of household items, children's schooling and holidays.

Table 47: Seasonal calendar, Molale PA, Menz Gera Midr, mixed group

														As of January 2015
Activities	Months in a Year													Remark
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug		
Rainfall pattern	√					√	√	√		√	√√	√√√		
Food scarcity	√	√										√		
Income	M	√		√	√√	√√√		√√√		√			Sale of sheep, horticultural crops, Local drink, chicken eggs and butter	
	F	√√√	√√√		√√			√√√		√√				
Expenditure	M	√√√	√√√	√	√	√√√		√√	√√	√	√		Input, tax, and holidays exp. School, household item, grain, holidyay exp.	
	F	√√√	√√√	√	√√	√	√	√√√	√	√	√	√		
Water availability		√√√	√√√	√√	√√	√	√	√			√√√	√√√		
Forage availability		√√√	√√√	√√	√√	√	√	√				√		
Credit availability					√	√	√			√	√			
No. of holidays		√			√	√		√			√	√		
Agri. Work load	M	√√√	√√√	√√	√	√		√	√	√√	√√	√√		
	F		√√√								√√√	√√√		
Non-agri. Work load	M													
	F		√√√		√√√	√√√				√√	√√		Firewood collection and beverage making	
Labour migration		√	√	√										

Credit services are available to the communities in both PAs for three to five months in a year. However, participants mentioned that the use of existing credit opportunities particularly by women and youth is very limited due to several factors such as lack of collaterals.

It is reported that men are overloaded with agricultural workloads almost throughout the year in these communities. But, in contrary, women are observed to be more overloaded with non-agricultural workload as compared to men in some of the months of the year (Table 47). Migration out of the community as casual labourers in search of off-farm activities during the months of September to November and September to January was observed for Molale and Mehal Meda respectively.

Table 48: Seasonal calendar, Sena amba PA, Menz Gera Midr district

														As of January 2015
Activities		Months in a year												Remark
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
Rainfall pattern		√					√√	√√	√		√	√√√	√√√	
Food scarcity		√								√		√	√	
Income	M		√	√	√√√	√√		√√		√				Sale of sheep, horticulture local drink, hen and egg, butter, horticulture
	F	√	√	√	√	√	√	√	√	√	√	√		
Expenditure	M	√√			√	√√		√√	√√√	√√	√√√	√√√	√√√	Input, tax, and holidays exp. School, household item, grain, holyday exp.
	F	√	√	√	√√√	√	√	√	√√√	√	√	√	√	
Water availability		√	√	√	√	√	√	√	√	√	√	√	√	
Forage availability		√	√	√	√	√	√	√	√				√	
Credit availability		√										√	√	
No. of holidays		√			√	√		√						
Agri.Work load	M	√√	√√	√√	√√√	√√	√√		√√	√√	√√√	√√	√√	
	F	√√			√√						√√	√√	√√	
Non-agri. workload	M													
	F		√√		√√								√√	
Labour migration		√√	√√	√√√	√√√	√√								

Small ruminant activities: Fattening calendar

The traditional way of sheep fattening is common in the two PAs. There is no special management done for sheep kept for the purpose of fattening except certain management practices such as castration and separating from flock by tethering them around the homestead for better follow up and are fed on locally available feeds like crop straws, home left-overs and grasses. Farmers do not know any improved way of sheep fattening in these areas. Participants reported that they take a minimum of three months to fatten their sheep for marketing.

In doing the work of fattening sheep, communities within the study area target three main months such as December for Christmas, April for Easter and end of August for New Year and Meskel festivals (Table 49). For this purposes, households begin the work of fattening three months prior to these public/festive holidays. For example, in order to get a fattened sheep ready for Christmas in December, a given household starts feed preparation in September; shed preparation, selection, castration, feeding/supplementation and watering in October so as marketing will be done in April (Table 49). The next cycle will start in January and June so that the sheep selected for fattening will get ready for marketing in April and end of August respectively.

Table 49: Sheep fattening calendar, Molale and Mehal Meda PAs, Menz Gera Midr, mixed group

Activities	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Selection		√			√					√		
Feed preparation	√	√	√	√	√	√	√			√	√	√
Barn construction		√			√					√		
Feeding and watering		√	√	√	√	√	√			√	√	√
Marketing				√				√				√

* Done 6-12 months before start of fattening; minimum of three month is required to fatten sheep in the study areas.

Access to and control over resources profile

In order to know how decisions are made over resources at household level, participants were asked to list key household resources and how these resources are accessed and/or controlled. Accordingly the results show that control over most of the household resources is gendered while access to resources is not as such in both study PAs (Table 50). Although, women have access to most of the important resources owned by the household, they lack control over key economic resources like irrigation water, farm equipment and labour. Moreover, women lack control over of the decision on who should participate in extension services and community affairs. In contrary, it is evident from Table 50 that women have entire control over livestock and poultry products in these communities.

Table 50: Access and control, Molale and Mehal Meda PAs, Menz Gera Midir district

Resources		Access		Control	
		Men	Women	Men	Women
Irrigation water		√	√	√	
Firewood		√	√		√
Crop	Wheat	√	√	√	√√
	Barley	√	√	√	√√
	Bean	√	√	√	√√
Food relief		√	√	√	√√
Livestock	Cattle	√	√	√	√
	Horse	√	√	√	√
	Mule	√	√	√	√
	Donkey	√	√	√	√
	Goat	√	√	√	√
	Sheep	√	√	√	√
	Hens	√	√	√	√
Land		√	√	√	√
Remittance		√	√	√	√
Cash		√	√	√	√
Training		√	√	√	√
Household equipment		√	√		√
Farm equipment		√		√	
Labour		√	√	√	
House		√	√	√	√
Energy	Fuel	√	√		√
	Charcoal	√	√		√
Cooked food		√	√		√
Livestock product	Milk	√	√		√
	Butter	√	√		√
	Cheese	√	√		√
	Wool	√	√		√√
	Meat	√	√		√
	Skin and hides	√	√		√
	Eggs	√	√		√
Asset	Radio	√	√	√	√
	TV	√	√	√	√
Extension services	Extension services at farm gate and community participation	√	√	√	

Gender relations and division of labour in sheep fattening, Molale and Mehal Meda PAs, Menz Gera Midir district

Small ruminants particularly sheep is one of the major livestock component of the community in the study areas. In fattening sheep, the question of who does what within the household was explored using gender analysis tools with selected members of the community separated in groups of men, women and youth (male and female). Although, men, women and youth participate in fattening practices, it is gendered to a greater extent in the communities.

According to the respondents, the work of deworming and removing hair is solely done by men whereas shelter preparation, feeding trough construction, castration, and marketing are shared by men and young boys. On the other hand, fattening activities such as feeding, watering and barn cleaning is mainly carried out by women while the work of selection for fattening and income management is shared jointly by men and women. Youth boys and girls are primarily engaged in feed collection and herding. However, watering is mainly done by women.

Table 51: Who does what in sheep fattening, Menz Gera Midr district

Activities	Men	Women	Son	Daughter	Others
Feed preparation			√√	√	
Shelter preparation	√√		√		
Constructing feeding trough	√√		√	√	
Selection for fattening	√	√			
Castration	√√		√		
Deworming*	√				
Feeding	√	√√	√	√	
Watering	√	√√√		√	
Barn cleaning		√√		√	
Herding			√	√	
Removing hair	√				
Marketing	√		√		
Income management	√	√			

* Mostly done at vet clinic.

Community profiles of Gaad and Dhegah-Jabis PAs in Shinelle district of Somali region

Brief description

Shinelle is one of the nine administrative zones of the Somali region. Lying at the northern most edge of the region, it borders with Djibouti in the north, Somalia (Somaliland) to the north east, Jijiga zone to the southeast, Dire Dawa and Oromia Regions in the South, and the Afar Region in the West. In this district, although, there is trade and a small amount of crop production practices in the southern part, people entirely depend on livestock production.

The altitude of the zone varies between 950 and 1350 metres above sea level. There are two rainy seasons—gu and karan. The gu falls between late March and late May, while the karan season is between late July and late September. In recent years, the karan has been more reliable. Annual rainfall is 500–700 millimeters. In far north and northwest, rainfall is well below this range. Rainfall is higher in the southern foothills and much lower in the northern plain (Hassen et al. 2013).

24 hour daily activity clocks

In Gaad and Dhegah-jabis PAs, daily life in the community for most adults' centres on livestock rearing. In these study areas, crop farming is not practiced unlike in other L&F research sites. In both PAs, communities keep livestock for both home consumption and sale to local markets. In these particular study villages, communities keep common livestock species such as goats, sheep, camel and donkey.

The result of our study in the target PAs shows that different members (men, women, boys and girls) of a household have multiple roles to carry out in a day. Although, there are some activities which are common to all household members and jointly carried out, there are gendered specific activities as well (Table 52 and 53).

Table 52: Daily activity clock for women, men and youth in a typical day during growing seasons, Gaad and Dhegah Jabis PAs, Shinelle district

Activity clock, women, wet season, Gaad, Shinelle		
Time	Activities	Hours
6:00–6:30	Wake-up and pray	0.5
6:30–7:00	Prepare breakfast	0.5
7:00–8:00	Release goats/sheep	1
8:00–9:00	Milking goats and cows	1
9:00–9:30	Fetching water	0.5
9:30–10:30	Cleaning	1
10:30–17:00	Collect feed, fire wood and feeding young small ruminants	6.5
17:00–18:00	Prepare dinner	1
18:00–19:00	Feeding young small ruminants	1
19:00–22:30	Milking small ruminants and serving dinner	3.5
22:30–6:00	Sleep	7.5
Activity clock, men, wet season, Gaad, Shinelle		
Time	Activities	Hours
5:00–6:00	Wake-up and pray/salat time	1
6:00–9:00	Milking and herding camel	3
9:00–10:00	Breakfast	1
10:00–12:00	Collect firewood, engage in social issues	2
12:00–13:00	Lunch and prayer/salat time	1
13:00–15:00	Resting time/chewing chat	2
15:00–15:30	Prayer/salat time	0.5
15:30–19:00	Milking and herding camels	3.5
19:00–22:00	Dinner and family time	3
22:00–5:00	Sleep	7
Activity clock, youth, wet season, Gaad, Shinelle		
Time	Activities	Hours
5:00–6:00	Wake-up and prayer/salat time	1
6:00–7:00	Have breakfast (M&F), feed animals(F)	1
7:00–11:00	Fetch water(F), fencing, look after animals(M)	4
11:00–12:00	Prepare food(F), assist family(M)	1
12:00–16:00	Collect firewood(F), herding small ruminants and cattle (M)	4
16:00–20:00	Assist family	4
20:00–5:00	Sleep	9
Activity clock, women, wet season, Dhagah Jabis PA, Shinelle district		
Time	Activities	Hours
5:00–5:30	Wake-up and pray	0.5
5:30–6:00	Prepare breakfast	0.5
6:00–9:00	Milking and related activities	3
9:00–11:00	Cleaning house and shelters for small ruminants	2
11:00–11:30	Fetching water	0.5
11:30–17:00	Collect grasses/feed for house construction/animals	5.5
17:00–18:00	Firewood collection	1
18:00–19:00	Prepare dinner	1
19:00–21:00	Milking goats/cows and managing kids and lambs	2
21:00–22:00	Baking and preparing children for sleeping	1
22:00–22:30	Clean house and organize household	0.5
22:30–5:00	Sleep	6.5

Activity clock, men, wet season, Dhagah Jabis-Shinelle district

Time	Activities	Hours
5:00–6:00	Wake-up, prayer/salat time and breakfast	1
6:00–10:00	Camel herding (monitoring, watering etc.)	4
10:00–12:00	Collect firewood, prepare charcoal	2
12:00–13:00	Prayer/salat and lunch time,	1
13:00–15:30	Leisure time, chewing chat, social discussions	2.5
15:30–16:00	Prayer/salat time	0.5
16:00–18:00	Leisure time and social discussions	2
18:00–18:30	Prayer/salt time	0.5
18:30–20:00	Dinner, managing and milking camel (monitoring, breeding and supplementary feeding, watering etc.)	1.5
20:00–21:00	Family discussion	1
21:00–5:00	Sleep	8

Activity clock, youth, wet season, Dhagah Jabis, Shinelle district

Time	Activities	Hours
6:00–7:00	Wake-up, prayer/salat time and cook breakfast(F) and have breakfast(M&F)	1
7:00–8:00	Release animals(M&F)	1
8:00–11:00	Look after animals, bring home for milking(M), milking(F)	3
11:00–12:00	Take animals for grazing(M), cook food(F)	1
12:00–18:00	Herding(M), marketing and assist mother(F)	6
18:00–21:00	Dinner, family discussion and leisure time(M&F)	3
21:00–6:00	Sleep	9

The daily activity clock comparison among women, men and youth shows that women in Dhagah Jabis PA have relatively shorter hours for sleeping in dry seasons indicating that women work longer hours in this community than men and youth during dry seasons. However, the same comparison for Gaad PA shows that there is no as such difference between men and women except for youth who have more sleeping hours. Men and youth are observed to have leisure times during the wet season whereas women do not have at all. Women and young girls carryout multiple activities which includes both productive and reproductive roles while men and young boys concentrate on few activities related to productive roles and community politics. Although, most of the reproductive activities are the work of women and young girls, milking camels is solely done by adult men in both study sites. All the management activities related to camel is believed as the work of adult men. Men are largely the decision makers for livestock production particularly that of camel, and are in charge of general herd management. Their management responsibilities require constant market visits and presence in gathering places to obtain information on pasture conditions, water availability and incidence of diseases. Men make initial decisions on when to move, where to move to, and who to herd the stocks. In these communities, camels are regarded as economically and culturally very important livestock species. They provide key livelihood services in the area. Likewise, small ruminants also importantly contribute much to the livelihoods of people in the study areas and women entirely depend on these animals for their living.

On the other hand, women do all the domestic activities and are supported by young girls. During the wet season, fire wood collection, feed collection and feeding sheep and goats are the main activities that take much of women's time which is much worse in Gaad PA in dry season. Relatively speaking, women do much work and as a result have less leisure and sleeping time particularly in Dhagah Jabis PA during wet season. Young girls share most of the domestic tasks with their mothers. Young boys provide support to the family in herding livestock species such as goats, sheep and cattle in addition to assisting the family with other chores while at home.

As season changes from wet to dry in both PAs, water and animal feed are hardly available in both communities. The daily activity clock of men and women for the dry season confirms this fact (Table 53). Women spend much of their time in search of water, feed and feeding goats and sheep while men in Gaad PA invest their entire time in search of water and pasture for camels during this season. Since water becomes scarce in dry season in the area, usually households travel long distances with their animals in search of water and feed. During the FGDs, the men groups pointed out that in the dry season, although social issues are their responsibilities to carry out, they do not engage in

such issues due to lack of time. Though, the workload for all household members seems less in wet season, women's workload and number of activities relatively remain the same from season to season in the study sites.

Table 53: Daily activity clock for women, men and youth during dry season in a typical day, Gaad and Dhega Jabis PAs, Shinelle district

Activity clock, women, dry season, Gaad, Shinelle district		
Time	Activities	Hours
5:00–6:00	Wake-up and prepare breakfast	1
6:00–9:00	Fetching water	3
9:00–17:00	Feed collection and feeding small ruminants	8
17:00–18:00	Prepare dinner	1
18:00–19:00	Feeding small ruminants	1
19:00–21:00	Managing small ruminants	2
21:00–5:00	Sleep	8
Activity clock, men, dry season, Gaad, Shinelle district		
Time	Activities	Hours
5:00–5:30	Wake-up, pray/salat time and breakfast	0.5
5:30am–20:00pm	Search for water and pasture for camels	14.5
20:00–20:30	Lunch and prayer/salat time	0.5
20:30–21:00	Family discussion	0.5
21:00–5:00	Sleep	8
Activity clock, youth, dry season, Gaad, Shinelle district		
Time	Activities	Hours
5:30–6:00	Wake-up and prayer/salat time, let out animals	0.5
6:00–11:00	Collect animal feed(F), labour work(M)	5
11:00–12:00	Cook food(F), labour work(M)	1
12:00–17:30	Off-farm activities like selling milk, petty trading (F)	5.5
17:30–19:30	Feed animals(F), gather animals(M),	2
19:30–21:00	Assist family and participate in family issues(M&F)	2.5
21:00–5:30	Sleep	8.5
Activity clock, women, dry season, Dhagah Jabis PA, Shinelle district		
Time	Activities	Hours
5:00–5:30	Wake-up and pray	0.5
5:30–6:00	Breakfast	0.5
6:00–18:00	Fetch water, feed for small ruminant and firewood collection	12
18:00–19:30	Prepare food and serving	1.5
19:30–20:00	Baking for the next day	0.5
20:00–22:00	Other household activities	2
22:00–5:00	Sleep	7
Activity clock, men, dry season, Dega Jabis-Shinelle district		
Time	Activities	Hours
5:00–6:00	Wake-up, prayer/salat time and breakfast	1
6:00–11:00	Collect firewood, prepare charcoal and social work(like PSNP)	5
11:00–18:00	Search for water and pasture for camels	7
18:00–18:30	Prayer/salat time	0.5
18:30–23:00	Family discussions	4.5
23:00–5:00	Sleep	6
Activity clock, youth, dry season, Dhagah Jabis, Shinelle district		
Time	Activities	Hours
6:00–7:00	Wake-up and cook breakfast(F) and have breakfast(M&F)	1
7:00–8:00	Release animals(M&F)	1
8:00–11:00	Feed animals, cook food, clean house(F), take animals to water sources(M)	3
11:00–15:00	Leisure time (M&F)	4
15:00–17:00	Collect firewood (M&F), cook(F), rest(M)	2
17:00–18:00	Gather animals back home(M), tethering (F)	1
18:00–21:00	Assist family and family discussions(M&F)	3
21:00–6:00	Sleep	9

In general, in the study sites both men and women cooperate in livestock farming. In contrary to other L&F target sites, most of the work related to livestock activities such as feed collection, milking and cleaning barns are gendered based on species of livestock. Men do all the work related to camels while women are responsible for majority of the activities related to goat, sheep and cattle. Young boys primarily do the work of herding, watering, fencing and collecting firewood. Young girls support most of the work done by women such as collection of feed, feeding, barn cleaning and marketing of milk. Moreover during dry season, young girls involve in petty trading while young boys do wage labour activities that can generate some sort of income.

Concerning the reproductive roles, women and young girls are primarily responsible for household chores in addition to participating in livestock activities. Household activities like fetching water, collecting firewood, cooking and care for children and family members constitutes the reproductive work of women and young girls although men and young boys participate in fetching water and firewood collection as depicted by the daily activity clocks analysis. It is observed that young boys and girls have different roles and responsibilities in the study communities. The reproductive activities like cleaning house, cooking and serving meal, fetching water, and firewood collection are regarded as young girls' task in addition to productive activities like feed collection, feeding and milk marketing whereas young boys are responsible for only productive activities such as herding, feeding animals and fencing.

On a typical day in wet season, a woman in Dhagah Jabis wakes up at around 6:00 am. Then she prays, untie goats and sheep. At around 9:00 am she milks goats/cows and goes to river/water point to fetch water and back home to do the work of cleaning sheds and house. Then she goes back to the field in order to collect green fodder to feed young small ruminants, collect firewood and stay up to 17:00 pm in the field. In the late evening, she prepares dinner for the family and feed young small ruminants at homestead. After serving dinner and doing the work of milking up to 22:00 pm she goes to bed at midnight after all members of the family.

On the other hand, in Gaad PA, in a typical day in wet season, men wake-up a bit earlier between 5:00 and 6:00 am in the morning and pray. Then milk camel up to 9:00 am. After having breakfast, he goes to collect firewood and engage in community/social issues until noon. After having lunch, he conducts salat (Islamic prayer) and rests for about three hours chewing chat until salat time arrives at 3:00 pm. In the late afternoon, he herds and milks camels until he goes to bed at around 17:00 pm after having dinner. However, during the dry season, he spends the whole day with camels looking for feed and water.

In the same season in a typical day in Gaad PA, youth (young boys and girls) wake up at around 6:00 am as men and women go for prayer/salat. While young boys release and herd sheep and goats, the girl assist their mothers in preparing breakfast, milking and feeding small ruminants. From around 7:00 am for about 4 hours, young girls travel to fetching water whereas young boys stay in the field herding small ruminants. At noon, girls return home to assist with cooking food and then go for firewood collection until late evening. After having dinner, both go to bed at around 20:00 pm.

Seasonal activities and gender specific changes

In the study PAs, community members are entirely engaged in livestock keeping. They rear animals to supply themselves with milk and meat, occasionally selling surplus to the local market and traders crossing the border. In order to explore seasonal changes in gender specific activities in Shinelle district, we employed a seasonal calendar analysis tool. The analysis shows that Gaad and Dhagah Jabis PAs have two rainy seasons. The short rainy season falls between late March and April while the long rainy season is between late July and early September for Gaad and late August for Dhagah Jabis (Tables 54 and 55). The remaining months constitutes dry season. As a result the communities experience prolonged dry season in which communities face water shortage for over half of the year for their home use and livestock during which participants indicated that forage availability is a problem as well. However, recently the regional government has installed pull water pumps in both PAs which are used by the community for household consumption.

Moreover, during the months of November through March in Gaad and September through February in Dhegah Jabis PAs, communities face food shortage. However, it is evident from the seasonal calendar that households generate income from their livestock activities in few months of the year which is used to fill their food gap through buying from the market. The seasonal calendar exercises indicated that men's and women's income sources are mainly from commodities like sales of small ruminant and livestock products supported by additional income generated from petty trading by women. With regard to expenditure, men and women expend differently in this community. While men's expenditure is mainly on self e.g. buying chat and sugar, women expend particularly on the purchase of household items such as food.

Table 54: Seasonal calendar, Gaad PA, Mixed group.

As of February 2016

Activities	Months in a Year												Remark
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
Rainfall pattern								√			√√		
Food scarcity			√	√	√	√√√	√						
Income	M								√		√		Sale of milk and small ruminant
	F								√		√		
Expenditure	M	√		√	√	√	√		√	√	√		Expenses on sugar and chat
	F	√	√	√	√	√	√		√	√	√		Expenses on food
Water availability	√						√	√		√	√	√√	
Forage availability*	√							√	√	√	√√	√	
No. of holidays	√									√			
Agri. Work load	M	√	√	√	√	√	√	√	√	√			Livestock rearing
	F	√	√	√	√	√	√	√	√	√	√	√	
Non-agri.**	M	√		√	√	√		√	√	√		√	Social affairs
Workload	F	√						√	√	√		√	
Labour migration			√	√	√								Migration is rare and mostly by youngsters

*During the dry season, men move from place to place in search of water and pasture for their animals usually for camels. They travel up to 8km per day. However, in wet season, children are the main actors in herding animals as they can find water and pasture around the homestead and nearby. Tap water is available for family consumption.

** Non-agricultural workload during the dry season includes social affairs, mostly for men.

Credit services are not available to the community members at all in both PAs. It is reported that both men and women are overloaded with livestock related activities throughout the year. Searching of feed and water for livestock during the dry season are the activities that burden men and women most. Migration of adult men and women out of the community is not common in the study areas. However, migration of the youth in search of off-farm activities as casual labourers in November through January is reported only in Gaad PA.

Table 55: Seasonal calendar, Dhegah-Jabis PA, Shinelle district

As of February 2016

Activities	Months in a year												Remark
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
Rainfall pattern*								√	√		√	√√	
Food scarcity	√	√	√	√	√√	√√							
Income	M										√	√	Selling of milk and animals
	F										√	√	
Expenditure	M	√									√		Holyday expenditures
	F	√									√		Holyday expenditures
Water availability**	√	√	√	√	√	√	√	√	√	√	√	√	
Forage availability	√						√	√	√	√√	√√	√√√	During rainy season only
No. of holidays	√										√		
Agri. workload	M	√	√	√	√	√	√	√	√			√	
	F	√	√	√	√	√	√	√	√	√	√	√	
Non-agri. workload	M	√			√	√	√		√	√	√	√	
	F	√							√	√	√	√	
Labour migration													migrate with their animals but for labour is not common

* But very erratic and not consistent across years.

**The village has installed pulled tape water for family consumption, but water for livestock is a problem.

Access to and control over resources profile

Gender differences within the community can be manifested through various dimensions and one way of assessing this is by analysing access to and control over resources at household level. In order to determine how decisions are made over productive resources, participants were asked to list key household resources and how these resources are being accessed and controlled within the household. Accordingly, the results show that access to and control over household resources is not gendered as such in the study areas (Table 56). However, although, key household resources such as camel, cattle and land/house are jointly owned and controlled, the relative decision power of men is more than that of women particularly in Gaad PA. Moreover, decision on participation in training, community meetings and labour allocation is entirely made by men in both PAs.

Table 56: Access and control, Gaad PA and Dhegah-Jabis PAs, Shinelle district

Resources		Access		Control	
		Men	Women	Men	Women
Gaad PA, Shinelle district					
water		√	√√	√	√√*
Firewood			√		√
Food		√	√	√	√√
Livestock	Cattle	√	√	√√	√
	Camel	√	√	√√	√
	SR(sheep and goat)	√	√	√	√
Land/house		√	√	√√	√
Remittance		√	√	√	√√
Cash		√	√	√	√
Training		√	√	√	
Household equipment		√	√	√	√
Labour		√	√	√	
Livestock product	Milk	√	√	√	√√
	Meat	√	√	√	√
	Skin and hides	√	√	√	√
Community participation		√	√	√√	
Dhegah-Jabis PA, Shinelle district					
Water		√	√	√	√
Firewood		√	√		√
Food		√	√	√	√
Livestock	Camel	√	√	√	
	SRs	√	√	√	√
	Donkey	√	√	√	√
Land		√	√	√	
Remittance		√	√	√	√
Cash		√	√	√	√
Training		√	√	√	
Housheold equipment		√	√	√	√
Labour		√	√	√	
House		√	√	√	√
Camel cart		√	√	√	
Livestock product	Milk	√	√	√	√
	Meat	√	√	√	√
	Skin and hides	√	√	√	√
Community participation		√	√	√	

*relative decision power over resources.

Small ruminants, particularly goat, is one of the main livestock species kept by the community in the study area. Households traditionally practice fattening of their animals targeting certain months of the year, mainly holidays. Improved ways of fattening are not common in the communities. In fattening sheep, the question of who does what within the household was explored using the gender analysis activity profile with selected members of the community, organized in separate groups of men, women and youth. Although, men, women and youth participate in fattening practices there are gender differences in the communities.

According to the respondents, the work of selection/purchasing, health monitoring, marketing and income management is jointly done by men and women in male headed households. On the other hand, shelter preparation, deworming and castration is solely done by adult men with the support of young male. Whereas supplemental feed preparation, feeding, watering and shed cleaning is entirely regarded as the work of women supported by young female children. Although, health monitoring is common work, it is mainly done by women whereas herding is the work of young male children.

Activities	Men	Women	Son	Daughter	Others
Selection for fattening	√	√			
Shelter preparation	√√		√		
Feed preparation		√√√			
Feeding and watering		√√√		√	
Deworming	√√				
Castration	√√				
Barn cleaning		√√√		√	
Herding			√		
Health monitoring	√	√√			
Marketing	√	√			
Income management	√	√			

As mentioned by participants, households do not practice improved ways of goat and sheep fattening across the study areas. Under the traditional fattening system, although there are no special management practices done for the animals, certain practices such as castration and deworming are carried out by households. Participants reported that they take about five to six months to fatten their goat/sheep and make them ready for the market.

As to the Table 58, communities within the study area target January (Christmas and Epiphany) and July (Eid-al-Fitr) in most cases for goat/sheep fattening. Households begin to identify and start the work of fattening five months prior to these targeted months. For example, in order to get a fattened sheep ready for Eid-al-Fitr holyday in July, a household starts selection and feeding/supplementation in March and the remaining activities from April through July so that the sheep selected for fattening will be ready for marketing in July.

[illegible]

Conclusion

From the PRA and gender analysis exercises, the results show that women, men, and youth have multiple roles and these roles are gendered. We also observed that men, women and youth have activities in common which they jointly carry out. Women engaged in various activities, including productive, reproductive and community, which roles compromise their available time for resting. Similarly, young girls have less time to rest. This implies that innovations that help reduce women's workload release some portion of their time for their engagement in economic activities and community affairs, which helps them improve their access and control over benefits and income.

Differences in gender roles in livestock production are not only observed among regions but also farming systems. Women undertake multiple activities while men concentrate on a few, which depicts the complexity of women's roles and the cultural norms that govern allocation of roles and the social expectations. Women have a primary role in dairy related and small ruminant management activities across the study sites particularly in the drier areas. Interventions that aim at improving livestock production in general and small ruminant production in particular, are more likely to help women to benefit more from their work in the short run and improve their economic decision making position over productive resources at household level in the long run.

Designing technical solutions to men and women farmers' problems must take into account household members' time and labour allocation, and access to and control of resources, women's mobility and cultural norms. Innovations which work best in one area may not work in other areas due to the differences in household members' involvement, shaped by the gender roles specific to farming systems. Different technologies impact men, women, boys and girls differently hence need to be assessed to avoid unintended consequences. In these target sites, women need to be key partners in the development of small ruminant value chains beside men. The small ruminant value chain development initiative will maximize its impact if youth are also considered as important actors.

However, it was noted that men and women conceptualize access to and control over resources differently within and across the study sites. For example, for women in Horro, having access to extension services is when they can obtain information at farm gate while for women in Menz, it must include participation in community trainings and extension visits or demonstrations. This could imply that, in Horro, it is culturally acceptable for women not to go outside home for participation in any extension activities. However, this needs further investigation in order to understand how these gender concepts are articulated by men, women and youth across the L&F target sites based on social and ecological variations. This is one of the important factor to be considered in technology/innovation development, adaptation and dissemination.

The results of this rapid assessment suggest that site specific detailed gender analysis is essential in order to identify gender based constraints and opportunities so that the benefits of all communities' members are ensured through better targeting and avoid unintended consequences.

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Annex

Sample photos taken during the PRA exercises



Group discussion with women in Dharito PA



Plenary session with men, women and youth In Dharito PA.



Group discussion with men in Dharito PA.



Group discussion with male and female youth in Elweye PA.



FGDs with men, women, youth and mixed groups, Shinelle district.



Women traveling to fetch water and men to water his camel, Shinelle district.

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