Household dynamics within livestock-owning smallholder households: India, Ethiopia, Tanzania

A GALVmed Monitoring and Evaluation Study

GALVmed

Protecting Livestock – Improving Human Lives

Executive summary

This was a large study involving over 2,800 smallholders from 14 locations in India, Ethiopia, and Tanzania. The purpose of the study was for GALVmed to build a better understanding of the household dynamics at play within livestock-owning smallholder households. In particular, it would afford a clearer focus on the issue of gender and livestock. This was considered necessary since previous GALVmed Monitoring and Evaluation studies (focusing on issues such as vaccine adoption, livestock productivity, etc.) have collected gender disaggregated data, but at a fairly limited level of detail. These wider studies have suggested highly variable trends and patterns in terms of livestock ownership and management between adult males and adult females. It was therefore considered necessary to undertake a one-off specialised gender study. This would provide the opportunity to drill considerably deeper into this topic of gender / household dynamics and to provide GALVmed with a much more detailed picture than is afforded through its standard livestock health related studies.

The study design focused on a series of questions being put to smallholders for each species class of livestock (poultry, small ruminants, and large ruminants). Pigs were also included in the surveys; however, their prevalence in sampled households was much lower than other species. These questions covered aspects of ownership, care, husbandry, and general management and the respondents were asked who in the household was responsible for these activities. The questionnaire structure allowed for multiple responses (i.e. allowed for shared responsibility of specific activities within the household).

The results of the study revealed clear and illuminating trends. The widely held generalisation that certain species of livestock are the preserve either of men or of women appears to be a misleading over-simplification. Both genders are active participants in the care of all species and children can also play an important role in the upkeep of household livestock. There are, however, clear trends in the activities undertaken by both men and women and, while these vary somewhat across geographies, they can be broadly described as:

- For poultry: women perform more labour in the 'daily chore' type activities (e.g. feeding, cleaning housing etc.) but the input of men increases substantially for the 'management and money' type activities (e.g. buying medicines / vaccines, when to sell / slaughter, what to do with poultry income etc.). This increase in involvement by men does not eclipse that of women in these 'management and money' type activities. Rather, it suggests that poultry production is a shared household enterprise, albeit with a higher level of input by women.

- For small ruminants: noticeable geographical variations exist, although the general trend of more input by men in the 'management and money' categories than in the 'daily chore' activities continues. In the Ethiopian and Tanzanian study areas, this input by men eclipses that of women, but, even here, approximately 30 – 60% of households have active input by women in 'management and money' activities. Again, as a generalisation it seems fair to consider small ruminant production as a shared smallholder household enterprise.

- For large ruminants: noticeable country variations exist but the perception that women have very little input or say in cattle (aside from milking) is shown to be largely inaccurate. Again, only in the Tanzanian study area is the role of women in 'management and money' activities eclipsed by men. As a generalisation, it seems fair to consider large ruminant production as a shared smallholder household enterprise, albeit with a higher level of input by men.

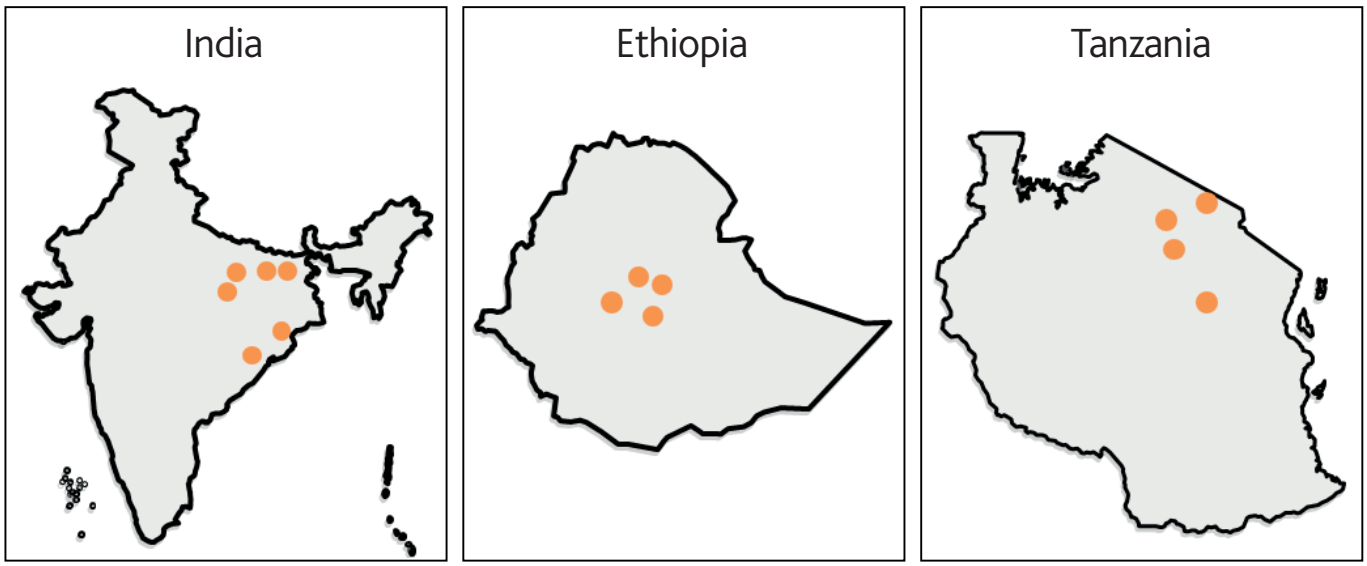
The evidence from this study supports the theory that livestock is best considered as a shared household enterprise rather than a specific male or female smallholder undertaking. It also highlights the dangers of collecting disaggregated gender data at a shallow or simplified level (as is often necessarily the case when the focus of the study lies elsewhere on animal health and productivity issues). GALVmed will seek to make this study widely available to donors and grantees active in gender / women empowerment work and where this data may be helpful in informing the objectives of this work.

Contents

Background

This GALVmed Monitoring and Evaluation (M&E) study explored whether there were discernible trends or patterns in the dynamics of livestock ownership and care in smallholder households in India, Ethiopia, and Tanzania.

Map of project areas, India, Ethiopia, and Tanzania



India	Ethiopia	Tanzania
Uttar Pradesh Chandauli Robertsganj Bihar Darbhanga Samastipur Odisha Mayurbhanj Phulbani	Adama Debre Birhan Fiche Hagere Hiywet	Babati Karatu Kiteto Longido

There is little consensus in the literature around how smallholder households interact with livestock and, more specifically, the gendered factors underpinning livestock-owning smallholder households. This is mainly due to a dearth of research on smallholder livestock keeping and scant information on women's roles in particular (Zezza et al, 2016; Jumrani & Birthal, 2015; Njuki & Sanginga, 2013; Kristjanson et al., 2010).

The underlying assumption is that women in smallholder production systems around the developing world are responsible for different systems of livestock production to men with women playing the main role in poultry, small ruminant, and micro-livestock production as well as processing and marketing of milk and milk products (FAO, 2013; GIZ, 2013; Okali, 2011; Hill, 2009). Women and girls purportedly play a limited role in livestock-related household decision-making processes (FAO, 2013; Hill, 2009).

The available literature documents some differences in the roles and responsibilities of men and women within different livestock sub-sectors, and between different regions, countries, and communities. Other than these differences, widely-accepted trends in the distribution of household roles and responsibilities based on sex and age (FAO, 2013) include:

1. For poultry, gender and age are understood to be important factors with children playing a role in day-to-day management along with their mothers or other female family members (Okali, 2011).
2. For small ruminants, especially goats, milking, and milk processing are understood to be carried out mainly by women and, to some extent, children (Okali, 2011).
3. For large ruminants, women are understood to be primarily involved in the production and processing of milk and milk products while men are mainly responsible for slaughtering and the commercialisation of these products (FAO, 2013).

However, GALVmed's wider studies have seen highly variable trends and patterns in livestock ownership and management across Africa and South Asia. These studies suggest that the gender divide may not be as clear-cut as widely understood. On the other hand, it is recognized that gender was not the critical focus of such studies.

In response, GALVmed carried out a one-off specialised study to better understand smallholder household dynamics and to provide GALVmed with in-depth information on patterns of livestock ownership, daily chore activities, management and money activities, and other livestock-related roles within the smallholder household. The study was implemented through questionnaire-based surveys that were rolled out with individual households and groups of smallholders in India, Tanzania, and Ethiopia from September 2016 to January 2017.

Study design

Questionnaire

The group and household survey questionnaires (Appendix 1 – Group Survey; Appendix 2 – Household Survey) comprised a set of closed-ended questions, which were tested and revised in a pilot study. The questionnaires were designed to capture which member of the household (male head of household, female head of household, adult male or female, boy or girl child, or other non-family member) performed which livestock-related responsibilities. The questionnaire structure allowed for multiple responses (i.e. allowed for shared responsibility of specific activities within the household).

The questionnaires were written in English and translated into local languages. The household survey questionnaire took between 45 and 60 minutes, while the group survey took 15 to 20 minutes, to administer. Data was spot checked before being entered via open source data collection software into a customised database.

Sampling

Non-probability convenience sampling was used to carry out 240 Rapid Group Surveys and 303 Household Surveys with smallholders across 14 locations in India, Tanzania and Ethiopia for a sample size of 2823 respondents. Sample sites were purposively selected based on logistical suitability, prevalence of smallholders, and variety of livestock including poultry, small and large ruminants.

For the household survey, a combination of random walk and quota sampling techniques were used to select households in the villages, screening along the way to determine eligibility for participation (i.e. they had to keep livestock). Additionally, a randomly selected sub-sample of two households per group survey were surveyed to spot check for consistency of the group survey results. The sampling strategy maintained a balanced quota of male and female respondents and of households keeping different types of livestock.

For the group survey, traditional authorities were approached to help identify smallholders for inclusion in the study. Purposive sampling was used to select 10 – 15 respondents per location balancing gender and livestock ownership.

Data processing and statistical analysis

The data was processed and restructured using R statistical software. The analysis was primarily conducted within Microsoft Excel. Results were excluded when very low numbers of respondents carried out certain activities (e.g. processing of milk amongst sheep and goats in Ethiopia). Precisely, results were excluded if percentages of 60% and 40% were not statistically discernible if the sample size was below 50.

Involvement of different household members (adult males, adult females, boys, and girls) was calculated as a percentage relative to the number of households actively participating in each individual livestock-related activity.

Findings

The findings present an overview of the livestock keeping characteristics of all three countries followed by a breakdown of patterns of ownership, daily chore type activities, and management and monetary type activities across different livestock classes: poultry, small ruminants, and large ruminants. Given the much larger sample sizes involved (and as many of the household survey respondents also participated in the group survey), the group survey findings are the focus of the presented results.

In the breakdown of daily chore type activities and management and monetary type activities by livestock type, where the combined results are more than 100% this represents a shared household activity with more than one household member playing a role.

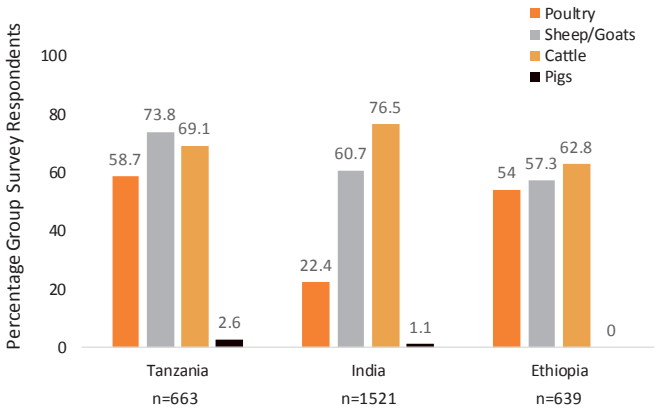
Livestock keeping overview

The question of 'ownership' put to smallholders in this study may have been difficult for smallholders to answer given that so many livestock activities are shared among household members. The study required a binary answer but the data suggests the question of ownership may not be as straightforward as asked. However, there does seem to be a relationship between ownership and decisions to sell livestock and to spend the income from these sales so these questions could possibly be considered a proxy for the direct question of ownership.

Similar numbers of smallholders kept small and large ruminants across India, Ethiopia, and Tanzania while the pattern for poultry was different (Figure 1). Smallholders in the African countries were substantially more likely to keep poultry than in India, with over half of households in Tanzania (58.7%) and Ethiopia (54%) keeping poultry compared to less than a quarter (only 22.4%) in India. Very few smallholders reported keep pigs and "other" livestock (not presented in this report).

In India and Ethiopia, cattle were the most commonly kept livestock, with just over three quarters (76.5%) of Indian respondents and nearly two-thirds (62.8%) of Ethiopian respondents reporting keeping cattle. Cattle were also common in Tanzania (69.1%) but slightly more households kept sheep and goats (73.8%). In India and Ethiopia, sheep and goats were the second most commonly kept livestock after cattle, at 60.7% and 57.3%, respectively.

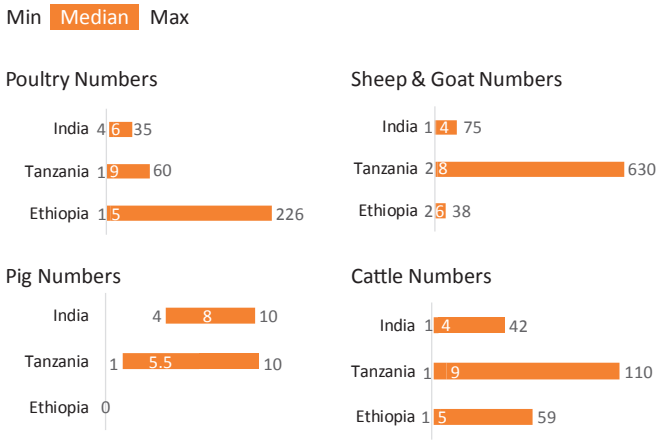
Figure 1. *Livestock kept (household and group surveys)*



The median[1] of the data (Figure 2) demonstrates that the number of livestock kept does not vary widely between India, Tanzania, and Ethiopia. The median number of poultry kept in Indian, Tanzanian, and Ethiopian households was less than 10 (median of 6, 9, and 5 respectively) but there was a much wider range in Ethiopian households (from 1 to 226 birds) compared to India (from 4 to 35 birds) and Tanzania (from 1 to 60 birds).

The median number of sheep and goats was similarly small and homogeneous across the three countries: 4 in India, 8 in Tanzania, and 6 in Ethiopia. There was a much wider range in Tanzanian households (from 2 to 630 sheep and goats) compared to India (from 1 to 75 sheep and goats) and Ethiopia (from 2 to 38 sheep and goats).

Figure 2. *Livestock numbers (household survey)*



Poultry

In Ethiopia (Figure 3), both adult male and female smallholders owned poultry, although ownership was predominantly in the hands of adult females in the household (87.8% versus 54.8% of adult males). Some children owned poultry with more boys (14.8%) owning poultry than girls (7.5% - see Appendix 3, Figure A 3.1 for a breakdown of activities by household member).

Adult males and females were involved in all aspects of poultry production with adult females performing the majority of both daily chore and management and money activities. Slaughtering poultry was the only exception, where more than three quarters (77.6%) of adult males made decisions on when to slaughter poultry compared to almost two thirds (63%) of adult females. Children – both boys and girls – were occasionally involved in daily chore activities but were rarely involved in management and money activities.

Adult females were more involved in daily chore activities than adult males, which included tending (74.5% versus 20.8% of adult males), feeding (80.1% versus 31.7% of adult males), cleaning (72.6% versus 22.3% of adult males) and providing water to poultry (80.8% versus 19.5% of adult males). With the exception of feeding poultry, boys performed comparatively fewer of the daily chore activities such as tending (16.3% versus 20.8% of girls), cleaning (15.6% versus 21.2% of girls), and providing water to poultry (17.7% versus 22.5% of girls).

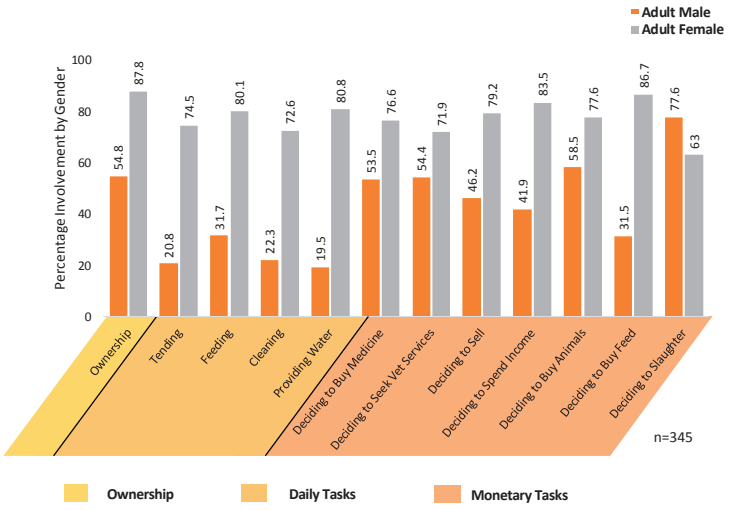
Adult males were substantially more involved in the management and money activities than the daily chore activities although adult females remained primarily responsible for management and money related decision-making. Approximately three quarters (76.6%) of adult females made decisions on purchasing medicines or vaccines for poultry versus just over half (53.5%) of the adult males in the household. More adult females (71.9%) than adult males (54.4%) decided when to seek the services of a veterinarian or para-veterinarian. Deciding when to sell poultry was also primarily in the hands of adult females (79.2%), although a number of adult males (46.2%) were also involved in making these choices. Many adult females (83.5%) decided how to use the income from the sale of poultry or poultry products, but less than half of the adult males (41.9%) also played a role. Over half of the adult males were involved in deciding when to purchase new animals (58.5%) but, again, more than three quarters of adult females (77.6%) also made these decisions. Purchasing poultry feed was primarily decided by adult females (86.7%) with some involvement of adult males (31.5%).

Boys and girls were both marginally involved in management and money decision-making activities. Between 4 and 8 percent of boys played a role in deciding when to purchase medicines, seek the services of a veterinarian, buy and sell poultry, spend the income from poultry sales, and purchase poultry feed. On the other hand, less than 3 percent of girls were involved in these activities, with no involvement of girls in decision-making around buying poultry or spending the income made from poultry sales. Neither boys nor girls were involved in deciding when to slaughter poultry.

The data suggests that poultry production and management is a shared activity in Ethiopia, with most members of the household, particularly women, involved from a fair to extensive degree in poultry-related daily chores and the adults holding the main responsibility for management and money decision-making activities.

[1]The number of livestock owned by each family was only asked in the household survey. Due to the skewedness of the livestock ownership data, (Ethiopia *n* household survey = 79; Tanzania *n* household survey = 61; India *n* household survey = 163), and outliers in the data, the median and not the arithmetic mean is used to present the data's central tendency.

Figure 3. *Poultry involvement in Ethiopia (household and group surveys)*



In the Tanzanian households (Figure 4), just over two thirds of adult females (69.7%) owned poultry although a number of adult males (42.7%) owned poultry as well as some boys (7.2%) and girls (3.3%), Appendix 3, Figure A 3.2. Adult males and females were responsible for all aspects of poultry production with adult females performing most daily chore and management and money activities. Children – both boys and girls – were occasionally involved in daily chore and management and money decision-making activities.

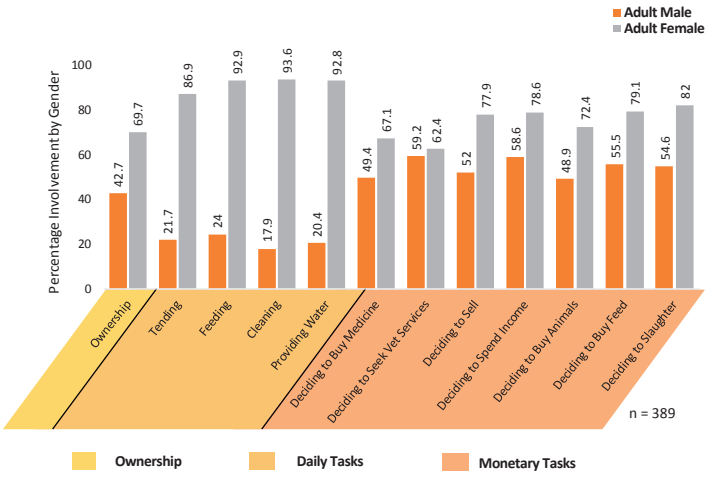
Most adult female smallholders were involved in daily chore activities, which included tending (86.9%), feeding (92.9%), cleaning (93.6%), and providing water to poultry (92.8%). A comparatively smaller number of adult males were also involved in tending (21.7%), feeding (24%), cleaning (17.9%), and providing water to poultry (20.4%). Although children were only marginally involved in poultry production, boys and girls provided some care for poultry, including tending (8.1% of boys and 4.4% of girls), feeding (9.5% of boys and 6.8% of girls), and cleaning the birds (10.5% of boys and 8.2% of girls). Girls and boys were equally involved in providing water to poultry (10.6% each).

Tanzanian men were more involved in the management and money decision-making activities than the daily chore activities, although adult females remained primarily responsible for making management and money-related decisions on poultry in the household. Approximately two-thirds (67.1%) of adult females decided when to purchase medicines or vaccines for poultry versus just under half (49.4%) of the adult males in the household. Similar numbers of adult females (62.4%) and adult males (59.2%) decided when to seek the services of a veterinarian or para-veterinarian, signalling equal participation. Selling poultry was mainly in the hands of adult females (77.9%), although more than half of the adult males (52%) were also involved in deciding when to sell poultry. Similarly, just over three quarters of adult females (78.6%) decided how to use the income from the sale of poultry or poultry products while more than half the adult males (58.6%) also made these decisions. Almost half of the adult males were involved in deciding when to purchase new animals (48.9%) but, again, adult females (72.4%) held the primary responsibility overall. Many adult females (79.1%) decided when to purchase poultry feed and over half of the adult males (55.5%) were also involved in these decisions. Unlike in Ethiopia, the decision to slaughter in Tanzania was mostly made by adult females (82%), although over half of the adult males (54.6%) were also involved.

Boys and girls were negligibly involved in management and money decision-making activities. Between 4 and 8 percent of boys played a role in deciding when and how to purchase medicines, seek the services of a veterinarian, buy and sell poultry, spend the income from poultry sales, and purchase poultry feed. By comparison, less than 4 percent of girls were involved in any of these activities. Again, neither boys nor girls were involved in deciding when to slaughter poultry.

The data suggests that poultry production and management is a shared activity in Tanzania, with most members of the household involved from a fair to extensive degree in daily chores and management and money decision-making activities – adults more so than children and women more so than men.

Figure 4. *Poultry involvement in Tanzania (household and group surveys)*



In India (Figure 5), the pattern of poultry ownership, care, and decision-making differed from the African countries. Adult females were involved in every aspect of poultry production while adult males were exclusively involved in the management and money decision-making activities. Less than half the men (44.4%) and more than half the women (56.8%) owned poultry, with no poultry owned by children. Children also did not perform many poultry-related activities (Appendix 3, Figure A 3.3).

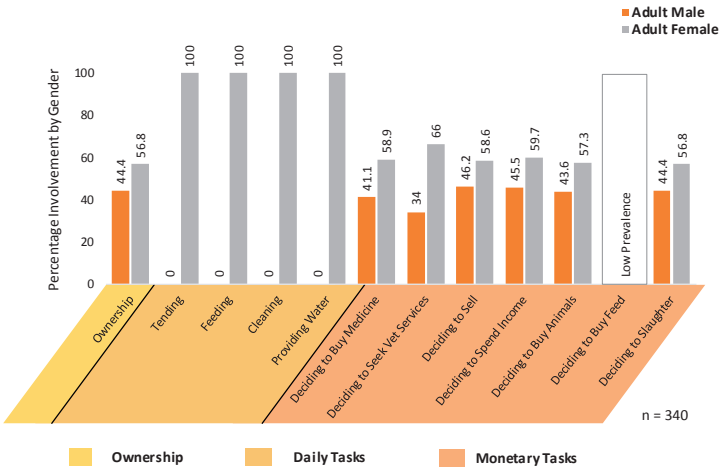
Daily chore activities were exclusively carried out by adult females, including tending, feeding, cleaning and providing water to poultry (all 100%). In a very few cases, boys (only 2.4%) played a small role in helping to provide water to poultry.

Adult males were involved to a fair degree in the management and money activities although adult females remained primarily responsible for management and money-related decision-making in the household. More than half (58.9%) of the adult females decided when to purchase medicines or vaccines for poultry compared to less than half (41.1%) of adult males in the household. Two thirds of adult females (66%) decided when to seek the services of a veterinarian or para-veterinarian versus a

third (34%) of adult males. More than half of the adult females decided when and where to sell poultry (58.6%) and how to use the income from the sale of poultry or poultry products (59.7%), although a number of adult males also played a role (46.2% and 45.5%, respectively). The pattern continued with less than half of the adult males deciding when to purchase new birds (43.6%) and more than half of the adult females (57.3%) making these decisions. Very few smallholders purchased poultry feed and so this aspect was not included in the analysis. The decision to slaughter poultry was made by more than half the adult females (56.8%) while just under half of the adult males (44.4%) also participated. Boys and girls were essentially uninvolved in any of the management and money-related activities.

In India, the data suggests that daily chores are firmly within the remit of women while men play more of a role in management and money decision-making activities, although not more so than women. Poultry production in India, for the most part, does not involve children.

Figure 5. *Poultry involvement in India (household and group surveys)*



Comparing poultry production activities across all three countries, it is clear that women made the greatest labour contribution although men were also substantively involved, particularly in the management and money type activities (Table 1). Men and women both owned poultry livestock. Women were involved in every poultry-related task, including both daily chore and management and money activities, with the exception of the decision to slaughter poultry in Ethiopia, which was predominantly performed by men. With the exception of India, adult males all played some role in daily chore activities. Management and money-related decision-making was split between male and female adults with women playing a slightly more involved role than men.

Table 1. *Poultry activities by adult males and females (household and group surveys)*

Poultry tasks	Ethiopia		India		Tanzania		Key
Adult	M	F	M	F	M	F	
Ownership	54.8	87.8	44.4	56.8	42.7	69.7	<10%
Tending	20.8	74.5	0	100	21.7	86.9	10-20%
Feeding	31.7	80.1	0	100	24	92.9	20-30%
Cleaning	22.3	72.6	0	100	17.9	93.6	30-40%
Providing Water	19.5	80.8	0	100	20.4	92.8	40-50%
Deciding to Buy Medicine	53.5	76.6	41.1	58.9	49.4	67.1	50-60%
Deciding to Seek Vet Services	54.4	71.9	34	66	59.2	62.4	
Deciding to Sell	46.2	79.2	46.2	58.6	52	77.9	60-70%
Deciding to Spend Income	41.9	83.5	45.5	59.7	58.6	78.6	70-80%
Deciding to Buy Animals	58.5	77.6	43.6	57.3	48.9	72.4	80-90%
Deciding to Buy Feed	31.5	86.7	Low Rate		55.5	79.1	+90%
Deciding to Slaughter	77.6	63	44.4	56.8	54.6	82	
	n = 345		n = 340		n = 389		

Small ruminants

In Ethiopia, both adult male and female smallholders owned sheep and goats (Figure 6) although ownership was mainly in the hands of men in the household (82.5% versus 68.9% of women). Children had some ownership with more boys (9.3%) owning sheep and goats than girls (2.2%), Appendix 3, Figure A3.4.

Adult males and females were involved in all aspects of sheep and goat production. However, while many women were involved in management and money-related activities, far more men held this responsibility. Children – boys more so than girls – were occasionally involved in daily chore activities, but were rarely involved in any of the management and money activities.

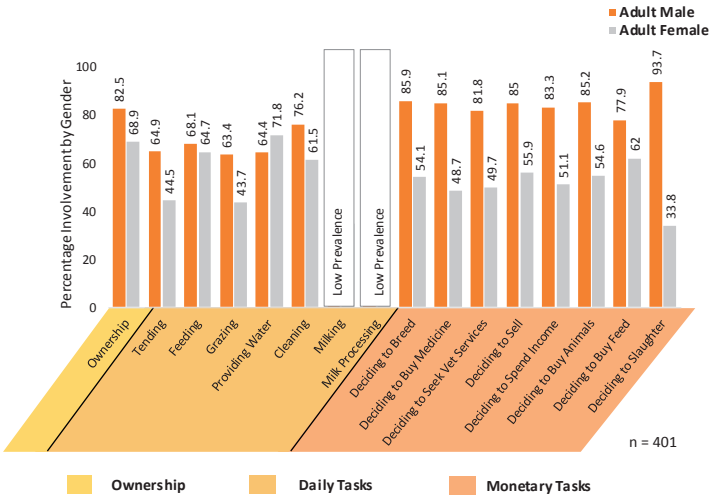
Daily chores were shared between men and women, including feeding (68.1% of adult males versus 64.7% of adult females) and providing water to the animals (71.8% of adult females versus 64.4% of adult males). Men were more involved than women in cleaning (76.2% of adult males versus 61.5% of adult females), tending (64.9% of adult males versus 44.5% of adult females) and grazing sheep and goats (63.4% of adult males versus 43.7% of adult females). Ethiopian households did not produce or process milk from sheep or goats.

Boys had substantially more responsibility in the daily chore activities, particularly with respect to tending (25.2% of boys versus 2.5% of girls), feeding (25.7% of boys versus 4.5 % of girls), and taking sheep and goats to graze (35.4% of boys versus 6.9% of girls).

Men were substantively more involved in the management and money activities than the daily chores. However, women still played a role in making these decisions. Most adult males (85.9%) decided when to breed sheep and goats compared to just over half (54.1%) of adult females. The pattern is repeated with adult males more involved than women in making decisions on purchasing medicines and vaccines (85.1% versus 48.7% of adult females), seeking the services of a veterinarian or para-veterinarian (81.8% versus 49.7% of adult females), selling sheep and goats (85% versus 55.9% of adult females), using the income from sales of sheep and goats (83.3% versus 51.1% of adult females), and deciding when to purchase new animals (85.2 versus 54.6% of adult females). More than three quarters of men made decisions on when to purchase animal feed (77.9%), although almost two thirds of women (62%) were also involved. The decision to slaughter was mainly made by men (93.7%), although a third of women in the household (33.8%) also played a role. Some (9.7%) boys and fewer (3.2%) girls were involved in deciding to breed sheep and goats. However, boys and girls were otherwise only marginally involved in other management and money decision-making tasks.

Overall, the data indicates that sheep and goat production is a shared enterprise with most members of the household playing a small to extensive role in daily chore activities. Adults hold the main responsibility for the management and money decision-making activities, with more input by men than women.

Figure 6. *Sheep and goat involvement in Ethiopia (household and group surveys)*



The patterns of small ruminant ownership, care, and management and money-related decision-making in Tanzania (Figure 7) are not as clear. In Tanzanian households, more adult males (87.5%), than any other household member, owned sheep and goats. However, a number of adult females (41.5%) also owned small ruminants, as well as some boys (11%) and very few girls (2.9%), Appendix 3, Figure A 3.5.

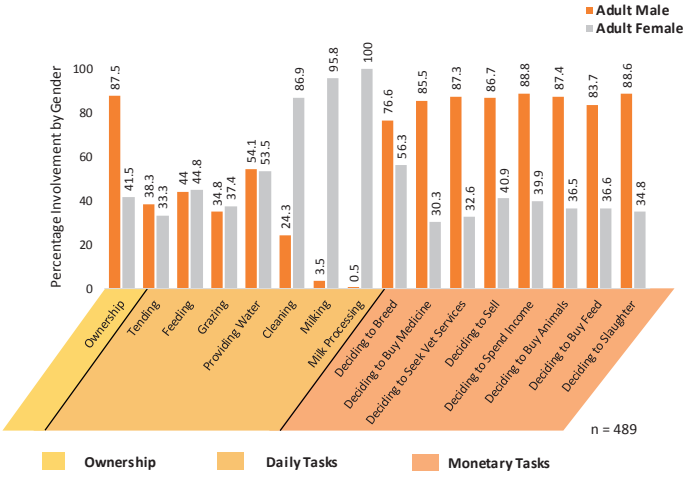
Men, women, and boys, all played a large role in the daily chore type activities. There was a much clearer distinction in the management and money activities with adult males playing the main role. However, adult females and boys also made some of the management and money-related decisions.

Boys played the largest role in the household in terms of tending (61.5%), feeding (49.5%), and taking sheep and goats to graze (59.4%). By comparison, approximately a third of the adults tended sheep and goats (38.3% of adult males and 33.3% of adult females) or put sheep and goats to pasture (34.8% of adult males and 37.4% of adult females). Fewer than half of the men and women fed the animals (44% of adult males and 44.8% of adult females) and just over half provided water to the animals (54.1% of adult males and 53.3% of adult females). Again, boys played an important role with a third (32.6%) involved in the latter task. Cleaning sheep and goats was primarily the responsibility of adult females (86.9%) although adult males (24.3%) and boys (16.8%) played a role. Milking was primarily carried out by adult females (95.8%) although a number of girls (18.1%) were involved, with very few adult males (3.5%) and some boys (6.6%) also playing a small role. This pattern was repeated with milk processing where 100% of adult females carried out these activities and some girls (7.8%) helped to a small degree.

Tanzanian men were substantially more involved in management and money activities although women also played a role. Approximately three quarters (76.6%) of men decided when to breed the animals compared to over half (56.3%) of women. Only a third of the women (30.3%) decided when to purchase medicines or vaccines for sheep and goats versus 85.5% of men. Similarly, a third (32.6%) of the women, and most (87.3%) men, decided when to seek the services of a veterinarian or para-veterinarian. Most men (86.7%) decided when and where to sell sheep and goats, although 40.9% of women were also involved in these choices. Similarly, most men (88.8%) made decisions on how to use the income from the sale of sheep and goat or sheep and goat products while a fair number of women (39.9%) also participated. Approximately a third of the women were involved in deciding when to purchase new animals (36.5%) but, again, more men (87.4%) made these decisions. Purchasing sheep and goat feed was mainly decided by adult males (83.7%) with approximately a third of adult females (36.6%) also involved in these decisions. The decision to slaughter was mostly made by men (88.6%), although some women (34.8%) were also involved. Girls were only negligibly involved in management and money activities. Boys were more so, particularly in breeding decisions where almost a third (28.5%) of boys played a role.

In Tanzania, the data suggests that sheep and goat production is a fully shared household enterprise. Boys carried out a large portion of the daily chore activities while adult males carried out the majority of the management and money type responsibilities. Adult females were involved in all activities, taking the primary responsibility for milking and milk processing.

Figure 7. *Sheep and goat involvement in Tanzania (household and group surveys)*



In India (Figure 8), adult male and female smallholders had almost equal ownership of sheep and goats with marginally more women (54.1%) owning sheep and goats than men (48.3%). Children did not own any of these livestock (Appendix 3, Figure A 3.6).

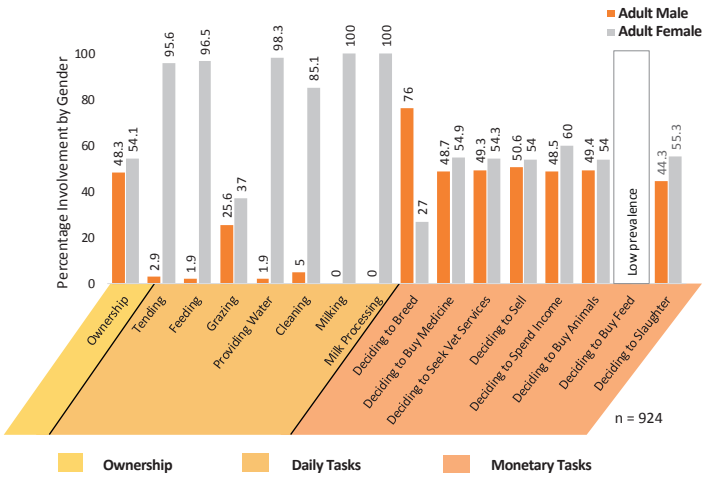
Women were involved in all aspects of sheep and goat production while men were only involved in certain daily chores and substantially more management and money activities. Less than 1% of children were involved in any of the daily chore or management and money-related activities, except for deciding to buy feed (2.3%) for boys and girls.

Adult females almost exclusively led the daily chore activities, which included tending (95.6% versus 2.9% of men), feeding (96.5% versus 1.9% of men), providing water to (98.3% versus 1.9% of men), cleaning (85.1% versus 5% of men), milking (100% versus no adult males), and processing milk (100% versus no adult males). Men were slightly more involved in putting sheep and goats to graze, although not more so than women (26.5% versus 37% of women). Boys did not participate in any of the daily chore activities while less than 1% of girls were involved in milking/milk processing and putting sheep and goats to graze.

Men were considerably more involved in the management and money decision-making activities. More than three quarters of adult males (76%) made decisions on breeding sheep and goats versus almost a third (27%) of adult females in the household. However, women and men were almost equally involved in all other management and money-related decision-making activities. These included deciding when to purchase medicines and vaccines (54.9% of women and 48.7% of men), when to seek the services of a veterinarian or para-veterinarian (54.3% of women and 49.3% of men), when and where to sell sheep and goats (54% of women and 50.6% of men), how to use the income from the sale of sheep and goats and related products (60% of women and 48.5% of men), when to purchase new animals (54% of women and 49.4% of men), and when to slaughter the animals (55.3% of women and 44.3% of men). Indian smallholders did not purchase feed for sheep and goats. Less than 1% of boys or girls were involved in any management and money-related decision-making activities.

The data suggests that, in India, sheep and goat production is a shared exercise between adults, with women primarily responsible for daily chore activities and (with the exception of breeding and deciding to buy feed) men and women participating fairly equally in the management and money type activities.

Figure 8. *Sheep and goat involvement in India (household and group surveys)*



Comparing sheep and goat production in India and Tanzania, there is a clear geographic difference (Table 2). While both adult males and females owned small ruminants, ownership was fairly equal in India whereas more men owned small ruminants in Ethiopia and Tanzania. The geographic differentiation continued in the daily chore activities with adult males undertaking the majority of these activities in Ethiopia, more equal participation of men and women in Tanzania, and adult females performing almost all the daily chore activities in India. The notable exception was milk production and processing, where women almost exclusively carried out these activities across in India and Tanzania. In the African countries, management and money type activities were primarily carried out by men with approximately a third of women in Tanzania, and half of women in Ethiopia, also involved in these activities. With the exception of breeding, these activities were more evenly split between men and women in India.

Table 2. *Sheep and goat involvement in India (household and group surveys)*

Sheep/Goat Tasks	Ethiopia		India		Tanzania		Key
Adult	M	F	M	F	M	F	
Ownership	82.5	68.9	48.3	54.1	87.5	41.5	<10%
Tending	64.9	44.5	2.9	95.6	38.3	33.3	10-20%
Feeding	68.1	64.7	1.9	96.5	44	44.8	20-30%
Grazing	63.4	43.7	25.6	37	34.8	37.4	30-40%
Providing Water	64.4	71.8	1.9	98.3	54.1	53.5	40-50%
Cleaning	76.2	61.5	5	85.1	24.3	86.9	50-60%
Milking	Low rate		0	100	3.5	95.8	60-70%
Milk Processing	Low rate		0	100	0.5	100	70-80%
Deciding to Breed	85.9	54.1	76	27	76.6	56.3	80-90%
Deciding to Buy Medicine	85.1	48.7	48.7	54.9	85.5	30.3	+90%
Deciding to Seek Vet Services	81.8	49.7	49.3	54.3	87.3	32.6	
Deciding to Sell	85	55.9	50.6	54	86.7	40.9	
Deciding to Spend Income	83.3	51.1	48.5	60	88.8	39.9	
Deciding to Buy Animals	85.2	54.6	49.4	54	87.4	36.5	
Deciding to Buy Feed	77.9	62	Low Rate		83.7	36.6	
Deciding to Slaughter	93.7	33.8	44.3	55.3	88.6	34.8	
	n = 401		n = 924		n = 489		

Large ruminants

In Ethiopia (Figure 9), both adult male and female smallholders owned cattle, although ownership was predominantly in the hands of men (86.3% versus 66.3% of adult females). Very few boys (3.5%) and even fewer girls (1.7%) owned cattle, (Appendix 3, Figure A 3.7).

Men and women were involved in all aspects of cattle production with the exception of milking and milk processing, which was primarily carried out by women. Adult males carried out the majority of both the daily chore and management and money type activities. Boys and girls were involved to a degree in many of the daily chore activities. However, with the exception of deciding when to breed and slaughter cattle, children were not significantly involved in any management and money-related decision-making.

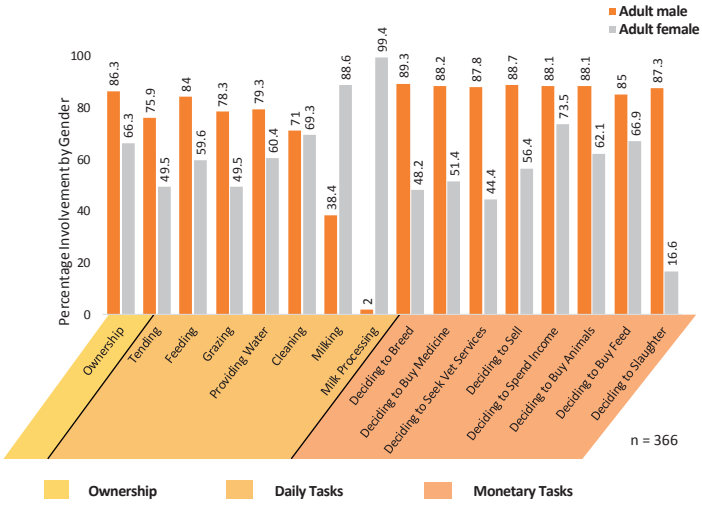
More than three quarters of the adult males carried out daily chore activities, although women and boys were also involved. These activities included tending (75.9% of men versus 49.5% of women and 15.3% of boys), feeding (84% of men versus 59.6% of women and 12.2% of boys), grazing (78.3% of men versus 49.5% of women and 19% of boys), providing water to (79.3% of men versus 60.4% of women and 15.9% of boys), and cleaning the animals (71% of men versus 69.3% of women and 5.7% of boys). Most women performed milking (88.6% of women compared to 38.4% of men and 5.8% of boys) and milk processing chores (99.4% of women compared to 2% of men and no boys). Boys had substantially more responsibility than girls did with regard to daily chores - less than 5% of girls participated in any of these activities.

Men were more involved than women in the management and money type activities. However, women played a substantial role. In terms of deciding when to breed cattle, most men (89.3%) were involved in making these decisions compared to just under half (48.2%) of women. Again most men (88.2%) compared to approximately half the adult females (51.4%) made the decisions on purchasing medicines and vaccines. Men (87.8%) made most of the decisions on seeking the services of a veterinarian or para-veterinarian compared to less than half the women (44.4%). Deciding when and where to sell cattle was also mainly an adult male activity (88.7%), although more than half the adult females (56.4%) were also involved. Almost three quarters of women (73.5%) and most men (88.1%) made decisions on how to use the

income from the sale of cattle and related products. Most men were involved in deciding when to purchase new animals (88.1%) and almost two thirds of women (62.1%) were also involved in making these decisions. Purchasing feed was a decision most men (85%) were involved in, while two-thirds of women (66.9%) also participated in this activity. The decision to slaughter was mostly made by men (87.3%), although a small number of women (16.6%) were also involved. Very few boys played a decision-making role in breeding (3.9%) and slaughtering (7.6%) cattle. Boys and girls were otherwise negligibly involved in making these decisions.

In Ethiopia, the data suggests that cattle production is a shared household enterprise with most members of the household – adult females, adult males, and children - involved from a small to extensive degree in daily chores and the adults responsible for management and money activities. With the exception of milking and milk processing, adult males hold the primary responsibility for cattle.

Figure 9. *Cattle involvement in Ethiopia (household and group surveys)*



In Tanzanian households (Figure 10), substantially more men (90.4%) owned cattle than any other household member although a fair number of women (28.6%) owned cattle, as well as some boys (7.6%) and very few girls (2%), Appendix 3, Figure A 3.8.

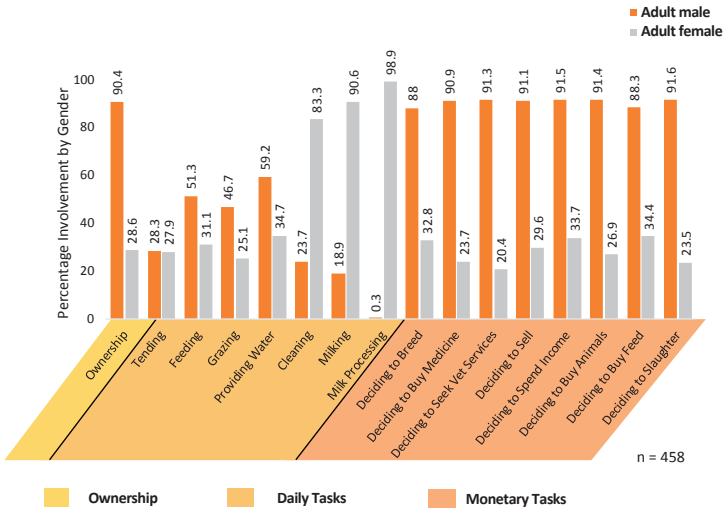
Men, women, and boys, played a large role in the daily chore type activities. There was a much clearer distinction in the management and money-related activities with adult males making most of these decisions, and women and a small number of boys playing a role.

As with small ruminant production, boys in Tanzania played the largest role in the household in terms of tending cattle (57.5%) and putting cattle to graze (51.2%). Comparatively, only a third of the adults tended cattle (28.3% of adult males and 27.9% of adult females). A quarter of women (25.1%) and half of the men (46.7%) were also involved in putting the cattle to graze. Adult males led the feeding (51.3% compared to 43.3% of boys and 31.1% of adult females) and watering activities (59.2% compared to 37.3% of boys and 34.7% of adult females). Cleaning cattle was primarily the responsibility of women (83.3%) although men (23.7%) and boys (15.3%) also played a role. Milking was almost exclusively carried out by women (90.6%) although some men (18.9%) and a few boys (8.3%) were also involved. Milk processing was exclusively carried out by adult females (98.9%). Less than 5% of girls were involved in any daily chore type activities.

Men were substantially more involved in management and money activities although women played some part. Most men (88%) made decisions on breeding cattle compared to a third of adult females (32.8%) and some boys (14%). Almost a quarter of the adult females (23.7%) decided when to purchase medicines or vaccines compared to almost all (90.9%) adult males. Again, almost all the men (91.3%) made the decisions on seeking the services of a veterinarian or para-veterinarian compared to only 20.4% of women. The pattern continues with most men deciding when and where to sell cattle (91.1% versus 29.6% of adult females), how to use the income from the sale of cattle or cattle products (91.5% versus 33.7% of adult females), when to purchase new animals (91.4% versus 26.9% of adult females), when to purchase cattle feed (88.3% versus 34.4% of adult females), and when to slaughter (91.6% compared to 23.5% of adult females). Less than 3% of girls were involved in any management and money activities whereas 4 to 14% of boys played a role.

In Tanzania, the data suggests that cattle production is a shared enterprise with most members of the household – adult females, adult males, and children - involved from a small to extensive degree in daily chore activities. With the exception of milking and milk processing, boys are largely involved in the daily chore activities while adult males carry out the majority of the management and money-related decision-making responsibilities. Women are involved in all activities, but take on the primary responsibility for milking and milk processing chores.

Figure 10. *Cattle involvement in Tanzania (household and group surveys)*



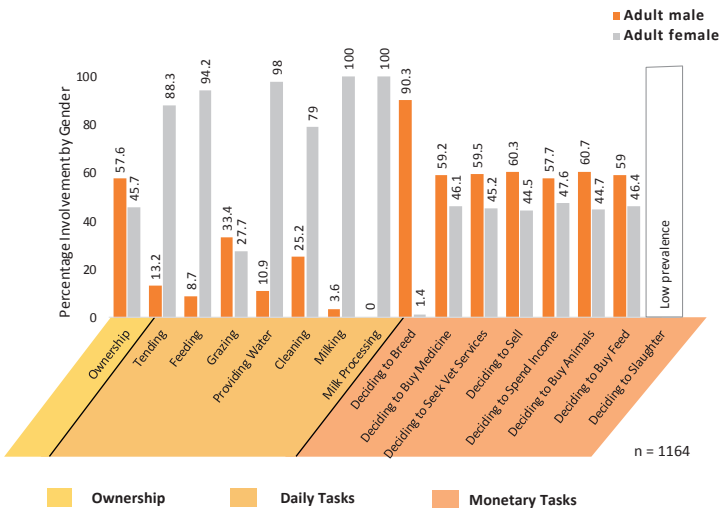
In India, men (57.6%) were more likely to own cattle than women (45.7%) or children (less than 1%) Appendix 3, Figure A 3.9. Women were involved in all aspects of cattle production while men were only involved in certain daily chore activities and substantively more of the management and money-related activities (Figure 11). Less than 1% of children were involved in any of the daily chore or management and money-related activities (Appendix 3, Figure A 3.9).

Adult females almost exclusively participated in the daily chore cattle-related activities, which included tending (88.3% versus 13.2% of adult males), feeding (94.2% versus 8.7% of adult males), providing water to (98% versus 10.9% of adult males), cleaning (79% versus 25.2% of adult males), milking (100% versus 3.6% of adult males), and processing milk (100% versus no adult males). Adult males were slightly more involved in grazing cattle (33.4% of adult males compared to 27.7% of adult females) and less than 1% of boys or girls participated in any of these activities.

Men were the primary decision makers when deciding to breed cattle (90.3%) versus almost no women (1.4%). However, women and men were more equally involved in other management and money type activities. These included deciding when to purchase medicines and vaccines (46.1% of women versus 59.2% of men), when to seek the services of a veterinarian or para-veterinarian (45.2% of women versus 59.5% of men), when and where to sell cattle (44.5% of women versus 60.3% of men), how to use the income from the sale of cattle and related products (47.6% of women versus 57.7% of men), when to purchase new animals (44.7% of women versus 60.7% of men), and when to buy feed for the animals (46.4% of women versus 59% of men). Due to the status of cattle in India, no smallholders were involved in decisions to slaughter the animals.

Overall, the data suggests that cattle production is an enterprise shared by adults in Indian households. Adult females are primarily responsible for the daily chore activities while, with the exception of breeding, males and females are more equally responsible for management and money type activities.

Figure 11. *Cattle involvement in India (household and group surveys)*



Comparing cattle production across all three countries, the data shows that both men and women own large ruminants (Table 3). Similarly to small ruminant ownership, more men overall own cattle in Ethiopia and Tanzania while, in India, there is equal ownership between men and women. Men undertake the majority of the daily chore activities in Ethiopia. There is a more equal distribution of daily chore activities between men and women in Tanzania, and women perform almost all of the daily chore activities in India. The notable exception was milk production and processing, where the majority of women carried out these activities. Interestingly, more than a third of the men in Ethiopia and approximately a fifth of men in Tanzania were also involved in milking cattle. The management and money type activities were similar to small ruminants, with adult males leading these activities in the African countries, and women and men sharing the responsibility in India.

Table 3. *Large ruminant activities by adult males and females (household and group surveys)*

Cattle Tasks	Ethiopia		India		Tanzania	
Adult	M	F	M	F	M	F
Ownership	86.3	66.3	57.6	45.7	90.4	28.6
Tending	75.9	49.5	13.2	88.3	28.3	27.9
Feeding	84	59.6	8.7	94.2	51.3	31.1
Grazing	78.3	49.5	33.4	27.7	46.7	25.1
Providing Water	79.3	60.4	10.9	98	59.2	34.7
Cleaning	71	69.3	25.2	79	23.7	83.3
Milking	38.4	88.6	3.6	100	18.9	90.6
Milk Processing	2	99.4	0	100	0.3	98.9
Deciding to Breed	89.3	48.2	90.3	1.4	88	32.8
Deciding to Buy Medicine	88.2	51.4	59.2	46.1	90.9	23.7
Deciding to Seek Vet Services	87.8	44.4	59.5	45.2	91.3	20.4
Deciding to Sell	88.7	56.4	60.3	44.5	91.1	29.6
Deciding to Spend Income	88.1	73.5	57.7	47.6	91.5	33.7
Deciding to Buy Animals	88.1	62.1	60.7	44.7	91.4	26.9
Deciding to Buy Feed	85	66.9	59	46.4	88.3	34.4
Deciding to Slaughter	87.3	16.6	Low Rate		91.6	23.5
	n = 366		n = 1164		n = 458	

Key
<10%
10-20%
20-30%
30-40%
40-50%
50-60%
60-70%
70-80%
80-90%
+90%

Conclusions

Surveys conducted for this study determined that livestock care is not simply men or women's work depending on the species of animal or nature of the work, but rather that both men and women within the same household share duties. While surface-level surveys that collect simple data disaggregated by gender may represent that there is a gender-based division of labour, this study's deeper dive into gender roles and livestock care provides valuable insight into who within a household is more likely to be responsible for which activities.

Trends in the activities undertaken by both men and women, while varying somewhat across geographies, can be broadly described as follows:

For poultry, women are more involved than men and other household members in the 'daily chore' type activities (e.g. tending, cleaning, feeding, watering) but men are also involved to a small degree. The input of men increases substantially and consistently across countries for the 'management and money' type activities (e.g. deciding when to purchase medicines / vaccines, when to sell / slaughter, and what to do with poultry income etc.). Though men's involvement increases in the management and money activities, women are still more involved in these activities than men and other household members. The findings indicate that poultry production is not solely in the domain of one gender or household member type, but is a shared household enterprise, although with a higher level of input by women.

For small ruminants, there is a distinct difference in the patterns of ownership and care between India and the African countries. However, the increased involvement of men in the 'management and money' categories continues. In Ethiopia and Tanzania, this input by men eclipses that of women but, even here, approximately 30 – 60% of households have active input by women in 'management and money' type activities. Again, generally, small ruminant production seems to be a shared smallholder household enterprise.

For large ruminants, the patterns differ from country to country but the notion that there is little to no involvement of women (other than milking) seems unsubstantiated. Again, in Ethiopia and Tanzania men play a larger role in 'management and money' activities although between approximately a third (Tanzania) and half (Ethiopia) of the women also play a role. As a generalisation, it seems fair to consider large ruminant production as a shared smallholder household enterprise, albeit with a higher level of input by men.

The data generated through this study was foremostly aimed at building understanding for GALVmed and the numerous partners engaging the smallholder animal health market. The data collected shows, for example, that smallholder livestock production is a shared enterprise, with all household members involved from a small to extensive degree in poultry, small and large ruminant production. This information can inform GALVmed in future gender work.

It is understood that the data emanating from this (and similar) studies may be of interest to researchers looking to undertake more rigorous gender and/or household-based assessments. In this regard, GALVmed's remit is not to undertake these rigorous and costly research studies but rather to use pragmatic approaches, which still yield good data and which can point to areas of potential interest for the research community.

Acknowledgements

This study is based on research funded in part by the Bill & Melinda Gates Foundation and with UK aid from the UK Government through GALVmed. The findings and conclusions contained within are those of the authors and do not necessarily reflect positions or policies of the Bill & Melinda Gates Foundation or the UK Government.

The study was managed on behalf of GALVmed by Khulisa Management Services. Data collection was undertaken by Asplor Research Private Limited. The report was written by Katharine Tjasink from Khulisa Management Services (www.khulisa.com).

References

FAO. (2013). Understanding and Integrating Gender Issues into Livestock Projects and Programmes. Retrieved from http://www.fao.org/3/a-i3216e.pdf

GIZ. (2013). Gender and Livestock Production. Retrieved March 21, 2018, from https://www.giz.de/fachexpertise/downloads/giz2012-en-gender-and-livestock-production.pdf

Hill, C. L. M. (2009). Module 14: Gender and Livestock. In Gender in Agriculture Sourcebook. Washington DC: The World Bank. Retrieved from http://siteresources.worldbank.org/INTGENAGRLIVSOUBOOK/Resources/Module14.pdf

Jumrani, J., & Birthal, P. S. (2015). Livestock, Adult females, and Child Nutrition in Rural India. Agricultural Economics Research Review, 28(2), 223. https://doi.org/10.5958/0974-0279.2016.00003.3

Kristjanson, P., Waters-Bayer, A., Johnson, N., Tipilda, A., Njuki, J., Baltenweck, I., … Macmillan, S. (2010). Livestock and Adult females's Livelihoods: A Review of the Recent Evidence. Retrieved from https://cgspace.cgiar.org/bitstream/handle/10568/3017/Discussion_Paper20.pdf

Njuki, J., & Sanginga, P. . (2013). Adult females, Livestock Ownership and Markets: Bridging the Gender Gap in Eastern and Southern Africa. New York: Routledge. Retrieved from https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/52269/IDL-52269.pdf

Okali, C. (2011). Notes on livestock, food security and gender equity. Animal Production and Health working paper No. 3. Rome.

Zezza, A., Pica-Ciamarra, U., Mugera, H. K., Mwisomba, T., & Okello, P. (2016). A Guidebook for Designing Household Survey Questionnaires Measuring the Role of Livestock in the Household Economy. Washington DC. Retrieved from http://siteresources.worldbank.org/INTLSMS/Resources/3358986-1423600559701/Guidebook_2_Finaltext_web.pdf

Appendix 1

RAPID GROUP SURVEY - MIXED GROUP/ WOMEN'S ONLY GROUP/ MEN'S ONLY GROUP

Interviewer guidelines: There are two parts to this Rapid Group Survey. The first part will be conducted individually with each group survey participant in a quiet location when they arrive at the survey location/setting. Its purpose is to determine demographic information about each respondent. The second part will be conducted with all participants in a single group. Please make sure to follow the instructions in your manual regarding group composition. Provide each participant with the relevant numbered baton that corresponds with their profile in the individual interviews.

ARRIVAL INFORMATION

Fieldworker name _____

Date of survey (DD/MM/YY) _____ /_____ /_____

Please indicate which Group Survey Number this survey is associated with _____

Please indicate the respondent number (HINT – PROVIDE RESPONDENT WITH CORRECT STICKER AND BATON NUMBER) _____

RESPONDENT: ARRIVAL QUESTIONS

Do you agree to participate in this survey?	Yes	◯	No	◯
Do you agree to participate in a household survey, if selected?	Yes	◯	No	◯
Do you have/keep livestock?	Yes	◯	No	◯

If NO to any of the arrival questions, stop the individual survey and thank the participant for their time.

Name of respondent (Name & Surname) _____

Respondent gender — Male ◯ Female ◯

Respondent age _____

Respondent's highest level of education (completed)
- No formal education ◯
- Primary education ◯
- Secondary education ◯
- College/university and above ◯

Respondent contact number _____

Are you the head of your household? Yes ◯ No ◯

If no, who is the household head? (Name/Surname) _____

If no, who is the head of the household (TYPE)?
- Adult Male ◯
- Adult Female ◯
- Boy ◯
- Girl ◯

If no, what is the age of the household head? _____

If no, what is the gender of the household head? Male ◯ Female ◯

If no, what is the highest level of education (completed) of the household head?
- No formal education ◯
- Primary education ◯
- Secondary education ◯
- College/university and above ◯

Does the household head live on the farm? Yes ◯ No ◯

On average, how much did your household earn in the past week? (SELECT ONE)

Less than 900 Rupee	900 - 1500 Rupee	More than 1500 Rupee
◯	◯	◯

What were the sources of your income? (CAN SELECT MORE THAN ONE)

Livestock	Crops	Other
☐	☐	☐

What was the main source of your income? (SELECT ONE)

Livestock	Crops	Other
◯	◯	◯

During the last year, did you try to borrow money? Yes ◯ No ◯

If yes, were you successful in borrowing the money? Yes ◯ No ◯

Did you eat/drink any of these food items in the LAST WEEK (7 days)?

ITEM	YES	# Times
Fish (fresh or dried)	☐	_____
Meat (pig, cattle, goat, sheep, etc.) - excluding poultry	☐	_____
Poultry (chicken, ducks, etc.)	☐	_____
Eggs	☐	_____
Milk	☐	_____

RAPID GROUP SURVEY - MIXED GROUP/ WOMEN'S ONLY GROUP/ MEN'S ONLY GROUP

Convey the following information to the respondents as you convene the group: *Hello. My name is _____ and I am from Asplor. I will be asking some questions to better understand small-scale farmers in livestock owning households. Thank you for volunteering to participate in this group survey. All information collected in this survey is confidential. Your answers will be grouped with the answers of other people in the group and we will not make any reference to your name in our reports. I would like to take photographs of you during the interview for use in our reports and/or website. If you do not wish to be photographed, please tell me and I will not take any photographs. There are no known risks associated with participating in this research project. You are free to participate only if you wish to do so.*

Arrival Information

Record your current location (if GPS locator allows) Latitude (x.y) _____ Longitude (x.y) _____

Survey number _____

Date of survey (DD/MM/YY) _____ /_____ /_____

Start time of survey (HH/MM) _____

Interviewer name _____

Country _____

Please select the enumeration area
- Chandauli ☐
- Robertsgani ☐
- Samastipur ☐
- Darbhanga ☐
- Mayurbhanj ☐
- Phulbani ☐

Please enter the local area (village/town/traditional authority) _____

Type of area in which group survey is held
- Rural ☐
- Urban ☐
- Peri-urban ☐

Total number of respondents: _____ (Ensure this number matches the number of individual surveys you conducted)

I am going to read a list of types of livestock animals and ask you what types of livestock you keep on your farm. If you keep any of these animals, please raise your bat. If you don't keep any of these animals, please do not raise your bat. You can raise your bat for more than one type of animal.

Pigs	Respondents (#s)	_____
Sheep	Respondents (#s)	_____
Goats	Respondents (#s)	_____
Poultry	Respondents (#s)	_____
Cattle	Respondents (#s)	_____
Water-buffalo	Respondents (#s)	_____
Other	Respondents (#s)	_____

Who, in your household, OWNS the herd/flock? You can raise your bat more than once if there is more than one owner.

		HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other (non-family)
Pigs	Respondents (#s)							
Sheep	Respondents (#s)							
Goats	Respondents (#s)							
Poultry	Respondents (#s)							

Cattle	Respondents (#s)							
Water-buffalo	Respondents (#s)							
Other	Respondents (#s)							

Typically, who spends the most time each day tending to your livestock? (SINGLE CHOICE)

	HH Male	**HH Female**	**Other Adult Male**	**Other Adult Female**	**Child: Boy**	**Child: Girl**	**Other (non-family)**
Respondents (#s)							

Do you have shelter or housing for your herd/flock? Please raise your bat only ONCE to indicate yes. Do not raise your bat if you do not have shelter/housing for your animals

		Yes
Pigs	Respondents (#s)	
Sheep	Respondents (#s)	
Goats	Respondents (#s)	
Poultry	Respondents (#s)	

		Yes
Cattle	Respondents (#s)	
Water-buffalo	Respondents (#s)	
Other	Respondents (#s)	

What is the MAIN use of your livestock/poultry? I am going to read out four options. Please only raise your bat ONCE when you hear the correct option

		Sale of live animals	Sale of animal products	Home con-sumption	Other
Pigs	Respondents (#s)				
Sheep	Respondents (#s)				
Goats	Respondents (#s)				
Poultry	Respondents (#s)				
Cattle	Respondents (#s)				
Water-buffalo	Respondents (#s)				
Other	Respondents (#s)				

Who in your household is responsible for FEEDING the animals? You can raise your bat more than once if there is more than one person who is responsible for feeding the animals.

		HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other (non-family)	NA (Do Not Feed)
Pigs	Respondents (#s)								
Sheep	Respondents (#s)								
Goats	Respondents (#s)								
Poultry	Respondents (#s)								
Cattle	Respondents (#s)								
Water-buffalo	Respondents (#s)								
Other	Respondents (#s)								

Who in your household is responsible for HERDING/ GRAZING the animals? You can raise your bat more than once if there is more than one person who is responsible for herding/grazing the animals.

		HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other (non-family)	NA (do not herd/ graze)
Pigs	Respondents (#s)								
Sheep	Respondents (#s)								
Goats	Respondents (#s)								
Cattle	Respondents (#s)								
Water-buffalo	Respondents (#s)								
Other	Respondents (#s)								

Who in your household is responsible for WATERING the animals? You can raise your bat more than once if there is more than one person who is responsible for watering the animals.

		HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other (non-family)	NA (Do not water)
Pigs	Respondents (#s)								
Sheep	Respondents (#s)								
Goats	Respondents (#s)								
Poultry	Respondents (#s)								
Cattle	Respondents (#s)								
Water-buffalo	Respondents (#s)								
Other	Respondents (#s)								

Who in your household is responsible for CLEANING the animals? You can raise your bat more than once if there is more than one person who is responsible for cleaning the animals.

		HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other (non-family)	NA (do not clean)
Pigs	Respondents (#s)								
Sheep	Respondents (#s)								
Goats	Respondents (#s)								
Poultry	Respondents (#s)								
Cattle	Respondents (#s)								
Water-buffalo	Respondents (#s)								
Other	Respondents (#s)								

Who in your household is responsible for MILKING the animals? You can raise your bat more than once if there is more than one person who is responsible for milking the animals.

		HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other (non-family)	NA (do not milk)
Sheep	Respondents (#s)								
Goats	Respondents (#s)								
Cattle	Respondents (#s)								
Water-buffalo	Respondents (#s)								
Other	Respondents (#s)								

Who in your household is responsible for PROCESSING THE MILK? You can raise your bat more than once if there is more than one person who is responsible for processing milk.

		HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other (non-family)	NA (do not process milk)
Sheep	Respondents (#s)								
Goats	Respondents (#s)								
Cattle	Respondents (#s)								
Water-buffalo	Respondents (#s)								
Other	Respondents (#s)								

Who in your household is responsible for BREEDING the animals? You can raise your bat more than once if there is more than one person who is responsible for breeding.

		HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other (non-family)	NA (do not breed)
Pigs	Respondents (#s)								
Sheep	Respondents (#s)								
Goats	Respondents (#s)								
Poultry	Respondents (#s)								
Cattle	Respondents (#s)								
Water-buffalo	Respondents (#s)								
Other	Respondents (#s)								

			HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other (non-family)	NA (do not buy)
Who in your household makes most of the decisions on buying medicine or vaccinations for the animals? (CAN SELECT MORE THAN ONE)	Pigs	Respondents (#s)								
	Sheep	Respondents (#s)								
	Goats	Respondents (#s)								
	Poultry	Respondents (#s)								
	Cattle	Respondents (#s)								
	Water-buffalo	Respondents (#s)								
	Other	Respondents (#s)								

			HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other (non-family)	NA (do not use vet/ para-vet services)
Who in your household makes most of the decisions on seeking the services of a vet/ para-vet? (CAN SELECT MORE THAN ONE)	Pigs	Respondents (#s)								
	Sheep	Respondents (#s)								
	Goats	Respondents (#s)								
	Poultry	Respondents (#s)								
	Cattle	Respondents (#s)								
	Water-buffalo	Respondents (#s)								
	Other	Respondents (#s)								

Who in your household makes most of the decisions on when and where to sell the animals? (CAN SELECT MORE THAN ONE)		HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other (non-family)	NA (do not sell)
Pigs	Respondents (#s)								
Sheep	Respondents (#s)								
Goats	Respondents (#s)								
Poultry	Respondents (#s)								
Cattle	Respondents (#s)								
Water-buffalo	Respondents (#s)								
Other	Respondents (#s)								

Does your household sell eggs? (only raise bat if yes)	Yes
Respondents (#s)	

Does your household sell milk? (only raise bat if yes)	Yes
Respondents (#s)	

Who in your household makes most of the decisions on how to use the income from the sale of the animals / animal products? (CAN SELECT MORE THAN ONE)		HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other
Pigs	Respondents (#s)							
Sheep	Respondents (#s)							
Goats	Respondents (#s)							
Poultry	Respondents (#s)							

Cattle	Respondents (#s)							
Water-buffalo	Respondents (#s)							
Other	Respondents (#s)							

Who in your household makes most of the decisions on buying new animals? (CAN SELECT MORE THAN ONE)

		HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other (non-family)	NA (do not buy new
Pigs	Respondents (#s)								
Sheep	Respondents (#s)								
Goats	Respondents (#s)								
Poultry	Respondents (#s)								
Cattle	Respondents (#s)								
Water-buffalo	Respondents (#s)								
Other	Respondents (#s)								

Who in your household makes most of the decisions on buying animal feed? (CAN SELECT MORE THAN ONE)

		HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other (non-family)	NA (do not buy animal
Pigs	Respondents (#s)								
Sheep	Respondents (#s)								
Goats	Respondents (#s)								
Poultry	Respondents (#s)								
Cattle	Respondents (#s)								
Water-buffalo	Respondents (#s)								
Other	Respondents (#s)								

Who in your household makes most of the decisions on when to slaughter the animals? (CAN SELECT MORE THAN ONE)

		HH Male	HH Female	Other Adult Male	Other Adult Female	Child: Boy	Child: Girl	Other (non-family)	NA (do not slaughter)
Pigs	Respondents (#s)								
Sheep	Respondents (#s)								
Goats	Respondents (#s)								
Poultry	Respondents (#s)								
Cattle	Respondents (#s)								
Water-buffalo	Respondents (#s)								
Other	Respondents (#s)								

End time of survey _____

Appendix 2

HOUSEHOLD SURVEY

Interviewer guidelines: Respondents for this survey must be selected using Khulisa's approved sampling strategy. One form should be completed for each household and only a household representative over the age of 18 should be interviewed. Ask to speak to the person who is knowledgeable about the household selected, particularly about livestock issues. If such person is not present, ask when he/she will be back and then do a call back if possible. If not possible, move on to the next household

Convey the following information to the respondent: Hello. My name is _____ and I am from Asplor. I will be asking some questions to better understand small-scale farmers in livestock owning households. A member of your household participated in our group survey and we randomly chose the name of this household member to do a deeper study in your household. All information collected in this study is confidential. Your answers will be grouped with the answers of other people like you and we will not make any reference to your name. This study may include taking photographs of you, your family members, and/or your farm during the interview for use in our reports and/or website. If you do not wish to be photographed, please tell me and I will not take any photographs. There are no known risks associated with participating in this research project. You are free to participate only if you wish to do so.

Arrival Information

Record your current location (if GPS locator allows)	Latitude (x.y) _____ Longitude (x.y) _____
Date of survey (DD/MM/YY)	_____ /_____ /_____
Start time of survey (HH/MM)	_____
Interviewer name	_____
Country	_____
Please select the enumeration area	◯ Chandauli ◯ Robertsgani ◯ Samastipur ◯ Darbhanga ◯ Mayurbhanj ◯ Phulbani
Please enter the local area (village/town/traditional authority)	_____
Type of area in which household is located	◯ Rural ◯ Urban ◯ Peri-urban

Arrival Questions

Do you agree to participate in this survey?	Yes ◯	No ◯
Do you have/keep livestock?	Yes ◯	No ◯

If NO to any of the arrival questions, stop the survey and thank the participant for their time.

Name and surname of respondent (if no surname, list NA in surname field)	_____ (name) _____ (surname)
Gender of respondent	Male ◯ Female ◯
Respondent age (years)	_____
Respondent's highest level of education (completed)	◯ No formal education ◯ Primary education ◯ Secondary education ◯ College/university and above

Are you the head of this household (give definition)

Yes ◯ No ◯

If yes, what is your primary occupation?

Livestock keeping ◯
Small business ◯
Labourer ◯
Other ◯

If no, who is the head of the household (TYPE)?

Adult Male ◯
Adult Female ◯
Boy (Under 18) ◯
Girl (Under 18) ◯

If no, who is the head of the household (NAME & SURNAME)? _____

If no, what is the age of the household head? _____

Does the household head live on the farm? Yes ◯ No ◯

If no, what is the highest level of education (completed) of the household head?

No formal education ◯
Primary education ◯
Secondary education ◯
College/university and above ◯

Other members of the household

HH Member Type	Total number
Adult Male	
Adult Female	
Girl (under 18)	
Boy (under 18)	

Which of the following livestock do you keep on your farm? (*if no pigs, do not ask about pigs again*)
What is the size of the herd/flock?
Who in the household owns the herd/flock?

Animal Type	Number (size of herd/ flock)	Who owns? (list all relevant codes)
Pigs		
Sheep		
Goats		
Poultry		
Cattle		
Water Buffalo		
Other		

(CODE: HHM = household head male, HHF = household head female, AM = other adult male, AF = other adult female, B = boy, G = girl, OR = other relative, ON = other non relative, NA = not applicable)

Typically, who spends the most time each day tending to your livestock? (SINGLE CHOICE) _____

(CODE: HHM = household head male, HHF = household head female, AM = other adult male, AF = other adult female, B = boy, G = girl, OR = other relative, ON = other non-relative, NA = not applicable)

Which animals, if any, do you have shelter/housing for?

Animal Type	Yes
Pigs	☐
Sheep	☐
Goats	☐
Poultry	☐
Cattle	☐
Water Buffalo	☐
Other	☐

(CODE: HHM = household head male, HHF = household head female, AM = other adult male, AF = other adult female, B = boy, G = girl, OR = other relative, ON = other non-relative, NA = not applicable)

Who is responsible for maintaining the shelter/housing?

_____

(CODE: HHM = household head male, HHF = household head female, AM = other adult male, AF = other adult female, B = boy, G = girl, OR = other relative, ON = other non-relative, NA = not applicable)

What is the MAIN use of your livestock/poultry? (SELECT ONE PER ANIMAL)

Animal Type	Sale of live animals	Sale of animal products	Home consumption	Other (specify)
Pigs	◯	◯	◯	_____
Sheep	◯	◯	◯	_____
Goats	◯	◯	◯	_____
Poultry	◯	◯	◯	_____
Cattle	◯	◯	◯	_____
Water Buffalo	◯	◯	◯	_____
Other	◯	◯	◯	_____

Who is responsible for the following tasks? (USE CODES - CAN SELECT MORE THAN ONE)

Animal Type	Feeding	Herding/ Grazing	Watering	Cleaning
Pigs	_____	_____	_____	_____
Sheep	_____	_____	_____	_____
Goats	_____	_____	_____	_____
Poultry	_____	_____	_____	_____
Cattle	_____	_____	_____	_____
Water Buffalo	_____	_____	_____	_____
Other	_____	_____	_____	_____

Who is responsible for the following tasks? (USE CODES - CAN SELECT MORE THAN ONE)

Animal Type	Milking	Milk Processing	Monitoring Health	Breeding
Pigs	_____	_____	_____	_____
Sheep	_____	_____	_____	_____
Goats	_____	_____	_____	_____
Poultry	_____	_____	_____	_____
Cattle	_____	_____	_____	_____
Water Buffalo	_____	_____	_____	_____
Other	_____	_____	_____	_____

Please describe a usual day in your life on the farm (RESPONDENT - CAN SELECT MORE THAN ONE)

Checklist			
Milking animals	☐	Slaughtering animals	☐
Processing milk	☐	Bathing animals	☐
Gathering eggs	☐	Feeding animals	☐
Cleaning sheds/ nests/ stalls	☐	Checking animals for disease/ illness/ injury	☐

Growing crops for pasture / livestock feed	☐	Treating animals for disease/ injury	☐
Harvesting fodder	☐	Vaccination of animals	☐
Gathering feed	☐	Treatment of animal parasites	☐
Wool processing	☐	Delivering baby animals	☐
Wool sales	☐	Purchasing animal food	☐
Inspecting farming equipment	☐	Providing water for animals	☐
Building/ repairing animal shelters/ farm structures (e.g. fences)	☐	Animal product value addition (processing) e.g. drying	☐
Other, specify _____			

Who makes most of the decisions on buying medicine for the animals? (CAN SELECT MORE THAN ONE)

Animal Type	HH Member
Pigs	_____
Sheep	_____
Goats	_____
Poultry	_____
Cattle	_____
Water Buffalo	_____
Other	_____

(CODE: HHM = household head male, HHF = household head female, AM = other adult male, AF = other adult female, B = boy, G = girl, OR = other relative, ON = other non-relative, NA = not applicable. Do not buy)

Who makes most of the decisions on vaccinating animals? (CAN SELECT MORE THAN ONE)

Animal Type	HH Member
Pigs	_____
Sheep	_____
Goats	_____
Poultry	_____
Cattle	_____
Water Buffalo	_____
Other	_____

(CODE: HHM = household head male, HHF = household head female, AM = other adult male, AF = other adult female, B = boy, G = girl, OR = other relative, ON = other non-relative, NA = not applicable. Do not vaccinate)

Who makes most of the decisions on seeking the services of a vet/ para-vet? (CAN SELECT MORE THAN ONE)

Animal Type	HH Member
Pigs	_____
Sheep	_____
Goats	_____
Poultry	_____
Cattle	_____
Water Buffalo	_____
Other	_____

(CODE: HHM = household head male, HHF = household head female, AM = other adult male, AF = other adult female, B = boy, G = girl, OR = other relative, ON = other non-relative, NA = not applicable. Do not use vet/paravet services)

Who makes most of the decisions on when and where to sell the animals? (CAN SELECT MORE THAN ONE)

Animal Type	HH Member
Pigs	_____
Sheep	_____
Goats	_____
Poultry	_____
Cattle	_____
Water Buffalo	_____
Other	_____

(CODE: HHM = household head male, HHF = household head female, AM = other adult male, AF = other adult female, B = boy, G = girl, OR = other relative, ON = other non-relative, NA = not applicable. Do not sell)

Who makes most of the decisions on how to use the income from the sale of the animals? (CAN SELECT MORE THAN ONE)

Animal Type	HH Member
Pigs	_____
Sheep	_____
Goats	_____
Poultry	_____
Cattle	_____
Water Buffalo	_____
Other	_____

(CODE: HHM = household head male, HHF = household head female, AM = other adult male, AF = other adult female, B = boy, G = girl, OR = other relative, ON = other non-relative, NA = not applicable. Do not sell)

Who makes most of the decisions on buying new animals? (CAN SELECT MORE THAN ONE)

Animal Type	HH Member
Pigs	_____
Sheep	_____
Goats	_____
Poultry	_____
Cattle	_____
Water Buffalo	_____
Other	_____

(CODE: HHM = household head male, HHF = household head female, AM = other adult male, AF = other adult female, B = boy, G = girl, OR = other relative, ON = other non-relative, NA = not applicable. Do not buy new animals)

Who makes most of the decisions on buying animal feed? (CAN SELECT MORE THAN ONE)

Animal Type	HH Member
Pigs	_____
Sheep	_____
Goats	_____
Poultry	_____
Cattle	_____
Water Buffalo	_____
Other	_____

(CODE: HHM = household head male, HHF = household head female, AM = other adult male, AF = other adult female, B = boy, G = girl, OR = other relative, ON = other non-relative, NA = not applicable. Do not buy animal feed)

Who makes most of the decisions on when to slaughter the animals? (CAN SELECT MORE THAN ONE)

Animal Type	HH Member
Pigs	_____
Sheep	_____
Goats	_____
Poultry	_____
Cattle	_____
Water Buffalo	_____
Other	_____

(CODE: HHM = household head male, HHF = household head female, AM = other adult male, AF = other adult female, B = boy, G = girl, OR = other relative, ON = other non-relative, NA = not applicable. Do not slaughter.)

On average, how much did your household earn in the past WEEK? (SELECT ONE)

Less than 900 Rupee	900 - 1500 Rupee	More than 1500 Rupee
◯	◯	◯

What were the sources of your income? (CAN SELECT MORE THAN ONE)

Livestock	Crops	Other
☐	☐	☐

What was the main source of your income? (SELECT ONE)

Livestock	Crops	Other
○	○	○

During the last year, did you try to borrow money? Yes ○ No ○

If yes, were you successful in borrowing the money? Yes ○ No ○

Most often, which main meals do the ADULTS in this household eat? (SELECT ALL THAT APPLY)

TYPE	Breakfast	Lunch	Dinner
HHM	☐	☐	☐
HHF	☐	☐	☐
AM	☐	☐	☐
AF	☐	☐	☐

Most often, which main meals do the CHILDREN in this household eat? (SELECT ALL THAT APPLY)

TYPE	Breakfast	Lunch	Dinner
Boys	☐	☐	☐
Girls	☐	☐	☐

Most often, which main meals do the CHILDREN UNDER 5 in this household eat? (SELECT ALL THAT APPLY)

TYPE	Breakfast	Lunch	Dinner
Boys	☐	☐	☐
Girls	☐	☐	☐

Did your household eat any of these items of food in the LAST WEEK?

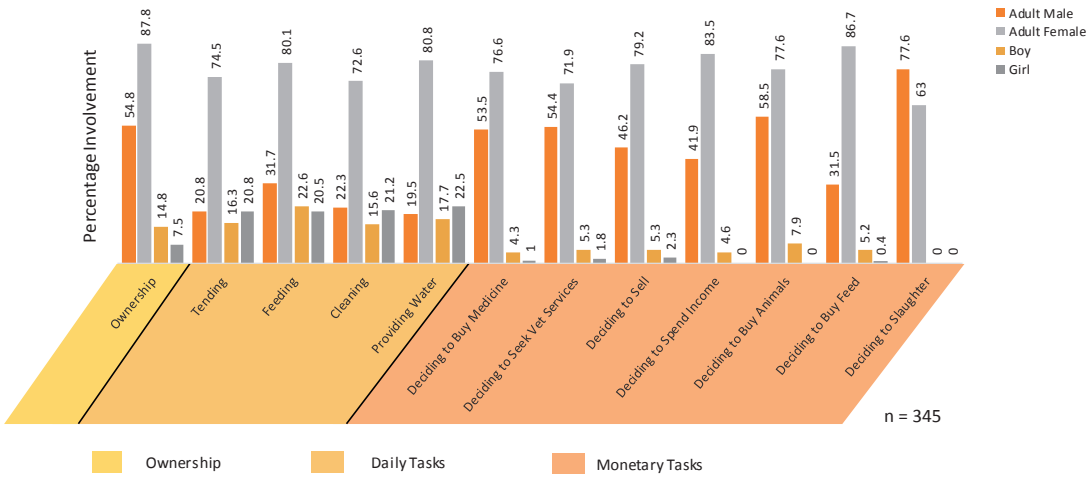
ITEM	Yes - have eaten	ITEM	Yes - have eaten	# Times	Source (buy or used own)
Maize or maize meal	☐	Fish (fresh or dried)	☐	_____	_____
Other cereals (millet, sorghum, rice etc.)	☐	Meat excl poultry/fish (pig, cattle, goat, sheep, etc.)	☐	_____	_____
Bread/flour	☐	Poultry (chicken, ducks, etc.)	☐	_____	_____
Wild foods (leaves, roots, etc.)	☐	Eggs	☐	_____	_____
Cassava/ sweet potato/ yams/ potatoes	☐	Milk	☐	_____	_____
Vegetables	☐	Milk products (butter/ cheese)	☐	_____	_____
Groundnuts / pulses (beans, peas, etc.)	☐				
Sugar or sugar products	☐				
Oils/fats	☐				

End time of survey _____

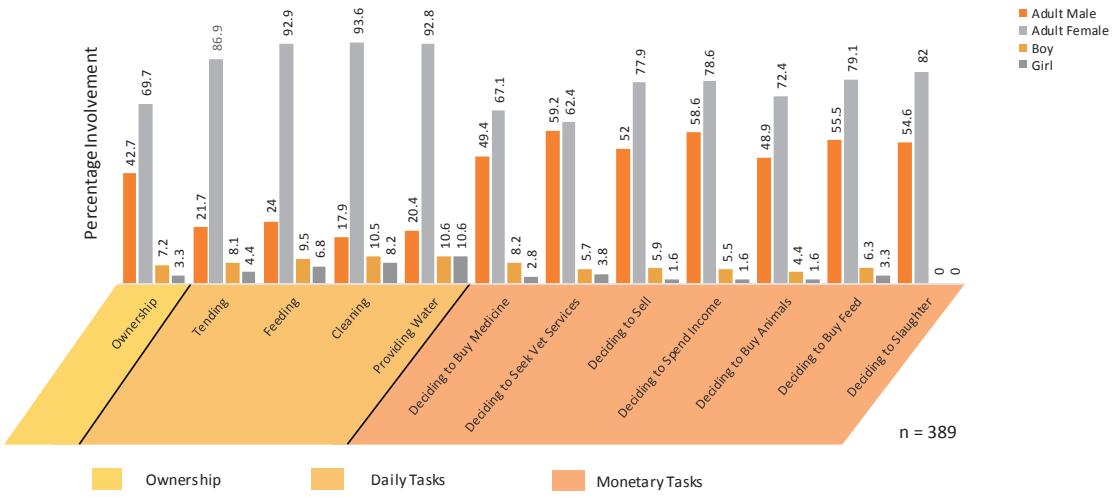
Appendix 3

Poultry

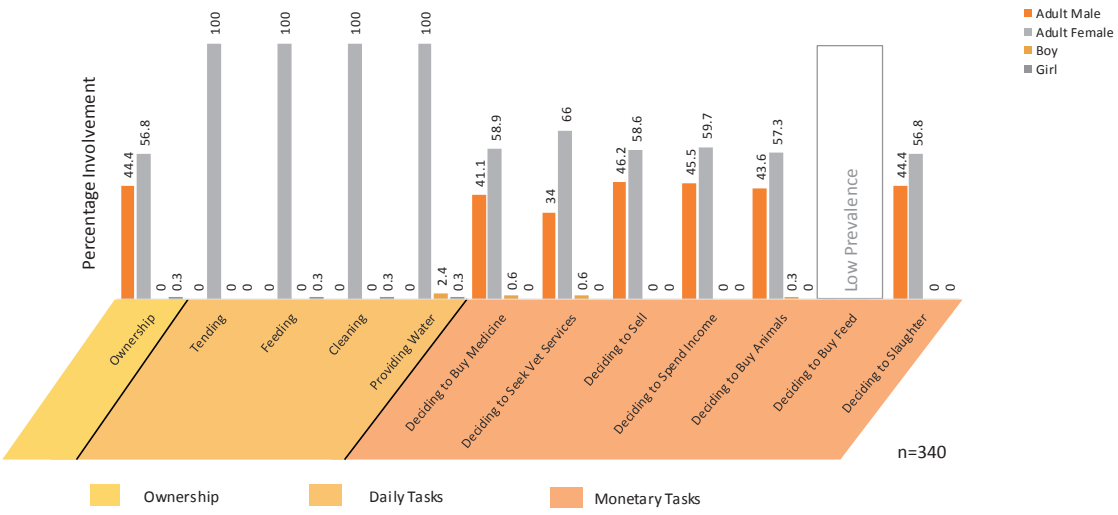
A. 3.1. *Poultry involvement by household member in Ethiopia (household and group surveys)*



A. 3.2. *Poultry involvement by household member in Tanzania (household and group surveys)*

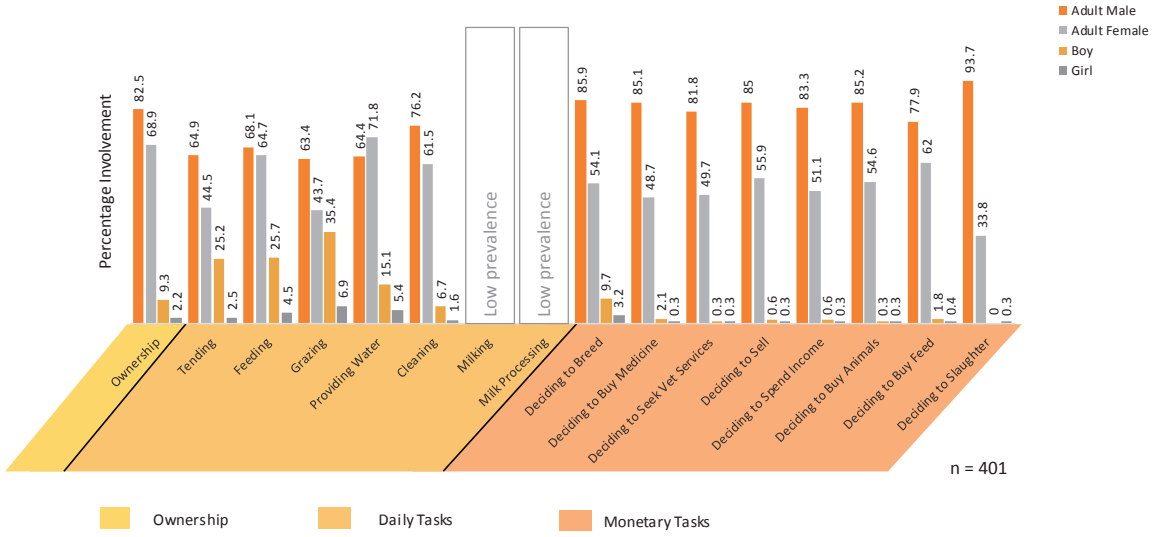


A. 3.3. *Poultry involvement by household member in India (household and group surveys)*

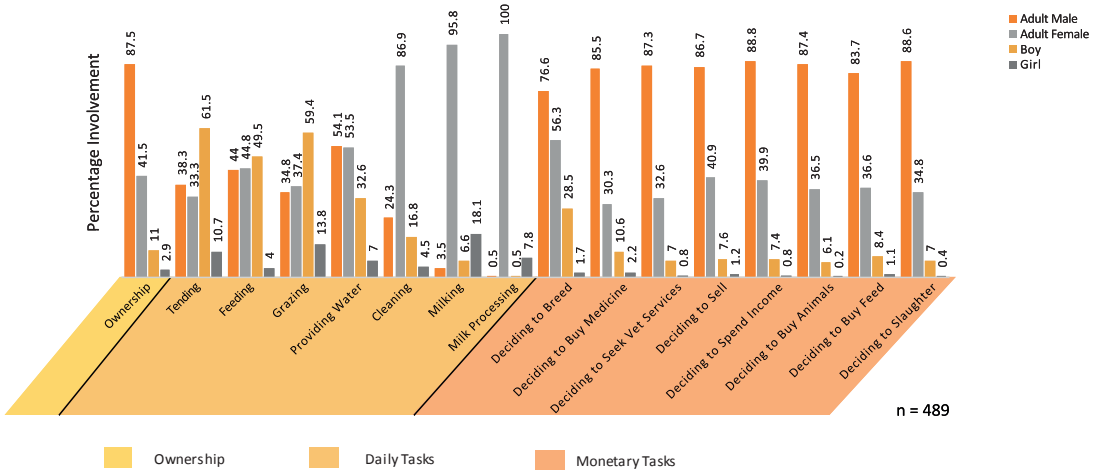


Small Ruminants

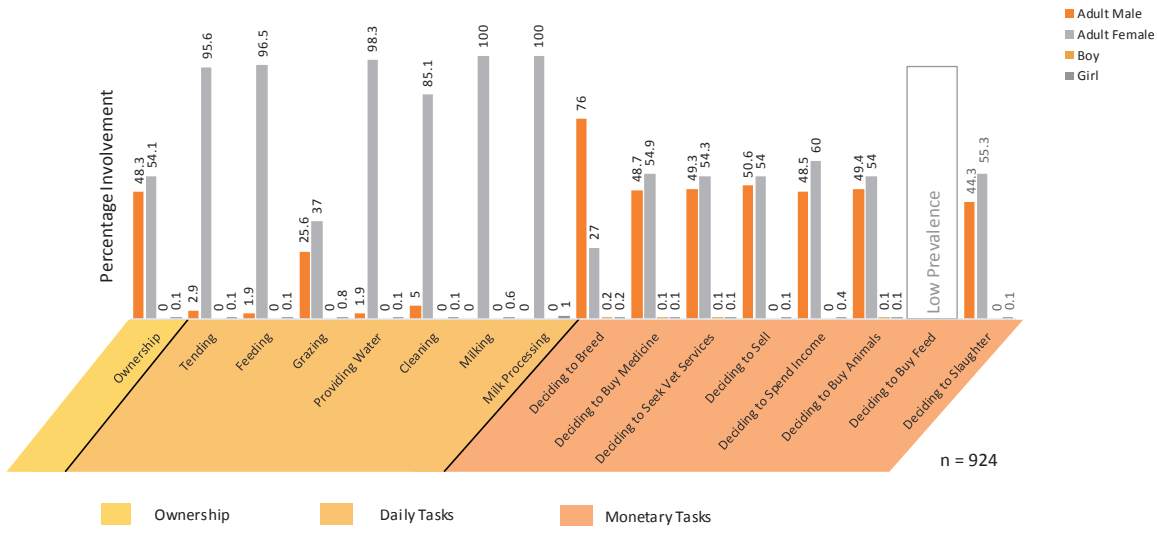
A. 3.4. *Sheep and goat involvement by household member in Ethiopia (household and group surveys)*



A. 3.5. *Sheep and goat involvement by household member in Tanzania (household and group surveys)*

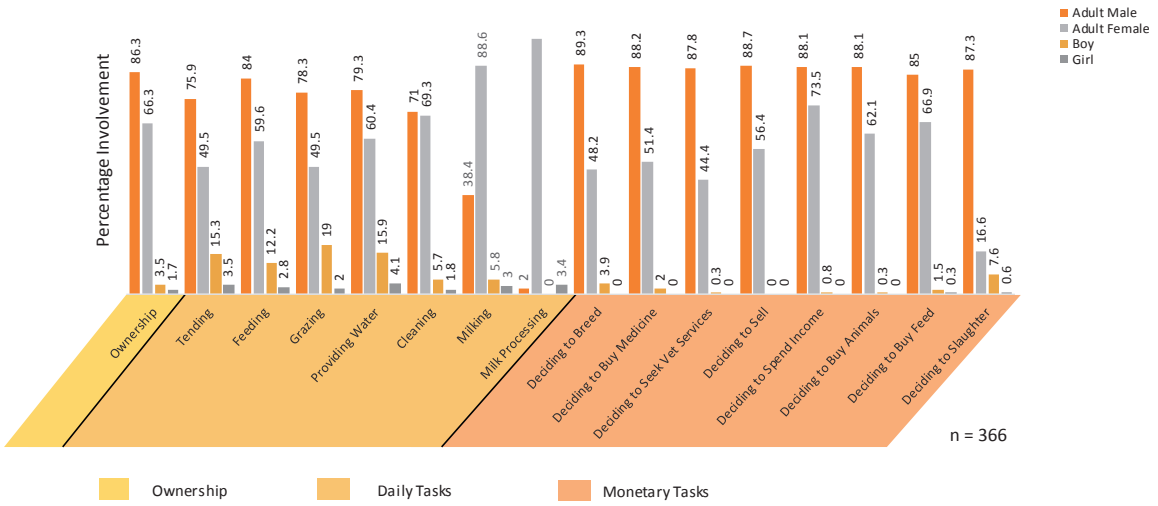


A. 3.6. *Sheep and goat involvement by household member in India (household and group surveys)*

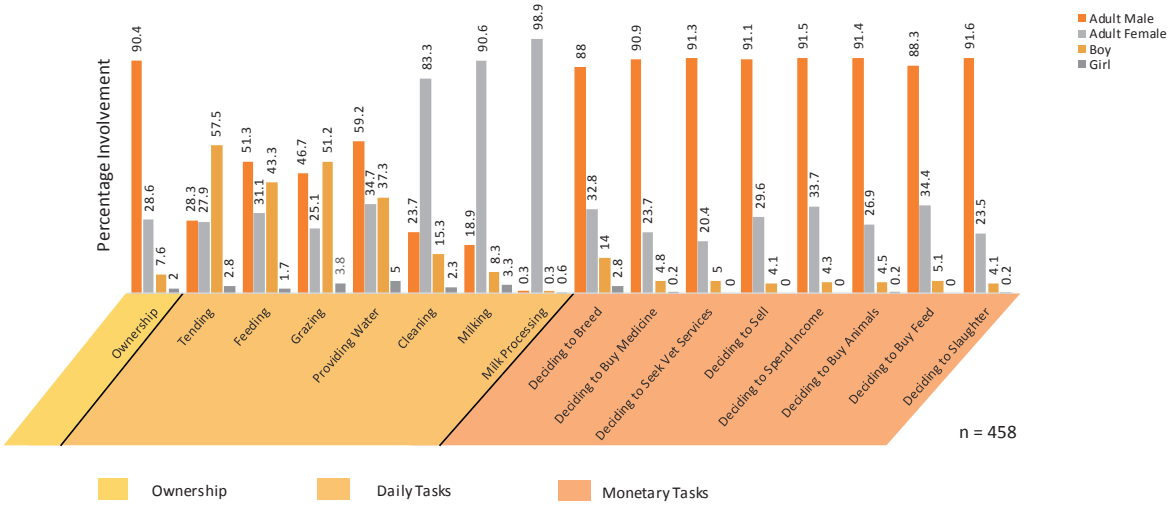


Large Ruminants

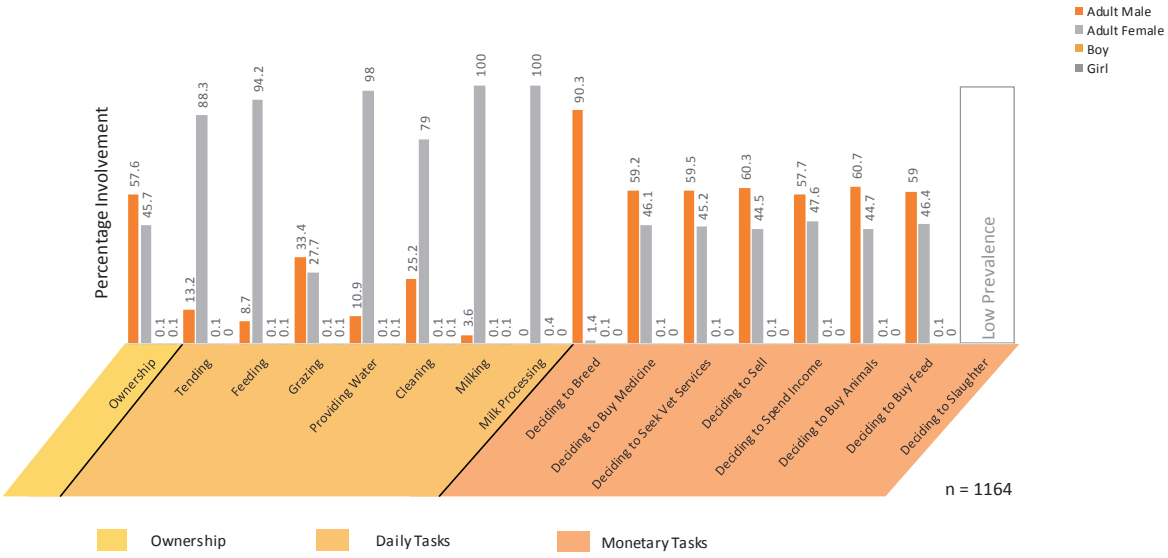
A. 3.7. *Cattle involvement by household member in Ethiopia (household and group surveys)*



A. 3.8. *Cattle involvement by household member in Tanzania (household and group surveys)*



A. 3.9. *Cattle involvement by household member in India (household and group surveys)*



Cover photo credit: Sephi Bergerson/GALVmed.

GALVmed

Protecting Livestock – Improving Human Lives