

# Socioeconomic Profile and Gender Characteristics in Relation to Camel Management Practices in the Pastoral Communities of Ethiopia

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## Abstract

Pastoralism was one of the oldest forms of organized human society in providing sustainable livelihood opportunities. However, this way of life is increasingly under threat due to a number of reasons. Today's political, legal, social and economic policies and laws are not taking into consideration the needs of pastoral populations specially women and children. An attempt has been made to evaluate the socio-economic conditions among the pastoral households of Eastern and Southern parts of Ethiopia. The study involved three major pastoral areas of Ethiopia, namely, Somali, Afar and Oromiya regional states. The findings of this study revealed that lacking of formal education except limited religious education for male children, girl children are excluded from any type of literacy. Population size in the study areas reflects above national average, due to custom of polygamy. Regionally there has been a variation in decision making on the issues like intensity of production, breeding, camel herding, milking, marketing and other related activities. In general this study observed that there has been a dominant role played by men in most of the revenue generating activities except in few areas of districts other than economic activities. Hence, different types of social and policy intervention should be made.

**Keywords:** Pastoralism, education, Polygamy, intensity of production, Breeding.

## Introduction

In situations where rainfall is scarce and volatile erratic and the physical environment is fragile, nomadic pastoralist way of life is advocated to be the more appropriate livelihood strategy than rain-fed agriculture (Gwida, 2010; Raziq *et al.*, 2008). One of the basic means of livelihoods for pastoralists is livestock keeping in general and camels in particular. Pastoralism makes a significant contribution to gross domestic product (GDP) in many East African countries and parts of Asia. Pastoralists are the custodians of dry land environments,

providing services through good rangeland management including biodiversity conservation, and wildlife tourism. Despite providing such value, pastoralist areas in East African countries tend to have the highest incidence of poverty and limited access to basic services compared with other areas (Oxfam, 2008).

Ethiopian pastoralists have traditionally been highly marginalized (PFE, 2002, 2008). Both men and women have vital roles in the continuation and adaptation of pastoral systems. Women play pivotal role as livestock herderers, natural resource managers, income generators, and service providers, tasks which by themselves are influenced by gendered norms, values, and relations (Ridgewel et al., 2007). However, in spite of women's contribution to pastoral life, they have only limited access to, and control over the key productive resources such as livestock and land. They limited access to healthcare, education, family planning, and reproductive health (PFE, 2008). Moreover, the fundamental role of pastoral women in agriculture and livestock production has been systematically ignored and undervalued (Flintan et al., 2011). Nevertheless, studies within and among different pastoral communities on socioeconomic and gender characteristics in relation to camel management practices in Ethiopia is scanty in comparison to other livestock species and production systems. Hence, the objectives of the present study were to describe socioeconomic characteristics of pastorals in relation to camel management practices in Somali and Afar regional national states and Borena zone of Oromiya national regional state to indicate gender participation in decision making of different activities in livestock husbandry.

## Materials and methods

### Study area

The study involved three major pastoral areas, namely, Somali, Afar and Oromiya regional states. The study sites within each area were purposively selected based on livestock population, while households within sites were selected randomly. Six rural *kebeles* (Rk, the smallest administrative unit in Ethiopia), two each from Jijiga, Gode, and Shinille Districts of the Somali national regional state (SNRS), two each from Yabelo and Moyale Districts of the Oromiya regional state, and four Rk two each from Mille and Amibara districts of the Afar national regional state (ANRS) represented the sample sites of the study area.

### Methods of data collection

A total of 205 households (HH) were selected from the study areas. The distribution of households across the sample sites were 21, 22, 39, 32, 30, 29, and 32 households from Moyale, Yabello, Gode, Jijiga, Shinille, Amibara, and Mille districts, respectively and on average 15HH samples were taken per kebele in each district. Data collection was conducted using semi-structured questionnaire by trained enumerators speaking the local languages. One group discussion per site was held with the group discussants that consist of elders, development agents and community leaders. Data on camel and livestock management practices in relation to men and women participation, household and children school attendance, decision by men and women on work share in different livestock activities were collected.

### Data Analysis

Software packages of SPSS version 16 and SAS (2008) were employed to generate descriptive statistics for qualitative and quantitative data.

## Results

### Educational status

The educational background of household heads in the study areas is shown in Table 1. Most of the household heads in Afar regional state were illiterate and some acquire religious education. In the districts of Somali regional state (Jijiga and Shinille) and Borena zone of Oromiya regional state (Yabelo and Moyale), more than 1/3 and ¼ of the household heads, respectively have a primary school education. More household heads in Yabelo district have a primary school background than Moyale district. Exceptionally, most households in Gode district had religious educational background. According to the findings of this study, more number of household heads attend formal education in districts that are accessible and located in close proximity to major town in the district. Household heads having religious education did not encounter in Moyale and Yabelo study areas.

Table 1. Educational background of the household heads in the study districts

Districts	Education type/level	Frequency	Percent
Amibara	Religious	13	41.94
	Illiterate	18	58.06
Mille	Religious	11	35.48
	Illiterate	20	64.52
Gode	Primary	2	6.67
	Religious	23	76.67
Jijiga	Illiterate	5	16.66
	Primary	13	40.63
	Religious	9	28.13
Shinille	Illiterate	10	31.25
	Primary	12	36.36
	Religious	4	12.12
Moyale	Illiterate	17	51.52
	Primary	4	20.00
Yabelo	Illiterate	16	80.00
	Primary	9	39.13
	Illiterate	14	60.87

Children school attendance and their level of education is presented in Table 2. More than 75% of children whose age is between seven and fifteen in the study areas of Afar regional state and Gode and Jijiga districts of Somali regional state were not attending school (this data is for those children whose age is within the age described school age in Ethiopia). Exceptionally 50% of the children in Shinille district were attending school. In all the study areas, except Jijiga district, the majority of children in school are males while the attendance of female was very minimal. About 1/3 of Gode and 1/6 of Jijiga district respondent households prefer their children to attend religious than formal education.

#### Population in the study areas

The total population of the interviewed households in the present study areas is 205 which consists 40% from 25-40 and 60% above 41 years of age category with a mean of 9 persons per household. The mean number of children per household is 7. Regardless of the number of children a household have, many of them have the plan to increase in the future (Table 3). In the study areas of Somali and Afar regional state more than 90 and 75% of the households, respectively have an interest to have more children in the future. In contrast, only 50% of the households in Oromiya regional state (Yabelo and moyale districts) have an interest to increase the number of children more than the present 4-5 children, although there is difference between the districts in the interest to have more children. Respondents reported that the large number of children due to the existence of polygyny. This is common in most of the study areas as indicated in Table:2.

It indicates that the national Norm of family size has been violated

Table 2. Children school attendance and level of education in the study districts

Disriects	Children attendance of school	Frequency	Percent	Children level of education	Frequency	Percent
Amibara	Yes	5	16.13	Male primary female	4	12.90
	No	26	83.87	illiterate	18	58.06
				All illiterate	6	19.36
				All male and female school	3	9.68
Mille	Yes	4	12.90	Male primary female	6	19.35
	No	19	61.29	illiterate	17	54.84
				Some of them	8	25.81
Gode	No	18	60.00	Male primary female	8	26.67
	Some of them	12	40.00	illiterate	12	40.00
				All illiterate	10	33.33
Jijiga	Yes	6	18.76	Religious	21	65.63
	No	26	81.25	All Illiterate	6	18.75
				All children in school	5	15.63
Shinille	Yes	14	42.42	Male primary female	12	36.36
	No	7	21.21	illiterate	7	21.21
				Some of them	12	36.36
Moyale	Yes	4	20.00	All illiterate	11	55.00
	No	12	60.00	All children in school	5	25.00
				Some school others not	4	20.00
Yabelo	Yes	7	30.42	All illiterate	10	43.48
	No	10	43.48	All children in school	6	26.10
				Some school others not	7	30.42

Table 3. Level of satisfaction of households with number of children currently owned and future anticipation

Districts	Whether or not satisfied with current number of children	Frequency	Percent	Number of children anticipated —in the future	Frequency	Percent
Amibara	Yes with five children	6	19.35	Less than 5	6	19.36
	Yes with four children	1	3.23	Five-Ten	11	35.48
	No	24	77.42	I want more number of children	7	22.58
Mille	No (as above)	22	70.97	I have enough children	7	22.58
				Less than 5	9	29.03
				More number of children	9	29.03
Gode	No (as above)	30	100	Five up to Ten	13	41.94
				More than eight	10	33.33
Jijiga	No (as above)	32	100	More than Ten	20	66.67
				Ten	17	53.13
Shinille	No (as above)	30	90.91	More than Ten	9	28.13
				More than 15	6	18.74
				Less than five	3	9.09
Moyale	No (as above)	11	55.00	Five up to Ten	18	54.54
				More than 10	8	24.24
				Without limit	4	12.12
Yabelo	No (as above)	7	30.43	Six	6	30.00
				Ten	6	30.00
Yabelo	Yes with four children	5	25.00	Enough	8	40.00
				Yes with five children	6	26.10
				No	10	43.48
Yabelo	Yes with four children	7	30.43	-Six	5	21.73
				-Ten	4	17.39
Yabelo	Yes with four children	7	30.43	-Enough	14	60.87

#### Gender participation in decision making in camel management

An attempt has made to evaluate Gender aspects of decision making in both domestic and business activities which are shown in Table 4. Decision about marketed camel by-products, breeding objective and scale of operation varies between districts even within the same region. Accordingly, scale of operation in Mille and Jijiga districts is decided entirely by husband and the participation of wife was reported to be non-existent. Exceptionally, wife and husband decided together for ¾ of the scale of operation in Gode and Shinille and 1/3 in Moyale and Yabello districts.

In the study areas of Afar regional state decision on intensity of production was made by husband. In more than half of the households in Gode districts decision on intensity of production was made by both wife and husband together, where as in all the study areas of Somali regional state more than ¾ of the decision on intensity of production was made by husband. In all the study areas decision on intensity of production can't be made by female or wife alone.

Gender aspect of decision making on market targeted product and breeding objectives are shown in Table 5. The Afar pastorals of the study areas replied that their livestock production is not market oriented. When money is required for holiday and religious ceremony, few camels and goats are sold and the decision is entirely made by the husband. In this regard 1/3 of the pastoral community from Amibara district replied that wife is consulted by her husband to decide on market targeted products. In the study areas of Afar, the main resources are livestock but it is forbidden to sale livestock products. In the contrary in the Ethiopian Somali communities, livestock and livestock products are market oriented. More than 75% and 100% of the households in the study areas of Somali regional state and Borena zone respectively, said that decision for market targeted products were given by the husband. Except few, in all the study areas decision for breeding objective was made by husband.

Table 4. Gender aspect of decision making with regard to scale of operation

Districts	Scale of operation	Frequency	Percent	Sales and purchase	Frequency	Percent	Decision on intensity of production	Frequency	Percent
Amibara	Men	21	67.74	-Men	4	12.90	Men	23	74.19
	Community	2	6.45	-Men and Women	27	87.10	Men and Women	8	25.81
	Men & Women	8	25.81						
Mille	Men	31	100	-Men & women	31	100	1	31	100
Gode	Men	3	10.00	-Men	3	10.00	Men	13	43.33
	Men, Women & community	24	80.00	-Men & women	27	90.00	Men & Women	17	56.67
	Men & community	3	10.00						
Jijiga	Men	32	100.00	-Men	32	100.00	Men & women	29	90.63
Shinille	Men	23	69.70	-Men	19	57.58	Men	27	81.82
	Men & women	10	30.30	-Men & Women	14	42.42	Men & women	6	18.18
Moyale	Men	4	20.00	Men	8	40.00	Men	15	75.00
	Men and women	16	80.00	Men & Women	12	60.00	Men & Women	5	25.00
Yabelo	Men	6	26.10	Men	13	56.52	Men	17	73.90
	Men and Women	17	73.91	Men & Women	10	43.48	Men & Women	6	26.10

Table 5. Gender aspect of decision making on market targeted products and breeding objectives

Districts	Decision on market targeted product	Frequency	Percent	Decision on breeding objective	Frequency	Percent
Amibara	Men	12	38.71	Men	27	87.10
	Men & Women	10	32.25	Men and Women	4	12.90
	No market oriented products	9	29.04			
Mille	Men	2	6.45	Men	31	100.00
	No market oriented products	29	93.55			
Gode	Men	30	100.00	Men	30	100.00
Jijiga	Men	29	90.63	Men	32	100.00
	Men & Women	3	9.37			
Shinille	Men	24	72.73	Men	33	100.00
	Women	3	9.09			
	Men & Women	6	18.18			
Moyale	Men	20	100	Men	20	100.00
Yabelo	Men	23	100	Men	23	100.00

### Gender participation of work sharing in camel management practices

All family members including wife are involved in feeding and watering of livestock in the study areas of Afar pastoral communities (Table 6). In the study areas of Somali and Borena pastoral communities' husband and male family members more than 15 years of age are involved in feeding and watering of camels. All family members are responsible for herding of camel in the study areas of Afar region and Gode district where as husband is responsible in Jijiga and Shinille district. But in Borena zone of the study areas only male family members undertake herding activities. Milking of camel is done by husband, wife and children less than 15 years of age in the study areas of Afar region. But in the study areas of Somali regional state milking is done by husband and male children greater than 15 years of age whereas in the study areas of Borena zone wife and female children greater than 15 years of age are responsible to undertake the task. Barn cleaning is the

responsibility of all family groups except husband in the study areas of Afar region. In the study areas of Gode and Shinille all male family member and wife, respectively are responsible for barn cleaning where as female family members are responsible to undertake the activity in the study areas of Borena zone. Exceptionally, both husband and wife are responsible for barn cleaning in Jijiga district.

In all the study areas of Somali regional state and Amibara district of Afar region male greater than 15 years of age are responsible to keep the health of camel. But in Mille, Yabelo and Moyale districts both husband and wife are responsible to in giving solution to health problem and health care for camel. Reproductive management of livestock is undertaken by husband in Mille, Jijiga and Shinille districts whereas all male family members greater than 15 years of age in Gode and Amibara districts are responsible. But in the study areas of Borena zone all family members can undertake reproductive management of livestock. Marketing of camel animals and animal products are undertaken by male family members greater than 15 years of age and female family group greater than 15 years of age, respectively in Gode, Jijiga and Shinille districts whereas all family groups greater than 15 years of age participate in study areas of Borena zone. Camel marketing is undertaken by all family groups greater than 15 years of age and the two house owners (husband and wife) in Amibara and Mille districts, respectively.

Table 6. Gender aspects of work sharing in camel husbandry among Afar pastorals.

Work sharing	Amibara	Frequency	Percent	Mille	Frequency	Percent
Feeding	Husband and children <15 years of age	3	9.70	All family members	31	100.00
	Family group >15 years of age	7	22.60			
	All family group	19	61.30			
	Only male family group	2	6.50			
Watering	Husband and children <15 years of age	2	6.45	All family members	31	100.00
	Husband and children >15 years of age	3	9.68			
	Family members >15 years of age	5	16.13			
	All family members	20	64.52			
	Wife	1	3.23			
Milking	Husband and children >15 years of age	4	12.90	Husband ,wife and children <15 years of age	31	100
	Husband and wife	6	19.35			
	Wife and children >15 years of age	1	3.23			
	>15 years of Age	2	6.45			
	All family members (6)	18	58.06			
Herding	Husband >15 years of age except wife	6	19.35	All	31	100
	All	3	9.68			
	Husband and wife, male>15 years	20	64.52			
	All Family members except husband	1	3.23			
	All Family members except husband	1	3.23			
Cleaning barn	Husband	2	6.45	All family members >15 years of age except husband	31	100
	Wife, children >15 years of age	4	12.90			
	All family members except husband	7	22.59			
	All family members	17	54.84			
Health management	Husband	7	22.58	Husband, Male >15 years of age Husband and wife	29	6.5 93.6
	Husband, Male>15 years of age	17	54.84			
	Wife	5	16.13			
	Husband and wife	1	3.23			
	All family members >15 years of age	1	3.23			
Reproductive management	Husband	8	25.81	Husband	31	100
	Male family members	2	6.45			
	Wife	4	12.90			
	Husband and wife	1	3.23			
	Husband and male>15 years of age	16	51.61			
Marketing	Husband	10	32.26	Family group >15 years of age	31	100
	Husband and wife	2	6.45			
	Family members >15 years of age <sup>3</sup>	19	61.29			

Table 7. Gender aspect of work sharing in camel husbandry among Somali pastoralists

Work sharing	Gode	No. HH	%	Jijiga	No. HH	%	Shinille	No.HH	%
Feeding	All family group	3		Husband and all children	12	37.50	Husband	19	57.60
	Male family group >15 years of age	18	10.00	Husband			Male children >15 years of age	14	42.40
	Male family group and community	9	60.00	Male family group >15 years of age	3	9.40			
				Family group >15 years of age	5	15.60			
			30.00	Male family group	3	9.40			
					9	28.10			
Watering	Male family group	18	60.00	Family group except wife	5	15.60	Wife	6	18.20
	Male family group and community	6	20.00	Male family group	4		Male children >15 years of age	4	12.10
	Husband	6	20.00	Husband	9	28.10	Husband	23	69.70
					18	56.30			
Milking	Male family group >15 years of age	20	66.70	Husband and female <15 years of age			Husband and wife	12	36.40
	Husband	4	13.30	Male family group >15 years of age	3	9.40	Wife		
	Husband	3	10.00	Husband			Husband	6	18.20
	Husband, Male >15 years of age	3	10.00	Husband, Male >15 years of age	4	12.50			
					23	71.90		15	45.50
				2	6.30				
Herding	Husband	3	10.00	Husband	32	100.00	Husband	29	87.88
	Husband, wife and male children	20	66.70				Male >15 years of age	4	12.20
	Family group >15 years of age	4	13.30						
	Family group except wife	3	10.00						
Cleaning the barn	Husband	3	10.00	Husband	18	56.30	Husband	7	21.20
	All male family group	24	80.00	Wife	14	43.80	Wife	26	78.80
	All female family group	3	10.00						
Health management	Husband	3	10.00	Husband	16	53.30	Husband	33	100.00
	All male family group	24	80.00	Husband and male >15 years of age	14	46.70			
	All female family group	3	10.00						
Reproductive management	Husband	6	20.00	Husband	32	100.00	Husband	33	100.00
	Husband and male >15 years of age	24	80.00						
Marketing products and animals	Husband(1)	8	26.70	Husband (1)	32	100.00	Husband(1)	9	27.30
	Family group >15 years of age(3)	16	53.30				Wife(6)	24	72.70
	Wife and male children(5)	6	20.00						

Table 7. Gender aspect of work sharing in camel husbandry among Borena pastoralists

Work sharing	Moyale	No.HH	%	Yabello	No.HH	%
Feeding to livestock	Male family members >15 years of age	5	25.00	Male family members >15 years of age	6	26.10
	Husband	10	50.00	Husband	12	52.17
	Male family members	5	25.00	Male family members	5	21.73
Watering livestock	Husband	12	60.00	Husband	10	43.48
	All male family members	4	20.00	All male family members	7	30.42
	Family members >15 years of age	4	20.00	Family members >15 years of age	6	26.10
Milking	Wife	5	25.00	Wife	6	26.10
	Wife, female >15 years of age	10	50.00	Wife, female >15 years of age	12	52.17
	All female family members	5	25.00	All female family members	5	21.73
Herding	All family members	5	25.00	All	5	21.73
	All family members except female children	15	75.00	All family members except female children	18	78.26
Cleaning the barn	Female family members	14	70.00	Female family members	17	73.91
	Wife	6	30.00	Wife	6	26.10
Health management	Husband and wife	9	45.00	Husband and wife	13	56.52
	Family members > 15 years of age	6	30.00	Family members > 15 years of age	4	17.38
	Husband, wife and male >15 years of age	5	25.00	Husband, wife and male >15 years of age	6	26.10
Reproductive management	Wife	5	25.00	Wife	6	26.10
	All family members	5	25.00	All family members	6	26.10
	Husband,wife and male children>15 years of age	10	50.00	Husband, wife and male children>15 years of age	11	47.80
Marketing products and animals	Husband and wife	4	20.00	Husband and wife	6	26.10
	Family members >15 years of age	12	60.00	Family members >15 years of age	10	43.48
	All family members	4	20.00	All family members	7	30.43

## Discussions

### Education

The main reason for high illiteracy among pastoralists in Afar region may be related to the harsh environment of the area and different infrastructures which enhance education. The absence of infrastructure such as road, electricity and water systems may frustrate the interest of professionals to teach in the region and families refrain to send children to school in the absence of safe and quality education. During our survey we have seen the initiation of mobile school to give primary education to children of the pastoralists which is delivering teaching using tent and under trees shade. The other problem observed is that teachers should move with pastoralists from one area to the other and teachers consider it painful in the absence stimulating motivation. Earlier work by Little et al. (2010) described challenges of educational service provision to pastoralist areas in Ethiopia. Their findings showed that mobility of pastoralists, lack of teachers willingness to live in the harsh environment of the area, a household economy dependant on child labor where children are spending long periods away from the settlement areas where teaching is delivered, high gender disparity in educational opportunities and a focus on formal education but little on non-formal education, are the major bottlenecks to the growth of education in pastoral areas of Ethiopia.

The highest number of religious educational background observed in Gode areas is attributed to remoteness of the districts from the center and inaccessibility through road transport. Hence, infrastructure like road and



different infrastructures of the area may be the most important factors to facilitate education among the pastoral population, this in-turn increase productivity of the people. Unlike the case in Ethiopia, Ocaido et al. (2005) reported intermediate level of literacy in the agro-pastoral communities of Uganda where about 62.9% of the household heads attained education up to primary level and beyond. The high level of illiteracy in the pastoral community can pose serious problem in the delivery of improved technologies to improve livestock production and livelihood as well as it impair record keeping through writing as described by Mgongo et al. (2014).

The absence or the low rate of children attending school in all the study areas may be related to the high rate of illiteracy among the owner of the households who usually give less value to education. Among many households, priority to send children to school is given to boys than girls. This may be the tradition inherited from their ancestors, in which gender inequality is the main feature of some pastoral communities. The study identified early marriage, lack of adequate schools in pastoral areas, and gender biased sentiment as barriers to girls' education. Comparable finding reported by Adugna and Sileshi (2013) indicated that absence of female education in the pastoral communities is for the reason that sexual division of labor demands that females stay at home to serve their family until they marry and fear that an educated girl may prevent early marriage which is against the social norm. Mani et al. (2009) indicates that Sub-Saharan African countries have some of the lowest primary school enrollment rates in the world, where only 59% of primary school aged-children were enrolled in school during 1996-2002. The result obtained in the present study areas is even much lower than the value reported for sub-Saharan Africa.

### **Population**

The interest to own more number of children in most pastoral communities may be because of the competition among clans in the community for communal resources and to achieve social values in the society. The relatively higher interest of the Borena people in Moyale to have more number of children than those living in Yabelo district may be to compete with Somali neighborhood in controlling different resources, thus to buildup young population who will protect and keep the resource, entailing the importance of peace building between and within ethnic pastoralists to reduce the human population. Due to the existence of poverty an additional child is treated as an asset than a liability as no expenditure is incurred on these children like in the form of education. Concerning population increase in the pastoral areas of Ethiopia, the study by Little et al. (2010) enlightened that policy makers should give attention to deal with growing human population. Even though population density of pastoral areas is low, there is scarcity of water and forage due to recurrent drought. Hence, increasing growth of human population in the pastoral areas may affect traditional camel production by escalating pressure on the grazing areas. The study by Abdul et al. (2004) in Borena pastorals indicated that the recorded natural increase in population is partly due to improving health facility, but largely to a weakening of the traditional rules that regulate marital and child bearing age and marriage of more than one wives. Beyond their community, the interest to acquire more children in the future will have a negative impact on the growth and education of the children and development efforts of the country. Hence, educating the community at large, and the households in particular about the negative consequence of more children in the family has a paramount importance and should be given priority by the local administrators.

### **Gender participation in decision making on scale of operation, market targeted product and breeding objective of camel**

Absence of participation of women in decision making in the scale of operation in camel husbandry in the study areas of Afar communities is due to the participation of male household owner or husband in the discussion and decision making on issues of concern in the community. It is documented that most of the activities in the region are decided by the community. All the community members who are responsible to decide on different activities and issues are male related to their family. Scale of operation in camel husbandry is decided by the community since camel is considered as a clan property, thus the decision makers are the males. This is also common in Somalia ceeldheer pastoral communities as noted by Ahmed (1989). In this community, although camels are individually owned and inherited, the ownership is not absolute and camels are always considered as clan property.

The participation of female in the decision making of scale of operation in the study areas of Borena zone may be related to the increment of sedenterization in the area, which decreased the impact of elders on the community to rule and define the implementation on communal resources and especially camel and cattle are individual properties. In this regard, the result of the study conducted by Kamara et al. (2003) indicated dramatic increase in land allocated to crops and pastures in the past 25 years that are either privatized or accessible to individual and households.

In all study areas, except Jijiga district, sales and purchase of camel are a common decision of husband and wife,

where as in Jijiga district sales of camel milk was decided by wife and purchase was decided by husband only. This reflects the inequality of wife concerning camel marketing. In this regard, the study of FAO (1997) described that females are commonly responsible, along with their children, for taking care of small livestock, production and marketing of butter, cheese, and vegetables. Nevertheless, during our study we observed that it is impossible to decide in the marketing of small ruminant and livestock products without consulting the husband in some of the households. But in Borena zone, Yabelo and Moyale districts and Somali region, Shinille district half of the households responded that the decision for sales and purchase of animals and camel milk were done by husband and wife together. Tangaka et al. (2000) noted that husband and wife make joint decisions on the purchase and sale of livestock in the Ethiopian highlands.

In most of the Somali and Borena communities' decision on the intensity of production and market targeted products are the responsibility of men. The study of Adugna and Seleshi (2013) also revealed that decision regarding sale of livestock, mobility, and restocking are the responsibilities of men in the Southern areas of Ethiopia. In addition, the author noted that women are involved in livestock activities such as grass collection and feeding, watering, milking, and processing milk by-products into food items. In most cases, men supervise and command, women work and obey. Studies by Tangaka et al. (2000) demonstrated that for animals serving purposes that are within the domain of women's responsibilities, such as milking animals that feed the family, women will have greater influence on decisions regarding the animals. Other study conducted by Fiona (2011) in Borena zone indicated that decision to dispose livestock is made by both husband and wife. Unilateral decisions concerning the use of livestock assets are considered uncustomary. Besides, large sales of livestock tend to be controlled by the clan elders. A woman tends to have greater control over livestock by-products that is given to her through a dowry or gifts. Similarly, study by McPeak et al. (2012) noted increased participation of women in decision making on market targeted livestock products in northern Kenya and southern Ethiopia. The authors observed that men own more, but women also own all types of livestock including cattle, and even camels. And they are increasingly involved in herding activities.

#### **Gender participation in work sharing of camel management practices**

In most of the study areas of Afar region camel milking is undertaken by male family members and this is because they considered camel as a sacred animal. In addition, it is believed that milking requires enormous energy which makes it difficult for females to milk camel. The respondents mentioned that the lactating camels do not allow women to milk them and do not give sufficient milk while women milk the camels. Earlier studies (Kassahun 2011; Seid 2011; Semenew et al., 2013) also revealed the fact that female are not involved in milking camel in Afar regional state. According to Seid (2011) female are not allowed to have contact with lactating camels, particularly during the menstruation period. This is because of the belief that the lactating camel would die if milking is undertaken by woman in Assayita district of Afar regional state. Females are also not allowed to drink camel milk till some days after birth of pregnant women and do not touch milking and drinking utensil shows the deep rooted customs. Similarly, the study of Kassahun (2011) in Berhale district of Afar region showed that women are only involved in calf rearing activity, and apart from this women have no role in milking, herding and marketing of live camels with the exception that they involve in the preparation of milking equipment. Semenew et al. (2013) also indicated that wives were not participated in camel management with husband and sons in milking, feeding, housing and marketing in Jijiga zone, Somali regional state. In Borena a pastoral, labor division among family varies with type of activities in the homestead and mobile camel herd (Bekele 2010). Mobile herds are often attended together with five or more village herds to reduce the labor demand at distant. Hence, about two adult men are often engaged in herding for sometimes until shifted by others while in the homestead lactating camels and calves herd attending and foraging feed activities are done by youngsters while adult men engaged in watering, health care and delivery assistances. Contrary to Afar and Somali pastorals, Borena women are mainly involved in milking activities.

The responsibility of herding in most of Afar and Somali regional state except Jijiga and Shinille districts were undertaken by male family members. This may be because of the harsh environment of the study areas which is uncomfortable and risky for women. The study by Seid (2011) indicated that both sexes (male and female adult) undertakes calf rearing if it is around their homestead especially during the wet season but in general herding is the major activity for young male in the study area and also responsible in taking animal to veterinary and market. In this regard, the study of Semenew et al. (2013) indicated similar result on the herding of Jijiga pastoral community. Other study Antonio (2009) in the Eastern Europe pastoral community indicated that women generally have mothering and domestic responsibilities; care for animals kept near the homestead and for young and sick livestock, and, when moving to new pastures, may also be involved in dismantling and rebuilding their houses.

The decision making for breeding objectives of livestock has been the prerogative of men, it may be because

traditionally the husband considered themselves as head of the house and responsible for the development of the family in the future. Similarly the studies by Maeda-Machangu et al. (2000) and Ngowi et al (2008) indicated that roles of females in pastoral communities are spelt out by males and forbid females owning property or livestock in that matter. It is for the same cultural perception that females are not allowed to head viable herds but are required to work within a family.

The study of Fida and Amer (2013) in Jordan pastoral communities described about female in that the gender division of labor in agriculture places a heavy burden on females who besides managing household tasks, have heavy workloads outside home in agricultural production tasks as well as taking care of animals. Women have little access to resources, especially land, and their ownership of livestock is also relatively low, although they sometimes play a major role in managing the livestock and grazing.

This study indicates that family labor is the main sources of labor in all the study areas of pastoral communities. The responsibility of health and reproductive management fall on the men and it may be because traditionally the knowledge of livestock treatment and management may pass from the ancestors (father) to the male child. The result of this study is comparable with of Martins (1990) who described that women participate less in decision making regarding animals such as draft oxen that are mostly used by men for ploughing and men are responsible for the general welfare of livestock, such as animal care, breeding and herd movements. Similarly, in Borena pastorals health care is mainly practiced by herders (Men) and traditional healers. Moreover, the Borena pastorals consider veterinary service as only useful for cattle and not for camels (Bekele 2010).

### Conclusion

- The present study shows that the present rate of population growth which is taking place in study area among pastoral communities is much above the national average especially in Afar and Somali regional states may affect the development of the regions and the country at large and the living standard of the households in particular. Hence the cause should be minimized by education, family planning and intervention of traditional sentiment on polygamy.
- The higher illiteracy rate in most of the pastorals may hinder to facilitate different technologies and innovations within the pastoral communities. Prevention of female children from education may hinder development in the pastoral communities.
- Except breeding objective and health management and parts of marketing activities all the other work sharing activities in pastoral livestock management practices were done by women, therefore without participating female it is impossible to increase livestock productivity in the pastoral areas of Ethiopia, without dynamic involvement of women productivities like this type has no economic meaning and brings out the positive role of women for transformation.
- It is possible to extend the participation of female in most decision making, except breeding objectives from Borena and Shinille pastoral communities to others.

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