

Full Length Research Paper

Factors affecting markets and prices of goats among the Rendille pastoral community of Northern Kenya.

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Goats serve important roles of food provision, income generation and socio-cultural functions among the Rendille pastoralists of Northern Kenya. Because of their small size, early maturity and high prolificacy, they can meet household cash and food needs efficiently. Sustainable goat production in arid and semi-arid lands (ASALs) is however constrained by frequent droughts that influence goat population dynamics. The objective of the current study was to determine the factors affecting markets and prices of goats among the Rendille pastoralists of Northern Kenya. The study was conducted through administration of structured and semi structured questionnaires to 82 households and the data collected were those of sales and purchases, markets and prices of different age groups and sex classes of goats in different seasons of the year. The results were presented in descriptive statistics. The results showed that most of the respondents used Ilaut market to sell goats. Ilaut serves as a market for livestock and other goods and services and hence it is termed "Nairobi One Day". A few of the respondents sold their goats in Korr because they had a wider range of traders from which to choose from and who could offer better prices. Rendille pastoralists sold goats during the short dry season and the majority of sales were male goats of 7-12 months old and castrates of four years where prices ranged from KES 1000-1600 and 2000-4000 respectively (1 US \$=KES 83). Majority of female goats purchased were mainly for breeding and herd build up. Young goats were sold to cater for goods and services that require little amount of cash while castrates are sold when substantial amount of money is required to serve specific purpose. The reasons for goats purchased were home and ceremonial slaughters, breeding and fattening. Due to active participation in markets by pastoralists there should exist efficient market structures and communication network and marketing cooperatives be formed to allow selling of goats to a wider range of traders who could offer better prices and avoid exploitation by middlemen. Financial institutions where pastoralist could save money from goat sales should also be established at strategic places to salvage the value of goats that could otherwise be lost through deaths during drought.

Keywords: *Goats, sales, purchases, markets, prices, seasons, Northern Kenya*

INTRODUCTION

Goats serve an important role in the economy and nutrition of pastoral communities in arid and semi-arid areas. They provide them with both tangible including food, income, manure and hides and intangible

benefits such as settling debts, cultural and ceremonial practices, savings and security against climatic risks and uncertainties (Kosgey, 2004; Ahuyaet *al.*, 2005; Sun, 2005; Dossaet *al.*, 2007; Kosgeyet *al.*, 2008; Akilu and

Catley, 2010).

Goats are easily converted into cash to meet the daily food and non-food requirements because of their small body size, low prices and higher reproduction rates that ensures faster recovery (Pavanello, 2010). The majority of goats sold are males (72%) as observed in Northern Kenya (McPeak, 2004). Besides age and sex of goats, Nyariki *et al.* (2005) also observed that wealth differences of pastoralists play a determinant role in livestock pattern of sales. A large number of immature animals in the market is an indication that those selling are more likely to be poor.

The strong attachment of pastoralists to livestock has a negative impact on market prices because they are reluctant to sell even when the market prices are higher. In dry areas where pastoralists market their livestock locally to avoid long trekking distances, poor road infrastructure and attacks on the way before or after sale, livestock traders are likely to team up and fix low prices for the animals and this has a negative effect on the producers. Pastoralists have often been viewed not to have access to good markets that could fetch excellent prices for their livestock (van Rooyen and Homann-KeeTui, 2009). Therefore, livestock dealers who have access to market information exploit these ignorant pastoralists by offering lower prices for goats. In case they prefer to go to these markets, trekking the animals will make them weak and transporting them by trucks increases the transaction costs thus reducing the market prices (Figure 1).

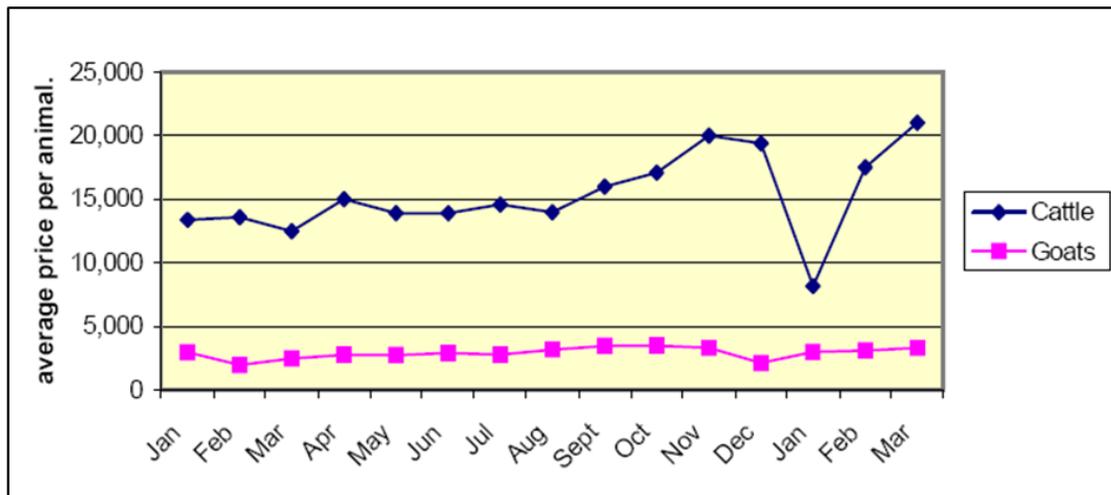


Figure 1: Comparative livestock prices Jan 2007 – Mar 2008

Source: ALLPRO, 2008

The exceptional situations has been reported by Akilu and Catley (2010) where better off pastoralists have access to high value secondary or terminal markets where they get excellent prices for their animals. In this region, goat's prices did not fluctuate much like for cattle but oscillated between 2000 and 4000 Kenya Shillings as shown in Figure 1 above. Livestock demand and prices have been reported to be affected by months of religious festivals, customary ceremonies (weddings and circumcisions) and school opening months (January, May and September) (Barret *et al.*, 2003). Pastoralists purchase both male and female stock as replacement for the previous years off take, to increase the flock size or to upgrade the herd. Like sales, prices of purchased goats vary across seasons and with respect to age and sex. The objective of this study was to determine the factors affecting

markets and prices of goats among the Rendille pastoralists of Northern Kenya. Attention is given to markets and prices because they determine goat production and performance. Goat production in pastoral areas can be improved when there is well-organized marketing system. The knowledge helps in developing strategies and development interventions to improve on production and marketing of goats in pastoral areas.

MATERIALS AND METHODS

Location of the study sites

The study was carried out at Laisamis sub-county, Marsabit County of Northern Kenya (Figure 2). Laisamis covers an area of 20,265.7 km² with a

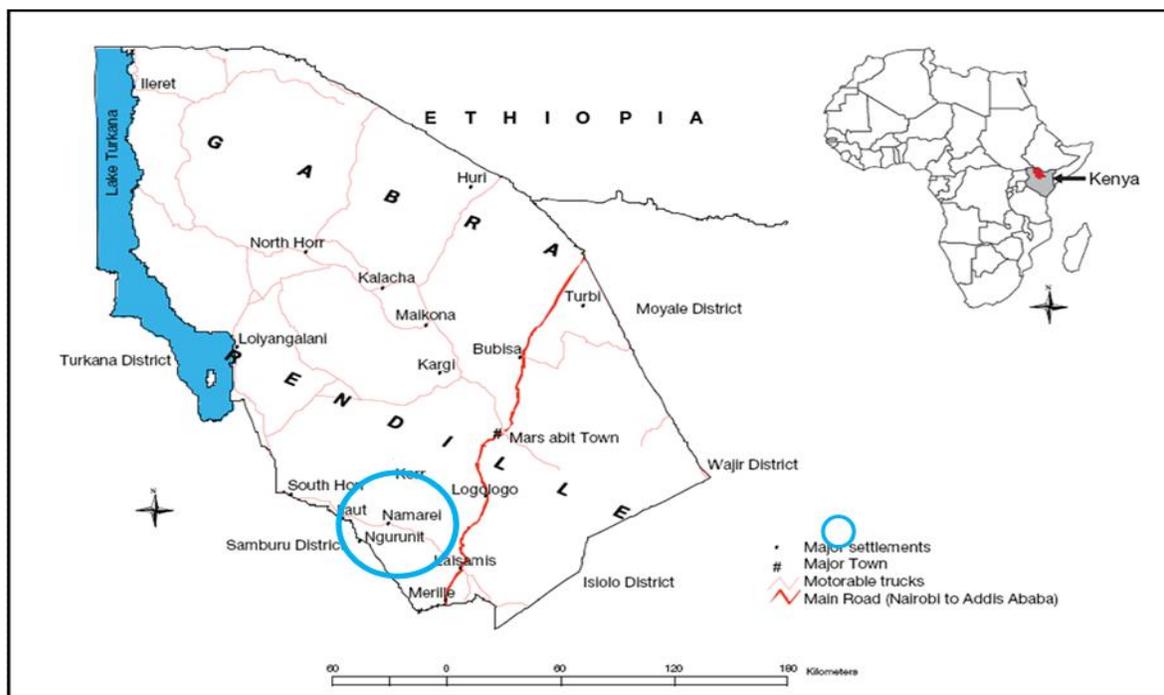


Figure 2: A map of study sites in Marsabit District

Source: Modified from Warui and Kshatriya, 2009

population of 65,669 persons and the major inhabitants are the Rendille community who are camel and small stock herders.

The rainfall in Marsabit County is low, erratic and highly variable but ranges between 100 and 200 mm per annum particularly in Laisamis sub-county. The rainfall pattern is bimodal with the long rainy season occurring between the months of April and June and short rainy season occurring between November and December. The short and long dry season occurs between the months of January to March and July to October respectively. Temperatures vary between 23°C and 34°C and the annual maximum temperature is above 30°C (Ngutu and Recke, 2006). The dominant vegetation in Rendille lowland area is dwarf shrub dominated by *Indigofera* spp and bushland dominated by *Acacia* spp. However, availability of vegetation depends on rainfall, soil types and height above sea level.

Data collection

Six villages in Laisamis sub-county, Marsabit County in Northern Kenya were selected for data collection based on the number of settlements in each village and the livestock species kept. The main study village sites were Korr, Namarei, Limoti, Ngurunit, Ilaut

and Farakorenand the majority of inhabitants in these areas are Rendille community who keep small ruminants particularly goats. Individual household interviews by use of structured and semi structured questionnaires were conducted in the six villages where Rendille pastoralists were the major target groups. Interviews were easily conducted because of the involvement of a Rendille livestock keeper and enumerator who was able to communicate with the researcher in both English and Swahili and with the research participant in local Rendille language.

Eighty-two households were interviewed and the data collected were sales and purchases, markets and prices of different age groups and sex classes of goats in different seasons of the year based on herders' recall of events.

Data analysis

The data collected from study was coded and entered into Microsoft Excel and from where it was later exported to Statistical Package of Social Sciences (SPSS version 16.0) for analysis. Descriptive statistics such as means, frequencies and percentages were used to present the results.

RESULTS

Goat markets and seasons of sale

The Rendille pastoralists sold goats to different markets and the sales were spread across all the seasons as shown in Table 1. Some pastoralists sold to their neighbouring goat keepers within the Manyatta Pastoralists sell goats throughout the year and the income obtained is mainly used to buy household food and non-food requirements. Most of them participated in marketing of goats during the short dry season occurring between January and March (47.8%) and the least during the short rainy season (15.5%) a period occurring between November and December.

Table 1: Percentage (%) of households who used different markets for goat sales during different seasons of the year in Laisamis sub-county

Goat markets	Seasons				Total (n=90)
	SDS (n=43)	LRS (n=17)	LDS (n=16)	SRS (n=14)	
Ilaut	17.8	4.4	4.4	2.2	28.8
Korr	4.4	2.2	4.4	1.1	12.1
Mobile traders	8.9	5.6	3.3	7.8	25.6
Merille	8.9	3.3	3.3	2.2	17.5
Lolguniani	5.6	2.2	1.1	2.2	11.1
Goat keepers (Manyatta)	2.2	1.1	1.1	0.0	4.4
Total (%)	47.8	18.8	17.6	15.5	100.0

SDS=short dry season, LRS=long rainy season, LDS=long dry season, SRS=short rainy season

Reasons for selling goats and utilization of revenue from sales

The revenue from sales of goats is used for different purposes. Fifty one percent of the respondents use the revenue to buy food as shown in Table 2. Only in few cases is the revenue used to buy other goats. Some pastoralists sold goats because they wanted to evade the effects of drought. Selling goats to pay school fees and to buy school uniform shows that there is a great valuation in child education among the Rendille pastoralists of Laisamis.

Table 2: Reasons for selling goats and utilization of revenue from sales

Reasons (n=82 households)	Number of response*	Frequency %
To buy food	58	51.8
To buy clothes	12	10.7
To pay school fees	11	9.8
To pay for livestock drugs	7	6.2
To pay hospital fees	5	4.5
To buy school uniform	3	2.7
To boost retail business	3	2.7
To evade drought effects	3	2.7
Buy other goats	2	1.8
To celebrate birth of a child	2	1.8
Others	6	5.5

*Multiple responses, others (to pay debts, buy beads and ochre, buy a camel, to save, buy tobacco/alcohol, pay dowry)

Factors affecting the buying and selling price of goats

The prices of goats vary from season to season and from one age group and sex class to another. Young male goats of 7-12 months old and castrates of four years old represented the majority of sales during the SDS (Table 3)

Table 3: Percentage of different age group and sex class of goats sold by Rendille pastoral community in different seasons of the year

Age group and sex class	Percentage and season of sales				
	SDS (n=46)	LRS (n=24)	LDS (n=17)	SRS (n=12)	TOTAL (n=99)
2-6 Mnths female	1.0	1.0	0.0	0.0	2.0
7-12 Mnths male	14.1	9.1	2.0	2.0	27.2
>1 yr doe	3.0	0.0	1.0	2.0	6.0
>2 yr doe	5.1	5.1	1.0	0.0	11.2
1-3 yr buck	6.1	1.0	1.0	0.0	8.1
4 yr castrate	8.1	2.0	3.0	0.0	13.1
5 yr castrate	6.1	3.0	6.1	3.0	18.2
7 yr castrate	2.0	1.0	3.0	4.0	10.0
Mating buck	1.0	2.0	0.0	1.0	4.0
Total	46.5	24.2	17.1	12.1	100

Table 4: Mean prices of goats of different age group and sex classes sold by Rendille pastoral community in different seasons of the year

Age and sex class of goats	Prices (in KES)			
	SDS	LRS	LDS	SRS
2-6 months female	1000	1300		
7-12 months male	1300	1600	1750	1325
>1 year doe	2350		1800	2250
>2 year doe	1775	1850	2000	
1-3 year buck	1350	1500	1300	
4 year castrate	3000	1925	3000	
5 year castrate	2800	2075	3150	2850
7 year castrate	3350	5000	4750	4500
Mating buck	3500	5250		3500

Table 5: Percentage of different age group and sex class of goats purchased in different seasons of the year

Age and sex class of goats	Percentage and season of goat purchases				
	SDS (n=10)	LRS (n=2)	LDS (n=6)	SRS (n=10)	TOTAL (n=28)
7-12 Months male	14.2	3.6	7.2	7.2	32.2
>1 year doe	3.6	3.6	7.2	7.2	21.6
>2 year doe	10.7	0.0	0.0	3.6	14.3
1-3 year buck	3.6	0.0	0.0	7.2	10.7
5 year castrate	3.6	0.0	7.2	10.7	21.5
Total	35.7	7.2	21.6	35.9	100

whereby their prices were on average KES 1300 and KES 3000 respectively (Table 4).

Females of more than 2 years old (*Riiyo*) were mainly sold during the short dry season and long rainy season while five-year old castrates (*Waharisubenet*) represented the majority of sales during the long dry season (Table 3). From November to December or the SRS, pastoralists sold the 7-year old castrates (*Wahari maar/ nyirakh*) at KES 4,500 on average (Table 4). Variations in goat prices, besides age and sex, are due to season, weight and condition of the animal and the

place of selling.

Male goats of 7-12 months old accounted for the larger proportion of goats purchased by the Rendille pastoralists (Table 5) and the prices paid for this class ranged from one season to another. The mean price during the short dry season and short rainy season was the same i.e. KES 1200 and KES 1250 respectively (Table 6). The mean buying prices of goats are lower as compared to the selling prices. The Rendille goat keepers did not purchase goats of 2-6 months, 4-year and 7-year castrate.

Table 6: Mean prices of different age group and sex class of goats purchased in different seasons of the year

Age group and sex class of goats	Mean prices of goats and season of purchase (KES)			
	SDS	LRS	LDS	SRS
7-12 months male	1200	1300	1350	1250
1-2 year doe	1200	900	1500	1050
>2 year doe	1850			2300
1-3 year buck	1700			1675
5 year castrate	2200		2250	2200

DISCUSSION

Goat markets

Most of the respondents sold goats to Ilaut livestock market that was established in the year 2007. The Rendille of Ilautare currently settling near this slowly emerging town because of the social amenities and many boreholes that are used as water sources for human and livestock use. Ilaut market serves several neighboring villages such as Ilaut, Farakoren, Ngurunit, Limoti and Namarei. It serves as a livestock market as well as market for other goods and services. Because of this, it is termed "Nairobi One Day" where most pastoralists prefer to accomplish their selling and purchasing activities during market day that takes place very fortnight. Nevertheless, the establishment of Korr and Ilaut markets was appreciated and used by most of the households in the study site. Producers were able to sell their goats directly to livestock traders in these markets and they had a wider range of traders from who, due to competition, offered better prices.

Additionally, some pastoralists sold to mobile livestock traders who later sold these goats either to other livestock markets or to the terminal markets in Nairobi. Mobile livestock traders (however not used by Farakoren respondents) may include the pastoralists groups that were formed in Farakoren with the aim of improving the management and marketing of small stock in pastoral areas (Ngutu *et al.*, 2011). Other livestock markets that were mentioned by the respondents included Merille, NdonyoWasin, Lolgunitani, Kargi and Nairobi.

According to Mailu and Rutto (2010), 46% percent of the total small ruminant sales in Marsabit go to the large terminal markets of Nairobi and Mombasa while the rest are sold through livestock market intermediaries. The constraints that hinder terminal market participation and maximization of profits in pastoral areas are logistical difficulties that include distance to terminal markets, insecurity, high transaction costs, underdeveloped infrastructure, poor marketing information and untimely information dissemination.

Selling of goats in Laisamis Sub County is limited to supplying butchers and local traders who would either sell to terminal markets at better prices or fatten for future use. The rate of sale also seems to be affected by market accessibility and therefore to increase on marketing of goats there should be planned establishment of markets at convenient locations in pastoral areas.

Majority of goat sales occurred during short dry season occurring between the months of January and March that corresponds to the months when pastoralists must pay school fees for their children. Few pastoralists participated in goat marketing during the short rainy season because of socio-cultural and religious celebrations (*Sorio* ceremony, circumcision ceremony and Christmas holiday) that involves the slaughter of goats hence availability of meat for consumption and a reduction of goat sales. At the onset of rains, pastoralists are not willing to sell their livestock rather they will retain them for breeding to offset the previous years' off-take. One other possible reason is the availability of milk from the lactating females. There is also increased demand of goats for replacement or herd-build up after the dry season and drought period

Reasons for goat sales

Goats are sold for different reasons and the revenue from the sales is used for various purposes. The most important use of the revenue was to buy food (Table 2). Milk that is a main component of pastoralist diet has to be supplemented and complemented with other foods such as maize, beans, cooking oil, sugar, and tealeaves among others. With respect to the importance and functions of goat, Dossa *et al.* (2007), Homann *et al.* (2007), Kosgey (2004) and Kosgey *et al.* (2008) found cash income to be the topmost reason for keeping goats in Benin, Zimbabwe and Kenya respectively. The finding of the current study on the use of revenue to buy food is similar to what was observed in

the study on Samburu pastoralists of Kenya by Konaka (1997) and a study by Grandin (1988) on the Maasai pastoralists. Besides the purchase of food, lump some cash go to the payment of school fees and school uniform. This shows that child education among the Rendille community is of great value.

Pastoralists sold goats to buy livestock inputs such as drugs and the result shows that livestock health management that contributes to better productivity is important not only to the pastoralist but also to the nation as a whole. A few of the people sold goats because they wanted to evade the effects of droughts on their animals. This finding concurs with the results of Little *et al.* (2006) who reported that selling livestock was a drought coping mechanism for pastoralists in Ethiopia. Young and weak animals who cannot withstand dry season and droughts are sold to allow retention and better management of mature animals. Rendille community celebrates the birth a child either male or female and to do so they have to sell goats to fund these celebrations.

Factors affecting the prices of goats sold and purchased during 2010/2011 year

The prices of goats in the study area varied from one season to another and for different age groups and sex classes. Rendille pastoralists have some special classification of goats based on the age and sex of these goats. They give different names to different classes and each one of them serves different functions. Age group and sex classes of goats, in addition to season, influence the market price. A class of 7-12 months old males and castrates of 4 years were the majority of sales during the short dry season (Table 3). Wealth differences also influence the pattern of goat sales in the market. The asset poor households do not have a choice of waiting for their animals to reach maturity but they are obliged to sell even though the prices are low because they are driven by necessities. Selling of immature animals means that a person has to sell more if the reason for selling needs a substantial amount of money. The poor households selling of immature animals were also reported by Nyarikiet *al.* (2005) and Sieff (1999). Another reason could be to ease the management of lactating and breeding females.

Castrates serve multiple functions; slaughtered for household consumption and during ceremonies, insurance against food insecurity during times of drought, gifted to friends and relatives, exchanged with other livestock species and as a bride wealth during marriage, hence their selling prices were higher than those of other categories. The more sales of castrates in

the current study concur well with the findings of Warui (2008) and Mahanjana and Cronje (2000) on Rendille and Gabra goats in Kenya and goat keepers of South Africa respectively. Higher cash demands also necessitates the selling of mature male goats or castrates that fetch higher prices. For example, the revenue from these castrates may be used to purchase two or more heifer goats for breeding.

Mating bucks (*Orgey*) and does were rarely sold because they are mainly used for breeding purposes. Young goats in the class of 2-6 (*maghasiriyotdedefto/borborate*) either male or female were sold to cater for minor family needs such as to buy tobacco, alcohol, beads and ochre. Nevertheless, they were hardly sold because of young age and low prices.

Purchases of goats is a rare activity, though, a higher percentage of male goats were bought during the long dry season (Table 5). The total worth of the purchased goats depends on their intended purpose such as to maintain a viable herd, to slaughter for home consumption and for ceremonial functions, to fatten for later use or for sale at a better price or to start a livestock business. Females were bought during the short rainy season for breeding purposes and for milk production for the family.

Similar to sales, prices of goat purchases vary across seasons and with respect to age group and sex classes. However, the ratio of purchases to sales is lower due to the major dependence on natural reproduction and acquisition strategies for replacements. Male goats of 7-12 months old (*Karat/Laraum*) represented a higher number of purchases during the short dry season and short rainy season and the prices were almost the same in the two seasons (Table 6). Mature does (*Riiyo*) and mating bucks had a higher purchasing price because they are the major "seeds" of future generation. From these results, it can be concluded that pastoralists are opportunistic buyers where most of them purchase goats when prices are low and sell when the prices are high however, several other factors influence the prices of sales and purchases.

CONCLUSION

Male goats of 7-12 months old and castrates represented age group and sex class of goats mainly sold by Rendille pastoralists. They sell immature goats to cater for household goods that require small amounts of cash while mature are sold when substantial amount of money is needed to serve a specific purpose. Cash from sales were mainly used to purchase staple foods and to fulfill other household requirements. Much of the sales occurred during the dry season when Rendille

pastoralists desperately needed money to buy cereals and other foods that could supplement their main diet from milk. The newly established Korr and Ilaut livestock markets served Rendille pastoralists living adjacent to these markets. To improve on marketing of goats, there should be efficient market structures and communication network in pastoral areas. Market centers should also be established at strategic positions and functional producer marketing cooperatives be formed to ease marketing, guide and inform pastoralists on marketing activities and avoid exploitation by intermediaries.

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