Analysis of the goat value chain in Beitbridge district of Zimbabwe

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Analysis of the goat value chain in Beitbridge district of Zimbabwe

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1. Introduction

The uptake of technologies is driven by incentives. These are embedded in households' and firms' commercial activities. The goat value chain project in Beitbridge also recognizes that transactions, and hence incentives for production and investment, are made by a sequence of actors that connect production to consumption. Each actor plays a role based on the demand for products, services, security and payment, together recognized as 'value'. These actors (input suppliers, producers, traders, transporters, retailers and consumers) together constitute the 'value chain'.

Goat population in Zimbabwe is increasing and in Matabeleland South in particular, there are more goats than cattle. Table 1 below shows average number of goats in the country and Matabeleland South province over four years.

Table 1: Goat numbers in Matabeleland South Province and the whole country

	2012	2013	2014	2015
Matabeleland South Province	445,827	551,326	574,068	616,135
Total for the country	3,072,850	3,764,000	3,941,274	4,049,528

Source: MoAMID Crop and Livestock Assessment Reports

This is despite the fact that constraints to improved goat productivity include mortality among others (Homann et al. 2007). In addition, small ruminant improvement has been neglected on the livestock agenda for quite a long time within policy development fora. Thus, even though there are changes to the role of livestock in developing countries, including southern Africa, smallholder farmers have not realized this benefit.

Production of goats is mostly dependent on natural pasture. They are let to browse the indigenous browse trees and shrubs. However, quantity and quality fluctuates throughout the year, with feed deficits being experienced during the dry season. For areas such as Beitbridge, this is worsened by the frequent droughts, despite the fact that the natural veld is of the sweet type. Common browse and grassland species include mopane and annual grass species of digitaria and heteropogon respectively. Farmers in the district do not supplement nor fatten for the market. Factors contributing to this include lack of motivation as market prices remain low, limited access to goat supplementary feed, limited finance to engage in goat feeding and cultural values attached to goats that do not consider important aspects such as supplementation and fattening.

Much can be achieved within the smallholder sector, through the participation of farmers in livestock markets and moving from subsistence to more commercial oriented production, including goats. This would create wealth for the smallholder farmers and opportunities for continued growth in the livestock business as most goats (+/- 85%) are in the smallholder sector.

Formal markets in the country are poorly developed and in some cases, non-existent. Farmers sell goats on a cash need basis whilst some developmental organizations have tried to set up organized markets for goats. However, sustainability of such markets need to be studied. This leads to farmers selling their goats at giveaway prices, without realising the true value of the goats. This leads to lack of motivation and incentives to improve productivity and market infrastructure for goats.

Type of goat markets in Beitbridge are both formal and informal, with the later most pronounced. Farmers sell directly to neighbours and outside their communities through negotiations on both parties. Prices in this informal market greatly varied and farmers have fallen prey to buyers who pay very low prices, despite the fact that farmers do not have information or knowledge of the actual market prices for goats. Auctions have also been developed for goats in the district to facilitate selling of goats by farmers, developing relationships among market players and sharing information. Also in Beitbridge, goats also find their way into the South African market through semi-informal/formal markets as numbers that are moved cannot be guaranteed.

Zimbabwe AgLivelihoods Innovations Project (ZALiP) is designed to increase CRS impact and influence in Zimbabwe agricultural livelihoods programming focusing on farmer learning centres (FLCs), commodity-specific groups (CSGs), improving soil fertility through green manure cover Crops (GMCCs) and increasing goat value chain productivity in the smallholder sector through adoption of improved forage and feed technologies.

International Livestock Research Institute (ILRI) is the partner for the increased goat value chain productivity work in Beitbridge district and will work with identified CSGs for the goat value chain and will also leverage on the FLCs as innovation platforms created in 2016. ZALiP uses CRS pathway to prosperity approach (P2P), the 'recover—build—grow' stages, but concentrating on the 'build—grow' stages to enable at least 2,500 rural smallholder farmers to participate more fully in food security and agricultural economic growth activities to protect and grow their productive assets and move steadily out of poverty towards secure and prosperous agricultural livelihoods.

Overall project objective is to out scale forage and feeds technologies, and feeding strategies for increased small stock production in Beitbridge district with the broader aim of improving food and nutritional security and income of smallholder farmers, especially women and the youth.

Specific objectives include:

- To improve the availability and quality of feeds through the adoption of forage and feed technologies, and feeding strategies;
- To improve the reproductive performance of small stock and the quality of animals that come for slaughter; and
- To influence policies and the regulatory framework in order to create a conducive environment for the growth and development of the small stock sector.

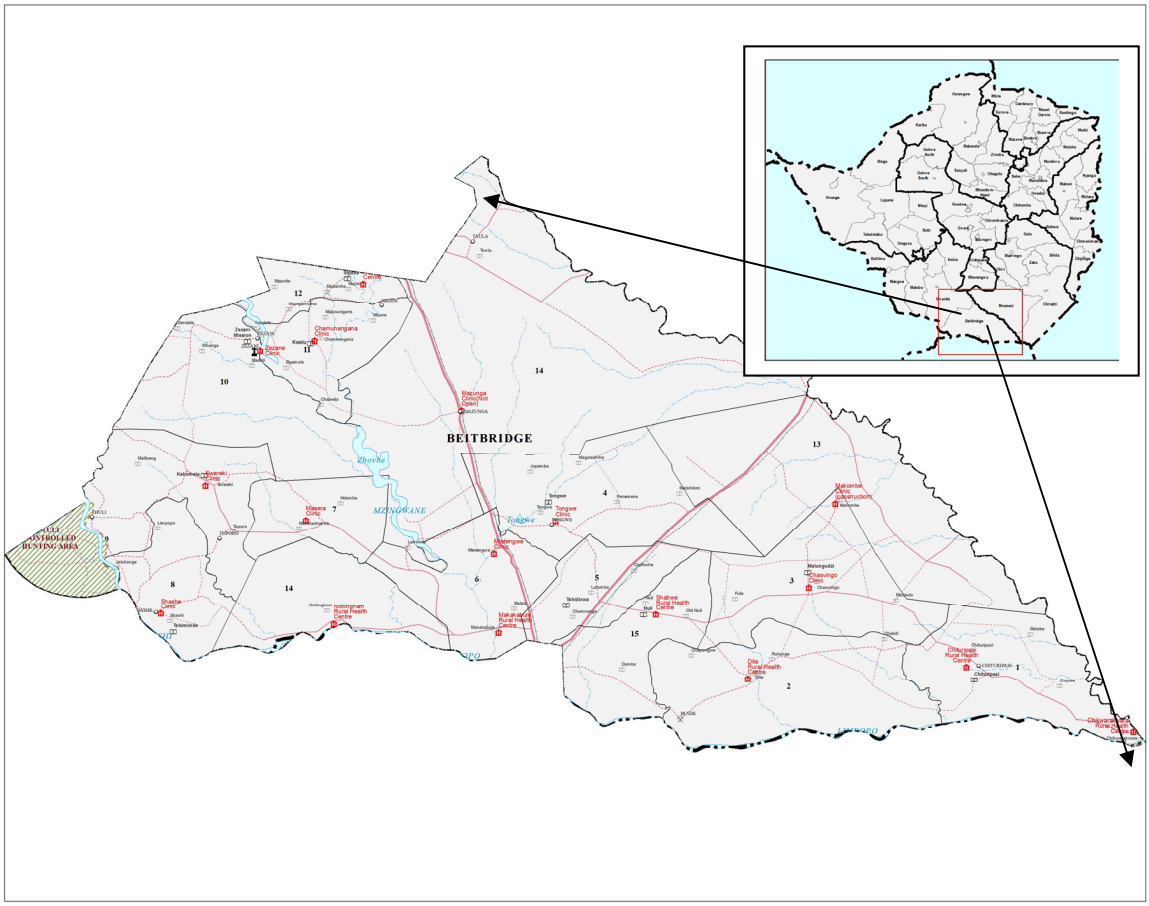
This document reports on the goat value chain study conducted in Beitbridge district. It starts with an introduction, followed by methodology describing the study area, how data was collected and analysed. Results are in the form of the value chain map, actors along the value chain, highlights of constraints and opportunities that exist along the goat value chain.

2. Methodology

2.1 Study area

Beitbridge district lies in natural region V, south of Zimbabwe and in Matabeleland South Province. Beitbridge town, is located about 580 km from Harare, the capital city of Zimbabwe (Figure 1).

Figure 1: Map of Beitbridge district. Source: OCHA District Maps (2010)



The district is characterized by low and erratic rainfall, receiving an average of 250–450 mm annually between November and March. Soils are dominated by lay to clay loam with vegetation type comprising woodlands of *Terminalia sericea*, *Burkea Africana*, *Colophospermum mopane* and 'Miombo', whilst common grass species are *Eragrostis* spp. and *Digitaria* spp.

Agricultural activities are characterized by livestock production as the major, with crop production being conducted on a smaller scale. Livestock species comprise cattle, goats, donkeys, sheep and pigs.

2.2 Methods for data collection

The overall objective of the value chain study was to reveal information on goat production and marketing in Beitbridge district, highlight constraints and opportunities that exist and suggest strategies to improve goat productivity and smallholder farmers' livelihoods. The specific objectives of the goat value chain study were:

- To characterize and quantify goat value chain processes in Beitbridge district, Zimbabwe;
- Analyse value chain performance (product flows, actors, information); and
- Identify entry points to improve goat value chain efficiency.

A workshop was organized for the various stakeholders along the goat value chain in the district. A checklist was drafted and employed in guided discussions during the stakeholder workshop. Participants at the workshop included input suppliers, farmers, abattoir and butchery owners, restaurant operators, service providers from government departments and non-governmental organizations (NGOs).

This was then followed by household survey involving 30 farmers. Random sampling was employed to select 2 farmers from each of the 15 wards of the district. Structured questionnaires were also developed for other value chain actors. Selection of the actors was through random sampling and number of participating actors depended on their availability in the district. Sampling plan is presented in Table 2 below.

Table 2: Sampling plan for goat value chain analysis in Beitbridge

Actor	Forms	Information sources	Approach	Sample size
Farmers	Small households, most keeping goats	Farm household head names are available on municipalities' lists at short notice. Baseline survey contains summary statistics of production systems.	Select # wards in the district	30
Traders	between farm gate and other markets	Lists of names available from market managers		3
Processors	Both formal and informal operators	Names known to market managers.	All informal, semi-formal and formal slaughter operators in the villages.	4
Retailers	Formal and market stalls in rural areas/villages	Names known to market managers.		2
Feed suppliers	Formal and informal operators	Identified through interviews of farm households	Sample all agents	1
Veterinary medicine suppliers	Small and large operators	Known to local veterinary authorities	Sample all agents	2
Transport operators	between farm gate and other markets	Lists of names available from market managers	Following same pattern as for traders (above).	2
Credit providers	Formal and informal	Known to project partners	Sample all agents	1

2.3 Data analysis

In this study, a combination of quantitative and qualitative research techniques were used. This was done to analyse the flow of processes along the value chain, identification of value chain actors, their roles and linkages, opportunities and constraints that affect growth of the value chain. Data collected from the survey and workshop was collated and sorted into the different categories and as per value chain actor. Microsoft Excel spreadsheet was used descriptive statistics. Discussions from the workshop were consolidated and information extracted from there supported data from the survey.

3. Results and discussion

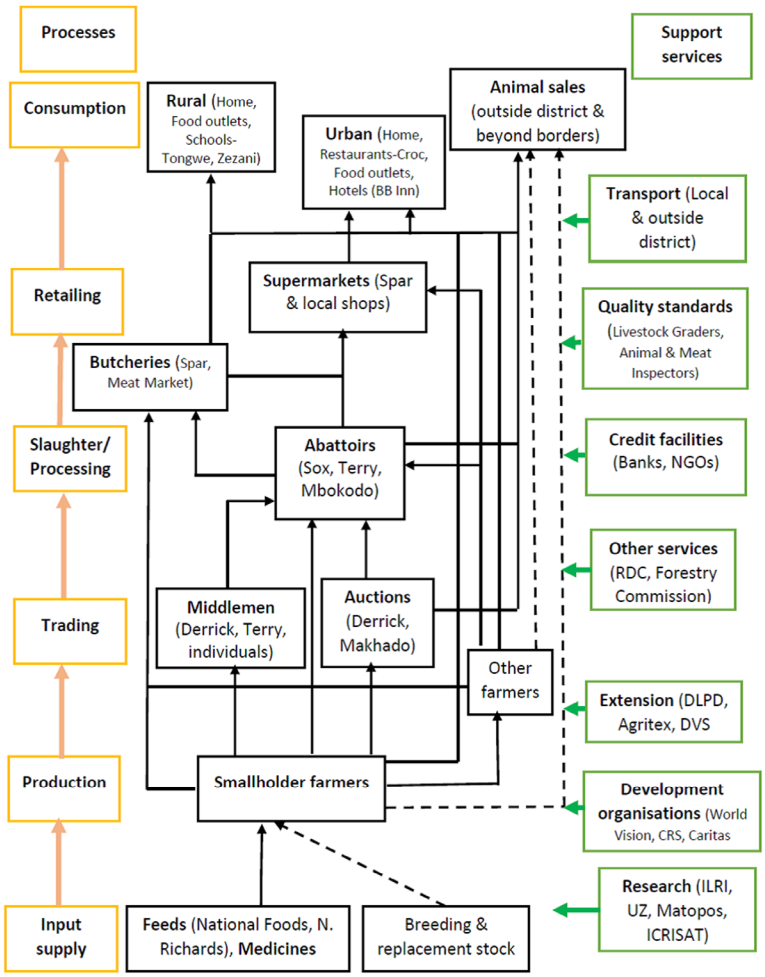
3.1 Value chain analysis

The goat value chain map is shown in Figure 2 below showing the various actors including input suppliers, producers, traders, processors, retailers and consumers.

Input supply

Feed supply—These are involved in the supply of branded feed for cattle, goats, sheep and poultry. Mostly they use rented premises for their business operations. Feed deliveries are made to buyers that are local and transport cost are included in the cost of the feed.

Figure 2: Goat value chain map in Beitbridge district



Veterinary medicine supply—consist of both government veterinary department and private companies who supply animal health products and offer animal health related services to customers. Products are sourced from Bulawayo, which is about 320 km away and from across the border in South Africa. These inputs are sourced and sold to customers on a cash basis. When sold to customers, advice is also given on the use and storage of the products.

Main constraints highlighted by veterinary medicine suppliers include animal diseases, limited farmer skills and knowledge, low prices charged for goats which then prevents farmers from buying veterinary drugs, and poor access to goat markets by farmers. These constraints have a negative impact on their business operations.

Suggestions to improve their returns from livestock include improvement of management practices by farmers, that is, vaccinations and embarking on breeding programs. Technologies such as artificial insemination (AI) and livestock marketing should be promoted and these should be implemented by farmers in collaboration with relevant government departments. There should also be localized slaughter of livestock and farmers to sell in groups.

Production

Goat production in the district is done by both communal and commercial farmers. Goat numbers kept by the farmers range from 0 to 132, with an average of 45. The common breeds of goat are the Boer, Matabele, indigenous and crosses. Main reasons for keeping goats include to generate income on a regular basis and for household consumption.

Transportation

Their main activities are transportation of feed, live animals and meat products on behalf of buyers in and outside the district, besides them being livestock traders as well. Their clients include farmers, livestock processors and feed suppliers of which transport charges are per load rather than individual goat. Transporters mostly ply the Beitbridge-Bulawayo route which they say there is high demand for goats in Bulawayo. Livestock are required to get movement permits and this costs USD10/lot to be transported. On the other hand, transporters have the option to charge USD2.00/goat. Transport business is not organized into any form and operators conduct business individually. Constraints faced by transporter include low goat prices, high transport costs, competition from large scale operators, poor access to market information and goat shortages at markets. To counter some the constraints, there is need for farmers to improve on breeds so that they fetch higher prices. The market should set base prices for goats and farmers should be able to access loans for goat production.

Trading

Traders in the district consist of intermediaries, auctioneers and other farmers. They are involved in farm production, buying, fattening and selling of cattle, goats and sheep, and sometimes in supply of livestock feed and breeding animals. Animals for fattening are held for 90 days before they are sold, whilst others for immediate slaughter are kept for only three–five days in holding pens. In some cases, these traders also act as processors and retailers. For example, other farmers buy goats from associate farmers, then sell them to take-away shop owners who sell food at livestock markets. About 90% of the goats are purchased from the auction and smallholder farmers at between USD40.00 and USD60.00 per animal and the main reasons for selecting these sources are stronger position to negotiate and at auction, payment is according to weight and grade. Traders sell most of the goats direct to other farmers (both smallholder and large-scale farmers) and abattoirs, the main reason being that they fetch higher prices from those markets. Traders highlighted that they get information on livestock from extension staff

Constraints that the traders face include high purchase prices and transport costs, competition from large scale formal sector, poor access to market information and limited trader skills and information. However, to improve income from livestock, traders indicated that they need to have own transport rather than using hired as it is expensive, they will need to embark on livestock feeding then market them and government should gazette livestock prices. There should be financial inclusion for rural farmers through promotion of use of plastic money.

Processing

This involves slaughtering of animals and grading. Grading of carcasses and inspection is carried out by meat graders who are government employees. Sox and Derrick Abattoirs are the main processors in the district, whilst others are butcheries and farmer producers who slaughter at their homesteads and premises. They sell directly or indirectly to consumers or to retailers, restaurants and butcheries.

Retailing

Retailers, include supermarkets, butcheries, restaurants and food outlets are into sale of beef, goat and poultry meat. These buy from farm gate or abattoirs, as carcasses, package it for sale to their customers who are the consumers. When buying from abattoirs, they look at fat cover and prefer carcasses with more fat cover. Goat carcasses are purchased at an average of USD3.00/kg and sell to customer at USD4.50/kg irrespective of meat grade. Retailers highlighted that consumers want quality meat although they are not prepared to pay for it because of economic hardships. Food outlets sell a plate of rice/sadza with goat meat at USD1.00 to USD2.00 each.

Sales are low compared to five years back mainly because of lack of cash and the economic hardships customers are facing. Also as the town is growing, there are many butcheries that have opened, thus creating competition. A butchery that used to sell a carcass over four days, is now selling only 5-6kg/day. In some outlets goat meat is not sold because the business operation does not have a licence to sell that kind of meat. In addition, most goat meat is sold on the open market and will not sell in butcheries.

Consumption

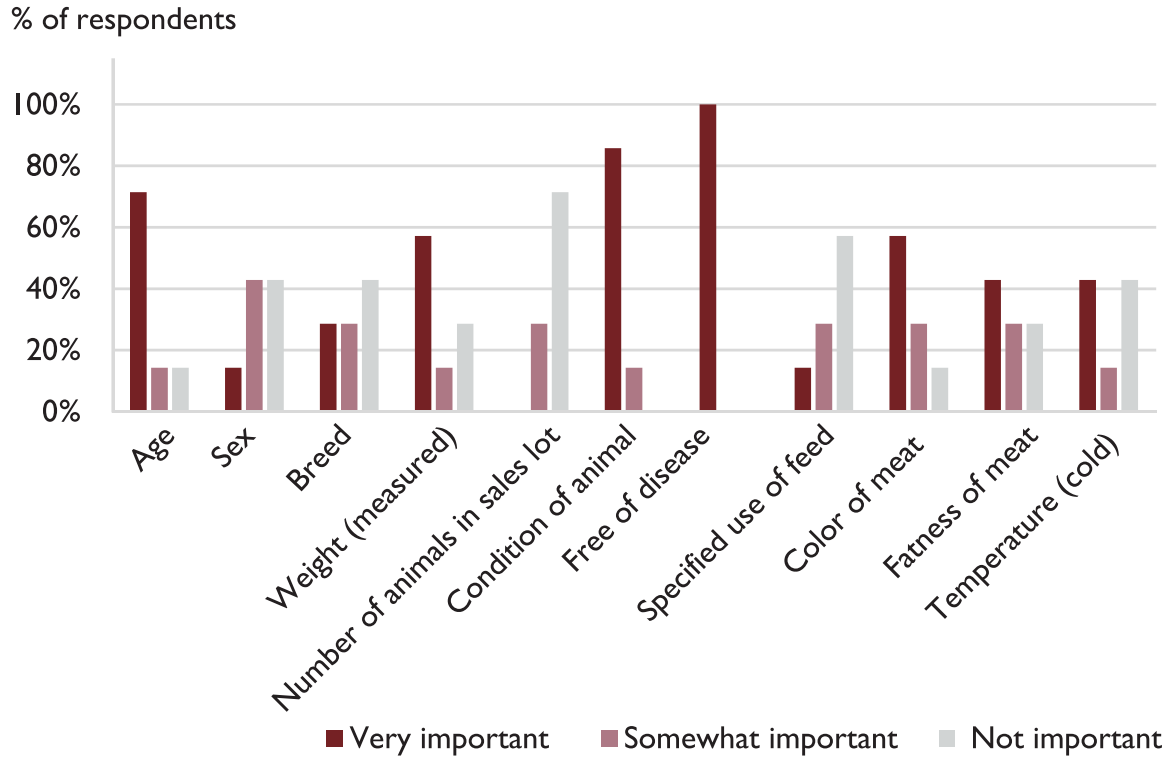
Consumers are the customers who buy goat meat either as raw or already cooked from the different outlets which include retail supermarkets, butchery, restaurants, hotels and fast food outlets. They highlighted that they buy whatever goat meat is available on the shelf as there is no clear grading system in place from the abattoirs. In homesteads where they keep goats, they prefer slaughtering young male goats and on slaughter one, they prefer to start eating the intestines, followed by meat. A goat can be slaughtered at any time of the year although this is most frequent during family gatherings where two or more goats are slaughtered per household.

Service provision

Service providers like extension staff, forestry commission, local authorities and development organizations play key roles along the goat value chain. They support the value chain at different levels. Local authorities are responsible for maintaining infrastructure (cattle dip tanks, livestock sale pens, roads) within their area of jurisdiction and they collect levies from users. There are ward based extension staff who are responsible for mobilising and training farmers, give technical advice on agricultural activities, conduct demonstrations in collaboration with farmers and communicate messages on farming to farmers. Development organizations like NGOs also assist farmers with training, introduce technologies and assist farmers to adopt these. Extension staff and NGOs do not charge anything for their services. NGOs have also promoted small livestock production in the district through projects that involve small livestock (poultry, goats, rabbits and fish).

The actors indicated what they consider to be important in determining consumer satisfaction and responses are shown in Appendix 1. A summary of the major attributes and importance is shown in Figure 3. According to the graph, age, condition of the animal and whether free of diseases are the most important attributes that value chain actors take into account when they buy or sell goats. Weight of animal and colour of meat also follow closely to the first three attributes although to a lesser extent. This is beside the fact that in some studies buyers focus on weight of the animal (Woldu et al. 2016; Doelamo et al. 2017). Of least importance are attributes of number of animals in a lot, the type of feed used, sex, breed and how cold the carcasses are after slaughter of livestock.

Figure 3: Major attributes and their importance to value chain actors



3.2 Goat value chain constraints and SWOT analysis

Constraints analysis

The constraints highlighted in Table 3 were expressed by farmers during the household survey, interviews with the actors and validation workshop conducted where the various actors attended including input suppliers, traders, processors, retailers and consumers. Producers had more challenges compared to the rest of the value chain actors.

Table 3: Constraints analysis along the goat value chains

Value chain actor	Who are they?	Challenges	Possible solutions
Input suppliers	National Foods	Shortage input supplies (feeds, vaccines)	Reduce prices
	N. Richards Group	Lack of cash in the market, Exorbitant prices charged	Make inputs available.
	Veterinary supplies		
	SeedCo	Scarcity of inputs—resulting in high prices being charged	
	Lutumba Warehouse	Long distances to source inputs.	
	Imprita Hardware		
	Olchem		
Producers	Farmers	Low prices (traders want own prices)	Increase market prices of livestock
		Diseases/predators, stock theft	Government protection —laws
		There is no market	Increase access to cash loans
		Lack of knowledge on management, breeding and diseases control	Access to regional and international markets.
		Expensive and scarce inputs (vaccines, feeds)	
		There is monopoly in livestock business	
		Poor water sources	
		High Transport costs	
		Too many and high levies.	

Value chain actor	Who are they?	Challenges	Possible solutions
Traders	Terry, Derrick	Poor quality livestock	Farmers too attached to their livestock e.g. giving livestock names
	Croc, Beitbridge Council	Too much control over market prices	Livestock should be sold at its tender young age
	Wyne (Makhado).	No buying on credit	Farmers should feed and water their livestock well
		Farmers sell sick and old goats which will be condemned at inspection by veterinary officer.	Transporters should not stress the animals
			Government authorities should not double charge.
Processors	Sox Abattoir	Poor quality meat	Farmers should improve on livestock management
	Terry Abattoir	Poor roads and accessibility to markets.	Engage government on infrastructure development.
	Mbokodo (Bulawayo).		
SWOT	Spar/Lucky 7	Business is expensive	Offer product that is required by customers
	Bambazonke	Lack of cash in the market forcing consumers not to buy meat	Purchase goods from cheaper sources.
	Tagarira	High competition as there are more retailers for the consumers	
	Meat market (Tsepang Nar)	Consumers prefer choice or commercial meat grade but not prepared to pay the price.	
Consumers	Local people and other farmers	There is poor quality meat on the market—young male goats are preferred for home consumption	Buy live goats and slaughter.
	Other people from districts and provinces	End up buying what is available and not what is preferred.	
	Schools (Tongwe, Zezani)		
	Hotels.		
Service providers	RDC	Chain actors failing to pay levies, nor adhering to regulations on live animal movements and carcass transportations	Farmers should do away with dependency syndrome on resources.
	ZRP	Producers relaxed on animal identification	
	Government departments (veterinary, AGRITEX LPD)	Producers not attending trainings offered by relevant service providers.	
	NGOs (Catholic Relief Services, World Vision).		
Credit suppliers	Banks (CBZ, Stanbic, Barclays).	Producers fail to meet lending criteria.	Consider projects on a case-by-case basis.

SWOT analysis

Table 4 below shows a SWOT analysis of the goat value chain. This was from data collected during the household survey, in-depth interviews with individual stakeholders and discussions during the workshop.

Table 4: SWOT analysis of the goat value chain

Strengths Availability of large goat numbers in the district Availability of markets like abattoirs and sale pens Presence of FLCs.	Weaknesses Limited knowledge and information on goat production and marketing Limited knowledge on fodder production and utilization Farmers not in any organized groups Limited access to credit facilities.
Opportunities Increase in demand for goats and goat meat Availability of high performing goat breeds Presence of extension services Presence of irrigation infrastructure in some areas – fodder production and water availability Potential to participate at goat markets.	Threats Competition among retail business operators especially food outlets Animal disease outbreaks Goat markets not well organized Crop production is rainfall dependent as district characterized by low and unreliable rainfall and frequent droughts Stock thefts Animal predation High levies being charged.

3.3 Improving goat productivity and marketing in Beitbridge

Some suggestions were made during data collection and discussions on what should be done to improve goat value chain in the district and these are outlined below.

- Farmers need to:
    - Do away with giving names to livestock as this encourages being more attached to them, thus making it difficult to dispose of the animals;
    - Improve livestock management practices;
    - Sell young animals rather than the old and unwanted animals;
    - Farmers should be able to sell off young animals to fetch best prices on the market;
    - Farmers should be trained on goat production and marketing.
- Levies should be reduced to encourage marketing of livestock in formal markets (abattoirs and auctions).
- Value chains should involve local leaders.
- There is need for use of modern technologies such as mobile phones for communication and sharing information.
- There is need for refresher courses on goat production and marketing for all so that everyone operates at the same level.
- There is need for branding of animals for ease of identification and traceability.
- Irrigation facilities and water points should be developed for fodder production and water access by animals.
- If there are any loan facilities to be availed to farmers, farmers should honour up and repay those loans. Farmer should understand how these credit terms function.
- More research needs to be done to improve goat value chains in the district.

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Appendix 1

Importance of factors in determining consumer satisfaction (1=Very important; 2=Somewhat important; 3=Not important)

Factor	Veterinary medicine supplier	Transporter	Credit provider	Retailer	Processor	Trader	Producer
Age	1	1	2	3	1	1	1
Sex	1	2	3	3	3	2	2
Breed	2	1	1	3	3	3	2
Weight (measured)	1	1	1	3	3	1	2
Weight (Apparent)	3	2	-	3	3	-	2
Number of animals in sales lot	3	3	2	3	3	3	2
Condition of animal	1	1	1	1	1	2	1
Free of disease	1	1	1	1	1	1	1
Specified use of feed	2	1	3	3	3	3	2
Specified use of medicine	2	1	3	3	3	-	2
Pelt condition	2	1	-	3	1	-	2
Pelt colour	2	2	-	3	1	-	2
Time of delivery	3	1	1	3	3	-	2
Place of delivery	2	1	-	3	3	-	1
Grade of carcass	2	1	1	1	3	-	2
Colour of meat	2	1	2	1	3	1	1
Fatness of meat	2	1	3	1	3	1	2
Temperature (cold)	2	1	3	3	3	1	1
Freshness	2	1	2	1	3	-	2
Delayed payment	2	1	1	3	-	-	2
Cutting of meat products	2	1	1	1	-	-	1
Brand	2	1	1	3	-	3	2

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