Government of Zimbabwe

Zimbabwe AGRICULTURAL GROWTH Programme

Funded by the European Union

Goat Value Chain Scoping Study Report

CIPS FOUNDATION

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Value Chain Alliance for Livestock Upgrading & Empowerment (VALUE) Project

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About The VALUE Project

The Value Chain Alliance for Livestock Upgrading Empowerment (VALUE) is a European Union funded project working in the goat and pork value chains under the Zimbabwe Agricultural Growth Programme. The project is running for four years between February 2019 and January 2023 and is being implemented in six provinces namely Manicaland, Matebeleland South, Matebeleland North, Mashonaland Central, Mashonaland East and Mashonaland West.

ActionAid Zimbabwe is the lead organisation in partnership with COSV and Mercy Corps together with private sector livestock players namely Shamiso and Braford farms in the pork value chain, Michview and Zvikomborero farms in the goat value chain. The aim of the project is to improve the capacity of smallholder farmers especially women and youths to improve their goat and pig breeds, production and productivity, access to viable markets and organizational efficiencies.

Acknowledgements

The VALUE project expresses heartfelt gratitude to the Development Governance Institute and field enumerators who dedicated time and effort to conduct this scoping study.

We are grateful for the technical support received from district and ward frontline extension staff who played critical roles in farmer mobilisation and data collection. We value the contributions received from the sampled farmers, district authorities and other value chain players which contributed to the successful completion of the study.

The invaluable contributions received from farmers, district authorities and other value chain players all contributed to the successful completion of the study.

Last but not least, the project greatly appreciates financial support from the European Union and the CIPS Foundation without which it would have been impossible to undertake the study.

Contents

List of Abbreviations

Abbreviation	Meaning
AAZ	Action Aid Zimbabwe
AMA	Agricultural Marketing Authority
BRDC	Beitbridge Rural District Council
CLIC	Crops and Livestock Improvement Center
DEGI	Development Governance Institute
DLPD	Department of Livestock Production and Development
DVS	Department of Veterinary Services
FGD	Focus Group Discussion
GBAZ	Goat Breeders Association of Zimbabwe
GICs	Goat Improvement Centres
GVC	Goat Value Chain
KII	Key Informant Interview
LMAC	Livestock and Meat Advisory Council
MCAZ	Medicines Control Authority of Zimbabwe
MRDC	Mbire Rural District Council
NGOs	Non-Governmental Organizations
PVC	Pig Value Chain
RDCs	Rural District Councils
SHFs	Small Holder Farmers
SNV	Netherlands Development Organization
VALUE	Value Chain Alliance for Livestock Upgrading and Empowerment
VEWs	Veterinary Extension Workers
ZIMVAC	Zimbabwe Vulnerability Assessment Committee
ZRBF	Zimbabwe Resilience Building Fund
ZVA	Zambezi Valley Alliance
GMSDP	Goat Market System Development Platform
VCDF	Value Chain Development Framework
VCA	Value Chain Analysis

Executive Summary

The Value Chain Alliance for Livestock Upgrading and Empowerment (VALUE) is a consortium under the Zimbabwe Agricultural Growth Programme consisting of ActionAid Zimbabwe (lead), Mercy Corps, COSV, MichView Enterprises, Braford Farming, Shamiso Farm and Zvikomborero Farm. The major objective of the VALUE project is to contribute to the development of an inclusive and diversified agricultural sector that promotes inclusive green economic growth along the pork value chains (PVC) and goat value chains (GVC).

The VALUE partners engaged Development Governance Institute (DEGI) to carry out a scoping study for the goat meat value chain. The essence of the scoping study was to;

1. Assess the economic, environmental, financial, social and natural aspects of the goat value chain along the marketing corridors of Bulawayo and Harare;

2. Determine the key vulnerabilities in the GVC for purposes of building resilient Market Systems for all the value chain actors;

3. Analyse the key Gender issues around the pig and goat value chains (ownership, control, decision making systems, gender and market dynamics, gendered access to financing etc.);

4. Assess the strengths and weaknesses of value chains stakeholders including Goat Breeders Association of Zimbabwe (GBAZ), Livestock and Meat Advisory Council (LMAC), Farmer Unions, Government line ministries and departments

5. Identify the policy gaps in the GVC with a view to develop an influencing and lobbying strategy;

6. Assess all stakeholders' and target groups' capacities, strengths and weaknesses; and those of other stakeholders such as Government Ministries, mapping of VC actors, policy gaps, market assessments on competitiveness of GVC;

7. Benchmark the Fair Value Farming Brand parameters and establish the operational framework for use by the project.

The Value Chain Development Framework (VCDF) was used to frame the scoping Study. Within this VCDF, a Value Chain Analysis (VCA) was used to attend to the gist of the scoping study. The scoping study used a mixed-methods research paradigm that incorporates both quantitative and qualitative methods. Quantitative data was collected through a survey questionnaire. The responses were then uploaded into Statistical Package for Social Scientists (SPSS) for data management and analysis. The survey questionnaire was administered to five hundred and nine (509) goat farmers. Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) of value chain actors (input suppliers, processors, integrators, policy makers and regulators) were used to capture qualitative data.

The study was carried in out in six districts (Lupane, Gwanda, Mudzi, Beitbridge, Mbire and Chipinge) out of the twelve programming districts. The districts were selected in consultation with the VALUE Consortium and local stakeholders such as Agricultural extension personnel. The selected districts are generally the largest goat production in the respective provinces. In the selected districts two wards were selected from each District based on the goat population.

Study Findings

Goat Sub-Sector Overview

Global consumption of goat meat is increasing and consumption in Africa has increased to almost 400 million tonnes per year. The goat population is estimated to be around 3.8 million. The national average goat flock size per household is 5.8 and the proportion of rural households which owns goats is 43.6% (ZIMVAC 2019). The highest proportion of households who own more than 5 goats is in Matabeleland South which has 39.3% followed by Matabeleland North with 23%. The goat sector's percentage contribution to the agricultural livestock sector is 19% according to the National Agriculture Policy (2018-2030) by Ministry of Lands, Agriculture, Water and Rural Resettlement (2018). Among the study districts, Beitbridge has the highest number of goats (190432), followed by Gwanda (187188), Chipinge (114705), Mbire (89139), Lupane (49107) and lastly Mudzi with 40000 goats. The contribution of the goats to the local district economies is not known in the majority of the districts. This is because the goat enterprises are not levied or taxed at the district level, except for Gwanda, Beitbridge and Mbire districts.

Goat Sub-Sector Map

Using the study data, a goat sub-sector map was drawn. The key functions in the goat sub-sector are input supply, production, collection and brokering, processing, wholesaling, retailing and consumption (end markets). The sub-sector maps also showed the specific actors at each node of the sub-sector, their roles and the related overlays. The support function actors, their roles and capabilities also emerged from the analysed data. The regulators and policy makers were also identified.

1. Input Supply.The study found out that there is very limited application of external inputs (drugs, vaccines and feeds) in goat production in the sampled districts. The goat infrastructure (housing) ranges from basic (poles) to modern (brick under roof). Dip tanks were very few and were only observed in Gwanda and Beitbridge districts. The public support service providers (DVS and AGRITEX, Grasslands and Matopos Research) are incapacitated with regard to personnel, mobility and financial resources. Whilst the country does not have a registered goat breed stud, there are a few farmers and institutions (Zvikomborero Farm, Anita Farm, Chris Grant, Grasslands and Matopos Research Institutes) who are supplying the goat sub-sector with breeding stock. Non-Governmental Organisations (NGOs) are also active at the input supply function as they are involved in providing supplementary feeds and breeding stock.

2. Production.Goat farming is dominated by women (54.6%), the production system and methods are extensive grazing and independent respectively. The study found that over 90% of the goat farmers are informally practising goat production. The goats are mainly kept as a guarantee for cash income on a regular basis or in emergencies. The goat breeds are region specific. In the Matabeleland region, the Matabele goat is predominate followed by Boer-Matabele cross, then Boer and Red Kalahari goats in that order. In Manicaland and Mashonaland provinces the dominant breed is the Mashona breed. In terms of breeding practices, the use of a village buck is the most employed and the breeding is random. Incidents of in-breeding are high.

   The study data indicates that kid mortality is very high (23%) against the industry's benchmark of 2%-5%. The buck-to-doe ratio is low (1:3) against a benchmark of 1:25 when the buck is between 6 months and one year. The low production and productivity volumes is due to poor husbandry practices. The farmers are not keeping records of the goat enterprises. This resulted in the study not being able to calculate the birth weights, weaner weights at 100 days and average inter-kidding rates among others. The farmers are involved in treatment and vaccinations of their animals. Access to public service is very low. This is because the public services providers do not have the resources to execute their mandates. The study observed the presence of goat improvement centres across the districts. These are being promoted by NGOs. The essence of these centres is to improve breeding and feeding practices.

3. Collection and Brokering. Brokers/Middlemen dominate the collection and brokering function. According to FVFB calculations done by the study the brokers are taking 55% of value created in goat value chain. The brokers are known to engage in unethical dealings with the farmers. The farmers are mostly under-payed for their goats. These brokers are either self-acting or buying on behalf of abattoirs. The brokers buy goats in the Matabeleland region and supply abattoirs and NGOs involved in goat breeding projects. There has been attempts to formalise goat collection and brokering, through the setting up of auction centres in Gwanda and Beitbridge districts. However, this initiative suffered a still-birth as these centres are not being used due to various reasons.

4. Processing.The study found out that there is capacity under-utilization among the goat abattoirs in the country. The under-utilization is attributed to goat supply shortage from the producers. The lack of organization of the collection and brokering function makes getting goats to the abattoirs a challenge.

5. Wholesale and Retailing. Wholesaling and retailing of the chevon meat is done by independent butcheries, large chain super-markets and Brokers. The independent butcheries are supplied by the farmers and the Brokers. Large chain-supermarkets are supplied by abattoirs, who get the goats from farmers or brokers. The study also observed that brokers also wholesale and retail to urban markets especially the live goat markets.

6. End Market Consumption. The end markets for chevon meat is at the farm-household level, local markets (civil servants, church gatherings, social functions and gatherings), urban low- and middle-income earners and the high-income end market.

The market for live goat meat is the largest. This market is preferred because the buyer will also have the offals, hoofs and the head.

7. Regulatory Environment. The goat sub-sector is given least attention at the national level with regard to policy regulations. However, the sector is affected by the other regulations that govern the livestock sector in Zimbabwe.

8. Value Chain Governance. The goat value chain governance is captured by the Brokers. The weak participation of the farmers in the goat value chain governance is due to their weak organization and information asymmetry experienced in the sub-sector. The Brokers have all the market information in the sector. This information relates to prices, who and where the goats and chevon meet is required.

9. Value Chain Financing. Goat production is a self-financing business. This is not because the farmers have the capital, but it is because they cannot access the available resources in the formal financial markets. The financial institutions are less willing to lend to goat farmers because there are no production and banking history records.

10. Fair Value Share.The study found out that the value share in the goat value chain is in favour of the Brokers. The Brokers are getting over fifty-five (55%) percent of the value created in the goat value chain.

11. Goat Milk Chain.While the VALUE project is focusing on chevon meat, the study observed economic opportunities in the goat milk value chain. This is evident in the Matabeleland region were also every household interviewed is milking goat for household consumption.

Study recommendations

Based on the findings, the study makes the following recommends;

a. Farmer Vertically Integrated Value Chain. To enhance efficiency in the goat value chain, the study recommends vertical integration of the chain by the goat farmers. The vertical integration will be both backwards and forward. The essence of vertically integrating (backward and forward) the farmers in the goat value chain is to reduce the inefficiencies at the input supply, collection and brokering functions. The integration will be achieved through development of the organizational capacities of farmers through the formation of groups and association, the setting up of the Goat Improvement Centres (backward integrations) and the Goat Aggregation and Slaughter Centres (forward integration). The improvement centres will be for breeding and production of fodder. The improvement centres will also act as learning centres for the farmers. The aggregation centres will be for live goat marketing and while slaughter centres will herald the formation of chevon meat cold chains.

b. Goat Market System Development Platforms. These will be established at provincial level led by private sector players in the goat value chain to enhance horizontal coordination among the chain actors. The platforms will be responsible for setting the goat value chain vision, learning activities, value chain governance and fair sharing of the value created along the chain.

c. Capacity building of the Goat Farmers. The study recommends the enhancement of capabilities of farmers through Training for Transformation, Training in Goat Farming as A Business and marketing skills through the Farmer Market Schools. The record keeping competencies of the farmers' recommended to be enhanced through the adoption of the block chain technology. The study further recommends the enhancement of the farmers' husbandry practices through ex-change visits, study circles and the use of smart extension and advisory services.

d. Capacity building of the Extension Personnel. The public extension and advisory service providers need to have their knowledge competencies enhanced through further training and exposure to latest developments in the goat husbandry. The VALUE project is also recommended to ensure the easy mobility of the extension personnel.

The following sections present goat value chain specific function recommendations that are not included under the general ones above.

a. Input Supply. Adoption of supplementary feeding systems through own-farm production. These include the production of hay, silage and laylage. The farmers should be trained in the formulation of these supplementary feeds and be encouraged to use the "Feed Calculator" technology. The study further recommends the improvement of goat breeds through use of AI and importation of breed stock. The adoption of hydroponic fodder production system is also recommended and the promotion of ethno-veterinary practices

b. Production. The study recommends support to the goat farmers to have the right flock size (of at least 50 does), production volume and productivity levels that are above the commercialization benchmarks. The use of smart extension and advisory services is further recommended. The commercialization of goat milk production especially in the Matabeleland region is an economic opportunity which should be explored.

c. Collection and Brokering. Farmer owned aggregation and slaughter centres at district and provincial levels must be set up. The aggregation centres will create enough volumes of goats to meet the demand of consumers and abattoirs. The slaughter centres will facilitate the establishment of a cold chain. The cold chain reduces the unit transportation costs of the chevon meat, subsequently increasing the profit margins. The aggregation and slaughter centres will be buying the goats from farmers.

    a. The establishment of Goat Market Information System to remove the information asymmetry in the goat value chain is recommended.

d. Processing. The study recommendations the development of linkages between the abattoirs and goat aggregation centres at district and provincial levels. These linkages will enable the abattoirs to fully utilise their installed capacities

e. Wholesaling, Retailing and Consumption. The consumption of goat meat was observed to be low, as most of the consumers prefer live goats. To enhance the consumption of chevon meat, the scoping study recommends awareness raising campaigns among the consumers. This will be done through various media and

communication channels such as radio, television, social media, adverts, road shows and promotions among others.

f. Goat Value Chain Governance. To resolve the governance challenges in the goat value chain, the establishment of Goat Market System Development Platform (GMSDP) made up of the all the stakeholders in the chain. These platforms will through the visioning process, identify and assigned roles and responsibilities to the different actors in the chain. This will ultimately level the playing among the different actors, therefore, improve the value chain governance. The formation of goat farmers' groups and associations will increase the bargaining power of the farmers. This will subsequently improve the governance of the goat value chain.

g. Value Chain Financing. The study recommends the engagement of Financial Institutions to explore the development of appropriate financial services and products for the goat farmers. Using its own resources, the VALUE project is recommended to set-up matching grants to stimulate production and productivity. The establishment of micro-insurance products and services for the goat farmers that cushion the farmers against shocks and hazards is recommended

h. Policy and Regulatory Environment. The development of a national goat policy is recommended by the study. The development of goat commercialization enabling by-laws at the local authority level is further recommended. Lastly, the study recommends the enforcement of animal permits and meat certification regulations. The development of a goat commercialization environment will be led by the farmers through their groups, associations and unions.

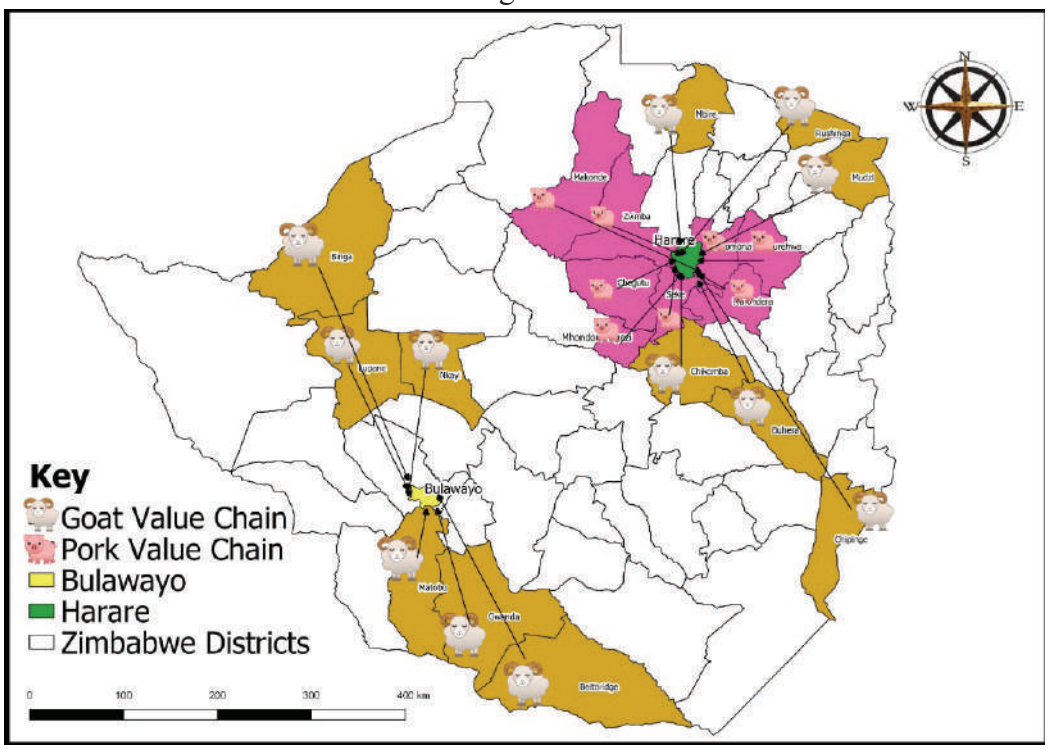
1.0 Introduction

Background to the VALUE Project

The Value Chain Alliance for Livestock Upgrading and Empowerment (VALUE) project is being implemented by a consortium of organisations which include ActionAid (lead), Mercy Corps, COSV, Michview Enterprises, Braford Farming and Zvikomborero Farm. The major objective of the VALUE project is to contribute to the development of an inclusive and diversified agricultural sector that promotes inclusive green economic growth along the pork value chains (PVC) and goat value chains (GVC).

With respect to the goat meat (chevon) value chain, the VALUE project intends to economically empower eight hundred thousand (800,000) goat farmers. The spatial coverage of the goat value chain is twelve (12) districts as shown in figure. The project is targeting small-scale farmers who are currently stuck at different suboptimal stages of commercialization and growth.

Figure 1



Map of areas of operation in the goat and pork value chains

The project seeks to address value chain constraints related to financial, environmental, technological, organizational and poor market linkages, regulatory and policy constraints. The VALUE project will run for four (4) years from February 2019 to January 2023. The project is funded by the European Union.

1.2 Focus of the Value Chain Scoping Study

The essence of the scoping study was to;

1. Assess the economic, environmental, financial, social and natural aspects of the pig and goat value chains along the marketing corridors of Bulawayo and Harare;
2. Determine the key vulnerabilities in the GVC for purposes of building resilient Market Systems for all the value chain actors;
3. Analyse the key Gender issues around the pig and goat value chains (ownership, control, decision making systems, gender and market dynamics, gendered access to financing etc.);
4. Assess the strengths and weaknesses of value chains stakeholders including Goat Breeders Association of Zimbabwe (GBAZ), Livestock and Meat Advisory Council (LMAC), Farmer Unions, Government line ministries and departments;
5. Identify the policy gaps in the GVC with a view to develop an influencing and lobbying strategy;
6. Assess all stakeholder's/ target groups, capacities, strengths and weaknesses; and those of other stakeholders such as Government Ministries, mapping of VC actors, policy gaps, market assessments on competitiveness of GVC;
7. Benchmark the Fair Value Farming Brand parameters and establish the operational framework for use by the project.

1.3. Structure of the Report

The study report in the introduction section (1.0) provides a background to the VALUE project and the focus/objectives of the study. Section 2 of the report dwells on the methodology used to gather the data. The framing of the study, its design, the study areas and the tools employed to gather the data are also under this section.

Section 3 presents the study findings. The presentation of the findings of the study start-off with an overview of the goat sub-sector at global, national and districts level. A sub-sector depicting the sub-sector functions, actors and overlays and product flows is presented next. The subsequent sub-sections cover the findings relating to the key goat value chain functions (input supply, production, collection and brokering, processing, wholesaling and retailing and end consumption). The other finding variables presented in this section relate to value chain governance, value chain financing, Fair Value Farming Brand and the policy and regulatory environment.

The last section (4) of the report represents the study recommendations. The recommendations are perched at two levels. The first level relates to general recommendations and the second level dwells on function specific recommendations.

2.0 Scoping Study Methodology

2.1 Framing of the Value chain Scoping Study

The Value Chain Development Framework (VCDF) was used to frame the scoping Study. A value chain describes the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use (Kaplinsky and Morris, 2001). The core of an agricultural value chain concept is about actors being connected along a chain producing and delivering goods to consumers through a sequence of activities.

Within this VCDF, a Value Chain Analysis (VCA) was used to attend to the gist of the scoping study. VCA is a process that requires four interconnected steps that is data collection and research, value chain mapping, analysis of opportunities and constraints, and vetting[1] of findings with stakeholders and recommendations for future actions. These four steps are not necessarily sequential and can be carried out simultaneously. (https://www.marketlinks.org/).

2.2 Study Design

The scoping study used a mixed-methods research paradigm that incorporates both quantitative and qualitative methods. Quantitative data was collected through a survey questionnaire. The responses were then uploaded into Statistical Package for Social Scientist (SPSS) for data management and analysis. The survey questionnaire was administered to five hundred and nine (509) goat farmers. The qualitative data was used to contextualize, compliment and deepen understanding of the findings of the quantitative data in a sub-sample of communities from the quantitatively sampled districts. The notes collected under qualitative data were transferred into matrices that follow the topical outline. The capturing of information on matrices enabled identification of important patterns in responses and specific contextual information. The matrices also facilitated analysis of responses from FGDs, KIIs and value chain actors (input suppliers, processors, integrators, policy makers and regulators).

The mixed-method research paradigm was selected because of its ability to;

1) Take full advantage of the strengths of each method used,
2) Combine in-depth understanding with representative numbers, and
3) Integrate methodologies for better measurement, sequencing information for better analysis and merging findings for better action.

[1] Three validation workshops were held in Harare (2nd of December 2019), Mutare (3rd of December 2019) and Bulawayo (5th of December 2019)

2.2 Sampling of Districts and Wards

The study sampled six (6) districts out of the 12 programming districts (which is 50% coverage). The districts were selected in consultation with the VALUE Consortium and local stakeholders such as agriculture extension personnel. The districts selected are generally the largest goat producing districts in the respective Provinces. The sampled districts were Lupane, Gwanda, Mudzi, Beitbridge, Mbire and Chipinge. Two (2) wards were selected from each District.

The selection of the wards was also based on the population of the goats. The wards with the highest number of goats are the ones that were sampled for the study. The study also selected wards, where the project is going to establish Goat Improvement Centres (GICs).

2.2 Data Collection Methods

The Goat Value Chain Scoping Study employed the following methods: (i) review of both academic, policy and development literature, (ii) Twelve Focus Group Discussion sessions, (iii) Fifty-one (51) Key Informant Interviews (with key value chain actors), (iv) Five-hundred and nine (509) household questionnaires (administered to anchor, champion, small-scale and young farmers) and (v) field observations (see table 2 for details).

Table 2: Key Data Collection Methods

Methods	Count	Reach		Comments
		Male	Female	
Household Questionnaire	509	231	278	Anchor, Champion & Small-scale Farmers, Integrators, young women and youths
Focus Group Discussion	12	43	86	Farmers, Local Leadership, young women and youths
Key Informant Interviews	51			RDCs, AGRITEX, DVS, Financial Institutions, Grasslands, Matopos, Brokers (Mitchview), Input Suppliers, Abattoirs & Processors, Retailers, Consumers, Legislators (LMAC), Integrators & Breeders.

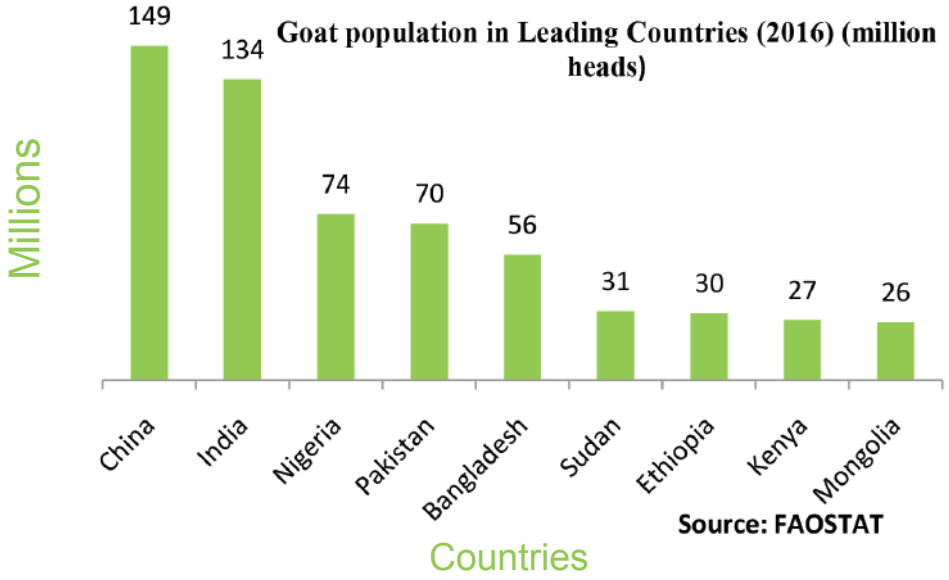
Participant observation methodology was used through interaction with buyers, sellers and middlemen during goat sales (e.g. Malibeni, ward 8-Beitbridge District). This method helped the team to understand the goat market dynamics in real time.

3.0 Goat Meat Value Chain Scoping Findings

3.1 Over view of the Goat Sub-Sector

3.1.1 Global Trends in goat production

Currently, the global goat population is one billion (Miller B. A, and Lu D. C. 2019). Global consumption of goat meat is increasing and consumption in Africa has increased to almost 400 million tonnes per year. Goats reared for chevon constitute a major part of the global goat population. Several goat breeds are used for chevon production. In southern Africa, the major meat breed is the Boer goat of South Africa. This breed is known to produce chevon of premium quality.



3.1.2 National Overview of the Goat Sub-Sector in Zimbabwe

There are no accurate goat statistics in Zimbabwe in terms of numbers and production values. The Goat (Capra hircus) population in Zimbabwe has been gradually increasing since 2000. It is estimated (LMAC 2019, Grassland Research Station 2019 and Goat Breeders Association of Zimbabwe 2019) that the goat population in Zimbabwe is a flock of more than 3.8 million with ninety –five (95%) percent in the smallholder sector. The available statistics from FAO (2011) indicate the goat population in Zimbabwe was at 3,120,000 (2006) and rose to 3,320,000 the next year. The common breeds of goats are the Boer, Matabele, indigenous and crosses. In Zimbabwe, the local demand for goat meat is difficult to ascertain given the informality of the sector.

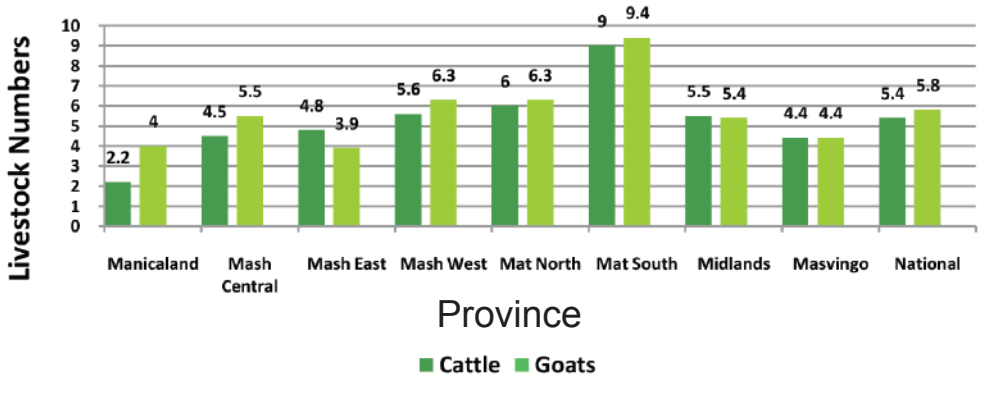
However, the literature indicates that the demand is not being met by producers and there is a huge potential to grow the sector. According to Trade Map, the global demand for goat meat increased by 125% to $342 million in 2016 from $151 million in 2006. The top importers of goat meat included UAE ($98 million), Saudi Arabia ($60 million), Bahrain ($33 million),

Oman ($14 million) and Qatar ($14 million). ZimTrade is offering to help goat producers to export goat meat to lucrative markets such as Angola and the Middle East. However, exporting to such markets requires large numbers of goats which the current production levels are unable to meet. According to the Cold Storage Company (2018) the country needs to export meat from at least 1 500 goats per week to meet the demand in the United Arab Emirates, Uganda and Angola, with Angola alone requiring 25 tonnes per week. Thus, in order to meet the export requirements, in addition to improving the livelihoods of the resource poor farmers increased efforts in promoting goat production are needed. There is also need to improve on quality.

Goats contribute to food security and can alleviate seasonal food variability and availability directly through milk and meat production and indirectly through cash earned from their sale. In semi-arid areas, goats have comparative advantages over cattle. Since they are more resistant to droughts, they utilize a wider diversity of plants and their higher reproductive rate allows populations to recover quickly. As browsers, they use different vegetation compared to cattle and thus allow farmers to make more efficient use of the available natural resources. In addition, goats play an important socio-cultural role. Promoting goat production contributes to risk mitigation, particularly in drought-prone areas, and empowerment of vulnerable groups (women, HIV/AIDS, poor).

The national average goat flock size per household is 5.8 (ZIMVAC 2019). The proportion of rural households which owns goats is 43.6% (ZIMVAC 2019). The distribution of goats per province in Zimbabwe is shown in Figure 3. The highest proportion of households who own more than 5 goats is in Matabeleland South (39.3%) and Matabeleland North has twenty-three (23%) percent. Matabeleland South has the highest goat flock size of 9.4 goats per household among the VALUE programming districts.

Figure 3: Average Goat Number per Household per Province



Source: ZIMVAC (2019)

In the Matabeleland region, goat numbers kept by the farmers range to one-hundred and thirty-two (132), with an average of forty-five (45) goats per farmer. Mashonaland East province has the least (3.9) average household goat flock among the programming provinces of VALUE. The production of goats amongst smallholder farmers is largely subsistence oriented. Marketing of goats is largely informal and sparsely distributed over time, done at

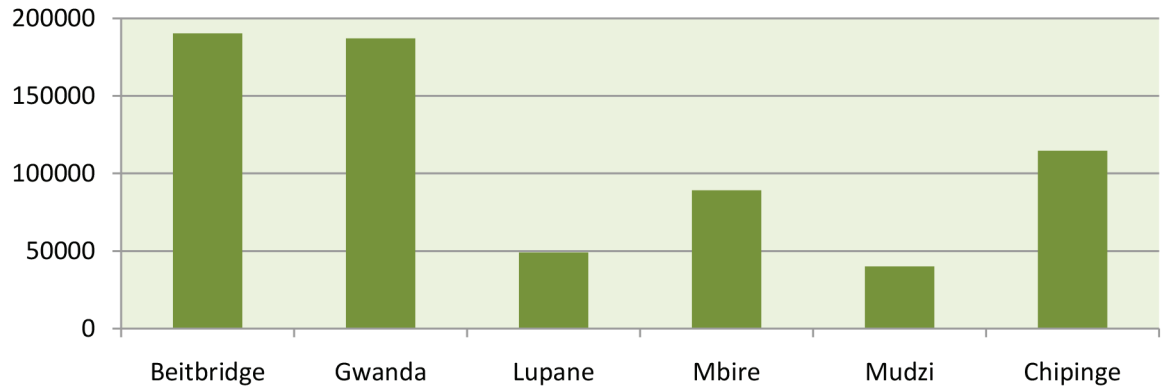
farm gates, with customers coming from neighbouring urban areas. The majority of the buyers in the sub-sector are middlemen and brokers.

With regard to contribution to the development of a diversified and efficient agricultural sector that promotes inclusive green economic growth, the goat sector is contributing seventy (70.4%) percent of all the employed people who are in the agriculture sector (source: ZIMSAT 2017). The goat sector's percentage contribution to the livestock to agriculture sector is at nineteen (19%) percent according to National Agriculture policy (2018-2030) by Ministry of Lands, Agriculture, Water and Rural Resettlement (2018).

3.1.3 District Overview of the Goat Sub-Sector

The scoping study gathered statistics on the goat population in the sampled Districts. These statistics were obtained from DVS and AGRITEX. Beitbridge has the highest number of goats (190432), followed by Gwanda (187188), Chipinge (114705), Mbire (89139), Lupane (49107) and lastly Mudzi with 40000 goats as indicated in Figure 4.

Fig 4: Goat Population in the target Districts

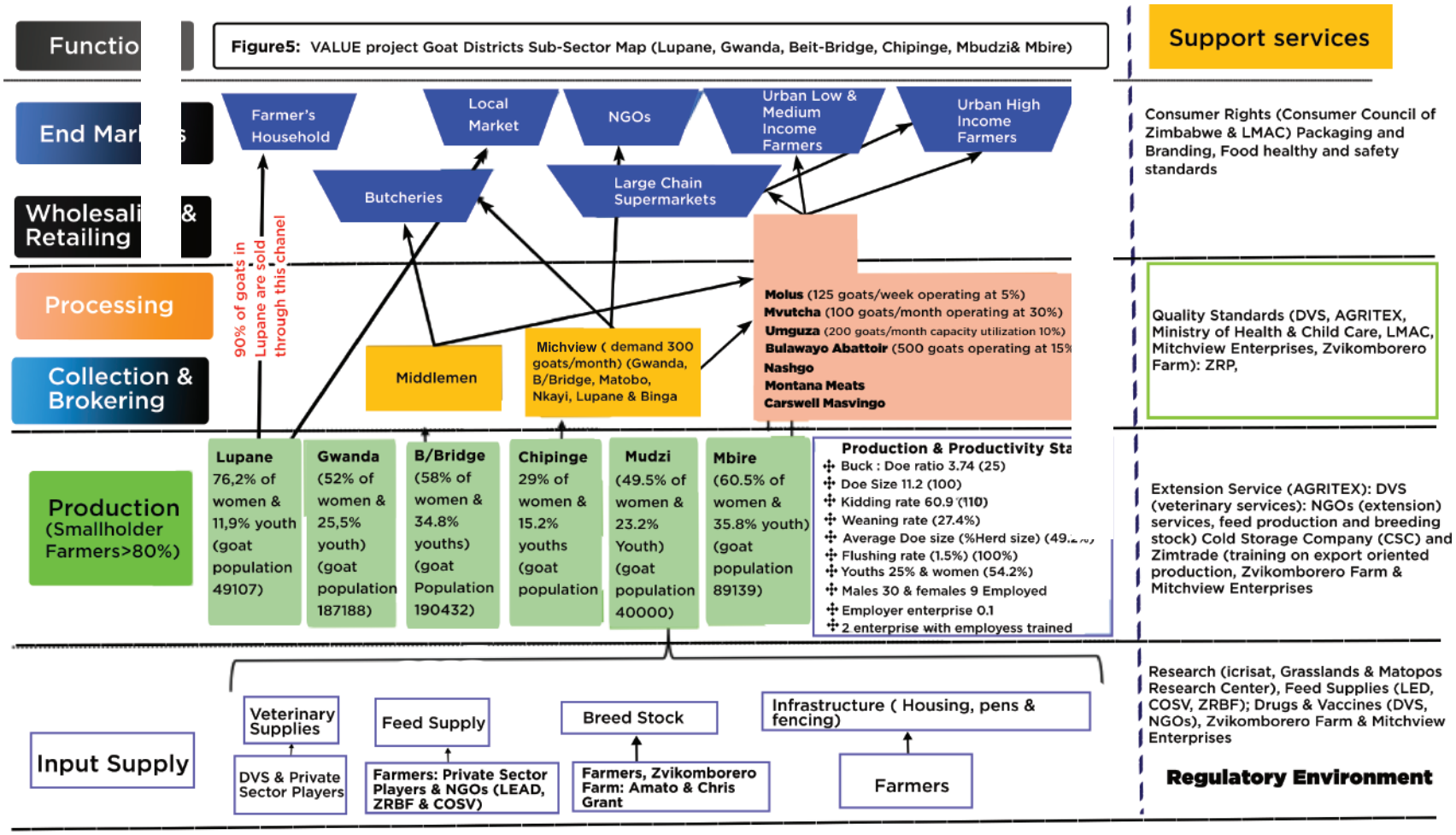


Source: Survey Data October 2019

The contribution of the goats to the local district economies is not known in most of the districts. This is because the goat enterprises are not levied or taxed at the district level, except for Gwanda, Beitbridge and Mbire districts. For instance, Gwanda RDC collected $404.25 in levies from total goat sales of $85 440 in 2018 and $12 209.77 from a total goat sales of $162 437 in 2019.

3.2 Goat Sub-Sector Map.

As part of mapping the dynamics in the goat sector, the study developed a sub-sector map. The sub-sector highlights the key functions in the goat sub-sector, the chain actors,relationships among the actors, the overlays (number of actors, volume of production, employment and margins) and growth dynamics. The sub-sector map is shown in Figure 5.


Functio
End Mar
Wholesali
Retailing
&
Processing
Collection &
Brokering
Production
(Smallholder
Farmers>80%)
Input Supply
Figure5: VALUE project Goat Districts Sub-Sector Map (Lupane, Gwanda, Beit-Bridge, Chipinge, Mbudzi& Mbire)
Support services
Farmer's Household
Local Market
NGOs
Urban Low & Medium Income Farmers
Urban High Income Farmers
Butcheries
Large Chain Supermarkets
90% of goats in Lupane are sold through this chanel
Middlemen
Michview (demand 300 goats/month) (Gwanda, B/Bridge, Matobo, Nkayi, Lupane & Binga
Molus (125 goats/week operating at 5%)
Mvutcha (100 goats/month operating at 30%)
Umguza (200 goats/month capacity utilization 10%)
Bulawayo Abattoir (500 goats operating at 15%
Nashgo
Montana Meats
Carswell Masvingo
Lupane
76,2% of women & 11,9% youth (goat population 49107)
Gwanda
(52% of women & 25,5% youth) (goat population 187188)
B/Bridge
(58% of women & 34.8% youths) (goat Population 190432)
Chipinge
29% of women & 15.2% youths (goat population
Mudzi
(49.5% of women & 23.2% Youth) (goat population 40000)
Mbire
(60.5% of women & 35.8% youth) (goat population 89139)
Production & Productivity Sta
Buck : Doe ratio 3.74 (25)
Doe Size 11.2 (100)
Kidding rate 60.9 (110)
Weaning rate (27.4%)
Average Doe size (%Herd size) (49.
Flushing rate (1.5%) (100%)
Youths 25% & women (54.2%)
Males 30 & females 9 Employed
Employer enterprise 0.1
2 enterprise with employess trained
Veterinary Supplies
DVS & Private Sector Players
Feed Supply
Farmers: Private Sector Players & NGOs (LEAD, ZRBF & COSV)
Breed Stock
Farmers, Zvikomborero Farm: Amato & Chris Grant
Infrastructure (Housing, pens & fencing)
Farmers
Consumer Rights (Consumer Council of Zimbabwe & LMAC) Packaging and Branding, Food healthy and safety standards
Quality Standards (DVS, AGRITEX, Ministry of Health & Child Care, LMAC, Mitchview Enterprises, Zvikomborero Farm): ZRP,
Extension Service (AGRITEX): DVS (veterinary services): NGOs (extension) services, feed production and breeding stock) Cold Storage Company (CSC) and Zimtrade (training on export oriented production, Zvikomborero Farm & Mitchview Enterprises
Research (icrisat, Grasslands & Matopos Research Center), Feed Supplies (LED, COSV, ZRBF); Drugs & Vaccines (DVS, NGOs), Zvikomborero Farm & Mitchview Enterprises
Regulatory Environment

Data analysis indicates that the goat sub-sector has the following functions: input sup
production, collection and brokering, processing, wholesaling and retailing, consumption
regulation. These functions and the value chain actors are shown in Figure 5 above.
subsequent sections elaborate on these key value chain functions, with evidence for the
gathered during the scoping study fieldwork.

3.2.1 Input Supply Function

The inputs required for goat production include the breeding stock, goat keeping and management, vaccines, stock feeds, supplements, medicines and drugs as well as training. These are elaborated below.

3.2.1.1 Veterinary Supplies

The actors in the provision of veterinary suppliers in the sampled districts are the Department of Veterinary Services (DVS) and the private sector providers. The DVS is incapacitated to provide the drugs and vaccines required by the goats because of limited treasury support. In the past, the DVS used to stock livestock drugs and vaccines. The DVS is also constrained in terms of mobility in order to reach the goat farmers. This challenge is worsened by the shortage of personnel. The study observed that some of the DVS Officers are providing their own supplies of veterinary drug and vaccines for a fee which is higher than the government set rates.

The scoping study found out that there is very limited presence of veterinary drug suppliers in the sampled districts. The main suppliers of drugs and vaccines for goat production are Coopers, Vet Distributors, VETCO, INTERVET and Fivet. The study noted that there is low penetration by private veterinary suppliers in the sampled districts. This is attributed to the low volumes of business since around forty-six (46%) percent (survey results) of the goat farmers do not use drugs and vaccines on their animals. The farmers that are not vaccinating or dosing their goats is because to them this is a not a business. This calls for a shift in the mind-sets of these farmers.

The majority of veterinary supplies are provided by feed suppliers such as Farm ad City, which has a wide distribution network across the country. In Gwanda and Beitbridge districts, the study noticed the non-availability of drugs for pulp kidney among the local supplies. The goat farmers with resources are resorting to buying the drugs in South Africa. The other coping strategy being used by the farmers is the use of local medicines and herbs that they have learned through the indigenous technical knowledge system.

The main drugs and vaccines used in goat production are shown in table 3. The limited use of drugs and vaccines among the goat farmers is accounted for by several reasons. The main one is that goat farming is still subsistence oriented, and therefore there is no need for investment in the health of the goats.

Table 3: Different types of drugs for goats available in local shops in Lupane District	
Drug Type	Use
Systamix	• Cures worms such as tapeworms, roundworms, hookworms and brown stomach worm.
Valbazen	• Used to get rid of worms such as roundworms and tapeworms, wireworms and tapeworms.
	• It is used to dose goats that will be having appetite problems.
Teremycine	• Used to get rid of worms which grows in goat's stomach.
Hitet 120	• Drug cures pneumonia, joint pain, foot rot and heart-water.
Trisulf	• Used to cure the growth and spread of worms in goat's stomach which causes them to loose appetite.
Albendazole	• These pills which cures worms in goat's stomach
Fivox	• An injection that cures the spread of ailments such as foot rot
Source: Survey Data October 2019	

Secondly, the drugs and vaccines that are required are beyond the financial means of most of the goat farmers. In Lupane for instance, the Systamix drug was costing USD8 per 200 ml and Hitet 120 was going for USD6.7 per 200 ml.The main drugs and vaccines used in goat production are shown in table 3. The limited use of drugs and vaccines among the goat farmers is accounted for by several reasons. The main one is that goat farming is still subsistence oriented, and therefore there is no need for investment in the health of the goats. Secondly, the drugs and vaccines that are required are beyond the financial means of most of the goat farmers.

Thirdly, these drugs and vaccines need to be kept under refrigeration facilities. These (refrigeration) facilities are not available in the operation areas except in ward 1 in Lupane district (solar powered by FAO). This limits the ability of the goat farmers to access and utilize drugs and vaccines.

3.2.1.2 Feed Supplies

Whilst there is limited use of external feeds by the farmers, the study found out that the key feed suppliers in the goat sector are National Feeds, Feed Mix, Non-Governmental Organizations and the farmers. In Lupane, LEAD and COSV are providing the farmers with supplementary feeds at subsidized prices (USD1.84 per 50kg). While the provision of subsidized feeds is a welcome intervention in the short run, it will distort the markets and is not sustainable in the long term. The farmers observed that once the subsidy has been removed, they will not be able to buy the feed.

The NGOs are also involved in the supply of feed by establishing feed gardens and goat feeding centers. In Lupane, LEAD and COSV have established 4 goat fodder gardens in wards 18, 9, 14, 12 as shown in Figure 6.

Figure 6: Fodder Garden Lupane District Ward 9

Mucuna / Velvet Bean

The gardens are solarized and provide seed banks to farmers. The cost of the fodder seed is USD1.7 per 3kg package. In Mbire district, the ZRBF has established a "Crops and Livestock Innovation Centre" with fodder production facilities. The farmers are also supplementing goat feed through locally produced plants such maize stover and bushes.

3.2.1.3 Breeding Stock

The key actors in the production of goat breeding stock are Amato Farm, Zvikomborero Farm, Chris Grant, Goodhope, Grassland and Matopos Research Centres and NGOs. Chris Grant runs the Mzilikazi Kalahari Red Stud in the Matobo district. Grant has been producing goats for many years but started stud breeding five years ago. He is probably Zimbabwe's biggest Kalahari Red commercial and stud goat producer. Zvikomborero Farm is one of the big goat producers, runs its own Boer goat and Kalahari Red training programmes at Featherstone in Chikomba district.

The production of breeding stock is very limited because of the associated high costs. For instance, the cost of producing a three (3) month old boer is USD100. The NGOs are involved in supplying breeding stock. The active NGOs include Lead and COSV among others. Overall, there is a challenge in the availability of goat breeding stock in Zimbabwe.

3.2.1.4 Infrastructure Provision and Equipment

The infrastructure required for goat production includes housing and dipping facilities among others. The equipment required for goat production includes dosing guns, dehoofers, syringes, weighing scales and feeding troughs.

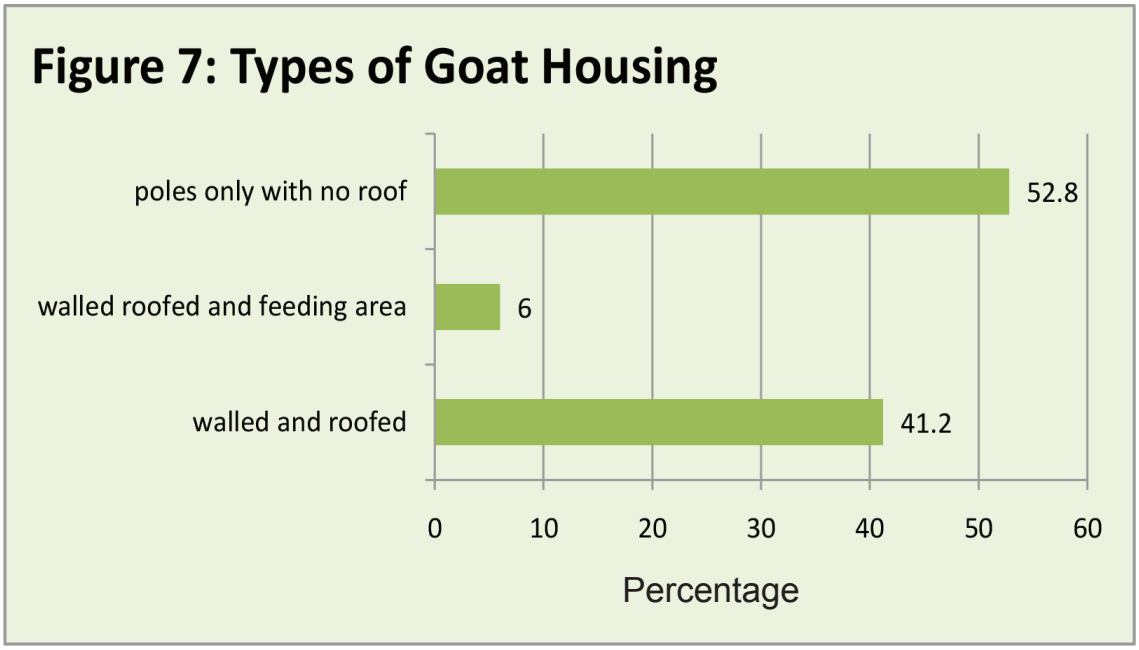
Goat housing is very important in goat production. It helps in the reduction of mortalities, loss through thefts and makes the management of the goats easier. The housing protects the goats from bad weather (sun, rains and wind). The goat housing must be well-ventilated, and easily cleaned. Poor ventilation can be detrimental to goat health and performance. Harmful

gases and dust can cause respiratory problems to the goats, while extreme temperature ca reduce goat productivity (https://startupbiz.co.zw/starting-goat-farming-business-plan zimbabwe/. The purpose of ventilation is to provide the desired amount of fresh air to al parts of the shelter; to maintain temperatures within desired limits and to maintain relativ humidity within desired limits. One can use wood or clay bricks or concrete blocks t construct the goat pens.

The floor space required for an adult goat is one and half (1.5m^2) square metres. The study found out a range and types of housing that were used in the farming of goats.

The study found out that 52.8 % of the farmers (Figure 7) had goat houses made of poles only with no roof, 41.2 % were using walled and roofed goat housing and 6% had walled and roofed housing with feeding area. In some areas like Lupane, goat farmers were trained on appropriate goat housing by organizations such as LEAD and COSV. Despite the need for good quality goat housing, the majority of goat housing in the target Districts and wards is sub-standard. Sub-standard housing exposes goats to diseases such as foot rot. The images below show the different goat housing used by farmers in the targeted Districts.

Figure 7: Types of Goat Housing



Source: Survey Data October 2019

The different goat housing structures that the study found out are shown in figure 8. The type of the housing structure is greatly influenced by the perceived role of the goats in the household's economy. If the goats are perceived as of little economic value to the family, then the housing will be very basic. While on the other, if the goats have higher perceived economic value the housing is modern.

With regard to the provision of equipment for the goat production, the scoping study found out that there is little use of the required equipment by the farmers. This is so because the production is still subsistence oriented and some of the equipment is relatively expensive.

Figure 8: Goat House Types

SOURCE: Survey Data October 2019

The study noted the presence of production related infrastructure in Gwanda and Beit-Bridge districts. In Gwanda district the study observed goat dipping sites and auction sites (Figure 9). These infrastructures were provided by SNV and Care International among others. All (3) of these infrastructures are now white elephants. This is attributed to wrong siting of the infrastructures as indicated by sampled farmers.

In conclusion, it is important to underline the finding that smallholder farmers are central in the input supply in the goat sub-sector. The smallholder farmers are involved in the supply of the breeding stock, feeds and infrastructure and veterinary drugs and vaccines.

3.2.1.5 Input Supply Function Service Provision

The main public service provider at the input supply function is the Department of Veterinary Services (DVS) whose mission is to promote biosecurity, animal health and welfare for the benefit of the livestock industry and human well-being. Its core functions include animal disease surveillance, animal disease and investigation control, veterinary control, veterinary infrastructure, animal health information and extension and administration of the provisions of the Animal Health Act. The DVS has one-hundred and forty-two (142) Animal Health Centres dotted across the country and the ones in study district are indicated in Table 4 below.

Figure 9 Goat Dip Tank (Gwanda Ward 7)

SOURCE: Survey Data October 2019

Table 4: DVS Animal Health Centers Per District

District	No. of wards	No. of Animal Health Centres	No. of VEWs
Lupane	28	14	12
Gwanda	25	20	20
Beitbridge	15	22	22
Chipinge	30	29	29
Mbire	17	12	11
Mudzi	18	13	13

The centres are not being fully utilised and risk being white elephants. The DVS is incapacitated with regard to personnel, mobility and knowledge competencies. The Department does not have adequate extension staff to cover all the farmers in the districts.

The research institutes involved in input supply function are Grasslands (in Marondera), ICRISAT and Matopos (Matabeleland region).

The other actors that are entering the input function service provision are the breeding agencies. These agencies include the Zvikomborero Farm, Amato Cader, Chris Grant, Zvikomborero Farm and Goat Breeders Association of Zimbabwe (GBAZ). Then there is the Boer Goat Breeders' Association of Zimbabwe, (launched in June 2018) which runs training programmes covering theory and practical lessons. Despite having these breeding agencies, there is no certified Boer breed stud in Zimbabwe. For one to be certified there are a number of gate entry competencies and these include;

a. Having genuine stud stock. Each of the animals must be recorded in terms of paternity and maternity;
b. Having the right operating environment. The stock must never come into contact with other breeds. Therefore, the farm must be fenced off to secure the stock from possible contamination from outside goats;
c. The Farmer must have passed a minimum of two advanced courses.
d. The breeder's farm must be inspected to ensure that the records, facilities and breeding programme are in tune with the international standards as outlined by the South African Boer Goat Breeders' Society.

The current breeding farmers whilst having the stud stock, they have not met these above gate entry competencies.

The NGOs were also found out to be active in the goat input supply function. They are involved in importing breeding stock into the country. The preferred breeds being brought in

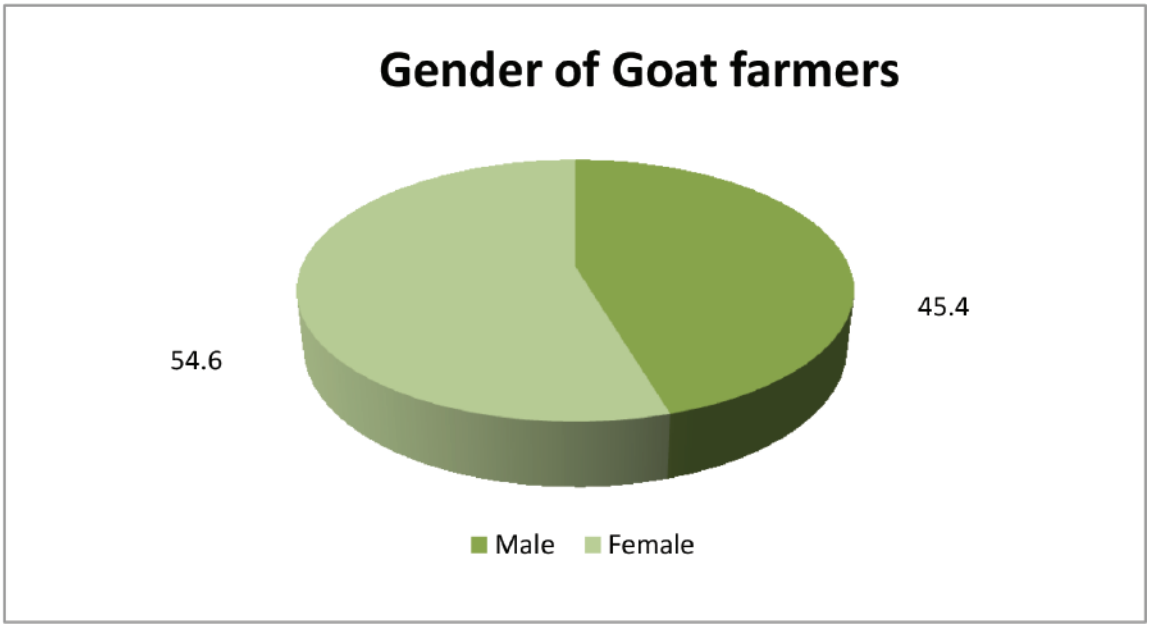
the country are the Boer and Kalahari Red. This is because of the high carcass weight averaging 90kg per adult goat. Elsewhere in the country, CAFOD and CARITAS Gokwe have been promoting artificial insemination in Gokwe South with a high degree success. The semen was imported from Australia.

3.2.2 Production Function

Goat production involves breeding, herding, treating opportunistic ailments, performing routine operations such as castration, dehorning, dipping, kraaling and watering the animals. In investigating the goat production function, the scoping study explored the socio-economic status of the farmers, their production systems and methods, breeding and feeding practices and health management practices among other practices. These attention points of the scoping study under the production function are elaborated in the following sections.

3.2.2.1 Socio-Economic Status of Goat Farmers

The scoping study data indicate that fifty-five (54.6%) percent of the sampled goat farmers are female, 45.4% are male (Figure 10). The dominance of women in goat farming confirms the notion that "goats are women's 'cattle'". The dominance of women in the goat sector is attributed to the fact that goat is a ruminant and men are less interested in farming it. The participants of scoping study noted that goats are women's animals because they are generally easier to manage, have a shorter production turnover and easier to dispose as compared to cattle.



The dominance of women in the goat sub-sector was found in all other districts, except for Chipinge district, where only twenty-nine (29%) percent of the women in the sample owned

goats. The low numbers of women in the goat farming in Chipinge district was attributed to the high patriarchal family system. The study noted that because of the high patriarchal system, the ownership of any means of production is owned by the male head of the household. However, in focus group discussions in Chipinge district it was observed that while the ownership of goats was ascribed to males, in reality women owned most of the goats.

With regard to the gender dynamics the study noted that whilst women are the majority owners of goat, they do not have the decision-making powers of selling their animals. Women who participated in the FGD mentioned that they must consult their husbands when they want to sell their goats. This practice does not undermine their ownership but is a practice that is common across many cultures in married households.The age distribution of the sampled farmers indicates that the majority (41%) of the goat farmers are within the 36-50 age category, with the youths (18-35) accounting for a quarter (25%) of the study sample. The high presence of youths in goat production points to greater growth potential as the youths have high propensity for learning and adoption of latest production technologies. The study discovered active involvement of young people in goat rearing (see box 1, page 24, a summary of a young person doing goat rearing in ward 17, Mbire).

In terms of farming experience, farmers (47.2%) have more than 11 years rearing goats. However, the study discovered that there is no correlation between goat farming experience and husbandry practices.

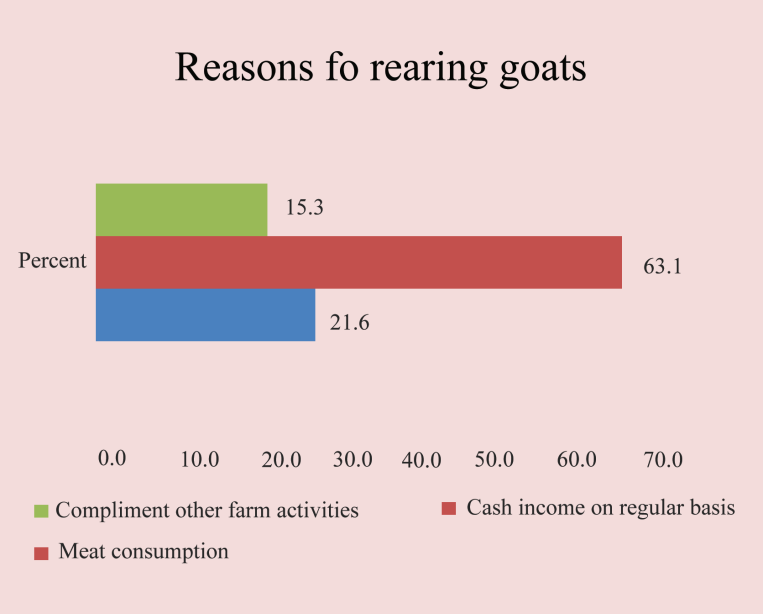
The study results show that the major source of livelihood (36.9%) of incomes for the household is from livestock including the small ruminants. This is because most of the VALUE programming districts are in agro-ecological regions four (4) and five (5) where crop farming is hardly practiced. The second source (26%) of income was informal trading which includes buying and selling of clothes and utensils from neighbouring countries. Farmers are farming goats for different reasons. Figure 11, Page 24 summarizes the different reasons for which farmers are rearing goats.

Box 1: The story of a young farmer in ward 17, Mbire District

Hodhera Morris is a young man aged 27. He lives in ward 17, Mbire District. He has a total goat herd size of 130, including 40 kids. He started his goat project in 2012. He started off as a middlemen buying and selling goats, but he realised that he was not getting enough out of it. In 2012, he bought 5 goats for his project. At one point, his herd size grew to 230 and he sold about 50 of the goats and bought 5 cattle. He recently sold 12 bucks and bought household items. His Doers also gave birth to kids twice a year. He also sent his 7 Doers to the Crops and livestock Innovation Center (CLIC) for breeding in September (for 2 weeks). He confirmed that all the 7 Doers are now pregnant and he has been monitoring them to ensure that they do not mate with other local breeds. At CLIC, he paid a total of USD 2.30 as well as 7 cart loads of grass (mixed with supplementary feed at the CLIC). He also keeps records of his goats, including birth rates, weights, productivity, sales and mortality among other records

Sixty-three (63.1%) of the farmers are rearing goats for income on a regular basis. Goats are usually regarded as an income security animal as they can be easily disposed to meet the income needs of households. Other reasons for keeping goats include the need for meat consumption (21.6%) and the need for complementing other farm activities (15.3%).

Figure 11: Reasons For Rearing Goats



Goat manure is generally regarded as good manure for vegetable gardens. Ninety-five percent (95%) of the farmers are using goat droppings as manure.

3.2.2.2 Goat Breeds

The study found that there are different breeds of goats that the farmers are keeping in the sampled districts. The popular ones are Mashona and Matebele which are indigenous[2] breeds and are reared on a subsistence basis. The study further noted a gradual shift in terms of the breeds to Boer and Kalahari Red, both of which originate from South Africa. These exotic breeds are being preferred for their commercialization returns potential. An adult Mashona or Matebele goat fetches no more than $100 on the local market, but prices for a commercial Boer goat or Kalahari Red range between $500 and $600 (https://www.agriorbit.com/sa-goat-breeds-suit-the-zimbabwean-landscape/).

The Matebele goats were found in Gwanda, Beitbridge and Lupane. They are large framed goats, does weigh between 30-50kg and mature bucks can weigh up to 55kg on average. Crossbreeds of the Matebele and Boer goats were also present in these districts. The Matabele goats are known for tasty meat which is preferred in lucrative South African markets. The Matabele goat has dual purpose of meat and milk. The study found out that almost every household in Lupane, Gwanda and Beitbridge were milking their goats. The study respondents noted that the goat milk is very nutritious and this is confirmed by literature (https://www.healthline.com/health/benefits-of-goat-milk#1 and https://doi.org/10.1016/B978-0-12-809762-5.00035-8)

The Mashona goats were observed more in Manicaland, Mashonaland Central and East provinces in the sampled districts. Mature does weigh up to 25 – 30 kg and bucks up to 35 – 40kg on average. They can reach a height of 64cm at the shoulders. Both sexes have horns which range from 2.5 to 20cm and ears average 12 cm and point backwards (https://livestockmatters.blog/2019/04/04/indigenous-goat-breeds-matabele-and-mashona/). The Mashona breed is also highly prolific and resistant to many diseases.

The Boer goat was found only in Matebeleland North and South provinces. Most of the Boer goats were brought by NGOs (SNV, COSV, and LEAD) involved in goat breed improvement programmes. The Boer goat's origin is South Africa. It is a large framed breed and an adult doe can grow up to 60kg and bucks up to 70kg. It has a very stocky body, well-muscled, strong bones and mostly kept for meat production. The Boer goat is also very prolific with an average kidding rate of 1.5 (3 times in 2 years) 50% twins, and 7 % triplets.

3.2.2.2 Goat Production Systems and Methods

Goat production in the sampled districts is largely subsistence oriented. However, the study noted the emergence of market-oriented production. This drive towards commercialization is being driven by the NGOs. The study found out that there are three types of production systems. There is the extensive production system, semi-intensive and the intensive production system. In the extensive production system, there is very minimum or no external input in the production system. The goats are managed through the free-ranging/grazing system. This extensive grazing system is also known as the "pasture fed system". Pasture fed means that the animals spend most or all of their time in the pastures. In some instances, the

[2] Indigenous breeds are those naturalised in an area

study observed tethering of the goats, especially in the summer season, when the owners will be busy in the fields.

Under the intensive production system, the goats are kept in enclosed structures the whole day. Intensive rearing means that the animal's movements are restricted as they are housed and fed in sheds. The goats will be provided with feed and water. The intensive production system relies heavily on external inputs such as feeds. The intensive production systems is usually commercialization oriented.

Table 5: Goat Production Systems and Methods

Goat Production System	Percentage	Goat Production Method	Percentage
Extensive grazing	86.2	Independent Production	98.2
Semi-intensive	11.8	Off-takers production	1.2
Intensive	1.2		
Other	0.8		

Source: Survey Data October 2019

The study found out that the most used production system is extensive grazing (86.2%) (see Table 5), followed by semi-intensive (11.8%) and very small (1.2%) is practising intensive production systems. These results show that the commercial orientation of the smallholder goat producers is very low. The majority (86.2%) are still in the subsistence production mode.

Table 6: Percentage of Informality by Gender and Age

	18-35	36-50	51-60	61+
Males	98.08	98.96	98.04	100
Females	98.67	90.91	98.33	100

Source: Survey Data October 2019

The study went further to assess the level of informality in goat production by gender using the production systems as a proxy. The farmers who are practicing extensive grazing were labelled as informal and those in intensive goat rearing as being commercial. The data (Table 6) indicates that across all age groups and gender, over 90% of the sampled goat farmers are practising informal goat production.Regarding goat production, there are a number of production methods. In the independent production method, the farmer is involved in the raising of the goats from farrowing up to their marketing. Then there is off-taker production, where the farmer is contracted to produce goats for and off-taker, who are usually private companies. The study results indicate that there is limited participation of the private companies in the goat subsector, as only 1.2% of the producers are under the off-taker model. The majority 98% of the farmers are using the independent production method. This points to a low level of market-oriented production.

The study observed that some of the farmers are innovating in their goat farming enterprises. The farmers are trying to establish goat improvement centres using locally available materials. For instance, in ward 1 (Lupane), there is only one traditional improvement centre which was started in October 2019 by the farmers themselves. The goat improvement centre is made from local resources at their disposal of the farmers such as poles and thatch grass. This improvement centre is being led by the farmers' association group (Lupane Small Livestock Association). It is almost 50-70% complete. There are also goat improvement facilities and they are being used for goat breeding purposes at individual farmer level. There is a total of 5 traditional functional goat improvement structures that have been established in Lupane district.

3.2.2.3 Goat Breeding Practises

Goat breeding is a very important and essential process for goat farming business. Understanding the breeding process and proper planning are prerequisites for growth. Before the breeding process, it is imperative to identify the breeds with preferable qualities first. The study found out that the majority 52% of the goat farmers use the village buck for breeding purposes and 42% of the goat farmers use their own buck for breeding. The last group 1% make use of the buck from the other villages. The use of the village buck confirms the extensive grazing production system. The mating of the goats happens in the fields where the goats will be grazing. Whilst the mating is random, 42% of the sampled farmers informed this study that when it comes to breeding there are certain characteristics they look for in the buck. The factors considered when selecting a buck for breeding include overall physical outlook 19% , buck of improved breed 18% , other physical characteristics 4% , twin born 6% and color 3% .

However, the majority 58% of the sampled farmers revealed that they are not concerned about the quality and characteristic of the buck. This statistic 58% indicate that the smallholder farmers are not yet commercially minded. The FGD sessions with goat farmers revealed challenges with goat breeding. The main challenge is the lack of does for improved breeds.

Data analysis from the household questionnaire indicate that the buck: doe ratio across the sampled farmers is one as to the three (1:3). This ratio is far below the expected ratio of one buck to 25 doe, when the buck is between twelve (12) and twenty-four months (24).

Table 7: Buck-Doe Ratio Gender

	18-35	36-50	51-60	61+
Males	1:3	1:5	1:4	1:3
Females	1:3	1:5	1:4	1:4

Source: Survey Data October 2019

The study results further revealed that the buck-doe ratio even though low, it is highest (1:5) among the males in the 36-50 age category (table 7). This indicates that this age group has better understanding of the importance of how to enhance the herd size. This age (36-50) age group offers more prospects for improving the herd size.

The poor buck-doe ratio is attributed to the intervention by NGOs, who are bringing in bucks to improve the goat breeds. NGOs such as LEAD and COSV have been supporting local farmers with breed improvement programs. For instance, in Lupane, LEAD and COSV have been providing Boer bucks at subsidized prices of USD10 (average) per Boer buck. These were purchased from Beitbridge. Other organizations such as Sizimele, under the Zimbabwe Building Resilience Fund (ZBRF) support farmer groups to reduce the prevalence of inbreeding, which is highly prevalent, given the absence of controlled breeding practices.

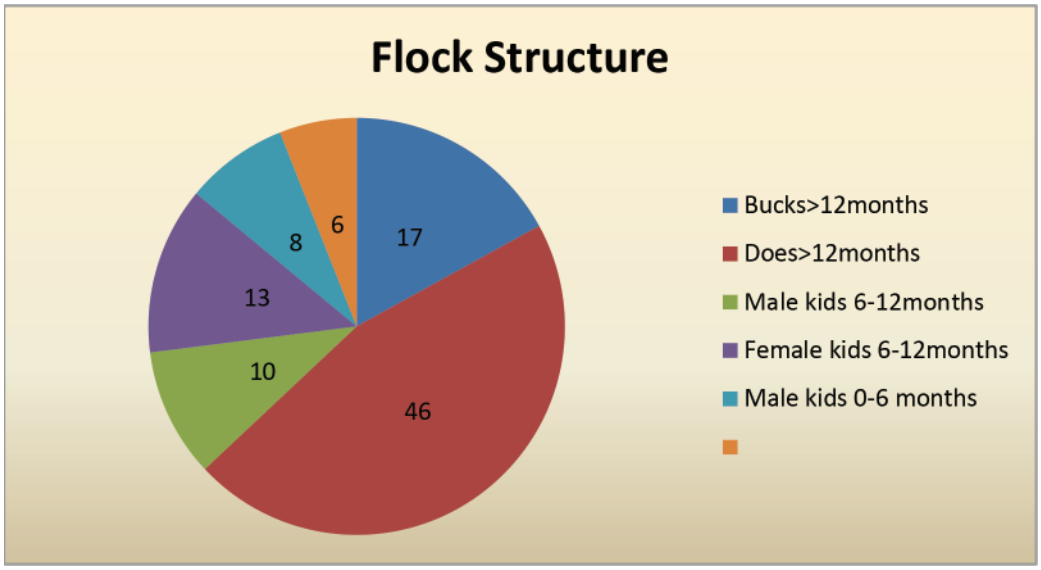
In Mbire district, the Zambezi Valley Alliance (ZVA) is currently running breed improvement programs. The Alliance has established two (2) Crops and Livestock Innovation Centres (CLICs) in Mbire under the ZRBF in ward 9 (near Mushumbe Business centre) and in ward 15 (in Mahuhwe). At the CLICs, there is a facility for goat breeding, where farmers bring their Doers to mate with the Boer Bucks. The farmers are charged USD0.3 for the breeding service[3]. The ZVA organized the farmers into groups and provided them with pure breeding bucks. These bucks are used for breeding purposes with the local Doers. The idea was to improve the quality of the breeds so that farmers can gain more when they sell them. The beneficiaries of such project confirmed that with better buck breeds, there is usually better quality and healthy kids.

In Lupane, LEAD in partnership with COSV has established 10 Goat Centres of Excellence (2 in ward 9, 2 in ward 1, 2 in ward 16, 1 in ward 5, 1 in ward 18, 1 in ward 21 and 1 in ward 12). At these Centres of Excellence, there are breeders. The Centres act as Farmer Field Schools, where on-site training and demonstration is offered to goat farmers on issues such as breeding, feeding, goat housing and other production related aspects. Standard goat houses have been constructed in wards 9 and 18 to act as learning points for farmers.

[3] KII with Official, Zambezi Valley Alliance

In Chipinge District, Red Cross established a Goat Centre of Excellence in ward 19. The centre has facilities such as goat spray race. However, the location of the centre is not ideal because that part of the District has very low goat population[4]. The centre is also far away from goat farmers, which makes it difficult to access and learn from innovations in the value chain.

3.2.2.4 Flock Structure



The Scoping Study explored the flock structure of the goats that the sampled farmers are keeping. The majority (46%) of the goats in the sample are Does over twelve (12) months. These are the productive goats. The high presence of productive Does means that there are prospects for commercial oriented production.

However, the number of productive bucks, that is, those over twelve (12) months is seventeen (17) percent. This confirms the earlier finding that the buck-doe ratio is very low, averaging one-three (1:3). The number of does need to be increased.

3.2.2.5 Production Volumes

The study explored the different production and productivity variables in goat production. The results of that analysis are elaborated below:

a) Kid Birth Weight.

The study found that among the Integrators (Zvikomborero Farms and Michview Enterprises) the kid birth weight of the Boer Goats and the Kalahari Red was 3.5 kilograms. These kid birth weights are within the industry's best practices and are attributable to good husbandry

[4] KII with Agritex Supervisor in Chipinge

practices and improved genetics. The kid birth weights among the communal farmers for the Mashona goats were found out to be 1.3 kgs against an industry benchmark of 2-2.5kgs. Poor husbandry practices account for this below benchmark kid birth weight. The average kid birth weight among the Matebele goats owned by the small-scale farmers was on the lower end of the industry benchmark at 2kgs.

b) Kid Mortality.

The study found out that the average kid mortality across the study sample was twenty-three (23%) percent. This average is way above the industry acceptable kid mortality of five (5%) to ten (10%) percent. The high kid mortality was attributed to poor husbandry practices, poor housing, thefts and deaths by predators. However, among the Integrators, the kid mortality was 10% and 9% for the Boer and Kalahari Red respectively. Therefore, the kid mortality at the Integrators is within the industry kid mortality range.

Analysis of the kid mortality by gender of goat keepers indicated that the highest mortality was among the older farmers. Female goat farmers in the over sixty (60) age category have a mortality of thirty (30%) percent. Male goat farmers over sixty (60) years are experiencing a kid mortality of twenty-eight (28%) percent. This high kid mortality rate among the oldest farmer group is to the old farmers not following the best kid management practices.

At the national level, ZIMVAC (2019) reports that the goat mortality rate is at 17% which is high compared to country's average rate of 8-10%. The highest goat mortality rate was reported in Manicaland (20%) whilst Mashonaland Central reported a lower rate of 13%.

c) Weaning Weight at 100 days.

The study results show that the weaning weight at 100 days among Integrators for Boer and Kalahari Breeds is below the industry benchmark of thirty-five (35) kgs. The Integrators are averaging twenty (20) kilograms. The smallholder goat farmers are within the 8-10 kgs weaning weight set by the industry. The smallholder farmers are doing ten (10) kgs for Matebele goats and nine (9) kgs for the Mashona goats. This was attributed more to good vegetation than husbandry practices.

d) One Year Weight

The study results indicate that the one-year weight among the Integrators was below the industry benchmark of seventy (70) kilograms for the Boer and Kalahari Red breeds. The Integrators are averaging fifty (50) kilograms. The smallholder farmers, according to the survey results are doing well in surpassing the industry one-year weight target of 12kgs. The smallholder farmers are averaging fifteen kilograms.

e) Inter-Kidding Rate.

The inter-kidding rates for the indigenous (Matebele and Mashona goats) and the Exotic (Boer and Kalahari Red) are between ten (10) and twelve (weeks) and eight (8) weeks respectively. The study results indicate that inter-kidding rates are well-off the commercial

production benchmark. Among the smallholder farmers the inter-kidding rate average seven (7) months.

f) Gross Margin.

In calculating the gross margin, the study used the formula Total Variable Cost (TVC) minus Gross Income (GI) as a percentage. The study results indicate that male farmers are not investing in the goat business, therefore a negative forty percent (-40.08%). The women goat farmers' gross margin is over thirty-seven per cent (37.58%) percent. This indicates that women farmers are investing in their goat businesses. The investments include purchasing of drugs and vaccines and supplementary feeding.

The study recommends that the project should promote the practice of record keeping, this will enhance accuracy of the production and productivity statistics.

3.2.2.6 Goat Feeding Systems and Practices

Nutrition plays an essential role in goat farming systems. In developing countries, these systems are characterised by low input of poor quality pastures that contribute to inadequate feeding and nutrition (Ben Salem and Smith 2008), and productivity is low (Thomas and Rangnekar 2004). Production of goats is mostly dependent on natural pasture. They are let to browse the indigenous trees and shrubs. However, quantity and quality fluctuate throughout the year, with feed deficits being experienced during the dry seasons. The fluctuations in quantity and quality of shrubs is worsened by the frequent droughts, though the natural veld is of the sweet type. Farmers in the sampled districts 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 (Dube et al, 2017). Climate shocks also lead to reduced availability of water for livestock, including goats. The small dams in Lupane District for example have all dried up. Goats end up drinking mud water, which will be highly contaminated and infested with worms[5].

The study results indicate that seventy-six percent (75.9 %) of the sampled farmers practice browsing in terms of feeding their goats. Majority of the farmers (55 % and 45.2%) indicated that the village common land is the area of browsing for goats during winter and summer respectively. These statistics demonstrate that majority of the farmers rely on the natural veld for feeding their goats. Some farmers through the support of NGOs have ventured into goat fodder production to supplement the natural feed, which is no longer of good quality due to climate induced shocks.

Climate change is also reported to be affecting the availability of feed and water for goat production. The study observed that fifty-six percent (56.0 %) of the sampled farmers are experiencing feed and water shortages during the summer. The feed and water shortages are compounded by perennial droughts that are experienced in most parts of the target districts. The districts such as Lupane, Mbire, Beitbridge and Gwanda experience serious climate shocks and hazards such as droughts. These hazards and shocks lead to poor quality pastures,

[5] KII with Agritex Officer, Lupane

In terms of watering their goats, farmers rely on boreholes that have been drilled by development organizations as natural water sources run dry during dry seasons. However, in other districts, the farmers are forced to travel over ten (10) kilometers to the nearest watering hole.

The study observed that in some districts, goat farmers are supplementing feeds by purchasing fodder. In ward 9-Lupane District, the farmers are buying fodder from the local fodder garden. NGOs such as Sizimele have supported farmers through trainings in on-farm feed production using locally available materials. This practice is cost effective as it does not require a lot of financial resources. World Vision in partnership with BRACT is planning to establish goat fodder demonstration plots in Mudzi.

3.2.2.6 Goat Health

The overall health of a goat is largely determined by their environment, genetics and nutrition. There are several illnesses that can affect a goat both in chronic and curable form. Two illnesses that can bring sudden death to a goat are coccidiosis and pneumonia. Of most concern to breeders and producers are worms and parasites. The study found out that farmers are experiencing a number of goat health challenges. The most common goat diseases are pulpy kidney, heart water, coccidiosis, tape worms, mange mites and ticks and pneumonia (shipping fever). Pulpy kidney is caused by bacterial toxins triggered by any stress factor e.g., change of diet, starvation, deworming, castration, weaning, and transportation. In Beitbridge, the study encountered a farmer in ward 9, who lost 18 of 25 kids due to pulpy kidney. Coccidiosis is very common in kids and where the goat housing in poor. Pneumonia results from bacteria attack. It is mostly found in animals under stress due to cold, heavy rains and strong wind. Pneumonia usually affects animals transported for long distances. Therefore, good animal health management is an important husbandry practice for goat production.

The farmers (75.6%) indicated that they administer treatment to their sick goats while the difference (24.4% did not provide treatment. The majority (83.6%) of the farmers who are treating their goats are doing it themselves, while 3.4 % revealed that it is done by Government Agencies. The study observed that NGOs are also involved in the treatment of the goats. The study data showed that two (2.2%) percent of the sampled farmers had their goat treatments done by NGOs. Local "experts" are involved in the treatment of goats. Seven (6.7%) percent of the sampled farmers noted that they were using these local experts. The local experts are mostly other farmers who have training in animal health. Among the providers of goat treatment are also private sector players who account for four (4.0%) percent of the treatments.

In terms of vaccination, 54 % of the farmers indicated that they do not vaccinate their goats while 46 % indicated they do vaccinate their goats. Majority of the farmers (69.4%) do vaccinations on their own, while 7.1 % revealed that vaccinations are done by government. The statistics on treatment and vaccination indicate limited or weak service provision by public agencies such as DVS. The study also discovered that 36 % of the farmers practice ethno-veterinary in treating and vaccinating their animals. This involves using local materials such as tree barks and "chin'ai."

In concluding the study findings on the production functions, the main production challenges faced by SHFs include: (i) limited technical and business skills capacity in terms of market-oriented goat husbandry, which limits productivity; (ii) lack of resources to finance goat production activities e.g. financing breed improvements; (iii) Inadequate access to inputs and

oriented goat husbandry, which limits productivity; (ii) lack of resources to finance goat production activities e.g. financing breed improvements; (iii) Inadequate access to inputs and services including appropriate technologies; (iv) land access and resultant grazing resource limitations in context of costly supplementary feeds and no farm-level fodder production; (v) poor husbandry practices and infrastructure resulting in high goat mortality.

3.2.2.7 Production Function Service Providers

At the production function, the main service providers are the public service providers and civil society organizations. The main public service providers are the DVS and AGRITEX. The mission of AGRITEX with livestock is to provide technical and advisory services to the agricultural sector for the purposes of enhancing production and productivity. The core functions include livestock extension and advisory services, farmer training, livestock multiplication and regulatory services. In Matebeleland South Province, the Department has plans to implement a small stock breeding and multiplication project. The overall objective of the project is to breed, multiply and distribute small livestock to farmers with the goal of improving their living standards. The proposed project will involve;

1) Acquiring 200-hectare farm in the province;
2) Paddocking for rotational grazing;
3) Pasture development;
4) Construction of goat handling facilities-dip tank, loading bay, overnight pen;
5) Training hall construction; establishment of water points for livestock watering and
6) Fodder irrigation and promotion of appropriate technologies for goat housing among other activities.

AGRITEX is constrained in terms of the numbers of extension personnel, mobility and the latest knowledge regarding developments in the goat industry. The scoping study found out that during the merging of AGRITEX and DLPD, some extension staff who had specialised in crop production were now assigned to provide extension to livestock farmers .

DVS as noted in the input supply function is also incapacitated regarding the number of personnel, mobility and supply of drugs and vaccines.Given the central economic role of goats among communities in the drier regions of the country, NGOs have been in overdrive promoting goat farming. The leading organizations in promoting the commercialization of goats are SNV, COSV, LEAD and CARE-Zimbabwe among others. These NGOs are active in the provision of infrastructure (dipping tanks and auction centers), breeding stock and the general promotion of the goat sub-sector.

The study also found out that goat breeders (Chris Grant, Zvikomborero Farm, GBAZ, Amato Cader) are supporting the goat production function. These breeders are promoting the enhancement of the local breeds and improvement of the husbandry practices.

Research institutions (Grasslands, ICRISAT and Matopos) are spearheading the enhancing of the husbandry and nutrition practices in the goat sub-sectors. The research institutions are resource constrained to fully implement their mandates that would increase production and productivity in the goat sector.

3.2.3 Collection and Brokering Function

After production, the next function in the sub-sector is collection and brokering. The study observed that goat trading and marketing is highly informal in Zimbabwe. The trade in goats is informal because of the costs that are associated with formalizing it. If goats are sold through the formal marketing channel, the buyers must pay ten (10%) percent of the buying prices to the authorities. The lack of formal goat selling facilities in Zimbabwe is a great barrier to the development of competitive and sustainable goat subsector enterprises including but not limited to goat meat. The collection and brokering in the goat sub-sector is done by middlemen and the private abattoirs.

The goat sector's collection and brokering is the domain of brokers, popularly known as "Makoronyera" or Middlemen. The goat brokers are either self-acting or are contracted by the Abattoirs. Traders sell most of the goats direct to other farmers (both smallholder and large-scale farmers), butcheries and abattoirs. The middlemen engage in this practice because they fetch higher prices from those markets. The abattoirs prefer to use the middlemen to reduce their costs of doing business. The study further found out that some of the abattoirs are involved in the collecting and brokering for goats.

The middlemen purchase the goats at the farm gate or at organized selling points such as the auctions in Beitbridge and Gwanda districts. The determination of the goat selling price is through the physical appearance of the goats. Because the farmers sell their goat when there is a need in the household, their negotiating power is compromised. Therefore, the middlemen determine the price. At the goat auction, there are scales for weighing the goats, but these are rarely used because the middlemen will be intent on cheating the goat farmers. The auction selling of goats is not being done, despite the setting up of the auction infrastructure by NGOS (e.g. SNV).

The study also observed a high prevalence of goat sales on the side-lines of cattle auctions. The findings indicate that close to ninety (90%) percent of the goats are purchased during cattle auction sales. The goat prices range between USD40.00 and USD60.00 per animal. Traders highlighted that they get information on livestock from extension staff. It costs USD10 to get a permit to transport a truck of goats. In addition, transporters also charge USD2.00/goat.

Despite the perceived high volume of goat trading, the study found out that the off-take rate among the sampled farmers is eighteen (18.10%) percent. The low off-take rate is because the goats are mostly sold when the family had a shock or hazard it wants to resolve. The goats are rarely produced for commercial purposes. Low productivity among the goats also contributes to the low off-take rate.

The transportation of goats from the farm gate or the selling point to be abattoirs is not efficient and is against the animal health and welfare regulations.The study observed that the goats are transported in public passenger (kombis) vehicles (Figure 13) and donkey drawn carts (Figure 14). These modes of transportation are against the regulations that deal with cruelty to animals.In other cases, the study observed that goats are transported using Lorries. This increase the unit cost of transporting a goat compared to the decked system.

Figure 13: Goat Being Transported in a Kombi

Figure 13: Goat Being Transported in a Donkey Drawn Cart

The study further observed that the buyers and traders bear the bulk of the transport costs but transfer the cost to the farmer by offering low prices. In summing up this section, the collection and brokering function is constrained by: (i) low goat volumes; (ii) high transport costs and (iii) lack of appropriate transportation facilities. In the target Districts such as Gwanda and Beitbridge, goat collection centres in the form of sale pens have been established, but most of them are not being used. In Mbire, Mudzi, Lupane and Chipinge, the study noted that there are no goat aggregation centres which makes the buying and selling of goats uneconomic.

3.2.3.1 Collection and Brokering Function Service Providers

The collection and brokering function is supported by the Local Authorities (Rural District Councils), DVS, AGRITEX and the Zimbabwe Republic Police (ZRP). The Rural District Councils (RDCs) are mandated by the RDC's Act in particular, Section 71 read together with the first schedule of Rural District Councils Act [Chapter 29:13] to undertake key functions that relate to:

- Conservation of natural resources,
- Grazing land,
- Bush fires,
- Facilities for animals,
- Animal disease,
- Roads, bridges, dams.

Important to note is that the said responsibilities imposed on the local authority have to be funded to allow the councils to provide the necessary services. This law empowers council to impose a levy to facilitate provision of the said mandate.

The study found disparities in the involvement of the RDCs in the collection and brokering of goats. Some RDCs (Gwanda, Beitbridge and Mbire) are heavily involved whilst others operate at arm's length. Gwanda Rural District Council has initiatives that are supporting

goat farmers with marketing their goats. The RDC organizes markets for goat farmers through public goat sales every month[6]. There are currently two (2) cattle sale pens in Gwanda District, located in wards 19 and 24. The public sales of goats have been running for more than 25 years now. The RDC has a monthly calendar for goat sales. The main actors in the goat market in Gwanda include organizations running breed improvement programs (e.g. CARE), agents or middlemen who usually buy goats for resale in Bulawayo and other markets. Gwanda Rural District Council is currently working with Nyamazama Auctions, who are based in Bulawayo.

As for Beitbridge, the RDC formalized goat sales in 2012. A consortium of NGOs (SNV, ORAP), Government Departments and Research Institutes including ICRISAT/Matopos Research Center, and Veterinary Department established goat sales pens. There are currently four (4) goat sales pens that are located at cattle sales areas. These are located in Zezani, Chesvingo, Toporo and Lutumba. The largest market for goats in Beitbridge is Grills abattoir, located in Bulawayo. Grills abattoir uses its middlemen who engage with the goat farmers and negotiate the price. Goat farmers in Malibeni have designed a temporary structure using locally available resources.

The ZRP is involved in the clearing of the animals. The Police is therefore involved in the issuing of the movement permits. The process of getting the permit is cumbersome and in most of the cases the farmers are forced to pay extra monies for the transportation and meals of police officers. This will ensure that the issuance of the movement permit is done faster than it would without these "incentives".

The DVS is tasked with the issuing of animal movement permits across districts and dip-tanks in the collection and brokering function. The study found out that the DVS is incapacitated to carry out these functions because of the immobility and low numbers of personnel. AGRITEX under the collection and brokering function is mandated to provide market information, facilitate market linkages and provide advisory services. Like the DVS, AGRITEX is also incapacitated to fully deliver on its mandate.

3.2.4 Processing Function

The processing of the goats involves verification of clearance papers, antenatal inspection, bleeding, skinning, chilling, cutting into quarters and separating offals, carcass inspection and grading and sometimes processing into by-products. The farmers and households are involved in the processing of the goats that is consumed at the family level. The independent butcheries are also engaged in the processing of goats. The grading of carcasses and inspection is carried out by meat graders who are government employees. Available abattoirs include licensed facilities and a varied range of informal enterprises including where carcasses are hung from a tree. When the individuals bring their animals for slaughter to the abattoirs, a slaughter fee is charged. The slaughter fees are thus often excessively high and account for a significant proportion of the retail cost of a carcass.

The study observed that there are a number of goat abattoirs in the sampled districts. In Manicaland there is Molus Abattoir that is involved in the collection/brokering and processing of goats. Molus has the capacity to process one hundred (100) goats per week, but

[6] KII with Council Official, Gwanda Rural District Council

processing of goats. Molus has the capacity to process one hundred (100) goats per week, but currently utilizes about five percent (5%) of that capacity[7]. Molus is currently failing to meet the needs of wholesalers like OK and TM who require at least 200 goats/week.

Goat abattoirs are mainly concentrated in Bulawayo since the Matabeleland region is the highest goat-producing region in Zimbabwe. For the abattoirs in Bulawayo, their installed and operating capacities are shown in table 9.

Table 9: Capacity Utilization of Goat Abattoirs in Bulawayo

Abattoir	Available Capacity	Capacity Utilization (%)
Mvutcha	100 goats/month	30%
Umguza	200 goats/day	10%
Bulawayo Abattoir	500 goats/day	15%
Source: Survey Data October 2019		

The other goat abattoirs are NASHGO (Harare) and MC Meats. All these abattoirs are operating below their installed capacity. In 2016, Lupane Women Development Trust approached MC Meats with the view to establish market linkages for the goat farmers. However, big buyers like MC Meats require a minimum goat supply of at least 1000 a month, a huge threshold given the current low production levels.

Besides operating below capacity, the current abattoirs are only involved in slaughtering of the goats. There is no value addition done to the goat meat.

The DVS provides support in terms of grading of the meat. The Ministry of Health and Child Care is supporting the sub-sector through the inspections of the abattoirs and the local authorities register them (abattoirs).

3.2.5 Wholesale and Retailing Function

The wholesaling and retailing function of the goat meat is done by a number of actors. The farmers are involved in the retailing of the meat as they sell the meat to the neighbours and the local market. The independent butcheries are engaged in the retailing of the goat meat. The large chain Supermarkets are also engaged in the retailing of the goat meat. The study further observed a higher density of live goat markets. These markets are supplied by middlemen. In Harare, the live goat markets are at Mbudzi and Tynward-N.Richards turn-off and in Bulawayo at Izibayeni.

Regarding the marketing channels, the study found out the following:

1. ***Farmer-to-Household.*** This marketing channel serves the household consumption needs. The goats are usually slaughtered during the festive season or when there is function at the household. These functions include marriage ceremonies and or deaths.

[7] KII with Official of Molus Abattoir in Mutare

2. ***Farmer-to-Local Market.*** This channel serves the neighbours and local civil servants. The market is predominantly live goats. For instance, in Lupane District, 90% of the farmers trade their goats on the local market i.e. in neighboring wards[8]. The farmers sell their goats within the local communities, mainly on need basis[9]. Many goat farmers sell animals in response to immediate household needs, allowing them little opportunity to seek out best market options and negotiate a good price. A case in point is a female goat farmer at Malibeni, ward 8 in Beitbridge who indicated that she had come to sell her goat in order to acquire her medication. She confirmed that though she has more than 60 goats, she only sells when she wants to meet immediate needs[10].
3. ***Farmers-Butchery-Local Market.*** This channel provides chevon meat to the residents. This market is usually the growth points and the local business centers.
4. ***Farmer-Broker-Butchery-Urban Low-Income Markets.*** This marketing channel supplies chevon meat to the urban low-income earners. However, this market is very low as most of the people in this income bracket prefer live goats.
5. ***Farmer-Broker-Urban Live Goat Markets.*** This is the highest goat market in the country. The majority of Zimbabweans prefer to buy a live goat. This is because there is an opportunity to consume the offals and keep the hides.
6. ***Farmer-Broker-Abattoirs-Large-Chain Supermarkets-Urban Markets.*** This is the emerging niche market for chevon meat. This market is under-served. It is experiencing an unmet market demand for chevon meat. The large-chain supermarkets interviewed by the study noted that they are failing to meet their customers demand for chevon meat.

3.2.6 End Market (Consumption) function.

The international market for chevon has been on an upward trend as indicated by world imports, which increased by 140% over the eight years up to 2014. The world's imports of goat meat rose to $372 million from $155 million during the same period. The top importers of goat meat included the UAE ($98 million), Saudi Arabia ($60 million), Bahrain ($33 million), Oman ($14 million), and Qatar ($14 million).

In Zimbabwe, the consumption of chevon is still very low at 1.1kgs/per capita per year. The low per capita consumption is not reflective of the real dynamics in the sub-sector. This is attributed to the highly informal nature of the goat business in the country. The study believes that the per capita consumption could be higher than what is in the official records.

The largest end market is the live goat market. This is predominantly in the urban areas where goats are brought in by brokers from the rural areas. The live goat market is large because the consumers get more value from the consumption of the offals, the head, hoofs and the skin can be processed into a sitting mate. The goat is used in many traditional rituals where it must be presented live.

[8] KII with local extension Officer in Lupane

[9] KII with Agritex Extension Officer in Chipinge

[10] Data obtained during a participant observation at goat sales in Malibeni, ward 8 in Beitbridge

The chevon meat is consumed by the urban high-income earners. This end market usually accesses the chevon through the large chain supermarkets.

The consumption of chevon meat is constrained by the unavailability of formalized marketing for goats and chevon, the lack of a product grading system, poor quality product, seasonality of demand and inconsistent product supply. The formal markets for goats in the country are poorly developed and, in some cases, non-existent.

The quality of the goats is also not meeting market expectations. Research by the Goat Forum (2015) indicated that flock sizes are small and managerial inputs are low, resulting in a limited number of low-quality animals available for sale.

3.2.7 Goat Sub-Sector Regulatory Environment

The goat sub-sector is the least regulated of the livestock sectors in Zimbabwe. This is because the focus at the national level has been on the big livestock at the expense of the small ruminants. This explains why there is no National Goat Policy. However, despite the absence of specific goat policies and regulations, the sector is affected by other broader national regulations.

At the farmer level the local authorities in the sampled districts are either taxing or not taxing the goat farmers. In all the sampled districts only Gwanda and Beitbridge are levying the goat farmers. In Gwanda and Beitbridge, where goat sales have been formalised, the RDCs require goat buyers to pay 7.5 % of the total amount of amount they might have paid for the goats. The farmers are not charged anything to sell their goats. Of the 7.5 %, 1.5 % is paid to the Auctioneers, 2.5 % towards sale pen infrastructure maintenance and 3.5 % is reserved for council administration. In Mbire, the council is charging USD0.3 per goat to transport them out of the District. Mbire RDC is also in the process of coming up with relevant By-laws to regulate the movement of livestock. Mudzi RDC uses the 1999 Land use and Conservation By-Laws, which also stipulate that no person shall move livestock (including goats) from one area to another without a permit from council.

Beitbridge RDC has tried to regulate the issue of livestock marketing through the Control and Marketing (Buying and Selling of Livestock by-Law, 2012). The focus of this proposed by-law was to regulate the buying and selling of livestock, including goats. Some of the provisions related to this include: (i) no person shall buy or sell livestock for commercial purposes without a permit from Council, (ii) Buyers are to buy livestock from livestock sales organized by the Council, (iii) all such livestock buyers shall pay to Council a prescribed percentage reviewed by Council from time to time as livestock Commission/levy, (iv) no inhabitants or persons shall connive with or assist unauthorized buyers of livestock.

Section 22 of the Animal Health Act requires farmers or anyone who wants to transport animals out of a certain District to get an animal movement permit. As per Veterinary Regulations, every goat farmer is required to have a goat movement permit prior to transporting their goat(s) outside the District[11]. The process is that a farmer gets Police clearance and applies for the movement license. The movement license is issued after a qualified Veterinary Person such as an Animal Health Inspector who has to certify the goats as disease free would have inspected the goats. It is important to note that the process of issuing the movement license is decentralized, as it takes place at the local Animal HealthCenters thereby reducing delays in processing. The current fee for the goat movement

[11] KII with Vet. Doctor, Lupane District

permit is RTGS$10. However, some farmers noted that this provision creates regulatory costs.

At the production level, the farmers are supposed to pay dipping fees to DVS. Given the absence of dipping infrastructure in most of the districts and non-functionality of the existing ones, the farmers are not dipping their animals. The study observed that the non-dipping of goats is negatively affecting the health of the animals.

The study noted that the high registration fees for traders by AMA is contributing to the continued informalization of the goat business. AMA requires between USD40 and USD133 for registering traders. Therefore, most of the goat traders opt not to register and operate informally. The high abattoir fees/charges are affecting the profitability of the processors. For instance, Export Grade Abattoirs pay US$500, A-Grade abattoirs pay US$400, B-Grade abattoirs pay US $300 and C-Grade abattoirs pay US$200 as annual license fees.

Another bottleneck in the policy environment is that of multiple institutions involved in feed import permit processing such as DVS, Research and Livestock Specialist Services and the Agricultural Marketing Authority (based on SI 147 of 2012). These policy bottlenecks create gaps, inconsistencies and conflicting interesting in the application of the Law. The Scoping study noted that some drugs are imported from outside the country. However, there are policy barriers to this. For instance, there are bureaucratic constraints in the import permit processing by DVS and the Medicines Control Authority of Zimbabwe (MCAZ). The MCAZ applies human standards on animal health leading to longer processes of approval.

3.2.8 Governance

According to Williamson, (1985) economic governance could be defined as an effort by economic institutions to promote trade and production. Apart from businesses and cooperatives, the institutions also include laws (Lecture, 2004). Governance is therefore to implement the good order and workable arrangements as stated by Williamson, (1985) with trading relationships as the core value. Value chain governance refers to the relationships among the buyers, sellers, service providers and regulatory institutions that operate within or influence the range of activities required to bring a product or service from inception to its end use (https://www.marketlinks.org). Governance is about power and the ability to exert control along the chain — at any point in the chain, some firm (or organization or institution) sets and/or enforces parameters under which others in the chain operate. The study found out that the goat sub-sector governance structure is captured by Brokers (Middlemen), who control the sub-sector. The Brokers have managed to capture the sub-sector because of information asymmetry between the different value chain actors.

Although RDCs try to advertise dates for goat sales using posters at Rural Service Centres, this is not reliable for farmers that stay further away from these areas. Market-related information is sometimes hard to come by and sources of information are frequently unreliable[12]. Farmers are therefore often unaware of when and where markets will be, and price structures are unknown. Many goats are sold at the farm gate where farmers do not have comparable price information and often accept low prices offered by traders (van Rooyen and Homann, n.d). There are cases where middlemen can cheat farmers, by manipulating the prices. Some buyers can choose to buy goats privately without councils' knowledge. This means there will be no competition, hence increased chances of farmers being cheated. The

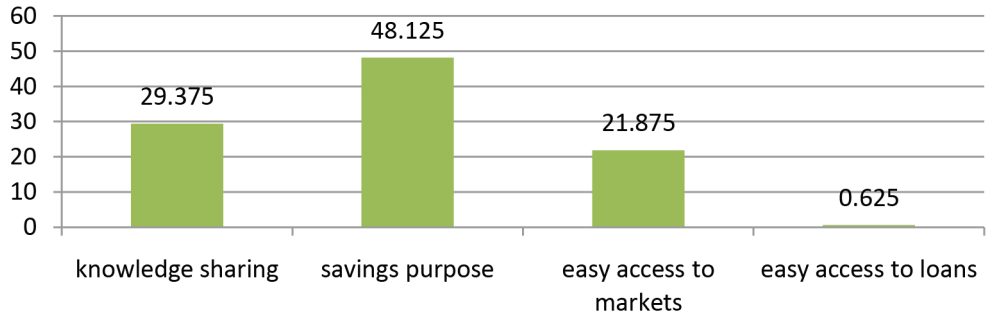
[12] FGD session with small scale goat farmers in ward 1, Lupane

middlemen as the goat average prices are based on estimations. For instance, goats are currently sold with no regard to factors such as live weight, which promote issues of underpricing.

Speculation is also a major problem affecting the efficient functioning of goat markets. Speculators negotiate with goat farmers at their homesteads or on their way to the markets, taking advantage of lack of competition[14]. Overall, middlemen are getting more money than farmers themselves as they buy goats at lower prices and sell at higher prices in lucrative markets.

The weak position of the farmers in the goat value chain governance is further compounded by their (farmers) poor participation in farmer organizations. The study found out that seventy (69.5%) of the sampled farmers did not belong to any farmer group or organizations. The low participation of the framers in groups/associations/organizations was attributed to poor knowledge of the benefits of the economies of scale. The low level of commercialization in the goat sub-sector diminishes the need for belonging to a group or association.The thirty-one (30.5%) percent of the farmers who belong to a representative organization mentioned the different reasons for joining (Figure 1)5. The main (48%) reason why some of the farmers are in groups/associations is because of saving purposes. The scoping study observed that most NGOs supporting goat commercialization that linked it to ISALs. The farmers are now placing more importance on the ISAL than the core business of the associations, that is, strengthening the lobbying, advocacy and policy influencing capacities.

Figure 15: Reasons of Joing a Farmers Group/Association



Source: Survey Data October 2019

However, it is interesting to note that the combined weight for the reasons related to promoting commercialization of goat production account for fifty-one (51%) percent of the sampled farmers. Twenty-nine (29%) of the sampled farmers mentioned that they joined the farmer groups/associations for the purposes of sharing knowledge. Through the FGDs, the farmers indicated that they share knowledge on husbandry practices especially related to diseases. The other twenty-two (21.8%) percent of the study respondents acknowledged that

[14] KII with Official at Beitbridge RDC

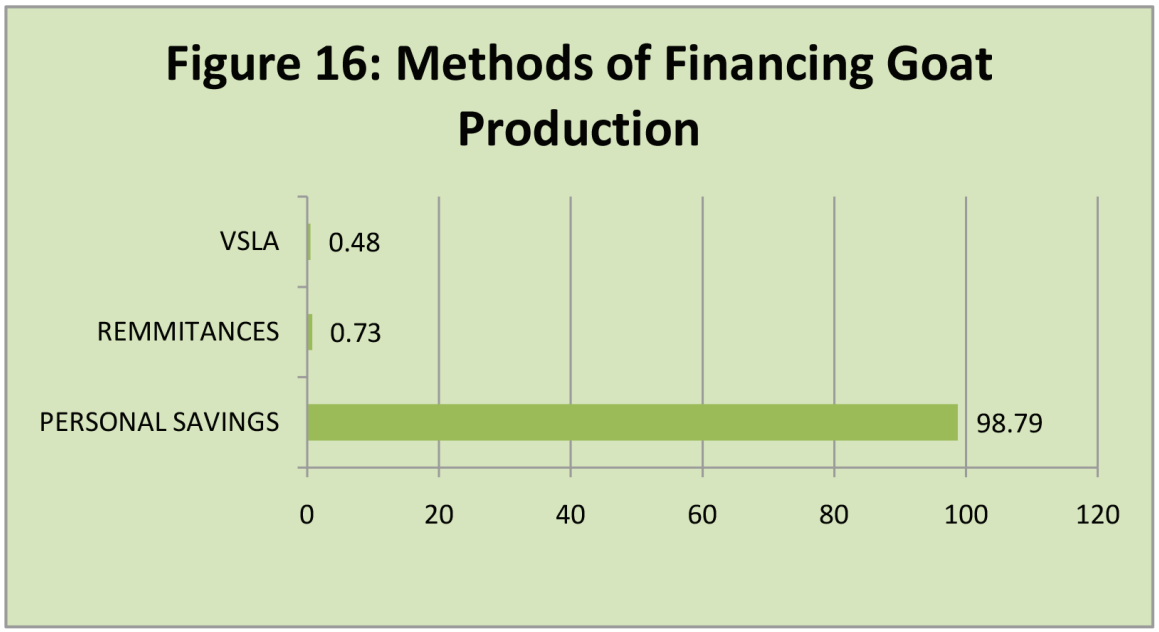
they joined farmer groups/associations for the purposes of easy access to markets. This motive of easy access to markets was predominant in Gwanda and Beitbridge districts, where the farmers are engaging in some level of market-oriented production.

Through their farmer groups/associations and with the assistance of NGOs and AGRITEX, the farmers are organizing joint marketing of their goats. This helps the farmers to negotiate better prices and reduces the transaction costs for the buyers. Through organized marketing the buyers no longer have to travel from farm to farm in search of goats.

The study found that less than one (0.6%) percent joined to be able to easily access loans. This indicates that the appetite for external funding for goat production is very low. This is accounted for by the non-commercial oriented production mind-set.

3.2.9 Value Chain Financing

Value Chain Finance (VCF) is concerned with the flow of financial products and services to or through any point in a value chain that enable investments that increase actors' returns and the growth and competitiveness of the chain. A VCF aims at improving finance at specific points in the value chain to increase the competitiveness of the entire value chain and involving multiple actors and leveraging relationships to lower or mitigate risk.



Source: Survey Data October 2019

The majority of goat meat value chain actors are self-financing not because they have the resources, but because of the scale of the enterprises and the mind-set of the farmers and the financial institutions. The goat meat value chain production system is still extensive grazing and therefore requires little or very limited financial support. The farmers are not taking goat production as an enterprise and therefore their propensity to invest in the business is very limited.

The financial institutions interviewed (Steward Bank, CBZ, Success and MFI) during the scoping study showed a high appetite to lend to the goat farmers but they are constrained by;

a. Lack of collateral security on the part of goat farmers;
b. Absence of production records and history;
c. No banking history for the farmers' goat production. The small-scale farmers do not keep most of the essential production records and not integrated into the formal banking system
d. High transaction costs of dealing with individual farmers dispersed across the districts and with very low production volumes. Further lending to the small-scale farmers is perceived as high-risk business because of price risk, climate risk, and credit risk

On the other hand, the value chain actors bemoaned the absence of financial products and services that are tailor-made for the goat production cycle. The challenges of accessing financial products and services by the goat value chain actors is also attributed lack of financial literacy on the part of the goat farmers, and lack of information on different financing models[15]. This is despite the growing number of financial service providers focused on agricultural SMEs (Agribank, CBZ, Micro-finance institutions)

The scoping study revealed that the financial products and services that are required by the value chain actors is for capitalization of their enterprises and working capital. In order to improve the flow of financial products and services along the goat meat value chain, there is need for "new and innovative agricultural financing solutions that are commercially viable for both the financier and the smallholder farmer" (Chartered Institute of Management Accountants Volume 12 Issue 5).

3.2.10 Fair Value Farm Branding

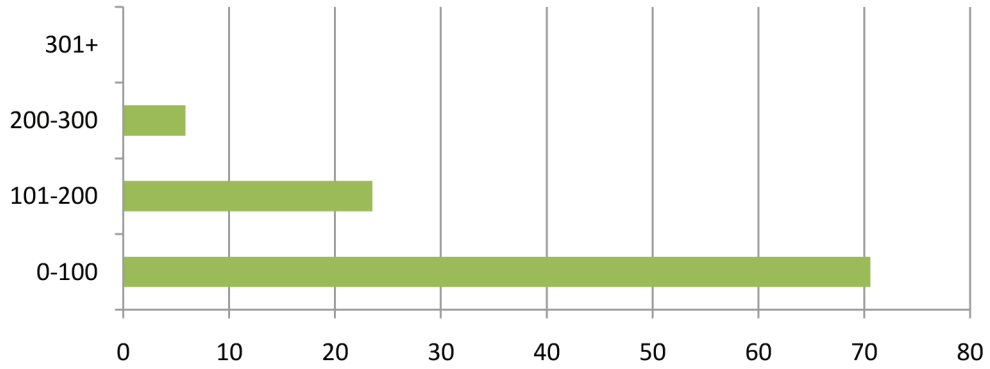
A new business strategy is emerging in the agricultural and food sectors known as "Creating Shared Value" or Fair Value Farming Brand." Fair Value Farming Brand arrangements transform the traditional competitive seller/buyer relationships to a collaborative approach. Transparency, working together, and providing fair returns to all partners under shared environmental or social values are the new hallmarks of food value chains (https://www.ams.usda.gov/services/local-regional/food-value-chain). This business arrangement appeals to a growing number of consumers who want to know the story behind their food and want to support businesses with a social consciousness. Responding to the needs of these

[15] FGD session with farmers in ward 1 Lupane

In assessing the fair value farm branding, the study focused on five interwoven issues. These are salaries for workers in the chain, return on investments (profits) to the entrepreneurs, tax revenues to government, better food supply to the consumers and net impact on the environment (externalities). The net impact on the environment can be positive or negative. With regard to the salaries of the employees in the GVC, the study focused on employment at the farm level. At this VC function node payment and conditions of employment negatively influence the fair share value of a value chain.

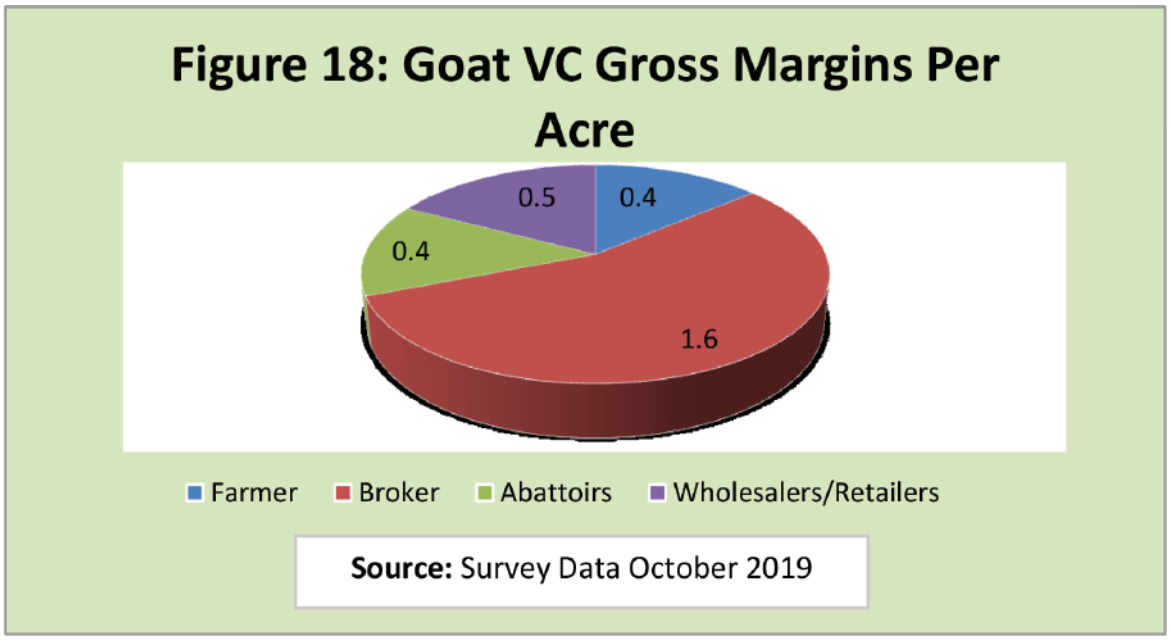
The study notes that employment in the goat value chain is very low (0.02 per enterprises) and of those employed the study observed seventy-one (70.6%) (Figure 17) are getting below the one hundred and ninety-five (ZWL195.00) Zimbabwean Dollars (USD13/month) per as set up the NEC General Agriculture effected from the 1st of July 2019. The employment at the production level is not regularised by contracts as is required by the law.

Figure 17: GVC Monthly Salary Ranges



Source : Survey Data October 2019

With regard to return on investments in the goat value chain, the study found out that Brokers (Middlemen) are getting the highest gross margins (1.6) as shown in Figure 18. This is because of the information asymmetry advantage that the Brokers have in the goat value chain. This is coupled by the unique monopolistic position of the Brokers in the goat value chain from collection, brokering, wholesaling and retailing. The Brokers supply goats to individuals, butcheries and abattoirs. The farmers and the abattoirs have the least gross margin of 0.4. The wholesalers are getting a gross margin of 0.5.

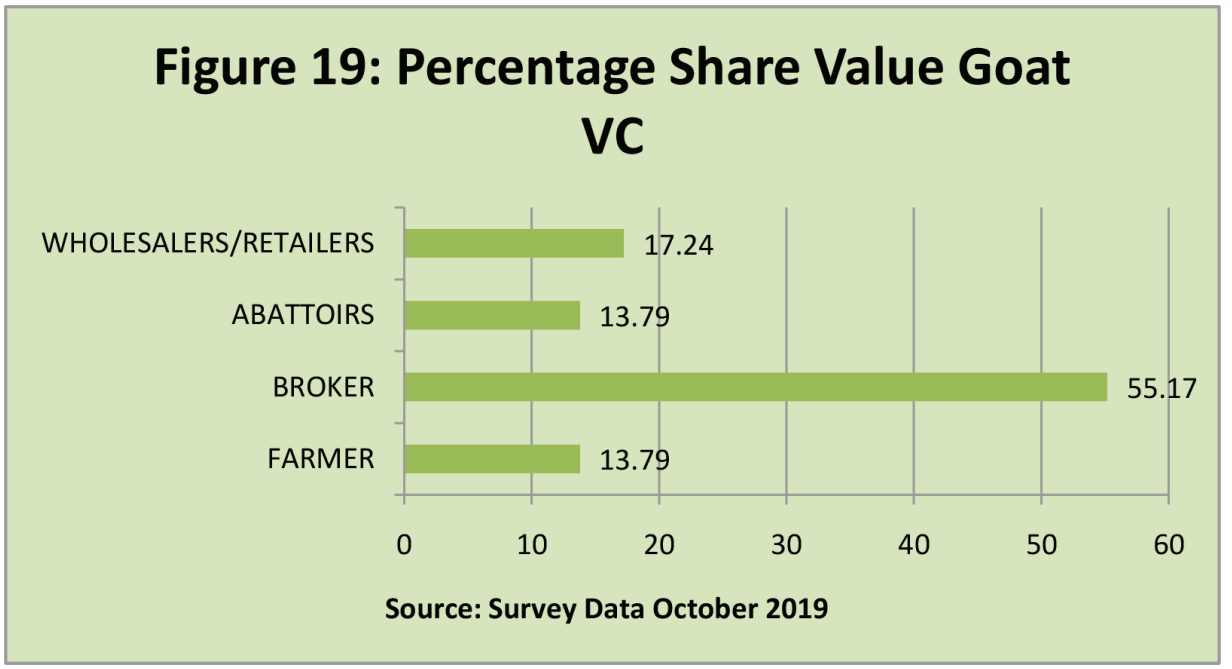


With regard to the tax revenues to government as a condition of determining the fair value share in the goat value chain, the study results indicate that only twenty-seven (26.7%) percent of the interviewed farmers are paying taxes. Out of those that are paying taxes, four (3.9%) percent are inspection fees related to the movement of goats. The rest (96%) of the taxes that are being paid are not related to goat production.

With regard to the better food supply to the consumers' criterion, the study noted that whilst there are safety regulations in the country, these are rarely adhered to and enforced. The majority of the goats that find their way to the consumers are not inspected by DVS and subsequently the meat. Chevon meat found in the large chain supermarkets is the only meat that would have gone through the inspection and certification for human consumption processes.

The last criterion of assessing the fair value in chain is the net impact on the environment (externalities). The net impact on the environment can be positive or negative. Drawing from literature and FGDs with the farmers, the study found that goat production has both positive and negative externalities on the environment. On the negative side, goat grazing causes loss of biodiversity. Environmental benefits of goat production include preventing the spread of noxious weeds and promoting the growth of local vegetative species through moderate grazing. Mitigation strategies vary by category of environmental impact, but largely suggest improved productivity to reduce land conversion, modified management systems (e.g., biodiversity, water use and consumption, grazing intensity and frequency, and waste) according to Jacob Lipson; Travis Reynolds and C. Leigh Anderson (2001)

The overall assessment of the fair value share in the goat value indicate that Brokers are getting the largest share value (55%) as indicated in Figure 19; because of the monopolistic position they have in the chain and advantageous access to market information. The farmers and the abattoirs have got the least share value.



3.2.11 Findings Conclusions

Despite the many constraints and challenges, the study concludes that there are many opportunities that can be tapped into for the commercialization of goat production. These opportunities are across all goat value chain functions.

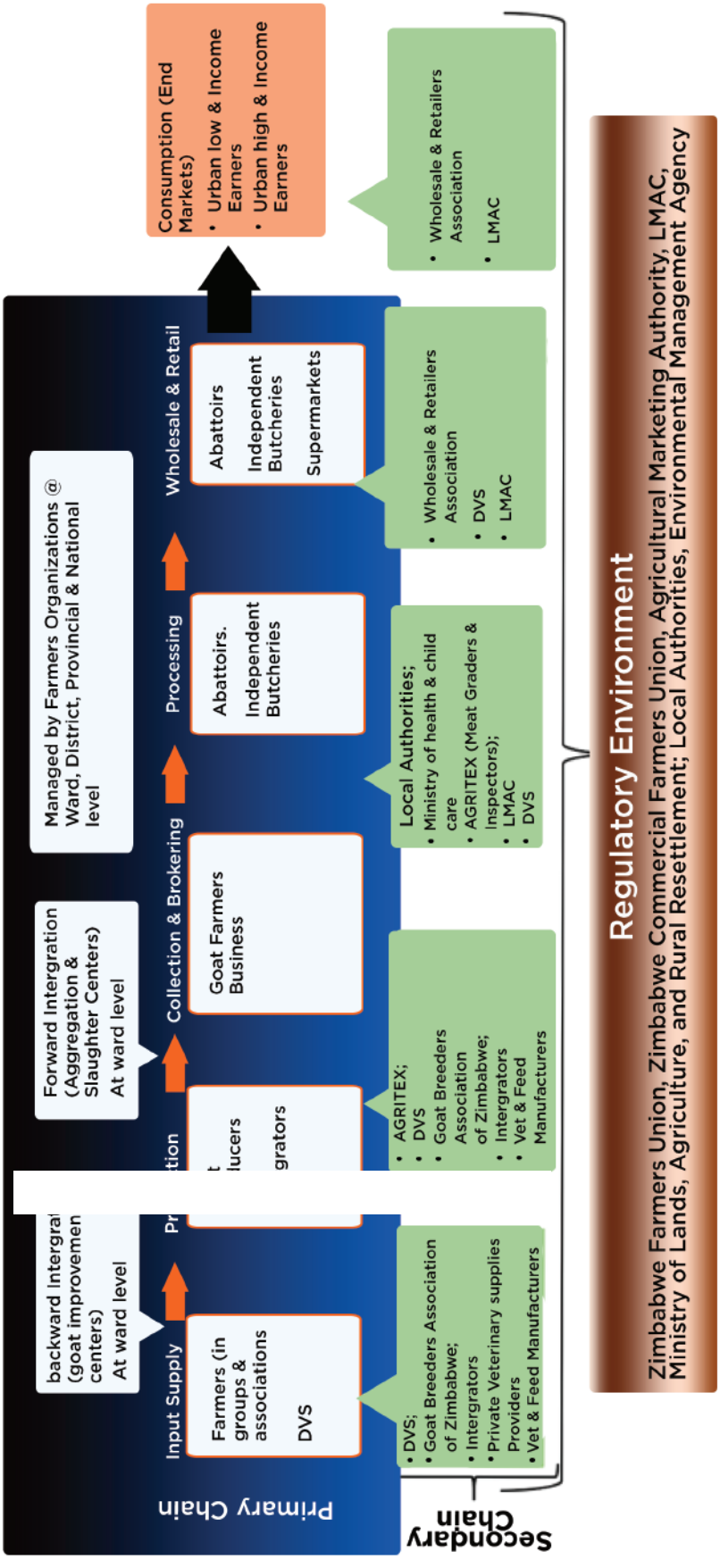
4.0 Recommendations

Drawing on the study conclusion, the study provides general value chain recommendations such as channel up-grading, development of GMSDP and those specific to addressing constrains at each of the value chain function nodes. The scoping study recommends;

4.1 Vertical Intergration of the Goat Value Chain

To enhance the efficiency in the goat value chain, the study recommends vertical integration of the chain by the goat farmers. Vertical integration is the process of expanding the farmers' span of control to different levels of production. The study recommends backward and forward integration. Backward integration involves taking over upstream activities that are closer to the input supply function. Forward integration interventions will entail the farmers taking up additional roles in the supply chain. The proposed vertical integration of the goat value chain is shown in figure 19 below.

Figure 19 Farmer Vertically Intergrated Goat Value Chain



The essence of vertically integrating (backward and forward) the farmers in the goat value chain is to reduce the inefficiencies at the input supply and retain value from the collection and brokering functions. The following are the proposed interventions to drive the vertical integration processes;

a) Farmer Organizational Development

Currently the farmers are not organized, and this is negatively affecting their returns to investment. The study recommends organizational development of the farmers. Engagement of farmer organisations such as the Zimbabwe Farmers Union (ZFU) and Zimbabwe Commercial Farmers Union (ZCFU) to spearhead the organizational development of the goat farmers is recommended. The organizational development will involve facilitating the formation of Goat Farmer Business Groups at ward level, their aggregation into associations at district and provincial levels. These groups and associations will be affiliates to the Livestock Commodity Associations of farmer associations.

The criteria of membership into the Goat Farmer Business Groups must be developed jointly with the goat farmers and the local leadership. However, it is important to note that the process of joining must be self-selection among the potential group members who are known to each other. Secondly, the group members must own an agreed number of goats. Whilst membership is open, the size of the groups must be kept at manageable levels. The study recommends that each group should have between fifteen (15) and twenty-five (25) members and between five (5) to eight (8) groups form an association at ward level. The ward associations will form the district association. The district associations will come together to form the Provincial Association which will be affiliated to the mother union.

Membership into the goat groups and associations must be based on a joining fee concept. For one to be a member they should pay a joining fee. The study recommends that the Farmer Goat Business Groups and Associations be run on a share-holding basis. The shares may be in the form of goats. This will prevent those who have money but are not goat farmers from joining these groups. The share-holding groups and associations will be registered with the relevant authorities.

The study recommends the following functions of the goat business groups and associations as shown in table 10 below.

Table 10: Recommended Functions of Goat Business Groups and Associations

Spatial Level	Formation	Functions
Village	Groups (15-25 members)	• Record keeping (production and productivity volumes) • Monitoring buck and doe performances; • Stock inspection; • Ear tagging; • Castration; • Reporting stock for sale and breeding animals
Ward	Association (5-8 groups)	• Organize trainings for the groups; • Organize linkages with knowledge facilitators; • Facilitate inter-group goat shows; • Facilitate goat aggregation for marketing purposes
District	District Association	• Organizing bulk goat sales; • Lobbying and advocacy; • Aggregation of farmers, information and sales (setting up an information, management system) • Coordination of goat shows; • Management of district level aggregation and slaughter centres.
Provincial	Provincial Association	• Registration of purebreds with the Goat Breeders Association of Zimbabwe; • Organizing district Goat Shows; • Networking and linkages with national associations; • Management of the Provincial aggregation and slaughter centres.

b) Backward Intergration

The study recommends the backward integration of the farmers, through their groups and associations into the input supply function, through the formation of the farmer managed Goat Improvement Centres (GICs) at ward level. It is proposed that the GICs be established at the Animal Health Centres run by DVS, which are currently non-functional. The GICs will be run on commercial basis and the farmers will contribute to the setting up of these centres. The concept of the GICs is already been practiced in some of the VALUE districts (Lupane, Mudzi) and these can be scaled-up. These centres will provide the inputs (drugs, vaccines,

breeding stock and feeds) to the goat farmers on cost-recovery basis. The farmers will be assisted by Integrators in the management of the GICs.

Besides improving accesses to inputs, the GICs will also facilitate horizontal learning among the farmers. The GICs will act as a Farmer-Field School where the farmers will come to learn and share experiences on goat production. The GICs will also have a demonstrative effect, as the farmers will be able to see some of the best practices on goat production. For instance, the GICs will have fodder production gardens and breeding facilitates, where the farmers will learn some of the best practices of fodder production and goat breeding.

c) Forward Intergration

The study observed that farmers are losing the value of their goats at the collection and brokering function. The study therefore recommends the farmers forward integration in the chain through the establishment of collection and slaughtering centres at district levels. The aggregation centres will be run by the farmers' associations with the support of the public extension services and Integrators. The aggregation centres will be run by the youths employed by the associations. This, therefore, presents an opportunity for mainstreaming youths in goat production. These centres running on a commercial basis, will purchase goats from the farmers and then organize the onward selling to abattoirs and other customers.

The study also recommends that the Goat Farmers Associations at the district level establish chevon meat cold chain. The associations will purchase the goats from the farmers, slaughter and then supply independent butcheries, supermarkets and also retail to the end consumers. This approach will reduce the unit transportation the meat and subsequently increase the profit margins.

The forward integration will address the issue of brokers/middlemen who have a huge (55%) share of the value generated in the chain. Decreasing the market channel steps or distribution costs and marketing animals in uniform or consistent groups will generally increase live animal value (http://agris.fao.org/agris-search/search.do?recordID=US201301001040). This will contribute better sharing of the value created along the goat value chain.

4.2 Goat Market Systems Development Platforms

To enhance horizontal integration among the goat value chain actors the study recommends the setting up of Goat Market System Development Platforms. The platforms will be established at the provincial level and will include representatives of the key stakeholders in the primary, secondary and regulatory chains. The platforms should be led by the private sector players to ensure realization of the commercialization goal. The scoping study recommends that VALUE works with Michview in Bulawayo, Molus in Manicaland and identify a reputable private sector player for the Mashonaland region.

The GMSDP will be responsible for;

- Facilitating collective action & trust building among the goat value chain actors;
- Innovation and research in the goat subsector;
- VC visioning and strategic direction

- VC visioning and strategic direction
- Capacity Building of the members and
- Communication & information sharing

The GMSDP will also lead the process of sharing the share value created across the value chain fairly. This will be done especially when developing the vision of the goat value chain and the subsequent dialogues among the chain actors.

4.3 Capacity Building Recommendations

The Goat Value Chain Scoping Study recommends the capacity building of the farmers and the extension personnel.

1) ***Capacity Building of Farmers.*** With regard to the capacity building of the farmers, the study makes the following recommendations

- Training for Transformation aimed at changing the mind-sets of the goat farmers from subsistence production to commercial production. The training for transformations will also help the farmers in changing the world's paradigms from one of dependency to one of independence, where one is responsible for shaping her destiny within the realms of the resources (goats) she has. Silveira House is good at providing these Training for Transformation courses.

- Training in Goat Farming as a Business. The trainings in Goat Farming as a Business will complement the trainings for Transformation. The trainings will equip the goat farmers will the business skills and competencies that will enable the goat farmers to commercialize their production;

- Training of Goat farmers in marketing. The study recommends through the groups and associations the training goat farmers in marketing through the Farmer Market Schools (FMS) model. The Farmer Market School builds on similar principles and discovery learning as used in Farmer Field Schools (FFS). In a FMS, smallholder farmers gain knowledge and skills on how to explore markets, what the market can offer and how to develop market decisions (http://www.fao.org/farmer-field-schools/news-events/detail-events/en/c/1185937/). ADRA is leading the training in FMS in Uganda, Ethiopia, Sudan, Eritrea, Malawi, Zimbabwe and Kenya.

- Development of the leadership and management competencies of the groups and associations. The study recommended the setting up of groups and associations among the goats, this should be followed up by the capacity development of the leadership. The development of the leadership skills should focus on problem solving skills, holding of meetings, decision making process and any other skills depending on the outcome of the capacity assessment of the leaders and the expectations of the members.

- Development of husbandry practices. The scoping study observed that main constrain to the commercialization of goat production is poor husbandry practices by the farmers. The

modelling through the use of Champion Farmers, exchange (look and learning) visits to breeders' farmers (Chris Grant, Amato Cader, Zvikomborero Farm); establishment of study circles and the development of relevant literature[16]. To enhance the husbandry practices of the goat farmers, the study further recommends the establishment of "Best Model Goat Farms" (BMGF) at district level, where the farmers can go and learning. The BMGF can be established among the local farmers who are already producing commercially and have the basic infrastructure for a best model goat farm.

- Enhancement of record keeping. Documentation and record keeping is very low among the goat farmers. This has had the negative consequence of limiting the farmers access to loans as their do not have production and banking records. This study recommends the adoption of Block-Chain technology which has been successfully piloted in the Caribbean (Natalie Dookie 2019). The block-chain technology stores farmers' records and create profiles using information regarding farm revenues, expenses and profitability to create secure digital ledgers. The information is obtained from the farmer and third parties who will be transacting with the farmers. The production and productivity performance can also be captured on block-chain with the information being web-stored. In the Caribbean the block-chain technology has information for over 200,000 registered farmers.

2) ***Capacity Building of Extension Staff.*** As concerning the capability enhance of the extension personnel, the study makes the following recommendations;

- Development of the knowledge skills of the extension staff on goat production and latest production technologies. With respect to AGRITEX, the study observed some of the extension staff that was dealing with crops has been assigned to livestock following the merger of DLDP and AGRITEX. These extension personnel need urgent training in animal husbandry with a particular attention to goat production. Some of the extension staff where trained under the "fast track" programme, when the country lost most of the extension staff. These need further training to ground them. There have been technological advances in goat production and the extension personnel need to be exposed to these. This will enrich their extension.

- Mobility. The extension system in Zimbabwe is currently crippled by immobility of the staff. The extension staff are mostly not motorised. If VALUE is to attain its objective of commercializing goat production, then the mobility of the extension officers has to be addressed. The study recommends the reimbursement of the transport costs incurred by the extension staff.

The above recommendations are cross cutting the goat value chain. The following sections provide recommendations to the specific value chain functions, which are not articulated in the general recommendations.

[16] WE EFFECT has already produced study circle literature on goat production.

4.4 Input Supply Recommendations

The study will regard to the input supply function, the goat scoping study recommends;

- The adoption of supplementary feeding systems through own-farm production. These include the production of hay, silage and laylage. Hay made by at farm level offers opportunity to feed the goats during the winter season, when the natural pastures would be dry. In making ten hay, farmers are encouraged to use legumes. Legumes make excellent hay and are usually superior to most other hay crops because of their higher protein content (Slijepcevic S. and Cosovic-Medic A. 2011). Silage and haylage is made from forage or grain crops to supplementary feed the goats. The GICs are recommended to supply the goat farmers with the concentrates (grains) to feed their animals. The concentrates will be provided on commercial basis. The concentrates are particularly important when feeding high producing animals. Supplemental feeding of kids and creep feeding has demonstrated ability to increase growth weight.

  The goat farmers need to be trained in making of supplementary feed such as hay. The training should cover skills in cutting, curing, processing, bailing and storing the grass. The grass should be harvested at its greatest nutritive value, thus when the leaves are fully developed, and the flower heads are a bit short of maturity.

  The use of supplementary feeding practices can be enhanced through the adoption of "Feed Calculator" a technology developed by Single Spark (Dutch Company). The Feed Calculator instructs farmers on how to prepare optimum feeds to meet the needs of their animals. This technology empowers farmers in contexts where stock feed is often scarce, like in the VALUE goat districts. This technology can best be owned at group level.

- Improvement of the Goat Breeds. The improvement of the goat breeds will be achieved through the importation of breeding stock and artificial inseminations. The recommended breeding stocks are the Boer and Kalahari Red breeds from South Africa and Namibia. These breeds will cross-bred with the local breeds. The study also cautions against the wiping-out of the local breeds as these have local attributes that make them adaptive to the local environment. The goat breeds can be improved through use Artificial Insemination (AI). VALUE can harvest learnings from experiences of CARITAS Gokwe (supported by CAFOD) in goat AI. The goat value chain scoping study urges, VALUE to carry-out a comparative study of the best returns to investment between importing breeding stock and use of AI.

- Development of hydroponic fodder production system. This is a system in which green fodder or plants are grown in nutrients rich solutions instead of soils. Maize, oats, barley, wheat grass, rice / paddy saplings, sorghum can be grown successfully for goats. Goats can use the fodder grown in this system will have grans, roots, stems, and leaves whereas in conventionally grown fodder, only stems and roots are used.;

- Working through GICs, VALUE is recommended to support the engagement of the youths and young mothers as Community Animal Health Workers on commercial basis.

The youths and young mothers will be paid for the services they would have provided by farmers.

- Promoting the use of natural herbs (ethno-veterinary) to treat the goats. However, this need to be preceded by research on the efficacy of this natural herbs.

4.5 Production Function Recommendations

With regard to the production function, the scoping study recommends,

- Goat farmers to have specific flock sizes, production and productivity volumes that recommended for commercialization purpose. These are shown in table 11 below

Table 11: Commercialization Rates

Flock Stricture & Productivity Volumes	Numbers & Percentage
Number of Does	50-100
Number of Bucks	2-4
Doe Mortality Rate	2%
Doe Cull Rate	13%
Kid birth rate	175
Kid Mortality rate	2%

The study found out that the majority of the small-scale farmers are far below these commercialization benchmarks. The study recommends, VALUE to facilitate the farmers to achieve these commercialization benchmarks.

- Smart Extension and Advisory Services. The study found out that the provision of extension and advisory services in Zimbabwe in general and goats in particular face a manpower challenge. The Ministries charged with the provision of extension and advisory services have serious shortages of personnel. The study therefore recommends the digitalization of the extension and advisory services. The VALUE project should adopt video, radio and mobile application extension services. Zimbabwe has a mobile phones penetration rate over 100%, therefore the use of e-extension is possible. However, the data costs will be a challenge and has to be managed through the associations.

This recommendation of smart extension and advisory services is in line with the EUs Digital4Development approach.

- A focus on facilitating the creation and sustainable utilization of rangelands accompanied by the promotion of alternative feed systems including dry season feed and fodder technologies.

- Exploration of the commercialization of goat milk. The goat milk is being used for household consumption in the Matabeleland region among the farmers with Boer, Kalahari and Matabele goats. Goat milk and its related products have properties that have health benefits. Goat milk is known to its high nutritional value and curative properties. Its consumption improves immunity, resistance to diseases, provides faster growth, optimal body weight and better bone mineralization (Slijepcevic S. and Cosovic-Medic A 2011). The commercialization can be linked to HIV and AIDS programming interventions.

4.6 Collection and Brokering Function Recommendations

The study recommends

- The setting up of aggregation and slaughter centres at district levels run by the farmers' association where the local youths and young mothers will be employed. The aggregation centres will be involved in purchasing the goats from the farmers after grading and weighing. The goats will either be sold as live to the different markets including individuals, butcheries and abattoirs, or slaughtered and sold through a cold chain.

- The Provincial Associations are recommended to establish goat aggregation and slaughter centres along the VALUE Corridor routes. This will be for the goats coming from the district aggregation centres. In Matabeleland North, the study proposes the establishment of such an aggregation centre at Lupane Business Centre. The aggregation centre would be able to supply Montana Meats, building on the relationship the abattoir has Lupane Women's Centre. In Matabeleland South two aggregation centre are recommended for Gwanda and Beit-Bridge districts. In Gwanda district, AGRITEX has already identified a piece of land where the aggregation centre can be established. For the Mashonaland region, the study recommends the establishment of a farmers' aggregation centre in Harare. This centre will get goats from Mashonaland provinces. The aggregation centre will supply both live goats and chevon meat to the Harare markets.

- Setting-up Goat Market Information System. The marketing information asymmetry in goat sub-sector is negatively affecting the value chain efficiencies. The study therefore is recommending the set-up of a mobile application market information system. This proposed market system will provide information on the number of goats available; location and the price being requested. The same platform should be designed in such a way to provide information on the demand for goats and chevon meat, prices being offered and where it is required. To ensure the sustainability of the goat market information system, it is recommended that it be hosted by ZFU or the ZCFU. The VALUE project can learn from eMkambo market information system being run by Knowledge Transfer Africa (www.eMkambo.co.zw) and ZFU's monthly electronic agricultural produce bulletin.

4.7 Processing Function Recommendations

The study recommendations the development of linkages between the abattoirs and goa aggregation centres at district and provincial levels. These linkages will enable the abattoirs to fully utilise their installed capacities. The associations through the Farmer Market Schools will have the capacities to engage abattoirs and have supply contractors. The selected abattoirs will perform the off-taker role.

The abattoirs that will be linked to the goat groups and associations need to be capacitated into value addition to the chevon meat. Currently the abattoirs are selling just chevon meat. Goat meat can be processed into meat patties, smoked and fermented goat meat sausages. Value added chevon meat, will also increase the market value of the meat.

4.8 Wholesaling, Retailing and End Markets Recommendations

The consumption of goat meat was observed to be low, as most of the consumers prefer live goats. To enhance the consumption of chevon meat, the scoping study recommends awareness raising campaigns among the consumers. This will be done through road shows and promotions.

4.9 Goat Value Chain Governance Recommendations

To improve the goat value chain governance from the current state of captive to near market one; the study recommends;

- The establishment of GMSDP made up of the all the stakeholders in the chain. These platforms will through the visioning process, identify and assigned roles and responsibilities to the different actors in the chain. This will ultimately level the playing among the different actors, therefore, improve the value chain governance.

- The establishment of goat farmers' groups and associations detailed above will increase the bargaining power of the farmers. This will subsequently improve the governance of the goat value chain.

4.10 Goat Value Chain Financing

The study found out that formal financing from the Financial Institutions is almost absent and that goat farmers have not access to insurance against climate induced shocks and hazards.

Whilst acknowledging the existence of informal risk management strategies by the goat farmers, these are not failing to protect them from covariate risks. The study therefore recommends VALUE to facilitate the setting up of micro-insurance products and services. Micro-insurance, though meant for low-income population and provided by a variety of different entities, run in accordance with generally accepted insurance practices and principles (International Association of Insurance Supervisors, 2007). Micro-insurance

allows policyholders to recover and rebuild after a crisis (Workneh et. al 2016). To increase the design and uptake of micro-insurance products and services, VALUE is urged to develop a business case for the insurers and the goat farmers. This should be complimented by awareness raising. Given the inflationary context of Zimbabwe, the micro-insurance products and services payments should be in-kind (e.g. goats) and not in cash.The VALUE is advised to explore micro-insurance opportunities through companies such as Old Mutual, First Mutual, Fidelity Life Insurance and some of the commercial banks.

4.11 Policy and Regulatory Environmental Recommendations

The development of an enabling policy and regulatory environment will be driven by the goat farmers' groups and associations with the support of the national unions. The study recommends the following policy and regulations actions to enhance the functionality of the goat value chain;

- At the national level, the study recommends the development of a national goat policy. This policy should drive the commercialization among the smallholder farmers in the country. The proposed policy should also rationalize the regulatory levies and ensure that levies are a percentage of the goat prices and not a flat fee.

- At the district level, the RDCs need to come up with by-laws that support the commercialization of goat production. The VALUE project could assist with the development of model by-laws which the local authorities will adapt to their local contexts.

- Ensuring the enforcement of the existing regulations like the certification of the chevon meat, issuance of the animal permits so that the goat will not move without them.

- Putting in place comprehensive and comparable national chevon classification systems will promote the selection of chevon based on quality. This will also motivate individual farmers to produce a product of good quality when incentives are provided. Chevon classification systems will also ensure a shift from benchmarking chevon against lamb or mutton. As a result, the chevon industry development will be propped allowing chevon to be developed and marketed as a lean and healthy product. This will improve the recognition of chevon as an alternative source of good quality protein.

Annex 1: Study Terms of References

Value Chain Alliance for Livestock Upgrading and Empowerment (VALUE) project

Scoping Study Terms of Reference
(Draft)

July 2019

I. Context/Background of Project

The EC VALUE Project has been designed to contribute to the development of an inclusive and diversified agricultural sector that promotes inclusive green economic growth. It is targeted to positively impact on the economic opportunities for 800 000 small-scale farmers in the goat value chain and 56 000 small-scale pig farmers who are currently stuck at different suboptimal stages of commercialization and economic growth. The 48-month project will be implemented in 18 districts (12 for goats and 6 for pigs) feeding into the country's main transportation corridors and supplying meat products into Harare and Bulawayo commercial meat markets. Addressing the mix of binding constraints - financial, environmental, technological, organizational and poor market linkages, regulatory and policy constraints – the action will integrate a significant proportion of these small-scale pork and goat producers into the mainstream economy. Aware of the potential damage to the global and local environment arising from growth in goat production in drought-prone districts, the action includes specific measures to reduce local environmental damage and offsetting measures to minimize overall impact on greenhouse gas emissions. The action promotes strategic alliances between integrators and Value Chain (VC) core actors to create opportunities for employment creation, better labour conditions and increased opportunities for women and youth through market-based solutions to enhance VC performance. Measures for coordinating commercially driven small to medium livestock farmers and independent butcheries offering value-adding services to low-income market segments are set to transform Zimbabwe's livestock and meat industry improving its business structure, market conduct and socio-economic performance. The project has the following specific objectives;

- Specific objective 1) Improve production and organizational efficiencies and market competitiveness in the commercial supply of safe, quality-assured pork and goat livestock and meat products from environmentally sustainable pork and goat VCs.

- Specific Objective 2): To enhance the domestic agribusiness environment through stakeholder organizational development and capacity building for strategic planning and evidence-based policy dialogue with government to get the national policy and regulatory frameworks right for growth and development of the livestock and meat industry

II. Objectives of the Assignment

The main objectives of the participatory, corridor-specific value chain scoping exercise are to;

- Assess the economic, environmental, financial, social and natural aspects of the pig and goat value chains along the marketing corridors of Bulawayo and Harare.
- Establish the baseline indicators for the project as outlined in the proposal and in the project monitoring and evaluation framework
- Determine the key vulnerabilities in the Pork Value Chain (PVC) and Goat Value Chain (GVC) for purposes of building resilient Market Systems for all the value chain actors.
- Analyse the key Gender issues around the pig and goat value chains (ownership, control, decision making systems, gender and market dynamics, gendered access to financing etc.)
- Mapping of the VC actors and analysing the power dynamics between the different stakeholders in the goat and pig value chains.
- Assess the strength and weaknesses of value chains stakeholders including PPAZ, GBAZ, LMAC, Farmer Unions, Government line ministries and departments.
- The study will include assessments of all stakeholders/ target groups, capacities, their strengths and weaknesses; and those of other stakeholders such as Government Ministries, mapping of VC actors, policy gaps, market assessments on competitiveness of PVC and GVC.
- Identifying the policy gaps in the GVC and PVC with a view develop an influencing and lobbying strategy for the project
- Benchmark the Fair Value Farming Brand parameters and establish the operational framework for use by the project.

III. Expected Outcome of the Assignment

The consultant firm will furnish Action Aid Zimbabwe and the VALUE Project partners with a comprehensive value chain analysis report having disaggregated data including the following, but not necessarily limited to:

- Detailed analysis of the pig and goats value chains with quantitative & qualitative description and the incremental values at each level/node of the chain.
- Economic profile, analysis, production and market costs and revenues, value additions and profit margin along the chain including income and employment, trade volume and sales trends in for the past 10 years, current bio-security measures and other Green Economy practices and technologies. This should also include detailed demand and supply core functions of the value chain market systems.
- Profile of target beneficiaries: Work with the teams to identify the key characteristics of value chain market producers (farmers) that the program will aim to target;
- Market functions: Support the VALUE teams to identify relevant functions of the market systems (market system donut);

- Market actors / stakeholders: Support the VALUE teams to identify relevant market system actors and other stakeholders, and map the relationships between them (market actor map);
- Capacities, constraints and incentives: Guide and contribute to the process of conducting detailed market assessments and analysis for market systems in the two target geographies. Through these market assessments the teams should develop a deep understanding of the existing capacities and constraints, and also develop a feel for the incentives of key market actors which will help inform the intervention brainstorming workshops. This analysis of capacities, constraints and incentives should include:
    - Analysis of core functions, such as value chain production, trade and processing;
    - Analysis of relevant supporting functions, such as extension services and financial services etc
    - Analysis of rules and norms that constitute the enabling environment for the value chain markets to properly function such taxes, regulations, certification etc
- Production hubs/pockets area and major market centres identification, growth potential, market trends (supply and demand) and competitiveness of the pig and goat value chains.
- Stakeholder analysis:
- Power economy Analysis: Power analysis within the value chains to understand forms and causes of exclusion at different levels of the value chains. Power analysis should be carried at least at following levels: Traders and farmers; Land owners and tenant farmers and Farmers and seasonal labourers. This should include key actors that have influence and interaction within the market systems value chains either positively or negatively.
- Gender analysis of the pig and goat value chains. Clearly indicate the constraints/ barriers affecting women in participating in the specific value chains selected
- Identify constraints and opportunities at each stage of the goat and pig value chains, including leverage points with potential for scale and sustainability.
- Recommend areas of interventions to improve the value of products including capacity-building requirements for inclusive value chain development.
- Identify the key constraints to the achievement of resilient Market Systems and recommend strategies for building resilience in the pig and goat value chains
- Enabling environment (policy/incentives and its implication) with suitable policy advice for project implementation and VC supporting/facilitating organisations &institutions at local /provincial/national level (RDCs, Farmer Groups, Farmer Unions and private sector) and their roles.
- List of potential agribusinesses interested in collaborating with the project through contractual arrangements and their contact details including useful policy advice for their involvement at any level of the PVC and the GVC.

- Document the minimum standards and develop framework for implementing the Fair Value Farming Brand
- List of stakeholders/actors consulted and list of References (studies and other literature used)

IV. Deliverables

The consultant is expected to deliver the following listed deliverables:

- Inception report (digital and hard copies of the assignment. The inception report should cover the methodologies and work plan.
- Interim report: Raw Data entered, Digital and hard copy of the data collected and analysed, models, diagrams including photographs & contact list of interviewees and workshop participants and key value actors.
- Draft report and Presentation: Value Chain Reports covering the six identified production/transportation corridors feeding into the major meat markets of Harare and Bulawayo. The PVC and GVC reports detailing backward and forward linkages with margins of all the actors in the value chain as well as recommendations indicating the bottlenecks, opportunities and key advantage points where the project could intervene for maximising returns to all value chain actors.
- Final report incorporating the comments (digital and hard copies) of each value chain.
- Participate in Strategy Development Workshops: The scoping studies will be followed by value chain specific validation workshops in each of the 6 provinces. The consultant is expected to present on the findings in all the workshops. The workshops will afterward develop fully fledged upgrading strategies.

Deliverable	Submission Timelines	Payment Schedule
Inception report	weeks	10%
Interim report.	weeks	20%
Draft Final Report and Presentation	weeks	20%
Final Report	weeks	30%
Presentation at Strategy Development Workshops	Weeks	20%

V. Study Methodology

The study comprises literature review and qualitative as well as quantitative research methods. Checklist as key informant interview, Focus Group Discussion (FGD), Participatory Rural Appraisal (PRA), observation and other methods will be used to gather information at each level of value chain. Primary information and secondary data analysis are equally important. Participatory tools, techniques and methodologies will be applied in information

gathering and verification of the available information. The technical proposal should include the following methodology in detail:

- Literature review and review of secondary information
- Develop survey instrument and conduct survey assessment
- Required number of focused group discussions and interviews with key informants/ VC actor.
- Participatory field observations, interviews and consultations at the major market points including smallholder farmers, wholesale and retail meat processing outlets (abattoirs, local butcheries, independent butcheries located in low-income residential areas of Harare and Bulawayo, aggregators, farmer representative bodies (FUs, associations and cooperatives)) and relevant stakeholders to collect required information.
- Analyse government policy and regulatory frameworks related to specific value chain development and private sector participation.
- Agribusiness mapping to including supporting functions and rules and norms shaping that markets, especially their status in corporate social responsibility, trade volume and sales, current bio-security measures and other Green Economy practices and technologies.
- Roles and responsibilities of each team members including number and person days of the enumerators with their roles and responsibilities.

The above mentioned list is not limited and the consultant may submit a proposal commensurate with the industry standards.

VI. Duration of Assignment

The assignment will be carried out for a period of 4 weeks from the date of signing the award contract.

VII. Project Coverage

The project will cover the following transportation corridors and districts

Value Chain	Province	District
Pork Value Chain	Mashonaland West	Chegutu, Kadoma, Mhondoro-Ngezi, Zvimba
	Mashonaland East	Goromonzi, Marondera, Murehwa, Seke
Goat Value Chain	Manicaland	Buhera and Chipinge
	Mashonaland Central	Mbire and Rushinga
	Mashonaland East	Mudzi and Chikomba
	Matabeleland South	Beitbridge, Gwanda and Matobo
	Matabeleland North	Binga, Lupane and Nkayi

- A financial proposal indicating fees for the consultancy, cost per major activity and VAT.
- CVs of consultant(s) who will work on the assignment.
- At least contacts of two referees who can vouch for the quality of your work

Completed bids must be enclosed in sealed envelopes or sent by e-mail in PDF format to: procurement.zimbabwe@actionaid.org on or before Wednesday the 14th of August 2019, at 1700hrs with heading ZAGP VALUE PROJECT SCOPING STUDIES - FED/2018/404-575. In addition, please submit three (3) Hard Copies of the same documents in a sealed envelope addressed to

Action Aid Zimbabwe
The Procurement Department,
ActionAid Zimbabwe,
26 Divine Road, Milton Park, Harare, Zimbabwe

Annex 2: List of FGD Participants

FOCUS GROUP DISCUSSION WITH GOAT FARMERS IN GWANDA (WARD 17)			
Name	Sex	Age	Contact Details
Cathrine Sibanda	F	56	0783209631
Mflika Ndlovu	F	64	0718111028
Jabulani Sibanda	M	45	0785626512
Emely Dube	F	60	0785515808
Samson Ndlovu	M	76	0771034003
Grace Siziba	F	67	
Keneiloe Moyo	F	28	0786312626
Jael Tiou	F	44	0716667250
Trust Ncube	M	46	
Moketsi Moyo	M	46	0783424069
Andreas Magaya	M	37	0783089310
Mcabango Nkomo	M	38	0715305499
Callen Mabatha	M	60	0775826932
Bongani Sibanda	M	42	0777247620
Thenjilove Sibanda	F	50	0771118531
Precious Ndlovu	F	34	0777825799
Pretty Mguni	F	50	0778526862
Mark Mabena	M	65	

FOCUS GROUP DISCUSSION WITH GOAT FARMERS IN WARD 9 (SWEREKI, B.BRIDGE)				
Name	Sex	Number of goats	Age	Contact Details
Robert Ndou	M	46	53	0715291201
Maritha Siziba	F	25	76	
Esther Dube	F	30	57	
Villia Ndou	F	28	67	0712136343

Rodney Mbedzi	M	55	51	0715177117
Sohlulo Mbedzi	F	37	49	071526896
Magret Mbedzi	F	58	46	0718947053
Dorcas Tlou	F	63	42	0718947249
Ownlous Ndou	M	125	49	0718947071

FOCUS GROUP DISCUSSION WITH GOAT FARMERS IN WARD 8-SHASHE, B.BRIDGE				
Name	Sex	Number of goats	Age	Contact Details
Maem Ngwenya	F	10	57	0633264384
Thabani Siziba	F	45	27	0737078749
Daglas Madau	M	45	65	0715769700
Bonang Muleya	F	40	49	0723754359
Pauline Ndou	F	30	68	0714852543
Naison Ndou	M	25	45	0714852543
Gamuchirai Ndlovu	F	35	35	27756827112
Alice Shava	F	18	39	0717484077
Maneto Mbedzi	F	10	61	0717484077
Senzeni Siziba	F	10	61	0717484077
Beatrice Moyo	F	13	38	0710178982
Eunice Nyati	F	20	49	0713125588
Johnson B Ndou	M	50	41	0714035357
Florence Ndou	F	10	32	0716792941

FOCUS GROUP DISCUSSION WITH VILLAGE HEADS IN WARD 8-SHASHE, B.BRIDGE					
Name	Sex	No. of goats	Age	Contact Number	Village
Malima Mbedzi	M	76	44	0027730116317	16
Raina Msipa	F	8	62		Limpopo

Masotsha Mudau	M	50	65	00268256832	Shashe
Jeopen Moyo	M	70	65	0839690899	Madani
Mekias Ndlovu	M	60	54		

FGD session with farmers in Mbire, ward 17				
Names	Sex	No. of goats	Age	Contact number
Willie Jamm	M	23	40	0782900232
Tich Songwe	M	13	33	0783321952
Morris Hodhera	M	130	27	0779061957
Vitalis Magunde	M	30	40	0783220969
Tatenda Guveya	M	21	27	0777481305
Sarafina Muchike	F	12	59	0773946318
Ptience Chawaneizvomba	F	6	32	0782348137
Tariona Velema	F	23	46	0776805576
Christopher Foya	M	20	30	0777191204

FOCUS GROUP DISCUSSION WITH GOAT FARMERS IN WARD 20-CHIPINGE				
Name	Sex	Number of goats	Age	Contact Details
Tafirenyika Chizinyewa	M	1	44	0777823015
Pomganai Sithole	M	5	43	0784510151
Eldias Ngezi	M	5	59	
Pikisanai Muteya	M	15	59	0776464404
Elijah Mucheno	M	16	50	0774474089
Ever Dekesa	F	2	54	0776650009
Ennie Mungenge	F	5	55	0778249049
Shelter Mushwaya	F	8	45	0786884574

FOCUS GROUP DISCUSSION WITH GOAT FARMERS IN WARD 9-LUPANE				
Names	Sex	No. of goats	Age	Contact number
Sibusisiwe Ncube	F	23	49	0783030591
Sibongile Mpofu	F	15	50	0771575888
Siganekiso Masina	F	10	45	
Samkeliso Mahlangu	F	6	39	0779439401
Sibusisiwe Ndlovu	F	15	45	0783893754
Doreth Ncube	F	8	59	0782800263
Simelimkosi Sibanda	F	23	45	0783061584
Enethy Ngwenya	F	11	47	0782009648
Calisters Mpofu	F	14	50	0771090496
Nkosilati Mahlangu	M	5	51	0776592504
Lifalabo Ndlovu	M	12	45	0779439801
James Dube	M	9	65	0783811160
Dancan Hlongwane	M	0	49	0713734513
Cowboy Sibanda	M	19	58	0712966750
Elson M.	M	2	65	
Thembeni Mkwananzi	F	5	48	0787259999
Asher Ndlovu	F	0	42	
Sithembiso Mpala	F	0	34	
Moffat Mlala	M	5	44	0772567971

FOCUS GROUP DISCUSSION WITH GOAT FARMERS IN WARD 1-LUPANE				
Names	Sex	No. of goats	Age	Contact number
Gladys Moyo	F	28	70	0716515665
Regina Ncube	F	9	69	0719922049
Rubie Mpofu	F	23	73	0714193120
Sethukile Ncube	F	17	51	0713004518
Thabitha Ndebele	F	9	59	0714660222
Othilia Nkomazana	F	10	60	0712337887
Rodah Matabire	F	11	50	0715934747
Fortune R Ndlovu	F	66	26	0715359336
Yijiruia Hlabangana	F	16	44	0716521198
Siboniso Thandindaba	F	28	39	0717858410
Bekezela Ncube	F	19	39	07158885786
Patience Nyoni	F	5	21	
Thembinkosi Mathe	F	52	33	0713400170
Thulani Lunga	F	4	70	
Christine Ncube	F	18	51	0713003893
Elitha Moyo	F	10	61	0717960570
Mayedi Moyo	F	19	83	0716646998
Dorcas Zikhali	F	102	29	0712958301
Irene Sibanda	F	36	44	0713332311
Khethisiwe Sibanda	F	23	59	0715575704
Sithengisiwe Ncube	F	15	54	
Adilet Tshuma	F	28	32	0714671346
Leggina Dube	F	7	53	077107834
Grace Ngwenya	F	19	47	0715715931
Sithembinkosi Sibanda	F	4	35	0717338424
Sethekele Sibanda	F	17	46	0713139292
Mombeziga Mpofu	F	20	51	0715655067

Morah Zikhali	F	40	64	0715577578
Botshiwe Ncube	F	18	49	
Linda Moyo	F	30	51	0717106673
Mtshazo Moyo	M	34	63	0712039289
Sokoluhle Luphhla	F	24	34	0714659830
Beatrice Zondo	F	9	29	0717319567
Edie Bhebhe	F	10	78	
Sibonbukuhle Nyoni	F	12	44	0712152842
Sibonginkosi Sibanda	F	32	57	0713981135
Paddy Masina	F	7	58	0713538730
Ntimeni Loveness	F	21	50	0713141152
Saziso Ncube	F	42	48	0716732463

FOCUS GROUP DISCUSSION WITH LEADERSHIP OF LUPANE SMALL LIVESTOCK ASSOCIATION				
Names	Sex	No. of goats	Age	Contact number
Bottomhey Dube	M	12	51	0713594300
Lizy Mwinde	F	23	37	0715868587
Jericho Siziba	M	42	49	0714743959
Mbuso Siziba	M	22	40	0779077428
Bongani Dube	M	25	46	0712791613
Isaiah Dube	M	4	69	
Jerrom Gumede	M	20	49	0713763248

Annex 3: List of Key Informants

District	Name of Key Informant	Organization	Designation	Contact Number
Lupane	Mr. Mtembo	Kusile RDC	CAMPFIRE Officer	0773674571
	Dr. Mutangirwa	Vet. Services	Vet. Doctor	0778852364
	Mrs. Mufukare	Lupane Women Center	Director	0772975308
	Mrs. Dube	Agritex, Lupane	District Agritex Officer	0772458897
	Mr. Chiganda	LEAD	Deputy Manager	0776172631/0771504816
	Mr. Ndlovu	Sizimele/ZRBF	Field Officer	0772319799
	Mr. R. Sibanda	Gwanda RDC	Treasurer	0776448188
Gwanda	Mr. Muchemwa	Agritex, Mat. South Provincial Office	Provincial Livestock Officer	0719208023
	Dr. Mdlongwa	Vet, Mat. South	Provincial Head	0775169544
	Mr. Pagiwa	Agritex	Extension worker, ward 8	
Beitbridge	Mr. Ndou	Agritex	Extension worker, ward 9	
	Mrs. Madzivanyika	Agritex	Extension worker	0772976844
	Mr. Ncube	BRDC	E.O, Admin and HR	0782799137
	Mr. R. Mbedzi	BRDC	Councillor, ward 9	0715177117
	Mr. Mwandipa	Agritex	District Livestock Specialist	0717770331
Chipinge	Mr. S. Mwero	Agritex	Agritex Supervisor	0775085011
	Mr. Saungweme	Vet.	Animal Health Inspector	0773427499
	Mrs. Timburwa	Agritex	Extension worker, ward 20	0784677867
	Mrs. Mtetwa	Vet.	Vet. Extension Worker, ward 20	0774860602
	Mr. Magura	Molusi Meats	Managing Director	0772448305

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This publication has been produced with the financial support of the European Union, its contents are the sole responsibility of the VALUE project and can under no circumstances be regarded as reflecting the position of the European Union

Implementing Partners

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