

Improving competitiveness of SMMEs through the Private Sector Development Programme Botswana

Goat value chain
analysis and action plan

October 2015



Government of Botswana



European Union

Cover Design & Layout:
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The findings and opinions expressed in this report remain those of the consultancy team and do not necessarily reflect those of the PSDP.

“The Private Sector Development Programme is an initiative of the Government of Botswana, represented by the Ministry of Trade and Industry (MTI) and the Ministry of Finance and Development Planning (MFDP), in partnership with the European Union (EU). The Programme is supported by the Centre for the Development of Enterprise and Business Botswana.”

Foreword

Goat value chain analysis and action plan

The Goat value chain study underlines appropriate actions, among them the establishment of market structures that could assist in commercializing local goat products.

The action plans have clearly defined the key public and private stakeholders which will play a leading role in the upgrading of the different actors on the value chain (farmers, distributors, retailers etc).

The implementation of the action plan will impact positively on key structures of the value chain while building the capacities of the institutions and human resources that support it. This includes encouraging contract agreements between farmers and distributors, including supermarkets, in order to increase the commercialization and consumption of goat products.

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Acronyms

ADG	Average Daily Gain
BCA	Botswana College of Agriculture
BCU	Botswana Cooperative Union
BDC	Botswana Development Corporation
BMC	Botswana Meat Commission
BMO	Business Membership Organisation
BOBS	Botswana Bureau of Standards
CDE	Centre for the Development of Enterprise
CEDA	Citizen's Entrepreneurial Development Agency
CSO	Central Statistics Office
DVS	Department of Veterinary Services
DW	Dead Weight
EDD	Economic Diversification Drive
FANR	Food, Agriculture and Natural Resources Directorate of the SADC
FARA	Forum for Agricultural Research
FDI	Foreign Direct Investment
IP Platform	Botswana Small Stock Innovation Platform
LAC	Livestock Advisory Council
LEA	Local Enterprise Authority
M&E	Monitoring and Evaluation
MFDP	Ministry of Finance and Development Planning
MoA	Ministry of Agriculture
MSE	Medium and Small Enterprise
NPL	Non-Performing Loan
R&D	Research and Development
SACU	Southern African Customs Union
SADC	Southern African Development Community
SCARDA	Strengthening Capacity for Agricultural Research and Development in Africa
SLOCA	Services to Livestock Owners in communal Areas
SME	Small and Medium Enterprise
SSIFB	Small Stock Industry Federation of Botswana
UNIDO	United Nations Industrial Development Organisation
VC	Value Chain

Executive Summary

This report on the Botswana goat sector is a component of the wider *Value Chain Analysis in Emerging Sectors*, a Government of Botswana initiative, undertaken under the Private Sector Development Programme (PSDP), which is supported by the European Union and the Centre for the Development of Enterprise. The main purpose of the study is to map the sector's value chain, identify key actors, highlight bottlenecks and upgrading opportunities, enabling the development of a national strategy and an action plan. Methodological tools used involved analysis of statistics and relevant documents, interviews of 21 value chain actors, and benchmarking.

Major findings of the intervention are that:

- Botswana's total goat flock was estimated at 1.6 million in 2012 (1.9 million in 2010), The sector is very important to the rural economy and social wellbeing of households as a source of food, income, employment and investment opportunities;
- close to 50% of goats are bred in the Gaborone and Central regions;
- 99% of goats are owned by small holders, mostly female subsistence farmers. This explains the low average off-take rate of 6.1%, and the high mortality rate of about 22%;
- the average goat price is estimated at P580 live weight, generating around 25% of the total holding revenue (P34.4 million in 2012);
- in the absence of price setter and regulator, grading system and formal market for carcasses and meat, producers receive low prices for goat products. Even underestimated at 0.3kg/per capita per year, goat meat consumption is very low compared, e.g. to South Africa (3.7kg).

The goat sector has no specific institutional framework, and existing entities and programmes (SSIFB, CEDA, BCA, SSIF), including the Small Stock Industry Federation, lack resources and implementation capacity. The sector, however, controlled by the Veterinary Services, is eligible to Government interventions aimed at supporting and promoting small stock (financing and pricing policies, artificial insemination, and different management and technical assistance services).

The key features of the Goat Value Chain are:

- very informal value chain (no specific abattoir), but important for the majority of rural households;
- total of 1.7 million kg dead weight yielding 550 000kg boneless meat equivalent;
- production is mainly oriented towards household consumption of milk, cheese, meat and skins. Live goats are sold to middlemen, at auctions or to individuals for traditional events;
- primary processing involves slaughtering of live animals and preparing carcasses. Secondary processing includes deboning, producing meat cuts, spicing and vacuum packaging. Goat skins are the major by-product.
- total feed produced locally is valued at P11 million, equivalent to 33% of production costs.

Namibia has been selected as the most appropriate benchmark for the Botswana goat sector, because of comparable environmental conditions. Lessons can be learnt from Namibia in the areas of production (fencing, nutrition and health care, Boer goat breeding, improvement of kidding and weaning rates, average daily gain), market-driven channels, institutional upgrading (breeders' societies), and exports to South Africa.

Recommended actions include:

- development of a formal goat market in Botswana, including State funded market structures (auctions, slaughter facilities, fixed prices, training and input services);
- development of a Goat Strategy and Action Plan which calls for a study and diagnosis of the goat value chain and the design of a national policy and strategy for the goat sector. An indicative Action Plan is proposed.

Introduction

Objective

This report presents the findings of the goat sector component of the study “*Value chain analysis in emerging sectors (meat (piggery, goats and poultry), dairy and leather)*” undertaken under the Private Sector Development Programme PSDP). PSDP is a Government of Botswana initiative supported by the European Union and the Centre for the Development of Enterprise. It aims to stimulate and sustain growth through diversification of the economy while building the capacities of institutions and human resources that supports the private sector

Value chain analysis is a useful tool for understanding the potential of agricultural industries, and through the application of this approach, new insights can be gained and valuable new strategies developed, both at the micro-economic (company) level and at the macro-economic (national) level. The value chain analysis in this report describes the overall value chain, apportions costs to the various elements within each segment and the relationships and mechanisms between them.

The methodology used involved a literature review of the sector, analysis of statistics, value chain mapping, survey of actors throughout the value chain and benchmarking from other countries. Based on this, a national strategy and action plan have been outlined for discussion by the stakeholders.

The overall aim of this assignment is to identify potential markets, upgrading opportunities and constraints throughout the goat value chain in order to develop national strategies and action plans to develop this sector.

Overview of the Goat Sector in Botswana

Production

Livestock production in Botswana is a very important socio-economic activity considering that the country has a semi-arid climate. Most smallholder (traditional) farmers invest in small stock (including goats, pigs and sheep). There are an estimated 2.2 million small stock in Botswana. Ownership of goats by the smallholder (traditional) farmers is encouraged by the Government through a number of projects/policies and programmes discussed later.

Since all the traditional farmers live in the communal lands (70% of the total area) most of the goats are found in these areas. Extensive grazing is practiced with very little control.

There are two dominant sub-sectors involved in the production of goats namely; the semi-commercial and traditional production system. The semi-commercial system is mainly for income generation purposes, while the latter's aim is for subsistence purposes with income generated from selling surplus.

The sector is dominated by the smallholder farmers (mostly women) and is mainly concentrated in the rural areas. Over 80% of all smallholder enterprises are owners of small stock animals (70% of whom own goats).

Table 1 shows that 99% of producers are subsistence farmers (traditional) while the remainder (1%) are commercial in orientation. Whilst 2010 was the peak production year in goat numbers (1.9 million) the subsequent high mortality rates reduced the number of goats to 1.6 million by 2012.

Table 1: Summary of traditional & commercial goats sub-sectors (CSO, 2012)

Type	2010			2011			2012		
	Traditional	Commercial	Total	Traditional	Commercial	Total	Traditional	Commercial	Total
Total Holdings	83,550	660	84,210	82,850	440	83,290	81,660	520	82,180
Total Goats	1,888,750	49,180	1,937,930	1,736,010	33,800	1,769,810	1,615,440	34,170	1,649,610
Total Births	788,070	18,040	806,110	720,480	13,350	733,830	668,970	13,580	682,550
Total Deaths	352,330	7,390	359,720	418,510	7,130	425,640	352,890	8,020	360,910
Total Sales	53,740	4,040	57,780	47,120	2,500	49,620	58,160	1,800	59,960
Total Home Slaughter	66,070	2,340	68,410	62,060	1,810	63,870	61,900	1,710	63,610
Total Purchases	14,620	1,550	16,180	10,710	640	11,350	22,600	580	23,180
Offtake	105,180	4,830	110,010	98,480	3,670	102,150	97,470	2,980	100,450
Offtake Rate (%)	5.6	9.8	5.7	5.7	10.9	5.8	6.0	8.7	6.1
Birth rate (%)	41.7	36.7	41.6	41.5	39.5	41.5	41.4	39.8	41.4
Death rate (%)	18.7	15.0	18.6	24.1	21.1	24.1	21.8	23.5	21.9

Source CSO (2012)

In 2012, a total of 13,540 holdings sold 58,170 goats generating revenue of P34.4million, with each holding earning an average of P2, 310 indicating an average goat price estimated at P580.00.

Table 2: Goat Production in Botswana - 2012

District	Holding selling goats		Total goat sales		Total revenue	Average holding revenue	Average goats revenue
	number	%	number	%	Pula '000	Pula	Pula'000
Southern	1,980	14.7	8,150	14.0	4,955	2,500	610
Gaborone	4,610	34.1	17,470	30.0	11,062	2,400	630
Central	4,310	31.8	23,130	39.8	12,993	3,000	560
Francistown	1,420	10.5	3,970	6.8	2,692	1,900	680
Maun	490	3.6	990	1.7	481	980	490
Western	720	5.3	4,460	7.7	2,228	3,090	500
Total/average	13,540	100	58,170	100	34,411	2,310	580

Source CSO (2012)

There are no formal markets for goat carcasses and goat meat which means that small stock producers face a difficult task in finding buyers. The absence of a facility that buys small stock by grades, similar to the system used by the Botswana Meat Commission for cattle, discourages serious investors from investing in the goat sector (Ministry of Agriculture - MoA - 2009).

Geographical distribution of value chain actors

Data indicates that the Gaborone region has most goat holdings in Botswana, followed by the central region, with the Western and Maun being the least. Generally though, the data indicates that the sector is distributed evenly throughout the country.

Table 3: Goat Producers by region

Region	Male	%	Female	%	Total
Southern	8,700	17.9	6,100	18.2	14,700
Gaborone	15,600	32.9	8,500	25.7	24,100
Central	11,700	24.1	7,500	22.7	19,200
Francistown	7,700	15.9	7,300	22.0	15,000
Maun	2,600	5.3	2,100	6.4	4,700
Western	2,200	4.6	1,700	5.0	3,900
Total	48,500		33,200		81,600

Source: CSO (2012)

Government Policy

Over the years, the Government of Botswana has introduced policies and interventions aimed at supporting and promoting the production of small stock, including goats.

Selected policies and interventions include:

- Financial Assistance Policy provides a grant of up to P 25,000 aimed at helping goat start-up projects given to a farmer (women are a priority).
- Pricing policy as an incentive for promotion of the small stock sub-sector.
- Improved rural nutritional and income status through increased productivity of milk and meat, and sales through improved management and genetic potential.
- Stock upgrading through provision of artificial insemination, ram subsidy (Boer goat was introduced to improve indigenous goats).
- Provision of services to livestock owners in communal areas programme (SLOCA),
- Provide technical assistance to Botswana Cooperative Union (BCU) responsible for livestock management and marketing. An increase in prices of small stock through BCU, increased animals sent to the official market, the Botswana Meat Commission (BMC) from 334 goats in 1982 to over 4,100 goats in 1983, and to 42,000 in 1989 (MFDP 1991).
- Construction of dams and assistance to syndicates in funding boreholes with a minimum of P20,000. This is necessary because there is very little surface water.
- Provide disease control measures, e.g., free vaccination from common diseases, cordon fences in production areas and the establishment of six main Livestock Advisory Centres (LACs) and 25 subsidiaries.

Domestic Control Regimes

The control of trade in animals and animal products in Botswana is governed by the Diseases of Animals Act CAP 37:01, Section 6 and other Diseases of Stock Regulations.¹ These powers are vested upon the Director of Veterinary Services (DVS). The Act and regulations are meant to prevent the introduction and spread of animal diseases in Botswana to ensure animal and human health. All import applications for live animals are centralized through the MOA headquarters in Gaborone. Any individual desirous of importing an animal into Botswana is required to lodge an application well in advance of the actual importation with the Permits Office, Ministry of Agriculture.

Business Support Services

In Botswana there is no single organisation that is promoting the small stock industry in a holistic manner but there are several organisations each supporting single components of the industry.

Financing

CEDA offers long term loans to citizens for bankable projects at a much lower rate than commercial banks, of 5% per annum. CEDA is therefore the preferred supplier of credit by Botswana.

¹(http://www.gaborone.diplo.de/contentblob/3497972/Daten/2199197/DD_Haustiere_BWA.pdf)

CEDA supports the production of goats for meat with the following requirements:

- minimum breeding stocking rate of 200 goats;
- minimum land requirement is 2 ha per goat per year;
- buck to doe ratio of 1:25.

Accessing this loan from CEDA has the following challenges for goat producers:

- land availability and land ownership;
- most farmers are small-scale informal producers;
- the management required to ensure the ability to repay the loans.

Development and Support Services

Local Enterprise Authority (LEA) provides development and support services to the local industry needs, encompassing training, mentoring, business plan finalisation, market access facilitation, and facilitation of technology adaptation and adoption.

In the goat sector, LEA has not done any specific studies aimed at informing targeted interventions but provide entrepreneurs with mentoring and business plan finalisation services.

Extension Services

The Division of Small stock Sector under the Department of Animal Production in the Ministry of Agriculture provides extension services to goat producers as regards to animal husbandry, farm management and disease prevention.

Accessing these services has the following challenges for goat producers:

- shortage of adequate personnel (extension officers) to cover all farmers;
- lack of transport;

Business Services & Business Membership Organisations (BMO)

The Small Stock Industry Federation of Botswana (SSIFB) which is best suited to represent the goat sector) has no dedicated resources (e.g. HR, communications, own offices). They have limited capacity to offer, among others, research for policy advocacy, information dissemination facility, technical support and continuous training and development to its members.

Sector Strategy

The following institutions have developed Strategic Plans relevant to the goat sector:

- Botswana College of Agriculture - Strategic Plan 2009 - 2016
- Small Stock Federation of Botswana: was engaged through the support of SADC to develop “A Strategic Plan of the Botswana Small stock Innovation Platform for 2012/2013 (IP Platform)”²

²Focuses on Goats and Sheep, although the Innovation Plan now includes Dairy and there is a desire of the actors to include pigs.

The BCA plays a key role in agriculture training and development and therefore in the Goat value chain. The missing link in the BCA Strategy seems to be the engagement of other stakeholders in the development of the strategy.

The Strategic Plan of the Botswana Small Stock Innovation Platform is an initiative of the Strengthening Capacity for Agricultural Research and Development in Africa project (SCARDA), originated by the Forum for Agricultural Research in Africa (FARA). SCARDA was funded by the Department for International Development in Africa. In the SADC region, it was coordinated by the SADC FANR Directorate.

The IP platform in Botswana identified the small stock industry³ as a critical focus area and mobilized various stakeholders including farmers, input suppliers, traders, processors, retailers, regulators, R& D institutions and consumers into a common forum for the development of this subsector. The IP platform is meant to become “an intertwined process of commercial interdependence, stakeholder solidarity and increased communication partnership for optimum investment returns, efficiency improvement, economies of scale, resource mobilization, structural and process renewal, information exchange and shared reduction in risk exposure”⁴.

This Innovation Platform has faced implementation challenges including lack of funds and is currently inoperative.

³The IP Platform in Botswana later included Dairy

⁴IP Platform workshop report, 2012

Goat Value Chain Analysis

The Goat Value Chain

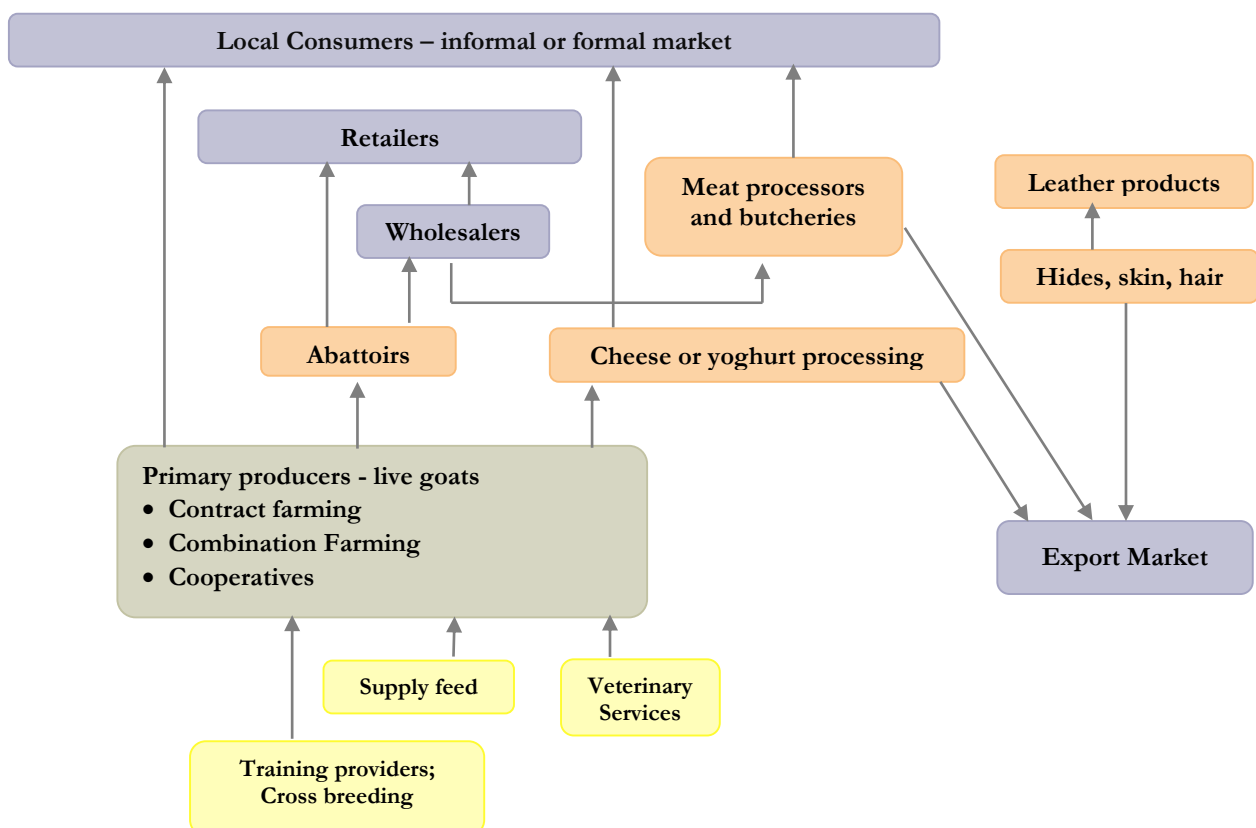
In order to plan and survey the value chain in any sector, and then develop upgrading and expansion strategies, it is first necessary to understand the value chain itself. The “theoretical” value chain for the goat sector can be divided into five core sub-sectors as shown in Figure 1:

1. Inputs;
2. Primary production
3. Processing
4. Retail, and
5. By-products

Primary Production

The first stage of the value chain involves the breeding of goats for eventual use in the production of goat meat or skins, or to be reared to provide milk for the production of goat milk and cheese. In the North West of Botswana, many goats are sold live by farmers at livestock auctions or, to individuals in local communities for use in cultural or traditional ceremonies.

Figure 1: Theoretical goat value chain



Processing

The processing of goat meat involves two stages: primary and secondary processing. Primary processing involves the slaughter of live animals to convert them into carcasses, while secondary processing involves the further processing of carcasses into meat products. Secondary processing can involve comparatively simple activities such as dissecting the goat carcass into various cuts or deboning to primary cuts; or it may involve additional value-adding processes such as the production of dried meats, spicing or vacuum packaging. The key players in the secondary processing segment of the value chain include abattoirs, deboning plants, butcheries and, further downstream, processors such as packaging plants.

By-Products

Goat skins are a by-product of the goat meat value chain. The skins are removed during the slaughtering process and thereafter, used either as non-tanned skin to produce parchment, drumheads, sounding boards for musical instruments or by tanneries to produce tanned leather.⁵

Survey Approach

The goat value chain survey covered 21 value chain actors comprising 15 farmers, 3 service providers and 3 butcheries.

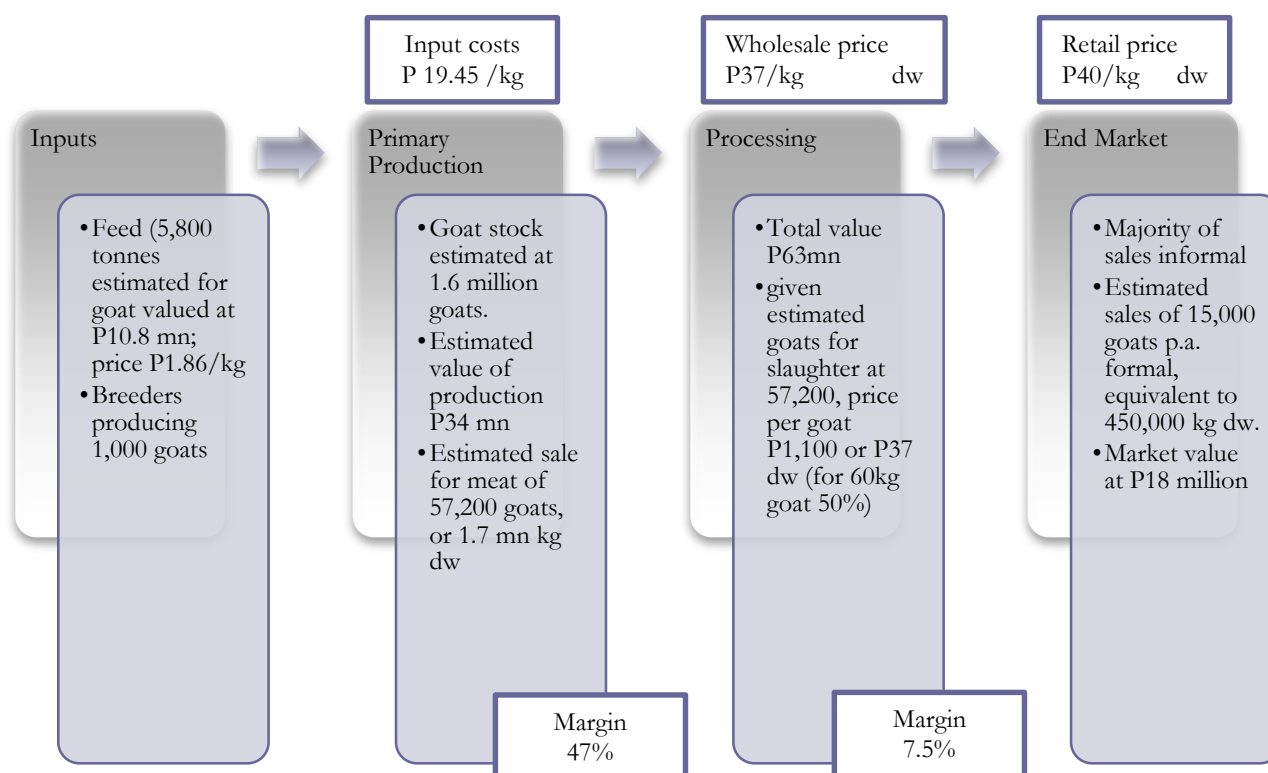
Data collected from the interviews was supplemented by secondary data collected from reports and verbal communication with the Ministry of Agriculture officials in the Small Rudiments Section, Department of Animal Production and other actors.

The Botswana Goat Value Chain

The goat value chain for Botswana is highly informal. An outline value chain map for the goat sector is detailed in Appendix 1. A summary value chain is presented below:

⁵Mthente, 2013

Figure 2: Summary Goat Value Chain Analysis



The goat value chain in Botswana totals 1.7 million kg dead weight (based on 58,170 goats at average 60 kg with production coefficient of 50% live to dead weight), that is, approximately 544,000 kg boneless meat equivalent (assuming production coefficient of 32% dw). However, given that the majority of this trade, including slaughtering is informal, these statistics probably underestimate the full extent of the market. In most cases, producers and processors see goat and other small stock as a filler, a marginal business to accompany other production or activities to supplement household income. As such, data regarding employment, earnings per employee and other economic contribution to the economy is meaningless.

Key Observations:

- Given that the goat value chain is not developed in Botswana, most of the value chain is very informal making it very difficult to capture the relevant statistics for the development of the sector. In fact most of the statistics available are an underestimation.
- Despite the fact that it is a very informal value chain and thus difficult to estimate, it remains a very important source of food, income and employment for the majority of the population in rural areas especially women.

Inputs

There are 3 feed manufacturers in Botswana manufacturing for livestock, of which approximately 5,800 tonnes is sold for goat feed at a cost of P1.86 per kg. This equates to total feed valued at P10.8 million and means across the total stock of 1.6 million goats, average goat feeding of 3.6 kg per annum (assuming all goats fed). However, if we assume feed is only purchased for slaughter goats, then 101kg

of feed per goat is purchased. Given the estimated value of live goat production is P34 million, then feed would be up to 33% of production costs.

In addition, there are 10 small-scale goat breeders producing approximately 1,000 kids per annum.

Key Observations:

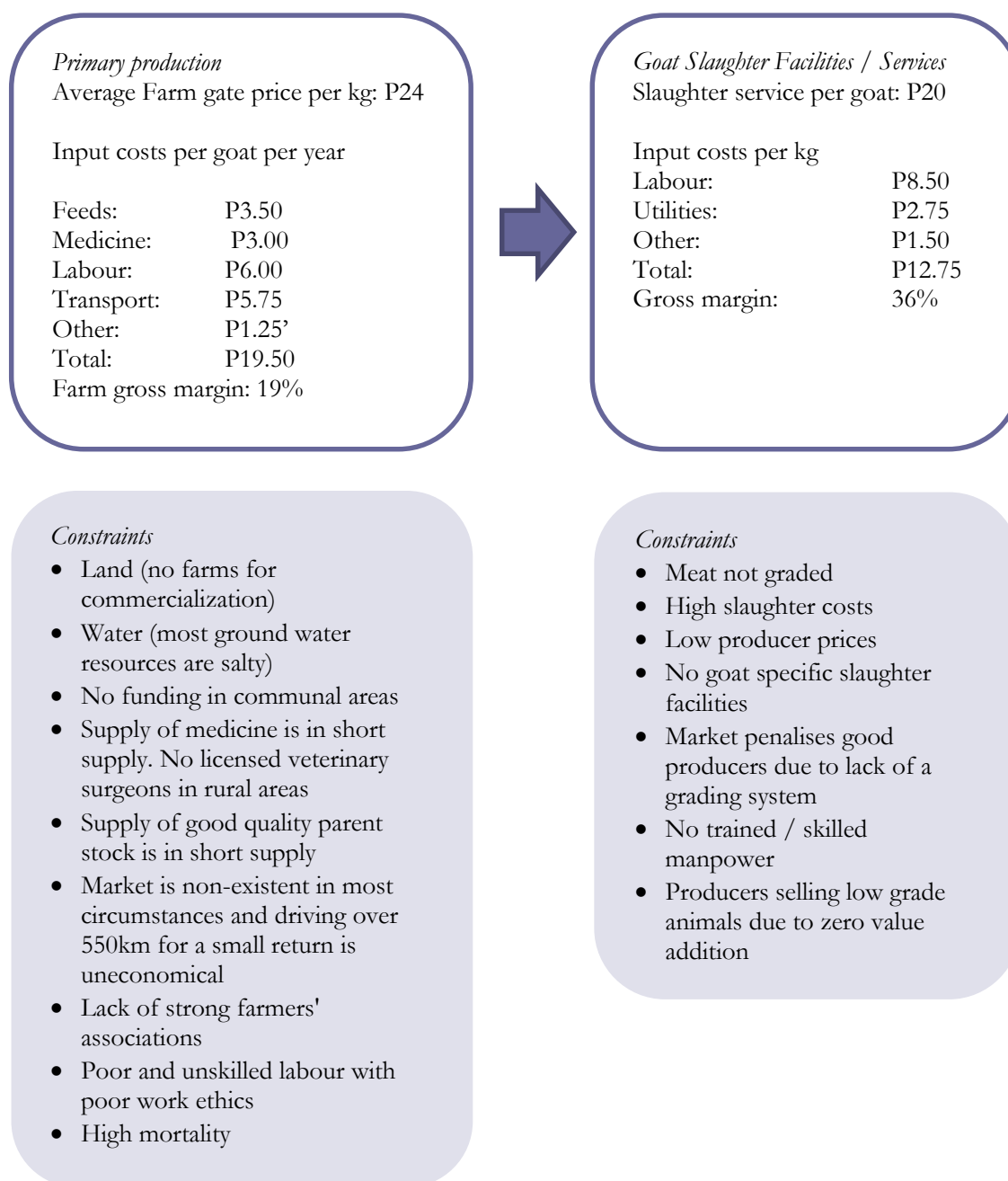
- *Even if we assume that only slaughter goats are fed supplements, feeding of goats in Botswana is undertaken at a much lower level than in other countries. For example, on average, goats for meat slaughter are fed 438kg feed per annum in New Zealand compared with only 101kg in Botswana.⁶*

Primary Production

The vast majority of goats in Botswana are produced by over 82,000 holdings which in this case are actually individual households. There are about 520 small-scale enterprises which have around 34,170 goats (of the 1.6 million), with an average number of goats per small farm of about 70 goats. This compares with households which average 20 goats. Households do not have any formal employees to tend to herds and even small-scale enterprises employ on average, one person to attend to the goats.

⁶ <http://maxa.maf.govt.nz/sff/about-projects/search/04-059/farming-goats-for-meat.pdf>

Figure 3: Goat Sub-sector Analysis



Key Observations:

- The demand for goat meat and its availability in retail chain stores is hindered by lack of support and infrastructural developments in the sector.

Goat Meat Processing

Processing of goats in Botswana is very limited with goats being sold as whole carcasses with little boneless meat sales. Of the 57,200 goats (1.7million kg dw) consumed annually in Botswana, more than 52%, (30,000 goats or 900,000 kg dw) are sold to local butchers with only 7,200 goats (216,000 kg dw)

being sold to processors in official Government abattoirs. The remaining 5,000 goats (150,000 kg dw) are sold by intermediary agents.

Key Observations:

- *Very few people are employed in the goat value chain as the majority of the goats are raised by family members. There is very limited processing in the formal sector with most of the goats sold as whole carcasses to the butchers.*

Market

The market for goat products in Botswana is estimated at P34 million. However, this figure significantly underestimates total production of goats for slaughter of 58,000. Assuming an average price of a goat of P1,200 then the total value of the market would be closer to P70 million with 1,740,000 kg dw. As discussed previously the vast majority of this production is sold through local butcheries.

Average consumption of goat meat is 0.8 kg per capita dw or 0.3 kg per capita of boneless meat. This means, the overall size of the goat meat market in Botswana is relatively small compared with per capita consumption of 2.1 kg in Kenya and 3.7 kg in South Africa. When per capita consumption of goat meat in Botswana is compared with those countries immediately above and below Botswana in World Bank GDP per capita rankings, per capita consumption would normally be expected to be more than 10 times higher than current levels of demand (average consumption is 3.6 kg per capita compared with 0.33 kg per capita in Botswana). However once again it must be emphasised that because goats are largely reared at the household level and are home slaughtered, per capita consumption is probably significantly higher than recorded. The important consideration is that goat meat is not seen as a popular product by the retail trade and this factor has militated against the emergence of commercial production.

Table 4: Goat Meat Per capita Consumption

Parameter	GDP per capita (US\$)	Per capita consumption (kg)
Mauritius	9210	4.0
Turkmenistan	7987	19.5
Grenada	7876	1.2
Colombia	7826	0.3
Belarus	7575	0.1
Botswana	7,317	0.3
Azerbaijan	7316	5.1
St Lucia	7310	3.5
Bulgaria	7296	1.8
Montenegro	7125	1.1

All producers sell their primary produce either via live weight or as dead weight (carcass) but most prefer the former as they will decide on the spot whether to sell it or let it go. Price is the determining factor, the higher the price on offer, the higher the willingness to sell by the producers. Their biggest outlet are the butcheries even though big chain stores do purchase but do not have slaughter facilities and would opt to send it to a slaughter facility at the producer's cost hence the best option for most are

butcherries. The prices are very low and vary by region from P14/kg – P18/kg live weight to a carcass weight price varying from P18/kg to P30/kg. Retailers do not collect from farms so producers have to bear the transport cost in order to sell their goats. This has led to most producers preferring the informal local market as they do not bare any transport cost and buyers and sellers negotiate the price.

Key Observations:

- *There is a low level of demand and little apparent interest amongst retailers for goat meat as a product for consumption in Botswana. However, it is apparent that actual consumption of goat meat is much higher than the statistics suggest but that it is informal, based on home slaughtering and local sales.*

Lessons from Other Countries

Goat Meat Value Chain Upgrading, Lessons Learnt from other Countries - Case Study: Namibia

The improved goat meat breed is the Boer goat hence the dairy goat breed has not been mentioned in this section because it is not a relevant breed for goat meat though when a dairy goat is slaughtered at that point it becomes meat.

Namibia is well known in literature for its role in the development of the favoured goat meat from the South African Boer Goat. The South African Boer-goat breed was developed for meat production in the early 1900s. The name Boer comes from the Dutch and Afrikaans word Boer meaning Farmer. The breed came from indigenous goats that were cross-bred with European and Indian goat breeds which helped them to become the breed they are today.



Upgrading Activities

Goat meat upgrading activities for Namibia were done on an industry-wide basis, in the areas of production, goat marketing channels and institutional development, as follows:

- **Production upgrading** was achieved through selection of breeding goats. Boer goat was breed for meat. This goat has a very fast growth rate with very desirable carcass qualities. It is also disease resistant. While the South African farmers did the pioneer work for the development of the SA Boer Goats, Namibia contributed through undertaking brilliant selection and breeding of this goat.
- **Channel upgrading.** The goats in Namibia are marketed through the auction markets which are mainly patronised by the middlemen. However goat farmers do not benefit from higher prices at the auction markets because the middlemen tend to buy goats from farmers at very low prices. The communal farmers lack information on goat selling prices hence they tend to be price takers and receive less than what is due to them. The Namibia Agricultural Union (NAU) is however encouraging farmers to bring their goats for sale at the auction markets.
- **Institutional upgrading** was achieved in the Namibian goat industry through initially setting up of the Namibian Breeders Club in 1969, and in 2001 the Namibian Boer Goat Breeders Society became independent from the SA Breeders Association. The society delivers services such as inspection, training courses, promotion days, stud and commercial auctions, exhibitions and national championships. The Boer Goat Breeders Society is in turn affiliated to the Namibian Stud Breeders Association. The Namibian Stud Breeders Association is charged with the responsibility of registration and genetic evaluation services which are delivered according to a Breed plan. The Namibia genetic evaluation system is known to be one of the world's most advanced genetic evaluation systems.

Programme Outcomes:

- Development of the Boer goat breed for meat production.

Key Lessons of success:

- Market-driven value chain upgrading is very important. The Boer goat which was developed through selection has little fat, good flavours, is more easily digested, has very low cholesterol which are ideal for the health-conscious people and grows very fast. The Boer goat therefore has characteristics which are good for both producers and consumers of goat meat.

Botswana Goat Value Chain Benchmarking**Benchmarking Country**

The Botswana goat value chain has been benchmarked with Namibia because Namibia shares borders with Botswana, which means they have comparable environmental conditions for raising goats. In addition, Namibia has been selected for benchmarking Botswana because Namibia has a long history of its role in breeding the Boer goat together with South African farmers. The South African Boer Goat is widely recognised to be the yardstick against which meat producing goats across the world are measured⁷. It is because of these two reasons (Namibian history in the development of the Boer goat and similar environmental conditions justify the selection of this country for benchmarking the Botswana goat industry).

Goat Benchmarking Parameters*Production Benchmarking*

As of 2005, Namibia's on-the-hoof goat population was two million with half of the goats produced in the veterinary cordon line north of Tsumeb. The rest are produced from different parts of the country, especially in the South.

Goat meat exports

Namibia exports about 250 000 goats annually to South Africa⁸ generating approximately N\$6 million in revenue. The demand for goat is quite high in South Africa. The Namibia local goat market is not competitive because of lack of goat meat markets. Most of the people in Namibia are not fond of goat meat. Goats are sold as live goats at much higher prices in South Africa depending on the size and breed of the goat. Live goat sales are more competitive. Dirk Potgieter is the largest exporter of goats in Namibia. Other goat export markets include, Namibia's surrounding neighbouring countries such as Angola, Zambia, and Botswana⁹.

Kwazulu Natal in South Africa is the province which is the major importer of Namibian live goats. The goats are mostly imported for ceremonial purposes. Other export markets for Namibia are the

⁷<http://www.Boergoats.co.za/>

⁸<http://www.lepelle-nkumpi.gov.za/docs/feasibility/GOATS%20FEASIBILITY.pdf>

⁹<http://www.Boer-goats-farmstay-bed-breakfast.com/Boer-goats-for-sale-namibia.html>

European markets but are a very tight market with all the stringent conditions to be met. Farmers get 100% return on their investment in goat meat. Botswana, on the other hand, has no formal markets for goat carcasses and goat meat.

Production Parameters

Important goat production parameters which are also available for Namibia include: kidding rate, kids per annum, weaning rate, 100 day mass, average daily gain (ADG) and over 100 days for singles, twins and triplets (Table 5).

Table 5: Production Parameters for the Boer Goats in Namibia

PARAMETER	NAMIBIA	BOTSWANA
Kidding rate/birth rate	98.0 %	42.7%
No. of Kids per annum	1.9	N/A
Weaning rate	97.4 %	N/A
100 day mass	23.5 kg	N/A
Birth mass	2.5 kg	N/A
Weaning mass	10 kg	N/A
Mortality rate	9%	6.4%
<i>Average daily gain (ADG) up to weaning</i>	62 gm	N/A
<i>ADG over 100 days</i>		N/A
Singles	239.5 gm	N/A
Twins	236.7 gm	N/A
Triplets	217.7 gm	N/A

Source: <http://www.Boergoats.com/clean/articleads.php?art=23> for Namibia statistics, <http://www.republikein.com.na/byvoegsels/Boer-breed-created-god-and-selected-nature.221221>, Ministry of Agriculture Small stock Annual Report of 2009 -10 for Botswana

Production parameters for Botswana are not readily available. The few which are available include birth rate, and mortality rates. The mating rates for Namibia as well as Botswana are also not available but because it is a key variable in production, it is important that mating rates for another neighbouring country (South Africa), whose goats are used as a yard stick for goat performance worldwide should be highlighted. The South Africa Boer goat uses a mass mating ratio of 35 to 40 female goats per Boer buck, and for single mating it is 50 female goats to one Boer buck.

Good Practices for Goat Meat Production

Some of the established good practices for goat meat include:

Fencing

Fencing is a priority for any Boer-goat enterprise because it is hard to keep goats in when they find out how to escape. The very first task when setting up a goat enterprise is therefore to address the fencing requirements. It is however important to consider all important factors including economics when deciding on fencing type. Electric fences are more costly than mesh fences. Mesh fence is however

recommended when the goats are kept in an area which has a lot of wild animals. Fences also protect goats from going astray missing and being hit by a vehicle.

Goat-feed and Nutrition.

Goat-feed and nutrition is an important priority for good health and productivity of the goats. Any goat farmer when planning goat feed must consider the following goat-feed priorities:

- **Maintenance nutrition:** This is the minimum goat feed nutrition required for non-lactating does and for maintaining body condition.
- **Pregnancy nutrition:** This is the minimum nutrition required to supply essential nutrition to both the doe and kids throughout the gestation period.
- **Lactation Nutrition:** This is the minimum nutrition required to ensure both kids and doe receive optimum nutrition in order for the suckling kids to grow at optimum rates since quality milk gives quality kids.
- **Kid Nutrition:** This is the minimum goat-feed required to achieve optimum growth when weaned.

Namibian Boer goats nutrition consists of 74% of leaves and of 26% grass.¹⁰

Goat Health Care

All goat farmers are required to be constantly vigilant for signs of disease and subsequent economic losses. Some symptoms of goat sickness include:

- Sick goats tend to stay away from the main herd, some do not eat, or have an abnormal body posture such as head hanging down. Normally goats separate only for illness or kidding.
- Sick goats produce clumpong faeces/dropping (diarrhoea), very hard droppings.
- Sick goats lag behind the other herd.
- Swelling goats' feet and legs.
- Sudden or inexplicable weight loss in animals.
- Swelling underneath the chin, which might indicate internal parasites, or throat which may be goiter.
- Observe any abnormal movement that could be staggered, limp or abnormal walking that may indicate tetanus.
- Dull and rough coats may indicate underlying disease or deficiencies.
- Abnormal discharges such as blood, mucus and pus from the mouth, eyes, ears or vulva, or any other part of the goat's body.

Important Goat Care and Parasitic Diseases

Parasitic diseases are a big threat to commercial goat farming. Parasites such as intestinal nematodes and tapeworms slow growth of goats, cause illness and possibly death. Some of the most dangerous parasites include: Coccidia, Ketosis, CAE, intestinal worms and liver fluke. These have the greatest negative impact on the economics of goat meat production. The parasites can be controlled with good animal husbandry and paddock rotation. Close monitoring and sampling with faecal egg count is also necessary for optimizing drenching program for maximum efficiency.

¹⁰<http://hilo.hawaii.edu/uhh/vcaa/documents/BoerGoatProductionProgressandPerspective2002.pdf>

Recommendations

Summary of Findings

The survey results indicate that the goat meat sector is informal in nature and far from being commercialised. There is no small stock abattoir in the whole country even though one has been suggested for development in Tsabong. Most of the primary producers are informal in application and orientation; producers keep no records and rear goats as a filler in their agricultural ventures. Little or no input investment is put into goat rearing resulting in high mortality rates and low value products.

The price of goat meat is low so does not incentivise farmers to invest in the welfare and upkeep of their stock. This means most farmers prefer not to sell but use goat to supplement their protein needs at home or for family and social events such as weddings and funerals.

There are no clear market structures with defined players and it appears like there is no retail demand for goat meat. Retail operators do not search for goat meat sources, relying on ad-hoc suppliers who sell direct to their place of operation.. The goat market is an unstructured market where owners sell because of personal pressures and buyers buy due to the fact that the product they can sell is available at low prices and close at hand.

Due to the absence of market structures, there is no price setter, no price regulator and producers are at a significant disadvantage to buyers. Other players such as speculators and transporters are demonised by the producers as they are seen as day light robbers. In Tsabong for instance, some speculators trade 200 litre water drums for goats benefiting from the fact that water is a scarce commodity and villagers need containers to ferry it from Government water pumps. By capitalising on this social problem, speculators are then seen as villains. Almost all the speculators that we were referred to were not available for questioning and it was, therefore, difficult to corroborate this anecdotal reporting.

Suggested Strategy

There is no formal market or value chain for the goat sector. Therefore, the following options are available initially:

1. Take first steps to establish a formal goat market in Botswana; or
2. Status Quo

If the Government decides that it wishes to establish a more formal value chain and market for goat meat in Botswana:

The strategic target for upgrading the Goat sector would be to establish existing consumption in formal markets of 1.7 million kg dw .

This is based on the estimated dead weight equivalent of 57,000 estimated goats slaughtered for meat currently in Botswana whereas sales in formal markets are estimated at 450,000 kg dw

In order to achieve this target, a number of strategic goals are proposed:

- ➔ Development of a Formal Market for Goat meat
- ➔ Development of a Goat Strategy and Action Plan

Strategic Goal 1: Development of a Formal Market for Goat meat

The specific Objective of the strategic goal is:

To establish and formalise the value chain and, once established, build on it to commercialise and develop as appropriate

Activities to Achieve this Goal will include:

1. *Market structures that trade in goat meat and are funded by the state need to be established:* This could include goat meat auctions and slaughter facilities that purchase goats for slaughter or goat carcasses at fixed prices or auctions. The Ministry of Agriculture should enhance its extension service delivery to cover a broad area and ensure that most farmers have access to training and input services
2. *Encourage contract farming:* production contracts between supermarkets and small-scale farmers to establish increased certainty in both supply and retail sales of goat meat.
3. *Goat commercialization:* model or demonstration goat-specific farms with capacity building exercises, animal husbandry and production standards which can be used to teach and encourage farmers to produce a high quality product.

Strategic Goal 2: Goat Strategy and Action Plan

The specific Objective of strategic goal is:

Once a formal market has been established (formal sales at 1 million kg dw) then Government should re-study the goat value chain and develop a firm policy and strategy for the newly emerged sector

Activities to Achieve this Goal will include:

1. *Study and diagnostic of the goat value chain:* Once a more formal industry has been established, a new study of the goat value chain should be undertaken to assess its needs, constraints and viability.
2. *Development of a national policy and strategy for goat sector:* In consultation with main actors, a national policy and strategy for the development of value chain upgrading can then be produced.

Action Plan

Supervision, and Monitoring and Evaluation

In the Table on the following page we detail a comprehensive list of activities which would assist in developing the Sector.

Ideally there should be some kind of APEX organisation which could bring together the various stakeholders in the Sector to take ownership of any policy initiatives and drive them forward. However it is clearly too early to take this step as the Sector needs to move from being almost completely subsistence-oriented to developing the beginnings of a retail market.

This development will only occur if the groundwork is first laid by the Government as we suggest in the Action Plan.

Outline Action Plan

The following Action Plan provides an indicative schedule of activities to implement the strategy. However, the institutions involved in implementation should review and revise the Action Plan on an on-going basis to ensure its accuracy, relevance and reflect the changing dynamics of Botswana as well as the global market.

Once these have been agreed, each component of the Action Plan must be elaborated into an individual Work Programme. The Action Plan and individual Work Programmes will need to be revised periodically to take into account the available resources, changing politics, commitment of the sector, international market dynamics and lessons from previous activities.

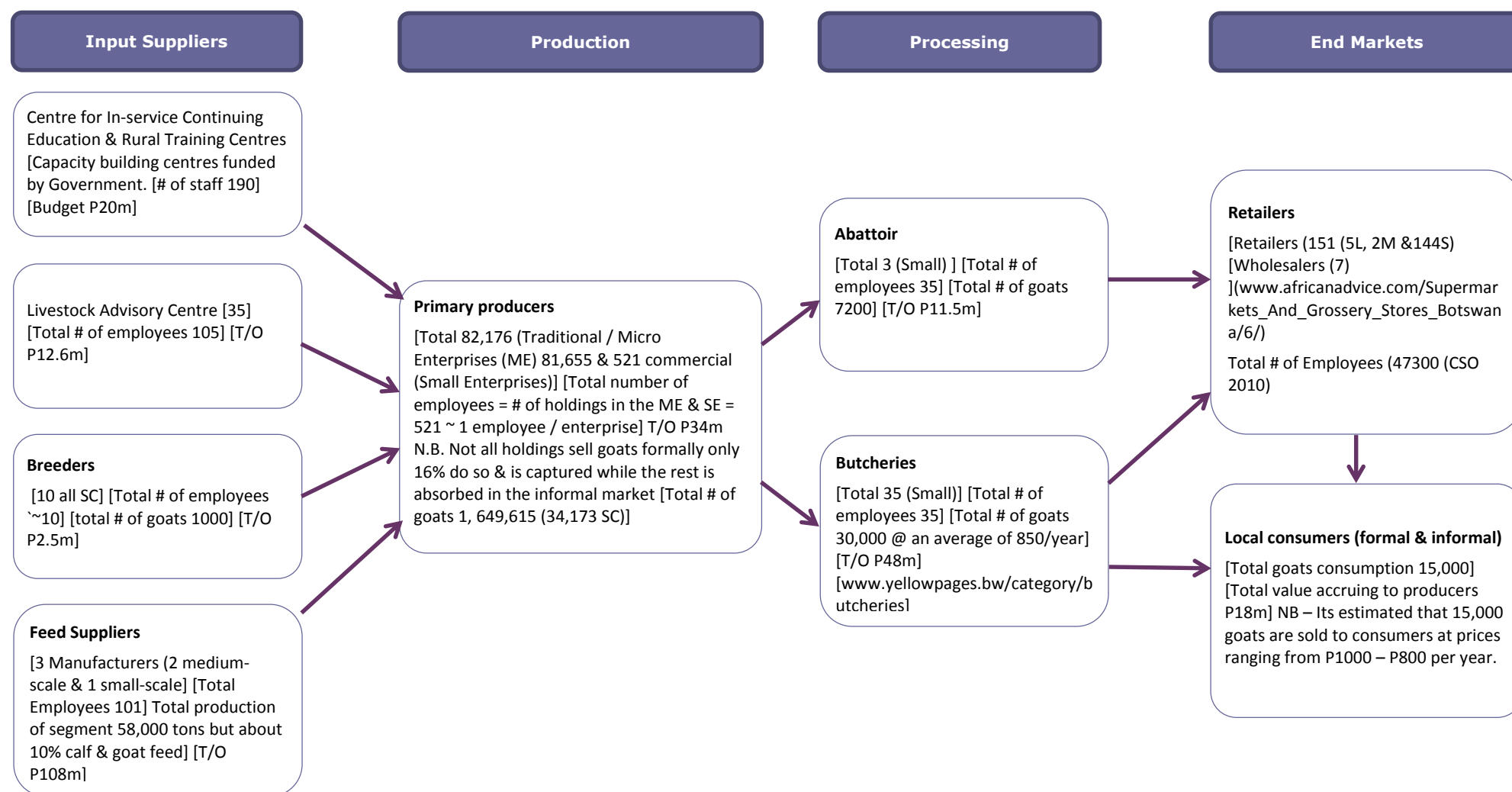
Activities	Outputs	Result Indicators	Lead Agency	Duration (start-finish months)	Internal Resources	Other resources (Donors and National Budget)
Overall objective	Formal markets sales of 1.7 million kg dw	Increase in sales of goat meat in formal markets from 450,000 to 1.7 mn kg dw				
Strategic Goal 1: Development of a Formal Market for Goat meat						
Specific Target	To establish and formalise the value chain and once established, build on to commercialise and develop as appropriate					
Activity 1.1 Market structures that trade in goat meat and are funded by the State need to be established:						
Task 1.1.1 Government to study feasibility of establishing regional slaughter and auction markets	Increased regional formal outlets for slaughter goats Increase in safe production of goat meat (slaughtered in formal hygienic conditions)	Increase to formal slaughter and sales of goat meat				
Task 1.1.2 Establishment of facilities						
Task 1.1.3 Promotion of use of facilities amongst local farmers						
Task 1.1.4 Government to study incentives for farmers (e.g. collection from farms to make the system work)						
Task 1.1.5 Use regional facilities as a base to deliver effective extension services to farmers						
Activity 1.2 Encourage contract farming						
Task 1.2.1 Develop model contracts	Contracts between retailers/supermarkets and small-scale goat farmers	More consistent availability of goat meat at retail sector				
Task 1.2.2 Provide						

Activities	Outputs	Result Indicators	Lead Agency	Duration (start-finish months)	Internal Resources	Other resources (Donors and National Budget)
interlocutor services between supermarkets and small producers to supply goat meats						
Task 1.2.3 Price service by Government to broker and publish monthly prices of meat for contracts						
Task 1.2.4 Promote further and continued use of system amongst actors and act as arbiter as necessary						
Activity 1.3 Goat commercialization						
Task 1.3.1 Studies and feasibility studies for goat farming	At least 6 demonstration farms established	Increase in the number of small commercial dedicated goat farms				
Task 1.3.2 Establishment of goat demonstration farms providing training, guidance and technical assistance	Training and assistance given to local goat farmers					
Strategic Goal 2: Development of a Goat Strategy and Action Plan						
Specific Target	Once a formal market has been established (formal sales at 1 million kg dw) then Government should re-study the goat value chain and develop a firm policy and strategy for the newly emerged sector					
Activity 2.1 : Study and diagnostic of the goat value chain:						
Task 2.1.1 Contract for study of the new formal goat value chain	Diagnostic Study tendered	Understanding of the constraints to the goat value chain				

Activities	Outputs	Result Indicators	Lead Agency	Duration (start-finish months)	Internal Resources	Other resources (Donors and National Budget)
Task 2.1.2 Study undertaken						
Activity 2.2 : Development of a national policy and strategy for goat sector:						
Task 2.2.1 Diagnostic and recommendations discussed with all stakeholders	Policy and strategy for goat sector established	Development of commercial value chain				
Task 2.2.2 Policy and strategy development						
Task 2.2.3 Policy implemented						

Appendices

Appendix 1: Detailed Value Chain Map



Appendix 2: Directory of Organizations by Value Chain Stage

Inputs

Feed & vaccine suppliers

AGRIFEED

AGRIVET

LAC Livestock Advisory Council

Techno Feeds

Centre for In-Service Continuing Education

Tholo Holdings

Fresh Taste

Breeders

Mr Proctor

Serurubele Boer Goats

Processors

Abattoirs

Jwaneng Council Abattoir

Senn Foods

Gaborone City Council Abattoir

SSPA

Mr. France Kanguaika, Ghanzi SSPA Chairman

Mr. Tumaletse, Tsabong SSPA Chairman

Mr. Lethare, Serowe SSPA Chairman

Mr. Tselaesele, Jwaneng SSPA Chairman

Mr. Kareng , Kweneng SSPA Chairman

Mr. Aaron, Kang SSPA Chairman

Mr. Mabutho, Francistown SSPA Chairman

Ms Patricia Jane, Ramotswa SSPA Chairman

Mr. Ramaloko, Mahalapye SSPA Chairman

Mr. Sethodi, Maun SSPA Chairman

Ms Connie, Letlhakane SSPA Chairman

Mr. Kgope, Mochudi SSPA Chairman

Goat Trader, Speculator

Mr. Piet Vilander

Appendix 3: Goat Sector - Existing Business Support Institutions

INSTITUTION	PURPOSE/ MANDATE	SERVICES/EFFECT ON Goat VALUE CHAIN
Government Ministries		
MOA	Agric policy, promotion and programmes	Agricultural policy; Extension services; Department of Veterinary Services; Livestock Management & infrastructure development programme (LIMID); Department of Agri-Business promotion; Export, movement, import permits
MOESD	Education & Skills development	HRDC – policy; TEC – policy & regulation; BQA – registration/accreditation;
MTI	Trade & industry policy, promotion & programmes	Private Sector Development Strategy & Programme; Trade Policy, Strategy, Negotiations & Implementation; Economic Diversification Drive; Industrial Upgrading & Modernisation Programme (IUMP); Business licensing;
MYSC	Youth & sport development	Youth Fund
Artificial Insemination (AI) Centre, Department of Animal Health, MOA	Farmer training in AI	Enhanced breeds
BITC	Investment & Trade	Investment support; International trade info and facilitation
Meat Inspection Training Centre	Training centre	Meat inspection training; Slaughter floor operation training (Meat technology);
Small stock Industry Federation of Botswana	Membership support	Advocacy; Representation; Information; Membership services
Training and Research Institutes		
Agricultural Hub, MOA	Transformation of agriculture	Commercialise and diversify agricultural sector (as part of Vision 2016)
BCA	Agric Education, training and research	Education & Training; R&D; Linkages with University of Botswana for additional R&D
BOBS	Development of standards	Standards
BVI	Animal vaccines development & sales	Provision of animal vaccines
LEA	Technical assistance & Training	Technical assistance & Training; Value Chain analyses

*The PSDP is an initiative of the Government of Botswana,
represented by the Ministry of Trade and Industry and Ministry
of Finance and Development Planning, in partnership with the
European Union*



Government of Botswana



European Union



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