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CDE and ITC partnership project on value chains

Beef value chain findings, strategy and proposed interventions

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DRAFT

International Trade Centre

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ABBREVIATIONS AND ACRONYMS

BCA	Botswana College of Agriculture
BCPA	Botswana Cattle Producers Association
BMC	Botswana Meat Commission
BNVL	Botswana National Veterinary Laboratory
BVI	Botswana Vaccine Institute
CAGR	compounded annual growth rate
CBT	Commodity Based Trading
CCARDESA	Centre for Coordination of Agricultural Research & Development for Southern Africa
CDE	Center for the Development of Enterprise
CEDA	Citizen Entrepreneurial Development Agency
CPA farmers	Cattle post area farmers
CWE	Carcass Weight Equivalent
DAP	Department of Animal Production, MOA
DVS	Department of Veterinary Services, MOA
EDD	Economic Diversification Drive
ES	Extension services
EU	European Union
FAO	Food and Agricultural Organization
FMD	Foot and Mouth Disease
GDP	Gross Domestic Product
GPS	GPS Food Group
IEPA	Interim Economic Partnership Agreement (EU)
ITC	International Trade Center
LAC	Livestock Advisory Center
MIS	Management information systems
BOBS	Botswana Bureau of Standards
MOFAIC	Ministry of Foreign Affairs and International Cooperation
NSO	National Strategy Office
ISPAAD	Integrated Support Programme for Arable Agricultural Development
SADC	Southern African Development Community
LIMID	Livestock Management and Infrastructure Development Program
LITS	Livestock Identification and Trace-back System
LMIA	The Livestock and Meat Industries Act 2006
MITI	Meat Inspection Training Institute
MOA	Ministry of Agriculture
MOH	Ministry of Health
MOLH	Ministry of Lands and Housing
MTI	Ministry of Trade and Industry
NDB	National Development Bank
NDP	National Development Plan
OIE	World Organization for Animal Health
PPP	Private Public Partnership
RFID	Radio Frequency Identification
SANAS	South African National Accreditation System
SDVO	Sub-District Veterinary Office
SMME	Small, micro and medium-sized enterprise
SWOT analysis	Analysis of strengths, weaknesses, opportunities and threats
TA	Technical assistance
TGLP	Tribal Grazing Lands Policy
USDA	United States Department of Agriculture
VGA farmers	Village grazing area farmers
PSDP	Private Sector Development Programme
VCAD	Value chain analysis and development
EPP	Export parity price
CDM	Cold dress mass
BITC	Botswana Investment and Trade Centre
BNBPA	Botswana National Beef Producers Association
BOCCIM	Botswana Confederation of Commerce, Industry and Manpower
PRINT	SADC Promotion of Regional Integration Project
SACU	Southern African Customs Union

BNBPU	Botswana National Beef Producers Union	BMTPA	Botswana Meat Traders and Processors Association
NFTRC	National Food Technology Research Centre	BEAC	Business and Economic Advisory Council
DABP	Department of Agricultural Business Promotion, MOA	DAR	Department of Agricultural Research, MOA

EXECUTIVE SUMMARY

Background to the value chain analysis and development

This value chain analysis and development (VCAD) of Botswana's beef sector has been undertaken as part of a partnership between the Centre for the Development of Enterprise (CDE) and the International Trade Centre (ITC). It is the first of three studies, the others being tourism and horticulture. The objective of all three studies are to identify bottlenecks and constraints in the sectors' value chains, especially related to exports and Small, Micro and Medium-Sized (SMME), and propose a strategy and roadmap to alleviate such constraints. The cooperation between CDE and ITC is being undertaken within the framework of Botswana's Private Sector Development Programme (PSDP).

Botswana's beef sector is a critical juncture. The sector is important for Botswana's rural population, and is an important source of export earnings. It has been highlighted as a strategic sector to be promoted to support the country's Economic Diversification Drive. At the same time, it is hampered by structural problems, including an export monopoly and lack of scale, which reduces its commercial potential. Recent years have seen a large reduction in the cattle population and the exit of significant numbers of commercial farms from the sector. Weaknesses in the country's cattle traceability system prevented exports to the important EU market for 19 months in 2011-2012, and caused large disruptions in the domestic market as surplus meat was channelled into it. The sector's production, processing and export performance lags behind those of its competitors.

Given the beef sector's strategic importance, a number of studies and recommendations have been made to address its weaknesses. In particular, a detailed study of the sector's value chain was published in 2013, undertaken by the Food and Agricultural Organization (FAO) and Ministry of Agriculture (MOA) (the FAO Report). The VCAD draws on the FAO Report, other studies and reports on the sector, and extensive consultation with participants in all the elements of the beef value chain. The focus has been to build on existing information to propose a coherent strategy for the export channel of the sector, a detailed roadmap aimed at achieving the strategic objectives proposed, and provide a set of interventions for PSDP and its partners that have been designed in-depth.

Botswana is currently in the process of implementing at the national level a number of policies and strategies. These include the National Development Plan (NDP) 10 for the period 2009-2016; The Private Sector Development Strategy; the Agricultural Sector Marketing Strategy; and, in particular, Michael Porter's recommendations on implementing a clustering development approach to selected sectors where Botswana has a natural advantage, of which beef was identified as one. The strategy and roadmap presented in this report are intended to reinforce the objectives and recommendations of the existing proposals and facilitate the achievement of their goals.

The findings and recommendations presented in this report were confirmed and supported during a validation workshop held in Gaborone in June 2014, in which representatives from a wide range of stakeholder organizations participated.

The global beef market and Botswana's position

In 2013, the global beef exports market was estimated at US$42.4 billion. The market is divided broadly equally between exports of fresh or chilled, and frozen beef. The market is dominated by the top 10 producers, who account for over 80% of exports. Botswana is a relatively small producer and exporter of beef in the global context. In 2013, its total beef exports were US$116.6 million, it had a world export market share of 0.3%, and was ranked 22nd and 28th in the world in the export of frozen and chilled beef, respectively.[1]

The beef sector is estimated to account for less than 2% of Botswana's GDP, and 1.5% of its merchandize exports. Nevertheless, it is considered to be a strategically important sector, with the country's pastures providing it with a natural advantage in producing high quality grass-fed beef, and the sector's performance affecting the livelihoods of a large number of livestock farmers.

Botswana's beef exports are highly concentrated in the South African and EU (mainly UK and Norway) markets, which, together with Netherlands, accounted for 97% of the country's beef exports in 2013. Exports have been rising steadily over a period, but the 2007-08 global crisis, followed by a withdrawal from the EU market in 2011 and 2012 as a result of failure to comply with standards have caused declines. Exports have been recovering from the EU problem, but are still significantly below the 2010 peak of US$158.6 million.

The beef value chain

In carrying out the value chain mapping exercise, we have drawn heavily on the FAO Report, which provides an in-depth analysis of the beef value chain. Where possible, we have updated the information provided in that report.

The production segment of the beef value chain is broadly divided into two classes of producers. Of the 2.2 million cattle, 88% is produced by mainly small communal farmers, often with very small holdings, practicing traditional methods offering lower productivity. The remaining cattle is owned by 809 commercial farms, practicing more modern husbandry and commercial practices. Profitability of the industry is low, and performance measures compare unfavourably with international competitors. There is an increasing trend toward feedlotting in the industry, to guarantee consistency of quality and supply.

The export processing sector is dominated by the Botswana Meat Commission (BMC), a government owned entity that has the monopoly to export beef. It has a processing capacity of 1,100 head of cattle, but often capacity is not met, especially out of season. Various studies have highlighted inefficiencies at BMC, which, if addressed, could have a positive impact on the value chain. BMC's work is made difficult by its dual mandate: to be a commercially oriented exporter of beef, while at the same time serving a social function of serving the interest of livestock farmers.

The marketing and distribution component of the beef value chain is occupied by GPS Food, a UK based distributor of meat that has a contract to market BMC's beef. Although it does not have exclusive rights, practically all of Botswana's beef exports are made by GPS. BMC itself lacks any meaningful marketing, or market intelligence analysis capacity.

[1] ITC Trade Map information.

The MOA's Department of Veterinary Services (DVS) is the main support provider to the sector. The quality of services provided is high, but over time DVS has accumulated a number of responsibilities that it finds difficult to discharge effectively. In particular, weak implementation of the current Livestock Identification and Trace-Back System (LITS) and slow transition to a new one is causing severe problems in the sector. Other services, such as availability of technical and commercial information is limited. The various government agencies need to coordinate their efforts more. Beef industry associations are weak.

Competitive constraints and bottlenecks in the beef value chain

We applied ITC's Four Gears Framework to identify export competitive constraints in Botswana's beef value chain. The four gears relate to: constraints relating to supply of beef (Border-in); the quality of the value chain's business environment (Border); export market entry bottlenecks (Border-out); and long term sustainability issues (Development). The principal constraints identified are outlined below:

BORDER-IN GEAR: SUPPLY-SIDE ISSUES

Capacity development

- The sector is dominated by small, potentially uneconomic holdings.
- Weather fluctuations, droughts and shortage of underground water hamper the sector's performance.
- Seasonality of supplies to slaughtering facilities reduces supply chain efficiency.
- Persistent FMD in red zone reduces volumes and prices achievable for exports.
- High overhead costs at BMC imposes a cost to the entire sector.

Capacity diversification

- There is a need to invest in technology, R&D and production capacity to produce different cuts, packaging, etc. for export.
- The range of secondary processed beef available is very limited.

Development of skills and entrepreneurship

- Traditional pastoral methods often hamper introduction of modern husbandry techniques.
- Most communal farmers and some commercial farms do not commercially approach livestock farming.

BORDER GEAR: QUALITY OF THE BUSINESS ENVIRONMENT

Infrastructure and regulatory issues

- Underdeveloped transport and communication infrastructure increases costs and disrupts access to supplies and markets.
- BMC lacks of modern, flexible packaging facilities for exports.
- BMC monopoly on exports disrupts the value chain and the lack of competition limits innovation and export growth.
- There is a lack of technology at BMC to promote CBT in Ngamiland.
- Politicization of sector prevents strict enforcement of some regulations.
- Import restrictions distort the market and can reduce scope for exporting higher quality beef.

Trade facilitation

- There is limited technical and economic information available to sector participants.
- Botswana does not have access to meaningful independent export market intelligence.
- There is very limited research into the sector's economics, diseases, etc.

Quality of the institutional support

- Limitations in capacity at DVS leads to including lack of flexibility, low commercial orientation and inconsistent official controls and enforcement.
- There is dispersal or export responsibilities among MOA departments and MTI needs to increase its involvement in trade negotiations affecting the sector.
- Beef producers associations are underdeveloped.

Cost of doing business

- There is a high reliance on expensive imported inputs including feeds, energy.
- Inefficiencies in the sector's support framework increase costs and risks for participants.
- The need to comply with a wide range of certification requirements and limitations in local testing facilities causes delays and increases costs.

BORDER-OUT GEAR: MARKET ENTRY

Market access and policy reform

- There is a shortage of people, knowledge, expertise and focus on trade among policymakers.
- There is limited trade coordination at the SADC level and possible misaligned priorities for South Africa weakens export negotiations.
- Reliance on exporting through SA poses risks of disruption.

Trade services support

- Reliance on one outsourced export agent presents a range of risks.

National promotion and branding

- Lack of national and product level branding.
- Botswana beef has limited product differentiation & targeting.
- There is heavy concentration on exports to South Africa and EU, especially UK.

DEVELOPMENT GEAR

Poverty alleviation and employment generation

- Traditional communal practices limit income potential.
- Lack of commercialization limits capacity to generate employment.

Environmental sustainability and climate change

- Overgrazing, especially near boreholes, is contributing to environmental degradation and its impact is aggravated by disease outbreaks.
- Poor hygiene practices contaminate grazing areas.
- Livestock and wildlife co-management including fencing creates problems.

Regional development and integration

- There is a need for increased effectiveness in regional cooperation in areas such as trade negotiations, research and disease control.

Gender and youth inclusiveness

- There is low involvement of women and youth in sector.

Proposed strategic vision and objectives

Our proposed vision statement for the export channel of the beef value chain is:

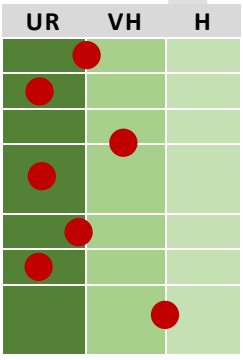
'Be a highly recognized producer associated with premium quality meat competitively targeting high value markets and segments'

The statement is intended to highlight the objectives of:

- Achieving recognition, through branding and promotion.
- Association with premium quality meat, which entails implementing action throughout the value chain and its support services to produce high quality products that are delivered consistently and efficiently.
- Competitiveness, which requires increasing efficiency and reducing costs in the value chain.
- Targeting of high value markets and segments, through a range of tailored premium products aimed at a diverse set of export markets.

We have proposed seven strategic objectives to realize the sector's export vision. Each objective has been prioritized as urgent (UR), very high (VH), or high (H). The strategic objectives are:

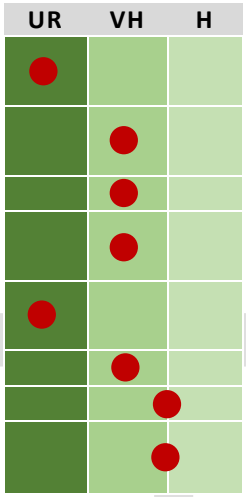
1. Strengthen the performance of communal livestock farming.
2. Improve the effectiveness of DVS and its services to the sector.
3. Develop a more useful support network for the sector's value chain.
4. Intensify efforts to find multiple solutions for cattle from FMD-infected areas.
5. Further restructure BMC and lift its export monopoly.
6. Enhance market positioning and diversify beef exports.
7. Improve regional cooperation on issues affecting the countries' livestock sectors.



Proposed roadmap

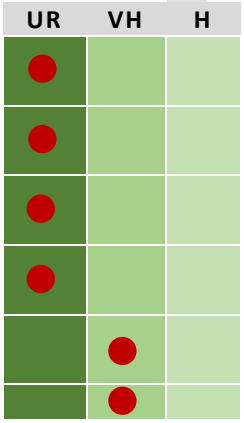
The proposed roadmap provides activities and initiatives for each of the strategic objectives, prioritized as urgent (U), very high (VH), or High (H).

Strategic Objective 1: Strengthen the performance of communal livestock farming.



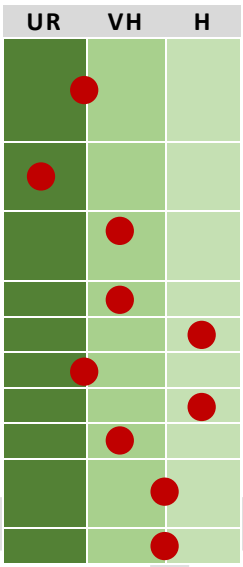
1.1 Strengthen and commercialize traditional livestock management practices.
1.2 Promote clustering and syndication among small and medium-sized farmers.
1.3 Promote cattle and feed integrated farming.
1.4 Improve access to finance for small and medium-sized cattle farmers.
1.5 Develop more effective coordination between the MOLH and MOA on allocating land for livestock.
1.6 Develop and implement Farm Quality Assurance Standards.
1.7 Promote FDI into the livestock sector.
1.8 Review longer-term impact on sector of BMC pricing policy and trend toward feedlotting.

Strategic objective 2: Improve the effectiveness of DVS and its services to the sector.



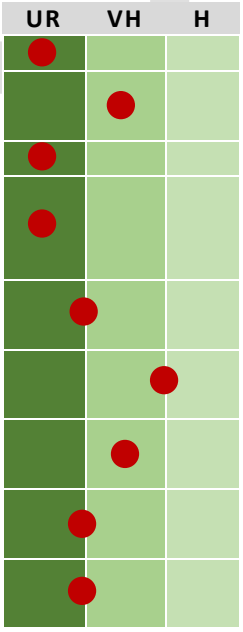
2.1 Realign DVS organization and strategy to meet user needs and outsource selected non-core activities.
2.2 Implement initiatives to control the spread of FMD and measles in cattle.
2.3 Improve cattle traceability and compliance with LITS regulations by moving rapidly to electronic ear tags.
2.4 Increase degree and consistency of the enforcement of food safety regulations.
2.5 Enhance Botswana National Veterinary Laboratory's capacity to meet industry needs.
2.6 Strengthen Livestock Advisory Centers.

Strategic objective 3: Develop a more useful support network for the sector's value chain.



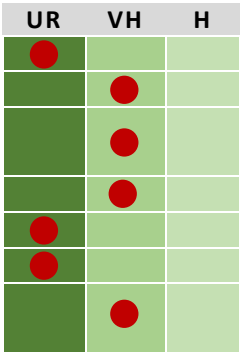
3.1 Improve availability & distribution of scientific, economic, standards, regulations, markets and consumer-related data and information.
3.2 Develop and deliver appropriate technical training for farmers at all levels on all aspects of farming.
3.3 Strengthen local livestock associations and Botswana Cattle Producers Association.
3.4 Enhance capacity of government agencies to support sector.
3.5 Produce and disseminate more relevant research for sector.
3.6 Improve process related to certification of cattle movement.
3.7 Increase investment in farm infrastructure.
3.8 Enhance DAP's effectiveness.
3.9 Build capacity in conducting trade negotiations related to beef sector.
3.10 Improve BVI's sustainability.

Strategic objective 4: Intensify efforts to find multiple solutions for cattle from FMD-infected areas.



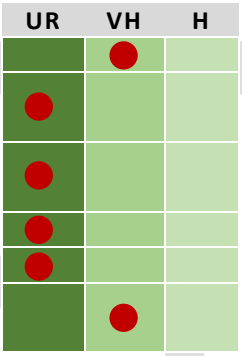
4.1 Improve epidemiological understanding and control over FMD.
4.2 Review and improve layout and condition of buffalo fencing in Ngamiland.
4.3 Increase export of FMD beef
4.4 Enhance awareness and acceptability of risk management and risks related to FMD area beef and carry out risk assessment study to demonstrate effectiveness of risk management.
4.5 Develop more systematic and strategic regional cooperation on CBT exports.
4.6 Explore quarantine of FMD area cattle for export to other eligible import countries.
4.7 Build capacity for CBT-related trade negotiations and develop inter-agency coordinated strategy for negotiations.
4.8 Study/validate effectiveness of purified FMD vaccine and implement strategy for its use.
4.9 Diversify processing capacity outside BMC to achieve technical requirements for selling to green zone.

Strategic Objective 5: Further restructure BMC and lift its export monopoly.



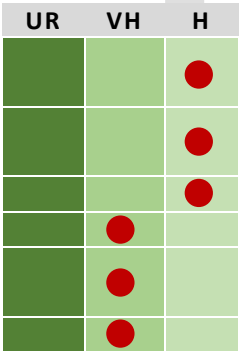
5.1 BMC to meet international benchmarks in processing.
5.2 Introduce regional procurement centers at BMC.
5.3 Explore supply chain finance solutions with range of finance providers.
5.4 Review and update ECCO brand.
5.5 Reform the BMC Act.
5.6 Lift the BMC export monopoly.
5.7 Establish institution similar to the Meat Board of Namibia to provide sector-wide support after export liberalization.

Strategic objective 6: Enhance beef product and market positioning and diversify beef exports.



6.1 Diversify beef export product range and target new markets.
6.2 Build market intelligence gathering and analysis and R&D capacity at BMC.
6.3 Develop appropriate brand, packaging, logo, etc. for Botswana beef.
6.4 Install new packaging lines at BMC.
6.5 Develop export marketing and sales capacity at BMC.
6.6 Increase capacity of Botswana trade missions to promote beef exports.

Strategic objective 7: Improve regional cooperation on issues affecting the countries' livestock sectors.



7.1 Implement more effective trade coordination at SADC, SACU level.
7.2 Strengthen regional cooperation on research into the issues affecting the sector.
7.3 Support CCARDESA
7.4 Improve dissemination of research.
7.5 Improve results-oriented collaboration on disease related issues.
7.6 Increase cooperation between beef industry associations.

Recommended interventions for PSDP and its partners

The following specific projects are recommended as being suitable for support by the PSDP or its implementation partners:

- Pilots on strengthening communal farming practices.
- Strengthening DVS and improving its service delivery, including the privatization or outsourcing of some of its services.
- Developing a brand of Botswana beef and strengthening marketing capacity at BMC.
- Strengthening beef associations.

1. INTRODUCTION AND APPROACH

1.1. INTRODUCTION TO THE REPORT

This beef sector value chain analysis and development (VCAD) has been produced as part of the partnership between the Centre for the Development of Enterprise (CDE) and the International Trade Centre (ITC) within the context of the Private Sector Development Program (PSDP) in Botswana. It is the first of three similar VCAD exercises, the others being tourism and horticulture.

The principal objectives of the VCAD are to draw on existing information and stakeholder consultations in order to identify the main opportunities and bottlenecks in the export value chains of the selected sectors; to assess whether or not technical assistance (TA) is likely to contribute significantly to increased exports by small, micro and medium-sized enterprises (SMME) in the sector; and if so to prepare plans of action or roadmaps for a comprehensive capacity building intervention within the framework of the PSDP.

In developing the beef VCAD, we have drawn on the extensive studies and strategies already carried out on this strategically important sector. In particular, we have built on the 2013 Food and Agricultural Organization (FAO) and Ministry of Agriculture (MOA) beef value chain study (FAO Report)[2] in mapping out the beef value chain, updating the information where appropriate. Our findings and recommendations are also based on consultations with a wide range of producers, processors, policymakers and academics involved in the sector, as listed in Annex II. Our findings and recommendations were presented to and confirmed by key stakeholders at a validation workshop held in Gaborone in June 2014.

1.2. BEEF SECTOR RECOMMENDATIONS IN CONTEXT

The strategic recommendations and roadmap proposed in the report are intended to be consistent and reinforce wider national and sectoral strategies being implemented in Botswana. In particular, we have taken into account the recommendations of:

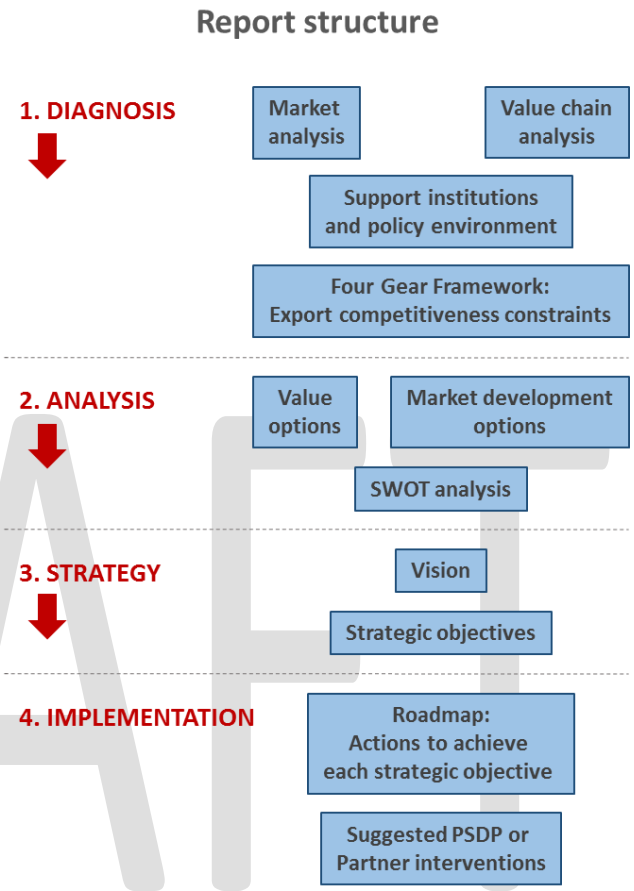
- The National Development Plan (NDP) 10, 2009-2016.
- Botswana: Towards a New Economic Strategy. Recommendations by Professor Michael Porter in developing key strategic sectors, including beef, by way of a clustering approach.
- Botswana National Export Strategy 2010-2016.
- Private Sector Development Strategy 2009-2013.
- Botswana Agricultural Marketing Strategy 2011-2016.
- Economic Diversification Drive: Medium to Long-term Strategy 2011-2016.
- Botswana Excellence: A Strategy for Economic Diversification and Sustainable Growth

[2] Botswana Agrifood Value Chain Project: Beef Value Chain Study. FAO and MOA. 2013.

1.3. VCAD APPROACH AND REPORT STRUCTURE

Figure 1 outlines the approach taken by the beef value chain exercise and the structure of our report.

Figure 1: VCAD approach and report structure



The diagnostic element of the exercise comprised an analysis of the structure and key trends in the global export markets and production in beef and Botswana's position in it (Section 2). This was complemented by the mapping and description of the key components of the beef export value chain, drawing extensively on the FAO Report (Section 3). The information from these two exercises, as well as an analysis of the sector's support network and policy environment (Sections 4 and 5) was drawn on to present the key export competitive constraints and bottlenecks in the value chain and its support network (Section 6). In carrying out the latter we used the ITC Four Gear Framework, which analyses constraints based on supply side, quality of business environment, export market entry and developmental impact issues.

The results of the diagnosis were then built on to identify value options: how the value chain could be developed to acquire, create, add, retain or distribute value more effectively. In addition, options for diversifying Botswana's current beef products and markets to develop new export markets have been analysed (Section 7). Section 8 presents a SWOT analysis on the sector.

The strategic vision and objectives, presented in Section 8, are intended to bring together our findings and analyses to provide a coherent framework for intervening in the sector to realize its full export potential.

Section 9 presents a roadmap for implementation, with a number of suggested prioritized actions, to realize each of the strategic objectives. Finally, Section 10 provides more detailed development of four proposed TA interventions, for consideration of implementation under the PSDP framework or by partners.

2. THE BEEF SECTOR AND ITS EXPORTS IN THE GLOBAL CONTEXT

2.1. BACKGROUND TO THE BEEF SECTOR IN BOTSWANA

The beef sector is strategically highly important in Botswana, and could potentially be a significant contributor to the government's Economic Diversification Drive (EDD) initiative. Although the sector currently contributes to a relatively small proportion of the country's GDP and exports, it provides employment and livelihood to a large proportion of the rural poor and is deeply woven into the country's history and culture. The sector suffers from a number of challenges, including poor and stagnating productivity, weaknesses in support services, seasonal overcapacity and lack of profitability in processing, and under-exploitation of the quality of produce in international markets. The progress achieved in recent years by the sector's competitors, such as Namibia, suggests that if these weaknesses are alleviated, its performance could be enhanced significantly, it can considerably increase the income of livestock farmers and enlarge its share of the country's economy and exports.

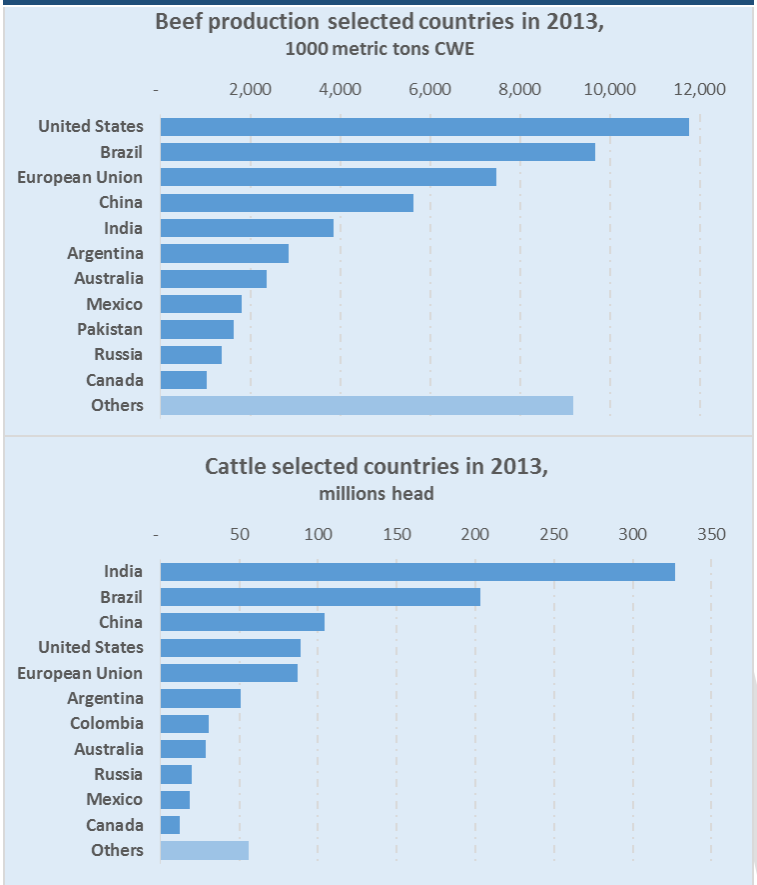
The agricultural sector's contribution to the country's GDP has been declining steadily since independence, when its share exceeded 40%. In 2012, the sector overall contributed to 2.9% of the country's GDP, compared with a 22% contribution by mining, 17% by trade and tourism services, and 16% by finance, real estate and business services.[3] The beef sector constitutes a substantial proportion of the agricultural sector. Similarly, in 2010, prior to a sharp decline in exports to the EU discussed later in this section, meat and meat products, almost entirely comprising of beef, accounted for 3.4% of the country's merchandise exports.[4] Although these shares in GDP and exports are small, the sector accounts for 30% of the country's total employment.[5]

This section provides an overview of the structure of the beef sector in Botswana and its export markets in the context of world export markets, trends and competition. Section 3 considers issues relating to the various components of the sector's value chain in more detail.

[3] Botswana 2014: African Economic Outlook. African Development Bank.
[4] Botswana International Merchandise Trade Statistics No. 2014.01. Monthly Digest. Statistics Botswana. November 2013.
[5] http://www.indexmundi.com/facts/visualizations/employment-by-sector/?country=bw

2.2. GLOBAL BEEF PRODUCTION AND TRENDS

Figure 2: World top beef producers



Botswana is a relatively small producer of beef in the international context.

Figure 2 provides an overview of the top 10 beef producing countries, by size of herd and beef production. The United States Department of Agriculture (USDA) estimates global beef production of 59 million tons Carcass Weight Equivalent (CWE), and world cattle population of over 1 billion in 2013. The top 10 producers account for 84% of production by CWE and 95% of cattle head. The United States is the world's largest beef producer, with 11.8 million metric tons CWE of production, and India, with 327 million heads, has the largest cattle population.[6]

No African country ranks in the top 10 global beef producers. South Africa ranks 13th globally, with a production of 825,000 metric tons CWE of beef and 8 million beef cattle heads.[7] In comparison, Botswana produces around 50,000 tonnes of beef annually[8] and had 2.2 million[9] cattle heads in 2012.

[6] Livestock and Poultry: World Market and Trade. Foreign Agricultural Service. United States Department of Agriculture (USDA). April 2014. 2013 information.

[7] www.indexmundi.com. 2013 information for beef production, and 2009 information for cattle heads.

[8] Based on 2010 estimates from FAO Report

[9] 2012 Annual Agricultural Survey Report. Statistics Botswana. April 2014.

Figure 3: Trends in production of main meat categories

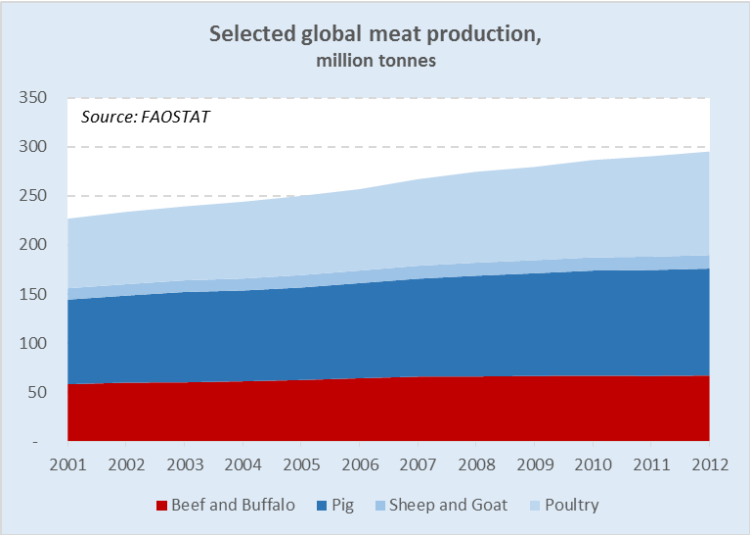


Figure 3 highlights the trends, over the last decade, in the global production of key meat categories.

Of these, beef and buffalo meat account for around 23% of production by weight in 2012, while pig and poultry account for 37% and 36% respectively. In 2001, the relative proportions were 26%, 38% and 31%.

Between 2001 and 2012, global production of beef and buffalo meat has increased by 15%, with a compounded annual growth rate (CAGR) of 1.3%. This has been relatively modest compared with the increase of 49% (CAGR 3.7%) in poultry production, and 26% (CAGR 2.2%) for pigs. The rise in prices, and declining popularity of red meat, especially in developed markets, have contributed to this trend. The latter factor is demonstrated in regional trends in beef and buffalo production: Europe showed a decline of 9% in production over the period, while Africa and Asia showed increases of 39% and 37% respectively.[10]

The USDA also estimates a modest growth in global beef production over the next 10 years, with a compounded annual growth rate of 1.5%, resulting in a world production of 68 million tons CWE in 2023.[11]

It's worth noting that the USDA's statistics may vary from those of other sources, for example the Food and Agricultural Organization (FAO). Where significant differences in data are identified between sources of information, we have highlighted them.

2.3. EVOLUTION OF BEEF PRODUCTION IN BOTSWANA

The FAO Report provides a comprehensive account of the development of Botswana's beef sector since pre-independence. Cattle has historically been, and continues to be to a large extent among smaller communal farmers, the main form of wealth and a safety net, providing milk, draught power, and a source of emergency funds through sales. The colonial government (1889-1966) undertook a number of initiatives, including the drilling of boreholes and improving veterinary services to support the growth of the sector. 1n 1952, an abattoir was opened in Lobatse in order to diversify exports of live animals away from South Africa and encourage processed beef exports to the British market. The Lobatse plant, now owned by the Botswana Meat Commission (BMC), remains the largest beef processing facility in the country.

[10] FAOSTAT
[11] http://www.ers.usda.gov/data-products/international-baseline-data.aspx#45167.

At independence in 1966, cattle rearing was probably the most important contributor to the economy, with 1-1.3 million cattle, the sector's contribution to GDP at an estimated 40%, and beef exports being the main source of foreign currency. Around this time, some commercial farms existed, and the private ownership of boreholes, once allowed, exacerbated this trend. This dual system of communal and commercial beef farming has intensified and prevails to this day. The BMC was created in 1965 to promote the livestock industry; interests of livestock producers in particular; slaughtering cattle at the highest price and lowest cost; and exporting the sector's products. It was also required to distribute any surpluses of revenues over costs to the livestock producers. A contingency reserve fund was created to absorb fluctuations in prices and provide for long-term investment.

Between the mid-1970s and mid-1980s, various trends and government actions benefited the sector and led to a strong performance. The 1975 Tribal Grazing lands Policy (TGLP) allowed easier fencing and creation of commercial ranches, which came to account for 30% of the national herd. Various trade agreements with the EU, including the Lomé Convention (1976), the Cotonu Agreement (2003) and an Interim Economic Partnership Agreement (IEPA) since 2009. The 1975 to 1984 period saw strong growth in exports, which came to dominate the beef value chain, and BMC was able to get consistent supplies of beef, enabling it to utilize its processing capacity effectively.

The beef sector started facing severe problems from 1984, caused by a number of factors including inefficiencies at BMC; a distorted flat-rate cattle pricing system operated by BMC that did not reflect market prices and therefore led to seasonality in supplies; farmers not being able to meet BMC quotas, leading to sourcing from a small number of large farmers with holding grounds near Lobatse; and BMC facing higher producer prices, input costs, taxes and exchange rate losses. The inherent conflicts in BMC's dual role: that of seeking to become a competitive producer and exporter of beef whilst meeting its social responsibility of offering high prices to a wide range of often inefficient farmers became more apparent in this period. The problem was intensified with the 1967 discovery of diamond and the relative decline in importance of agriculture, and a migration from rural areas to urban ones. With increasing income, domestic demand for beef also increased rapidly, leading to the development of local municipal and private abattoirs competing with BMC for supplies, further reducing its efficiency and capacity utilization. By the early 200s, the local channel accounted for half the animals being sold for slaughter. Urban migration has also led to an increase in absentee farmers, who are employed in cities and passively manage their cattle holdings, and often not applying optimum farm management practices.

The combination of declining prices paid by BMC and the rise of absentee-owners caused a decline in profitability in the industry and has led to a negative cycle of decline in cattle breeding and infrastructure, and lower and more variable production. The government and BMC have introduced a number of initiatives to address many of the issues in the sector, which are outlined in Sections 4 and 5.

2.4. GLOBAL EXPORT AND IMPORT MARKETS IN FRESH, CHILLED AND FROZEN BEEF

World beef exports

Table 1: Top 10 global fresh, chilled and frozen beef exporters

Fresh and chilled				Frozen			
		2013 Exports US$m	2004 Rank			2013 Exports US$m	2004 Rank
	World	21,189			World	21,238	
1	United States	2,929	8	1	Brazil	4,504	2
2	Netherlands	2,641	1	2	India	4,411	6
3	Ireland	1,901	5	3	Australia	3,267	1
4	Australia	1,771	2	4	United States	2,310	16
5	Germany	1,649	4	5	New Zealand	1,505	3
6	France	1,225	6	6	Uruguay	940	4
7	Poland	956	17	7	Paraguay	771	15
8	Brazil	855	7	8	Argentina	337	5
9	Canada	837	3	9	Nicaragua	289	18
10	Belgium	780	9	10	Canada	271	17
Share of top 10		**73%**	**81%**	**Share of top 10**		**88%**	**80%**

Sources: ITC calculations based on UN COMTRADE statistics.

The total value of frozen and chilled beef exports in 2013 was US$42.4 billion[12]. The export market is equally divided between frozen and chilled varieties. Beef exports have increased significantly since 2004, when the world total was US$18.7 billion. Frozen beef exports have increased particularly strongly since 2004, when they accounted for 40% of the total.

Table 1 highlights the top 10 exporters of both the chilled and frozen varieties. Most of the movement in ranking in chilled beef between 2004 and 2013 has been within the top 10, although frozen beef has seen a number of producers, such as Paraguay, Nicaragua and Canada, entering it over the period. The United States has shown strong climb in rankings in both the chilled and frozen varieties.

With frozen beef exports of US$75.4 million in 2013, Botswana ranked 22nd in the list (25th in 2004), and the country exported US$41.2 million of chilled beef in the same year, ranking it 28th (23rd in 2004). The recent EU problems, highlighted later in this report, has led to a switch from the more profitable chilled to frozen varieties. For example, in 2010, the year before the EU exit, Botswana exported US$97.8 million of chilled beef and US$60.6 million of frozen. With total exports of US$116.6 million, Botswana had a world export market share of less than 0.3%.

In terms of volume, total world exports of beef in 2013 were 8.7 million tons, of which frozen beef accounted for 61%. The top exporter in terms of quantity is India, with 1.6 million tons of mainly frozen beef. The top four countries, which also include Brazil, Australia and the United States, account for 53% of world beef exports by quantity.

[12] Unless otherwise stated, we have used ITC Trade Map information, which is based on UN COMTRADE statistics, throughout this section.

In comparison, in 2013 Botswana exported 20,376 tons of frozen beef, giving it a rank of 20 in that segment, and 6,470 tons of chilled beef (rank 33). Its overall rank by volume of beef exports was 26.

World beef imports

Table 2: Top 10 global fresh, chilled and frozen beef importers

Chilled				Frozen			
		2013 Exports US$m	2004 Rank			2013 Exports US$m	2004 Rank
	World	20,418			World	21,154	
1	Italy	2,347	1	1	Russia	2,448	2
2	Germany	1,874	6	2	Hong Kong	1,978	15
3	Netherlands	1,612	8	3	United States	1,953	1
4	United States	1,597	2	4	Viet Nam	1,896	105
5	France	1,515	4	5	Japan	1,275	3
6	Japan	1,454	3	6	China	1,202	60
7	United Kingdom	1,197	5	7	South Korea	1,066	4
8	Canada	933	16	8	Venezuela	868	35
9	Mexico	864	7	9	Egypt	835	8
10	Chile	724	12	10	Israel	477	176
Share of top 10		**69%**	**82%**	**Share of top 10**		**66%**	**82%**

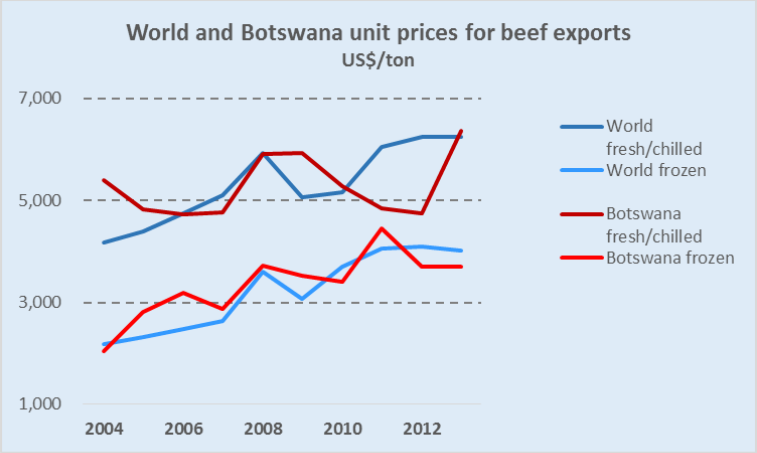
Sources: ITC calculations based on UN COMTRADE statistics.

Table 2 highlights the top 10 importers of chilled and frozen beef. There are some differences between world export and import totals due to reporting and estimation errors. The data shows an increasing diversification of export markets, with the share of top 10 importers falling from over 80% to less than 70%. The trend is particularly evident in the frozen beef segment, with a number of previously very low volume Importers entering the top 10 during the last decade.

The previous data shows gross export and import information. In practice, a number of countries both export and import beef, exporting low value beef and importing premium quality (usually in more developed economies), or vice versa in less developed ones. For example, in 2013 the United States exported US$6.8 billion of beef, and imported US$3.6 billion. Other such large active traders in the top 10 exporters and importers are the Netherlands, Germany, Italy and Canada. This practice is an important consideration for Botswana going forward.

Unit prices

Figure 4: Trend in world beef export prices



Source: ITC calculations based on UN COMTRADE statistics

Figure 4 presents the trends in the world fresh and chilled as well as frozen beef prices over the last decade. Overall, prices have shown some increase over the period, with chilled beef prices increasing from US$4,183 per ton to US$6,257 per ton between 2004 and 2013, and frozen prices from US$2,184 to US$4,027 per ton over the same period. The 2007-08 global economic crises contributed to a fall in unit prices, which have recovered strongly since then. Botswana's unit export values have kept in line with the above trend, other than for 2011 and 2012 when it lost access to the EU market. In the latter period majority of BMC beef was diverted to South Africa. A significant proportion was also sold in the domestic market, causing disruption and adversely affecting local processors.

Nevertheless, Botswana's beef, being predominantly grass fed and naturally reared, is a premium product and would be expected to command a substantial premium. For example, the FAO Report highlights that high quality grass fed beef can command twice the price of grain fed varieties. Even at the average unit price level of comparison in the fresh and chilled category, in 2010 before the EU ban, Botswana's unit export value was US$5,278 per ton. This was higher than the world average of US$5,172, but the equivalent unit export values were US$5,437 for Namibia, US$5,543 for South Africa, US$6,008 for Brazil and US$7,263 for New Zealand.

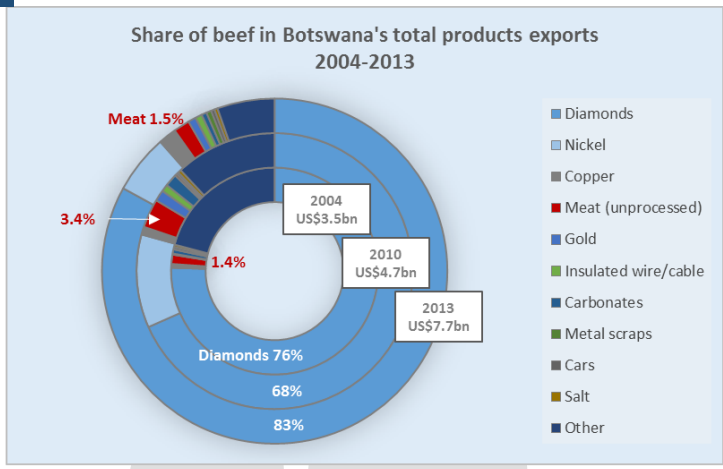
Expected future demand

The longer-term outlook for beef demand is positive. Growth in demand is principally expected to come from developing countries, with rising population and income. Demand for animal protein is expected to rise three times as fast in developing countries than in developed ones. Net trade in beef has been expected to increase by 1.5 to 2 million tons between 2011 and 2025, with price increases of between 20% and 30% over this period, with such increases concentrated in the earlier years.[13]

[13] FAO Report, citing various sources.

2.5. BOTSWANA'S BEEF EXPORTS

Figure 5: Share of beef in Botswana's exports



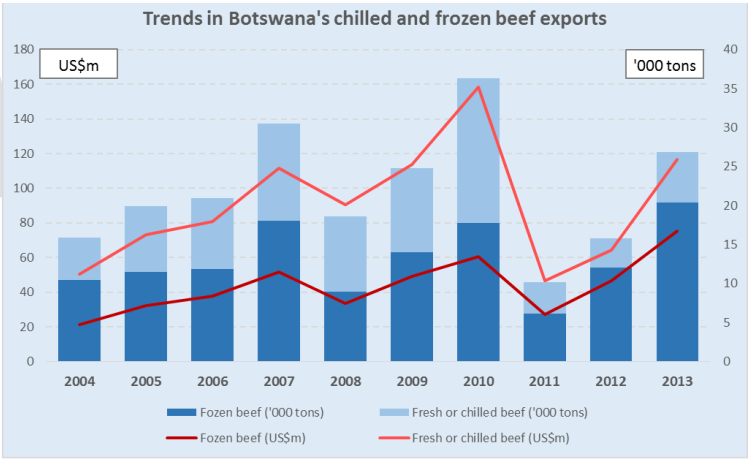
Sources: ITC calculations based on CSO statistics and ON UN COMTRADE statistics until January, 2013

Beef is expected to, and can potentially play, an important role in Botswana's EDD ambitions. Indeed, as Figure 5 shows, meat's[14] share in the country's total merchandise exports between 2004 and 2010 more than doubled from 1.4% to 3.4%. However, it has since fallen to 1.5% in 2013. As highlighted previously, despite its relatively small share of exports, the beef sector's strategic importance lies on its significant impact on the country's rural population.

Figure 6 shows the trends in Botswana's frozen and chilled beef exports, in terms of volume and value, over the last ten years. After a period of steady growth until 2007, the 2007-08 global crisis contributed to a decline in 2008. Exports continued to increase until 2010, when exit from the EU market caused a sharp fall in exports. The trend has been positive since then, although exports are still below their 2010 (and 2007) levels.

At its peak in 2008, exports of the higher priced chilled beef accounted for 63% of value and 52% of volume. In 2010, at the peak of exports, the proportion was 62% by vale and 51% by volume. In 2013, however, the share of chilled beef exports has fallen to 35% by value and 24% by volume, highlighting a deterioration since 2010 of the mix of exports. Total exports in 2010 was US$158.4 million, whereas the figure for 2013 was US$116 million after having fallen to a low of US$46.8 million in 2011, showing a strong rebound, but still considerable challenges ahead in recapturing lost customers.

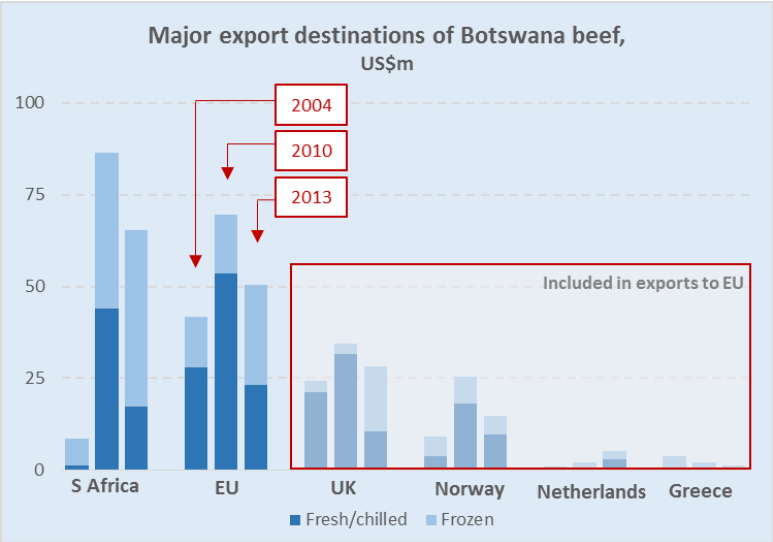
Figure 6: Trends in Botswana's beef exports



Sources: ITC calculations based on Central Statistics Office (CSO) statistices since January 2013, and on UN COMTRADE statistics

[14] Essentially all Botswana's meat exports relate to beef.

Figure 7: Major beef export destinations



Sources: ITC calculations based on Central Statistics Office (CSO) statistices since January 2013, and on UN COMTRADE statistics

Figure 7 highlights main beef export markets. The top four markets, South Africa, UK, Norway[15] and the Netherlands, have been consistently so over a number of years. Together they account for 98% of chilled beef exports, 97% of frozen ones and 97% of total beef exports.

In 2013, South Africa accounted for 56% of Botswana's beef exports and 63% of the frozen beef segment. In that year, South Africa's total imports amounted to US$83.6 million. Of this, 82% of imports were of frozen beef, the country having only imported frozen beef previously. Botswana (US$30.1 million) and Namibia (US$28.4m) accounted for 85% of frozen beef imports. Other main exporters to the country are Australia, Uruguay and New Zealand. Chilled beef was imported almost entirely from Botswana and Namibia, with the latter supplying a higher amount (US$7.6 million) than Botswana (US$6.9 million). Competition is expected to intensify in the South African market with the reported entry of Brazil.

UK is the largest market for Botswana beef outside of South Africa and has been historically and continues to be the most important premium market. At its peak in 2010, it supplied US$32.5 million of beef to that market, of which US$30.5 million was higher value chilled produce. Nevertheless, it only had a market share of 2.6%, ranking number seven by exporters. For example, Namibia's beef exports were US$45.4 million in that year, had a market share if 3.6% and ranked number four. Exports to UK have recovered in 2013, but not fully. At US$23 million it gave Botswana an export share of 1.6%, compared with 2.9% of Namibia. The UK export market for beef is dominated by Ireland, which consistently supplies over half the UK's beef imports.[16]

Norway is a key market for Botswana's beef exports, especially as it pays more than twice the prices compared with other countries. There is limited potential for growth in this market, however as its annual quota of 1,600 tonnes, which is met, imposes a ceiling.

In addition to these three countries and the Netherlands, Botswana exports to some countries in the region and Sub Saharan Africa, including Angola, Namibia, Zimbabwe and Zambia. Exports are also made to other European countries including France (which stopped after 2010 and has never resumed), Greece, Cyprus and Belgium. However, such sales are of very small quantities and never sustained over a long period.

[15] Exports to Norway are initially exported to Germany for testing and then re-exported to their destination. As a result, they show as exports to Germany in trade data. Re-exports from Germany to other countries are understood to be negligible.
[16] ITC calculations based on UN COMTRADE statistics.

The EU market is the most important export market for Botswana beef, given the premium prices it pays, and the preferential access enjoyed there by the country's exports. EU however enforces very strict regulations, which impose considerable costs on the domestic beef value chain. The market is also becoming more competitive for exporters such as Botswana, as the advantages of preferential access granted under the IEPA (which are quota-less and tariff-less) are being eroded by similar provisions in other bilateral and multilateral agreements EU enters into, for example with MERCOSUR countries, albeit with quotas of 300,000 tonnes. [17] Nevertheless, an added advantage of having access to EU markets is that the recognition it offers is an important precondition for exporting to other countries, especially in the Middle East. These advantages are offset by the significant costs added to the beef value chain and its supporting infrastructure by the need to comply with stringent standards, which have been tightening over an extended period as the EU responds to its consumers' concerns and reacts to crises.

The cost-benefit of access to the EU market is heavily debated. Nevertheless, a recent study concluded that there is a net social benefit in continued access to the EU market, although that conclusion is highly dependent on the price that can be realized on beef exports.[18]

2.6. IMPLICATIONS FOR THE BEEF VALUE CHAIN

The analysis in this section suggests the following:

- Botswana is a relatively small producer and exporter in global terms, and lacks the scale to compete on volume.
- The pricing realized for beef exports has a high potential for improvement.
- The high concentration on a limited number of markets poses risks, as was evident from the sharp drop in revenues as a result of the EU ban.
- Nevertheless, the EU market is a strategically important one, as access to it also acts as a prerequisite for entry into many other markets.
- Demand for beef in developed markets are static or declining, while those in developing countries are increasing. In the medium to long-term, these markets offer higher potential for growth.
- Beef's contribution to Botswana's exports is relatively small, as its share of GDP. There is potential for improving on this, but the real strategic importance for the sector in the medium-term is the contribution it can make in improving livelihoods in rural areas.

[17] Botswana Development Policy Review: An Agenda for Competitiveness and Diversification. World Bank. September 2012.
[18] Final report of the special select committee on inquiry on the Botswana Meat Commission and the decline of the cattle industry. February-August 2013. Draft.

3. THE BEEF VALUE CHAIN

3.1. INTRODUCTION

Botswana's beef vale chain is complex, involving a range of actors and channels, with diverse objectives and needs. The exports segment of the value chain is dominated by BMC, which accounts for around half of the country's beef processing and is Botswana's sole beef exporter. Beef production is segmented into a large number smaller of communal farmers, which account for 8lmost 90% of the cattle population, and a small number of more commercially operated cattle farms. Outside BMC, processing is also very fragmented. The support environment is relatively weak and uncoordinated and Botswana beef does not have any branding despite its premium quality.

This section highlights the key trends in the various parts of the sector's value chains and the main bottlenecks in each area. For the value chain mapping, we have drawn heavily on the comprehensive work done in this area by the FAO and MOA, as presented in the FAO Report.

3.2. BEEF VALUE CHAIN MAP

Figure 8 provides an overview of the main components of the beef value chain in Botswana, which has drawn on the FAO Report. The two broad channels, aimed at the export and domestic markets respectively, are evolving continuously.

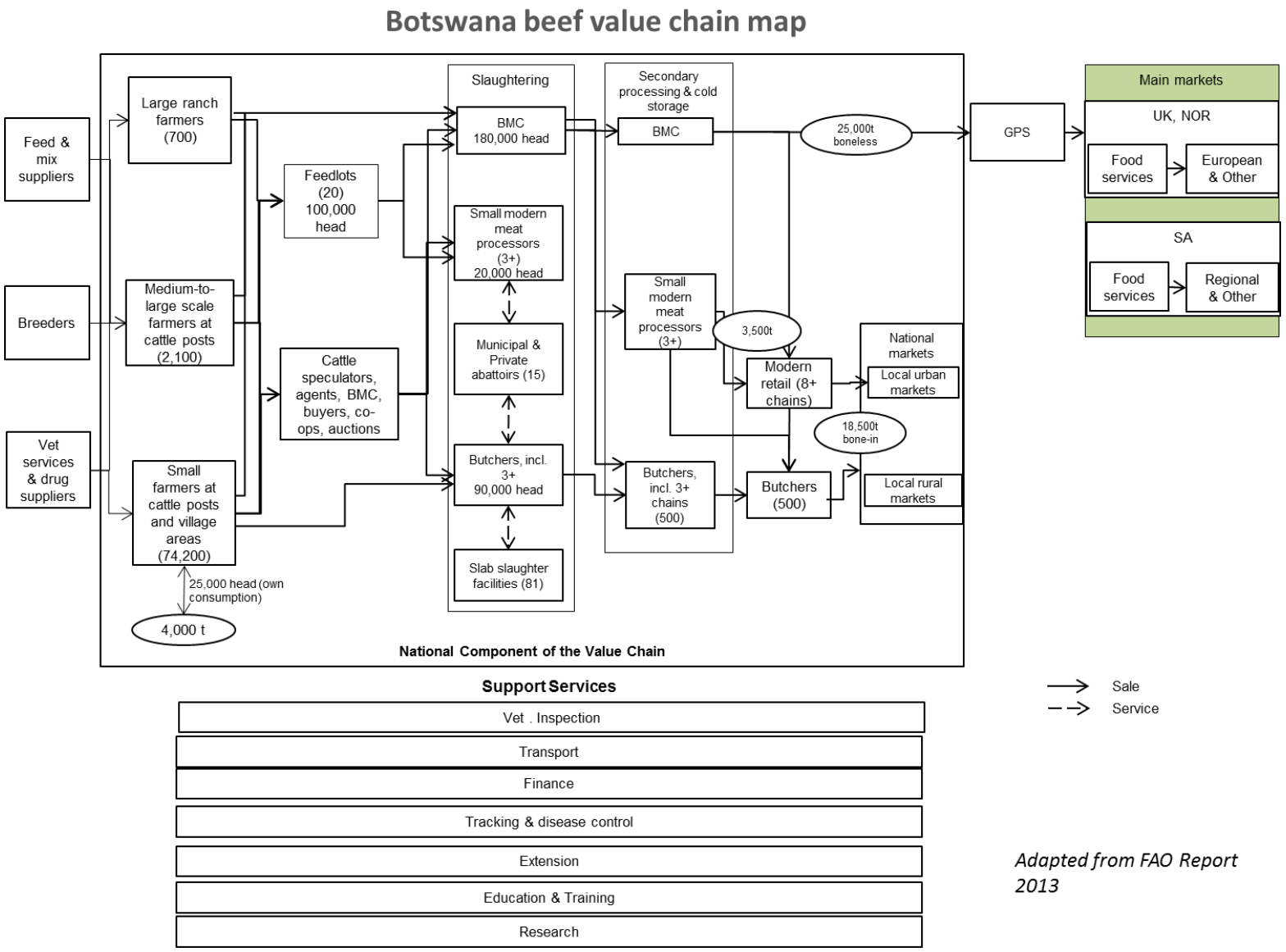
Farmers sell their cattle either directly to processors or local butchers, or to agents or speculators at kraals in marketing centres on pre-announced days. For the export markets, BMC buys directly from farmers, or through agents, and sells to export markets. At present, almost all its entire exports are made through a UK-based company called GPS food Group (GPS). Beef is sold in the local market through the larger grocery chains, who usually outsource their meat retail activities to local companies. Such retailers buy their meat from processors, some of them part of the same group of companies. Most of the remaining meat is retailed directly by butchers.

The main inputs are natural grass from pastures or feed, most of which is imported from South Africa. There is one prominent local supplement manufacturer, but most supplements are also imported. The other main input is fuel. There are a small number of breeders offering bulls. The need to import a significant proportion of the sector's inputs materially increases its relative costs of production.

Local transport for the sector, particularly needed for transporting cattle to slaughterhouses, is generally provided by the larger farms themselves; processors; agents or speculators; municipal authorities; or a large number of independently owned truck or van operators. Processors usually transport meat to retailers in their own vans. BMC exports through a warehouse in Cape Town.

DVS is the main support provider to the sector, through its extension agents and Livestock Advisory Centres. The MOA is also a key provider of support, including training and research.

Figure 8: The beef value chain



Adapted from FAO Report 2013

The FAO Report estimates that in 2010:

- There were 700 large ranch farmers; 2,100 medium- to large farmers; and 74,200 small farmers at cattle posts and village areas.
- There were around 20 feedlots accounting for 100,000 head of cattle.
- 180,000 head of cattle, representing 28,000 tonnes of boneless beef, moved through the BMC export channel. Of this 25,000 tonnes was exported and 3,000 tonnes came back into the domestic market.
- An estimated 111,000 head, representing 19,000 tonnes of beef, was processed through the domestic channel. Together with 3,000 tonnes of BMC beef therefore, the local market was estimated at 22,000 tonnes, marginally lower than the export market.
- In addition, 25,000 head of cattle (representing 4,000 tonnes of boned beef) were slaughtered by farmers for their own consumption.
- Although there are a large number of small suppliers to BMC, the supply is very concentrated and 64% of supplies came from the top 78 suppliers. The study estimates that 15% of BMC supplies originate in ranches and 85% in communal areas. Approximately 50% of BMC supplies came from communal holders of less than 150 cattle, 60% as weaners and 40% as oxen.
- For the domestic channel, there were around 500 butchers in the country and three registered cold storage, cutting and processing plants.
- There were 100 registered slaughtering facilities handling red meat, including seven linked to processing chains and 12 municipal abattoirs. There were 81 registered private rural slaughter facilities and slaughtering slabs. Over time, such slab butcheries are expected to be upgraded to abattoirs, or they are expected to be shut down.

The following analysis is based on more updated numbers where available, in particular those derived from the 2012 Annual Agricultural Survey.

3.3. PRODUCTION

Cattle population distribution and trends

Figure 9: Botswana cattle population trends

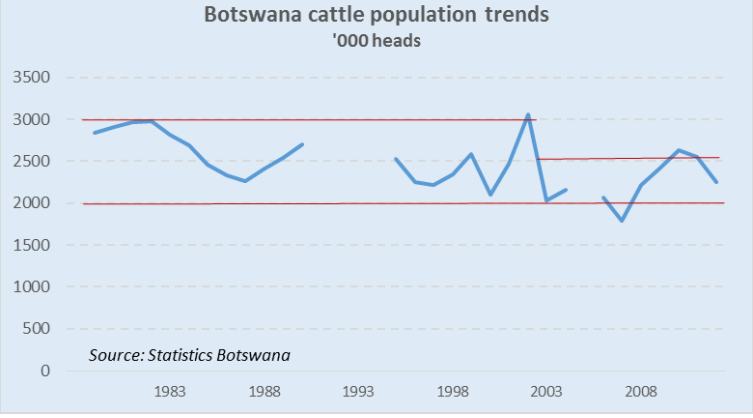


Figure 9 shows the trend in cattle head in the national herd since 1979, as published in the Central Statistical Office (CSO) Annual Agricultural Surveys.

The chart shows a cyclical declining trend, with weather conditions (droughts or low rainfall reducing prices as farmers sell cattle of relatively poor quality, while rainfall raises prices as farmers hold on to cattle and grow them) and economics (higher prices increasing supply, as it happened with an increase in BMC prices in 2006; and increasing income in other occupations reducing the attractiveness of livestock farming) playing major roles.[19] Overall, since a peak of 3 million in 1980/81, there has been relative decline in the national herd, which now

[19] Final Report of the Special Select Committee of Inquiry on the Botswana Meat Commission and the Decline of the Cattle Industry. February-August 2013. Draft.

ranges at between 2 and 2.5 million. It is estimated that a herd beyond 3 and 3.5 million is unsustainable in Botswana due to a combination of irregular rainfall patterns, limits of grazing land and relatively frequent outbreak of cattle diseases.

Botswana typically experiences droughts in 10-year cycles and there have been no major droughts in recent years. Nevertheless, rains came late in 2011-2012 and the dry spell affected cattle production.

Figure 10: Geographic distribution of cattle[20]

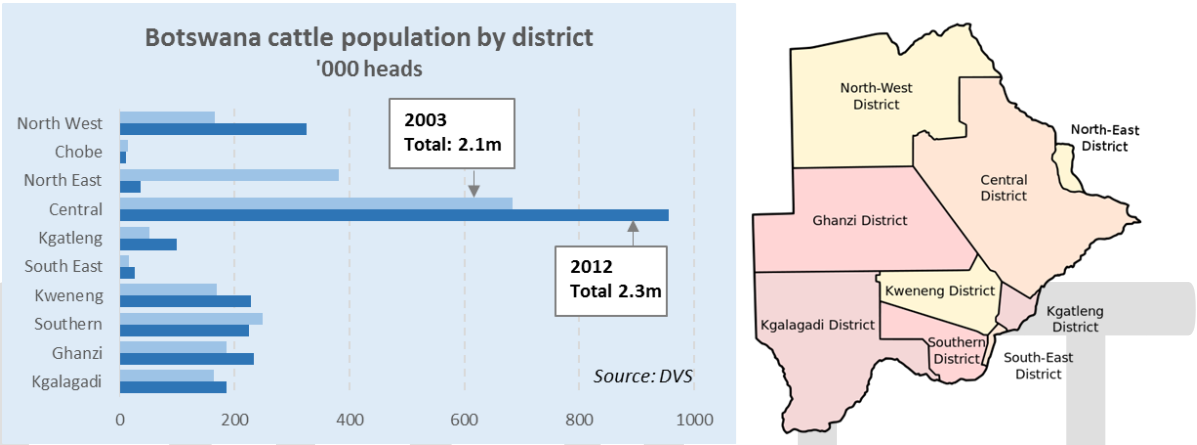
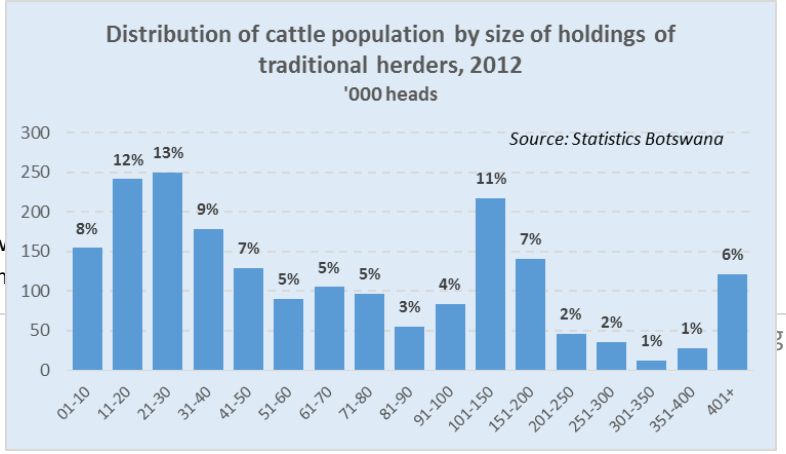


Figure 10 provides the regional distribution and trends in the cattle population. The Central District accounts for 41% of the cattle population. It and the North-West District, the second most populous in respect to cattle, account for 54% of cattle head. In contrast, the centrally located Chobe District, in a FMD declared zone, has relatively negligible cattle population. Variations in regional cattle population between 2003 and 2012 have been caused by: increase in cattle in the North West as a result of there being a limited market until BMC Maun abattoir was refurbished in 2010, which even now has relatively low capacity (23,000 head per annum); sharp reduction in the North East because of a large culling of cattle as a result of FMD outbreak; and increase in Central region because BMC stopped buying cattle from these areas when Francistown abattoir was shut down, and also from restocking by new farms and ranches.

The FAO Report states that cattle farmers operate in 333,000 km^2 of pasture land, 80% of which is occupied by communal farmers.

In 2012, 88% of Botswana's cattle population of 2.25 million was held by traditional[21] farmers in communally held pastoral land. The balance was held in what the MOA defines as commercial farms: usually fenced or otherwise enclosed spaces in freehold, leased or TGLP farms. Most of these would be operated using modern husbandry and commercial management practices, but some, such as those held by many absentee farmers and especially TGLP farms, practice more traditional farming methods albeit in a fenced environment. There were 72,116 traditional holdings, and 809 commercial farms,

Figure 11: Cattle distribution by holding



[20] Map source: http://en.wikipedia.org/w

[21] The terms traditional and communal h

with holdings averaging at 27.5 for communal farmers and 324 for commercial farms. Commercial farm numbers almost doubled since the early 2000's, although they have declined from their 2010 peak of 1,058, as profitability in the sector has eroded. Figure 11 illustrates that a significant number of cattle being held by small traditional farmers: 49% were held in holdings of 50 or less, and 81% in holdings of 150 or less.

The 2012 Annual Agricultural Survey found that in the traditional sector 25% of cattle and 35% of holdings were female-owned. Moreover, 78% of traditional holdings were owned by farmers aged 50 or over, and 38% by farmers over 65. The equivalent proportions for traditional cattle ownership were 80% and 38%. There were 121,766 cattle holders in the traditional sector.

The survey also found that only 11,139, or 15% of all traditional holdings relied on livestock farming as their main source of income.

Communal farming[22]

Communal farmers graze their cattle in open pastures that are communally owned and managed. They are divided into cattle post area (CPA) farmers, who operate in unfenced areas with one or more boreholes, away from settlements or towns; and village grazing area (VGA) or peri urban farmers, who graze from the village or surrounding area. The FAO estimated that in 2010, there were approximately 2,100 medium-to-large CPA farmers with a holding of 150 or more, many with operations similar to commercially managed farms, although without fencing. There were an additional 14,000 to 15,000 smaller scale CPA farmers with herds of less than 150. CPA farmers managed around 60% of Botswana's cattle in 2007, divided roughly equally between smaller and medium-to-large CPA farmers.

There were an estimated 60,000 VGA farmers in 2002, with their numbers declining as their land is increasingly lost to fenced farms and cattle port. They are mainly subsistence or hobby farmers, relying on additional income from alternative sources. They do not purchase feed or supplements, and usually slaughter cattle when they have cash needs. VGA farmers are estimated to manage around 30% of Botswana's cattle. They hold an average of 14 cattle, and are unlikely to be commercially sustainable. VGA practices can potentially lead to overgrazing, land degradation and bush encroachment.

Commercial farming

Also known as ranches, these are usually large commercially operated farms operating on fenced freehold or leasehold land, with exclusive rights to grazing resources. Their share of the national cattle herd has fallen from 30% in the 1980s to 12% in 2012, primarily due to reducing profitability. These farms have been increasingly moving to weaner based production, often with their own feed lots. This shift is reflected in their superior breeding and off-take performance, but also in higher costs.

Feedlotting and weaner based production

The government and BMC started to actively promote the weaner based system in 2006.The system is intended to overcome shortcomings associated with traditional farming approaches that lead to holding cattle until they lose their fertility and reduced meat quality and carcass weight. The weaner based system, animals are reared in the range until they are around ** months old and then finished

[22] This and the following subsections of Section 2.3 are summarised from the FAO Report.

in feedlots for 100 to 120 days. In addition to generating more consistent quality, releasing grazing resources, and reducing seasonality of supply, feedlotting increases births as the proportion of cows in the herd increases. The practice is also consistent with EU export requirements, requiring traceability of at least 90 days, and location of cattle in an approved area during at least the 40 days preceding slaughter. Nevertheless, there are additional costs associated with feedlotting, including in particular the high cost of supplying imported feed of grain, straw and premix. These limit the commercial attractiveness of feedlotting. In addition to costs, risks of importing key supplies exist, as they were realized when a 2011 FMD outbreak in South Africa led to an import ban on feed from that country. Consumers in Europe are increasingly averse to feedlot production methods, given their negative associations with animal welfare and the environment. Additionally, farmers selling their cattle as weaners do not realize the best value at the relatively young age.

The BMC has led the practice of feedlotting, partly to reduce the seasonality of the throughput in its abattoirs, and also to improve the consistency of the quality of its supplies. Its Large Scale Feed Advance Scheme to promote the system had limited uptake and in 2008 it introduced a direct cattle purchase scheme (DCP). After various permutations of the DCP, the BMC currently buys only male weaners meeting EU requirements, and places them in contracted feedlots, near its Lobatse and Francistown plants, until slaughter. The contractors charge a margin on inputs and a standing charge for the animals.

In addition to six BMC feedlots in 2010, there were also 14 registered private feedlots, selling their output to BMC and other large processors. The FAO estimates that in 2010 around 100,000 cattle were produced under the weaner system, 55,000 of which went to BMC.

The total cattle purchased by DCP and slaughtered from feedlots at BMC increased from 31,235 in 2009 to 55,272 in 2010. Contributed to by the suspension from the EU markets, these numbers fell to 23,829 in 2011 and 30,729 in 2012.[23]

In 2013, the total throughput from feedlots increased significantly to 127,147. Of these, 41,284 head (32%) came from BMC feedlots and 58,142 head (46%) were purchased from communal farmers.

Destination of cattle produced

Figure 12: Cattle sales by type of buyer

Figure 12 presents the major purchasers of cattle produced in Botswana. In 2012, of the 168,035 cattle sold, 41% went directly or indirectly to BMC. Although feedlot sales account for only 7% overall, commercial farms sell 21% of their cattle as weaners. The increasing importance of feedlots

[23] Final report of the special select committee on inquiry on the Botswana Meat Commission and the decline of the cattle industry. February-August 2013. Draft.

is evident from the fact that in 2007, they accounted for only 1.5% of overall cattle sales, and 4.4% of commercial farm sales. Local butcheries of various sizes are important customers of cattle farmers, and account for 38% of traditional farmer sales, compared with 16% of those of commercial farms.

Pricing

BMC sets the benchmark price for cattle in the sector, based on export parity prices (EPP). Prices are benchmarked weekly with those relayed by the Red Meat Abattoir Association of South Africa, less an imputed cost of transportation. Prices paid by BMC vary with quality, with cattle eligible for EU exports commanding the highest prices. There is a subsidy embedded in the pricing, with lower prices paid for EU eligible cattle being used to subsidize lower quality cattle. Prices paid for red-zone cattle is on average 80% of that paid for that from the green zone. Local butchers and processors typically price their supplies at around a 10% discount to BMC prices. Farmers are usually prepared to accept the latter given the lower risk of costs associated rejection from BMC, quicker cash payments and lower transportation costs.

BMC prices are based on cold dressed mass (CDM) weight and quality, as well as seasonality and availability of supply. Carcasses are graded based on quality gradings (Prime, Super, and Grades 1-3[24]). Younger animals weighing less than 270kgs[25] and less than 24 months old get higher grades. The FAO study suggests that the difference between the price paid for a live-weight based weaners and CDM-based prices for slaughter-weight cattle is relatively narrow, encouraging farmers to sell their cattle as weaners, whilst probably making feedlotting unprofitable. This arguably favours commercial farmers, who disproportionately sell their cattle as weaners.

Figure 13: Average prices realized by traditional and commercial producers

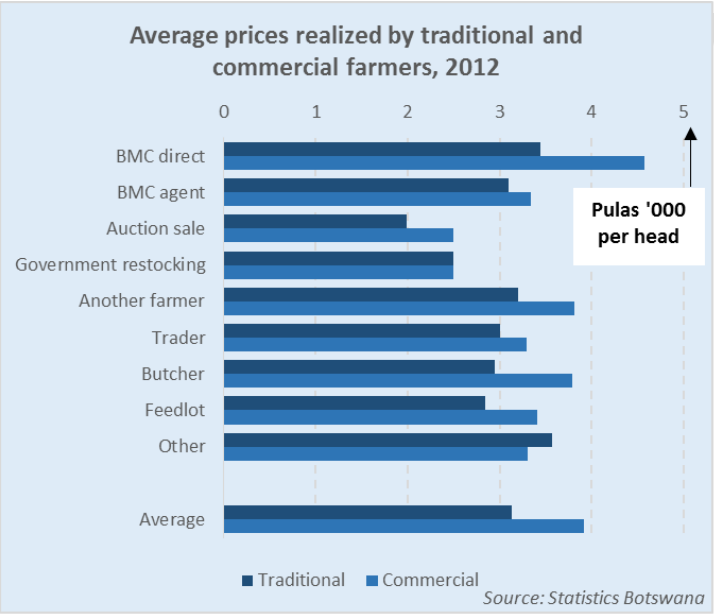


Figure 13 highlights that generally commercial farmers tend to achieve higher prices than their traditional counterparts. The gap in prices can be as much as one-third for sales to BMC, principally reflecting the [reason? Quality, stage at which sold?]. BMC offers the highest prices to producers on average.

The average price realized by traditional farmers in 2012 was P3,136 per head, compared with 3,916 for commercial farmers. Their total cost of production (excluding capital costs) were estimated at P2,930 and P3,266 respectively.[26]

Cattle diseases

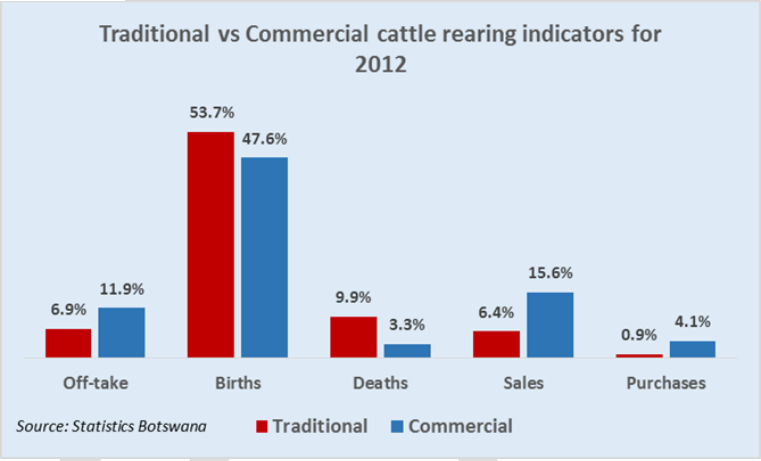
[24] Prime, Super and Grade 1 are eligible for EU exports,
[25] Having 0-2 tooth.
[26] 2012 Annual Agricultural Survey Report. Statistics Botswana. April 2014.

The 2012 Annual Agricultural Survey highlights Anthrax (Kwatsi), Black Leg, Brucellosis and Botullism as being the most common cattle diseases in the traditional segment. 9,949 holdings, representing 14% of total traditional holdings, were reported to have cattle suffering from FMD. Almost 50% of FMD infected holdings were in the Maun region, which accounted for 7% of all traditional holdings in the country.

FMD and measles related issues are discussed in more detail in Section 4.2.1.

Production performance and profitability

Figure 14: Traditional and commercial farm cattle performance



There are significant differences in production performance between the communal and commercial farmers in Botswana and those between Botswana producers on average and those in competing countries.

As Figure 14 illustrates, there is a significant gap in performance between traditional farmers and commercial farms, with the gap being wider still in the case of the best, professionally managed ranches. Off take rates of commercial farms, a key determinant of profitability, are almost twice those in the traditional segment, whilst death rates are a third. An anomaly in this comparison is the higher birth rate in the traditional sector, which could be as a result of farms sealing a higher proportion of weaners before they give birth.

The comparison in performance is starker when those of many other beef exporters is considered. For example, the FAO report highlights that Botswana's overall off-take rate of 12% compared unfavourably with those of Namibia (20%), Brazil (18%) and Australia (24%). Although restrictions such as on hormone use limit offtakes in Namibia, it is reported that some commercial farms in the country do reach those of around 20%.

Table 3: Model of performance potential in cattle production

The FAO Report suggests that changes in the production system, such as those from oxen to weaners and from traditional to holistic management could increase herd sizes, the proportion of adult cows and therefore calving rates and better management could lead to reduced mortality. It calculates (see Table 3) that based on realistically achievable production parameters, Botswana could double its beef production based on roughly the same number of livestock units and therefore land area. Nevertheless, the report stresses the need for further research

	2010 Oxen + weaner	Future Expanded weaner system
Herd size	2,700,000	3,000,000
Mature livestock units	1,944,000	1,980,000
Breeding cows (%)	40	45
No. of breeding cows	1,080,000	1,350,000
Calving rate (%)	55	65
Calves born	594,000	877,500
Mortality (%)	9	6
Net herd increase	297,500	644,850
No-growth off-take (%)	11	21
Potential beef production	45,821,160	99,306,900

Source: FAO Report

into the economics and ultimate profitability of moving to more intensive weaner-based methods, especially given the increased demand for high cost imported feed that would imply.

The FAO Report provides detailed analysis in an attempt to establish the profitability of the different livestock production systems practiced in Botswana. Based on various modelling assumptions, it finds that cattle production is generally profitable in gross terms at the farm level. However, when capital costs and especially the opportunity cost of investment in cattle holdings is taken into account, the result turns negative. The analysis also finds that the costs involved in implementing improved farming practices are not offset by the returns from increased production. Additional incentives, such as increased prices would be necessary to provide a return on such investment. The analysis also found that profitability is positively correlated with to increasing economies of scale and farm sizes. Finally, the profitability of feedlotting was found to be very marginal and highly sensitive to changes in input prices. The report recommends detailed research into the economics of cattle production in Botswana, highlighting that its conclusions are based on modelling assumptions and that some stakeholder feedback had suggested that some of its conclusions might be over-conservative.

3.4. PROCESSING

Slaughtering

BMC has the largest slaughtering capacity in Botswana. Its total capacity of 1,100 per day is accounted for by its three plants in Lobatse (650 per day), Francistown (350) and Maun (100). In international terms, this slaughtering capacity is still relatively small. For example the world largest processor, JBS SA of Brazil, has the capacity to process 26,000 head a day.[27]

BMC's maximum capacity is 286,000 cattle per year, with an expectation that they will operate at 85% capacity on average. The numbers of cattle supplied to BMC fell from 70% of capacity in the 1980s to 40% in 2005, increasing to 63% in 2010, partly contributed to by the DCP and feedlotting initiative and also improved prices. However, increased demand from domestic butchers has also been an important factor.

In addition to BMC facilities, there were 12 DVS registered abattoirs in 2010, of which nine were operational. They charge deeply subsidized slaughter fees. In 2010 there were also around 80 rural slaughter slabs and four private abattoirs. Enforcement at the slab butcheries of the standards required by the 2006 Livestock and Meat Industries Act (LMIA) is a major challenge, leading to distortions in the operations of the sector. The FAO Report highlights that if the LMIA standards are strictly enforced, many small butcheries would become uneconomic and would have to close. This matter is discussed in more detail in Section 4.2.3.

The supply of cattle is highly seasonal, leading to most butcheries operating at half their capacity for a significant part of the year in the summer. The trend toward increased feedlotting is partly aimed at reducing this seasonality.

Secondary processing

Deboning carcass and cutting the meat into portions and cuts, and further processing the meat into canned beef and sausages, etc., is done in a very small number of approved plants and facilities. In addition to BMC, the latter include processors such as Senn Foods and Quality Meat, and large butcheries such as Gantsi Beef, Afro Butchery and Butcher Shop. The grocery chain Choppies has quickly become a major operator in this area, with the rapid expansion of its outlets.
Most of the big processors have built an integrated supply chain, including owning their own cattle farms, feedlots, abattoirs, meat processing plants, distribution facilities and sometime retail outlets. There are some variations to this model, with some contracting with feedlots for supply, or hiring abattoirs. Many of the largest processors have the latest production management systems.

At BMC, processing of the carcass after slaughter includes deboning and cutting, followed by vacuum packaging and boxing for export as either frozen or chilled beef. The BMC also produces further secondary processed beef products such as ox tongue, stewed steak and corned beef, and by products including pet food. Both corned beef and canned pet food is distributed under the ECCO brand. Most of the secondary processed beef is sold in the local market, and BMC also supplies Botswana's school feeding program with stewed beef.

[27] http://en.mercopress.com/2009/07/07/brazilian-beef-processor-raises-cattle-slaughter-capacity-to-26.000-head

The larger private beef processors process the beef into cuts, sausages, minced beef, etc., and packaged in retail packs for sale primarily at the major grocery chains in Botswana. They also supply local restaurants and caterers.

Profitability of beef processing

The economics of the industry is distorted by BMC's dual objectives of operating commercially whilst fulfilling a social role in respect of the smaller livestock holders. In recent years, BMC has not been profitable, and became financially insolvent over the 2009-2012 period with accumulated losses of P727 million.[28] In 2013, it has reported a profit of P29 million as a group.[29] A number of factors have been identified as affecting BMC's poor profitability and recent losses, including high seasonality in capacity utilization, increase in prices paid to producers, its low operating efficiency and the lower than potential prices achieved in export markets. Of these factors, the cost of cattle procurement, which went up from 48% of average total cost in 2005 to 63% in 2012, is highlighted as the most important contributor to BMC's deteriorating financial performance. Principally as a result of the introduction of EPP, the average price paid for cattle increased from P695 per 100kg CDM in 2005 to P2,008 in 2012. In addition, BMC's DCP feedlot system is estimated to have lost P35 million, most of it during the 2011-2012 period when the EU market was closed.[30]

One of the principal operational problems facing BMC has been low capacity utilization. This was as low as 40% in 2007, increased to 63% in 2007 [ ].

The FAO Report, citing a 2009 benchmarking study highlighted that improving BMC's operating efficiency to industry average levels would result in annual cost savings of BWP260 million. Areas identified the following areas as requiring improvement:

- Low stock turnover in peak season, at three to four times longer than the industry average;
- Overall productivity being around one-third of industry average, principally contributed to by overstaffing, especially in administrative areas. More effective use of management information systems (MIS) would improve productivity and efficiency.
- Moisture loss was three times the industry average of 1% and boning yields were 67% compared with an industry average of 69%.
- Overall processing costs varied, but in 2008 this was 30% higher than industry average and 67% higher than industry best practice.

The FAO Report also carried out financial modelling to establish the profitability of a small butchery and found that the activity could be profitable, but was susceptible to costs and had high risks associated with availability of supplies.

The domestic processors have indicated that their profitability is variable and one of the main motivations for investing in processing capacity is the anticipation of a lifting of the BMC monopoly and realizing higher export prices. They also point out the destabilizing effect that BMC's often fluctuating supply can have on the domestic prices. For example, during the 2011-12 period when

[28] Final report of the special select committee on inquiry on the Botswana Meat Commission and the decline of the cattle industry. February-August 2013. Draft.
[29] BMC Annual Report 2013.
[30] Final report of the special select committee on inquiry on the Botswana Meat Commission and the decline of the cattle industry. February-August 2013. Draft.

BMC could not export to the EU markets, its domestic market share went up to 26% of sales and 32% by volume in 2012[31], leading to substantial losses by local processors.

3.5. MARKETING AND DISTRIBUTION

Domestic wholesale

The FAO Report highlights that in the domestic market most beef is sold directly by butchers, or by processors through retailers. Although there are some cash and carry outlets, the domestic channel does not have any wholesalers.

Domestic retail

The FAO Report estimated the domestic beef market at BWP705 million.

The main domestic retail channels for beef are:

- Village and urban butchers.
- Supermarket and cash and carry stores.
- Restaurants.

The FAO Report estimates the number of butcheries at around 500. Most villages have at least one butchery, normally part of a grocery store. Although cooling facilities are often available, most customers prefer fresh meat, with chilled meat being associated with that having been frozen before. In some remoter parts, individuals sell meat in the open, having slaughtered the animal themselves. Customers in rural areas prefer bone-in meat.

Butcheries and supermarkets in urban areas use more modern facilities and are estimated to account for 80% of the domestic market. In 2010, supermarkets and cash and carry stores accounted for 20% of the domestic sales, but their current share is likely to be significantly higher and is rising rapidly. The major contributor to growth is Choppies. , which has been growing at more than 20% per year and currently has [stores], having increased from 49 outlets in 2010.

Choppies supplies its stores through its own subsidiary, Safrosh. Other supermarkets buy their meat from processors, or enter into contracts with processors to operate butcheries in-store.

Exports

The BMC has appointed GPS as its distributor in export markets. The latter's principal responsibilities are:

- Export market penetration and diversification, and selling available inventory into those markets.
- Receivables from the customers they sell to.
- Assist BMC with production and production planning capacity development to help BMC become customer and market focused.
- Promotion of BMC product in target markets.
- Supply BMC with market data and information

[31] Final report of the special select committee on inquiry on the Botswana Meat Commission and the decline of the cattle industry. February-August 2013. Draft.

GPS is remunerated by way of a fixed percentage commission on the sales it generates. The contract does not give it exclusivity in any market: BMC is free to find own customers for direct supply. The contract is for five years, due to expire in 2015, with renewal dependent on performance.

GPS has a similar contract with MeatCo of Namibia.

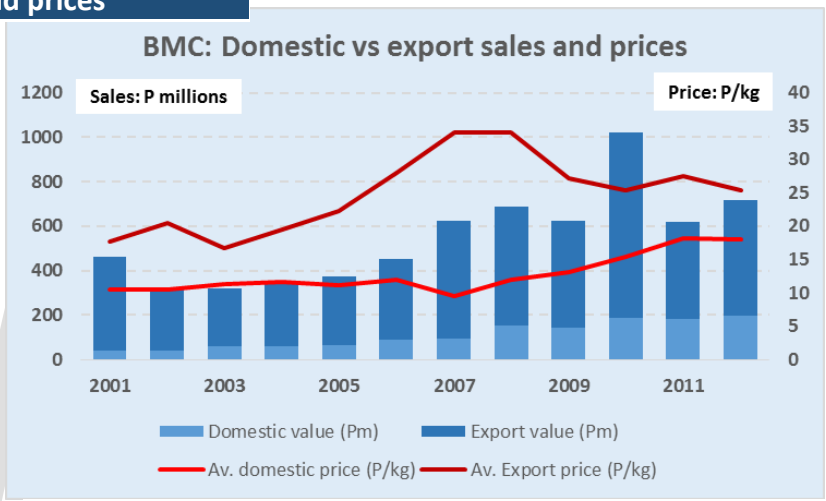
A key issue with the export of Botswana beef is the lack of branding and market segmentation. As a result, the price achieved is equivalent to more commoditized beef. In addition, BMC has no capacity for market intelligence, marketing etc., and relies on GPS almost totally for such intelligence.

All Botswana beef exports are distributed through South Africa.

BMC's sales in export and domestic markets

Figure 15: BMC domestic vs export sales and prices

Figure 15 highlights the trends in domestic and export market sales and prices achieved by BMC. Although average export prices continued to show a premium over those in the domestic market, the margin between them has been falling since 2007, as domestic prices have increased with increasing demand. This has been exacerbated by falls in export prices since 2008. In addition, the proportion of sales to the domestic prices has been increasing steadily, even before the 2011-2012 EU market suspension. In 2001, domestic sales accounted for less than 9% of total sales. In 2010, before the EU suspension, it had increased to over 18%.



Source: Final report of the special select committee on inquiry on the Botswana Meat Commission and the decline of the cattle industry. February-August 2013. Draft.

3.6. OTHER INPUTS

Feed and fodder

Cattle's nutrition is typically supplemented with dicalcium phosphate due to the low levels of minerals found in Botswana soils. Most of supplements and feed ingredients are imported, causing the overall cost of feeds and fodder to be higher compared with neighbouring countries. Some of the grain by-products enter the fodder supply chain although this follows a seasonal pattern.

The local feed industry either imports finished products from mainly South Africa or purchase the ingredients and carry out the mixing locally. Production sites are located in South East district, mostly around Gaborone. Currently 22% of the communal farmers provide their cattle with supplements[32]. Farmers get access to the feeds and inputs through regional outlets. In addition to the private feed retailers, LACs have traditionally supplied farmers with feeds at subsidized prices. LACs have been struggling to keep up with high demand by the farmers on one hand and the low financial capacity on the other.

[32] 2012 Annual Agricultural Survey Report. Statistics Botswana. April 2014.

The FAO Report highlights that improved use of licks to increase the productivity of grazing could have a dramatic impact on productivity, especially in communal areas. However, a number of factors, such as lack of knowledge, affordability and uncertainty about their economic return limits their wider adoption.

22% of traditional farmers use supplement in their cattle production[33], significantly smaller than the proportion of commercial farmers.

The main issues relating to feed and fodder inputs in the beef supply chain are:

- Expensive feeds due to most of the ingredients being imported
- Lack of R&D activities for indigenous feed ingredients
- Low mineral level in soil make use of supplements necessary to compensate
- Scope of LAC minimal due to lack of financial capacity
- Cash flow constraints at farmers constrain their ability to buy feeds
- Supplements, medicines and other inputs not consistently registered in LITS.

Veterinary drugs

LACs have historically supplied livestock medicines at discounted prices. Due to financial constraints though, LACs have ceased to stock medicines. One of the requirements of Botswana's export markets is for the drug administered by vets and other sources to be registered in the LITS system. Currently this is a shortage of the LITS system. Based on the 2012 Annual Agricultural Survey Report, an average 73% of the cattle in the communal holdings are vaccinated, with the highest percentage observed in the Maun region[34] whilst the lowest rate is observed in Western Region[35].

The principal issues related to this segment of the value chain are:

- Lack of recording of medicine administration.
- Vaccination levels at FMD zones have not reached 100%.
- Lack of funds for LACs means that veterinary drug prices might be expensive for some farmers in the future.

Breeding

Botswana has three locally available breeds, The Tswana, the Africander and the Tuli. Since the 1970s extensive research has proved that the Tuli breed offers better performance compared with the other local breeds[36]. Botswana has since moved out of the local breeds and into crossing with foreign breeds. The crossing is done very much on a random basis, risking dilution in the advantages of the local breeds.

The range of cattle breed grown in the traditional sector is relatively narrow. In 20102, this comprised 48% of Tswana and 46% of cross breeds. Commercial farmers use a significant proportion of cross breeds (48%), and breeds such as Brahman, Simentaler and Bonsmara. Tswana comprise only 5% of cattle in commercial farms.

[33] 2012 Annual Agricultural Survey Report. Statistics Botswana. April 2014.
[34] Ngamiland West, Ngamiland East, Chobe
[35] Gantsi, Hukuntsi, Tsabong
[36] In terms of calving, mortality, weight, weaner calf weight, weight of 18-month old calf.

2012 data shows that the large majority (97%) of the breeding in the traditional sector is done naturally with only a small portion of that being with artificial insemination. Although the use of the latter at 2.5% remains small, it has more than doubled in four years. [37]

Some of the key problems affecting this segment are:

- Lack of breeding strategy, particularly among communal farms.
- Random crossing amongst breeds not based on scientific evidence.
- Lack of regulatory framework for cross breeding.
- No bull movement control or restrictions.

[37] 2012 Annual Agricultural Survey Report. Statistics Botswana. April 2014.

4. SUPPORT INSTITUTIONS IN THE BEEF SECTOR

4.1. INTRODUCTION

The institutions and services supporting the beef value chain play an important role in its success. Given the nature of the livestock sector, it is critically dependent on the quality of services it receives from, for example, the veterinary services, market intelligence and information on standards. To optimize effectiveness, the support institutions need to work together as part of a coordinated network.

The support provided to the Botswana beef value chain is generally very professional, and of very high quality. Nevertheless, there are a number of issues that are hampering the sector's performance. Some of these issues need to be addressed urgently, as they are significantly impairing the operations of the sector's participants.

4.2. PUBLIC TRADE SUPPORT INSTITUTIONS

MOA is the principal support institution in the beef sector. It provides its assistance to the sector through the following departments and agencies:

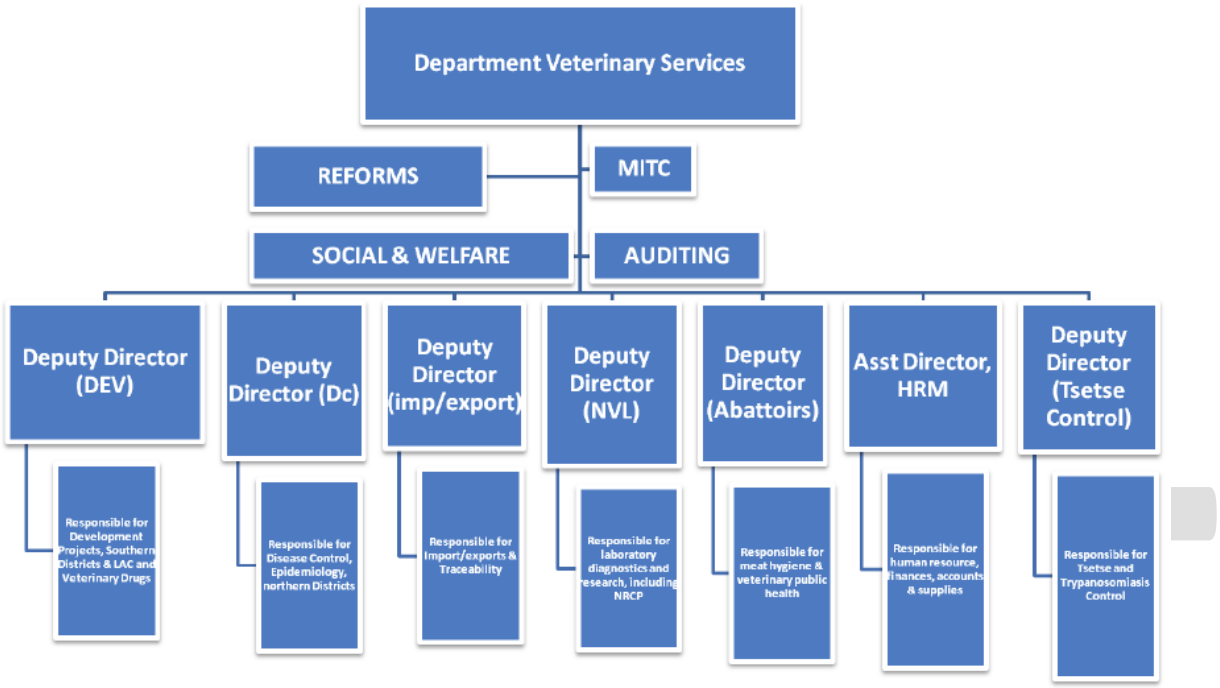
- DVS: which provides veterinary and animal health-related extension services; enforces regulations and standards relating to production and processing; distributes subsidized inputs through LAC; and inspection services through BNVL.
- DAP: Provides extension services in areas such as improving breeding methodology; training on production; support of trade associations; and implementation of subsidy schemes.
- Department of Agricultural Business Promotion (DABP): DABP provides agribusiness advisory support to farmers and processors in areas such as marketing; farm management; agricultural trade negotiations; and policies and regulations relating to cooperatives.
- Department of Agricultural Research (DAR): Carries out research principally in the area of improvement in animal production, including breeds and breeding methodology.

4.2.1. VETERINARY SERVICES

In 2008 the former Department of Animal Health and Production was divided in two independent departments: the Department of Animal Production (DAP) and the Department of Veterinary Services (DVS). These two departments have national responsibility. In line with the strategy of MOA, DVS focuses on rural development and beef exports. Under DVS there are six divisions led by Deputy Directors, all veterinarians by background. In addition to the centralized structure at MOA, the veterinary services include 10 District Veterinary Offices and 28 sub-districts offices, some of which are co-located with the District Veterinary Offices (DVOs). The next level of the veterinary services structure is clusters, then extension areas and finally crushes. Whilst all DVOs are headed by veterinarians, not all the Sub-District Veterinary Offices (SDVO) are headed by veterinary officers and in some cases they are led by non-veterinary scientific officers.

Figure 16 presents the DVS organizational structure.

Figure 16: DVS Organizational structure



Source: PVS Gap Analysis Report: Botswana. OIE. November 2011

Overall, DVS personnel are considered highly skilled with the majority of the veterinarian officers having been qualified at reputable international institutions. Some of them hold postgraduate degrees. Positions at the top of Figure 14 are dedicated to veterinarians whereas the staff that are in daily contact with the farmers and the cattle are mostly veterinary para-professionals. The latter normally receive official training but are not always supervised by a veterinarian. This is attributed mainly to the multi-layer hierarchical structure of the "organization".

In 2011 the World Organization for Animal Health (OIE) published a PVS Gap Analysis[38] aimed at assist Botswana's Veterinary Services (VS) to identify the gaps in the current system and propose a strategic action plan that aims to strengthen the VS to meet the future challenges and remain compliant with the OIE standards. The OIE PVS Gap Analysis clearly states that the overall challenge for Botswana's VS is to be able to improve the overall efficiency. It also mentions that the current lack of veterinarians on the ground does not meet the OIE requirements. During the consultations held by the ITC team, interviewees agreed that the current veterinary services are not optimal, requiring far-reaching reform. Over the years the department of veterinary services has accumulated a vast array of responsibilities including:

- Vaccinations, both routine and critical
- Fence maintenance
- Health inspection
- Disease management
- Livestock Identification & Traceability System (LITS)
- Cattle movements
- Meat inspections, and

[38] PVS Gap Analysis Report: Botswana. OIE. November 2011.

- Effective and up to date advice on inputs.

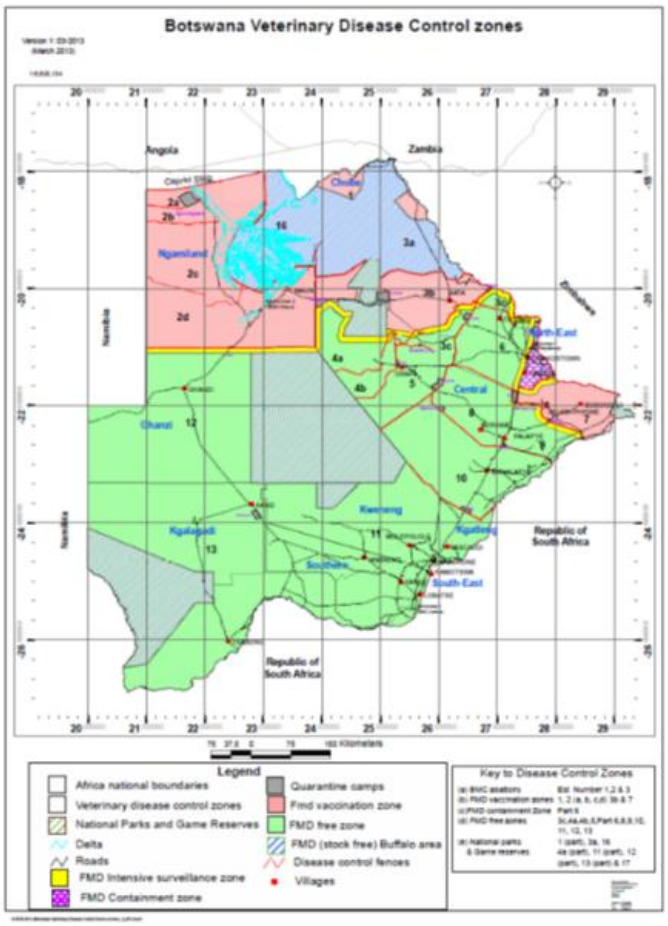
There is currently a shortage of qualified personnel, particularly close to the farms. Also, extension officers must cover long distances on daily basis. This situation has led to the following issues:

- Unavailability of the extension officers when and where needed.
- Increasingly high workload with multiple requests to attend different sites simultaneously.
- Lack of resources for transportation since often these means are shared with other departments of the MOA.
- Shortage of qualified veterinarians on the ground and in contact with the farmers.
- Outdated knowledge on best practices and information in relation to animal diseases.

FMD and measles issues

FMD

Figure 17: Veterinary control zones



In order to order to tackle FMD outbreaks, Botswana initiated the zoning system [in when?]. "Red zones" were established in areas with high occurrence of both wild buffaloes and FMD, separated from "Green" disease-free zones. A buffer zone where cattle form a first level of warning in the case of breakouts separates the two types of zones. Only cattle in the red zones are vaccinated. EU exports originate from the "green zones"[39]. The FMD-free status of the green zones is confirmed through regular tests conducted at Botswana National Veterinary Laboratory (BNVL). Complete eradication of FMD in Botswana is a hard task, due to co-existence of cattle and wildlife. An alternative approach to today's efforts to manage the disease could be to initiate a risk assessment based program such as the Commodity Based Trading (CBT) helping to avoid new outbreaks and at the same time maximize the value of the cattle from FMD-prevalent areas such as Ngamiland. Such programs although technically feasible, they are yet to be accepted by international organizations such as OIE and governments[40]. Figure X shows the percentage of cattle located in the FMD vaccination zones. The reduction of the percentage is due to the reduction of the number of heads in the FMD vaccination zones.

39 http://www.gov.bw/Global/Ministry%20of%20Agriculture/Veterinary%20Disease%20Control%20Zones%20Current_03_2013.pdf?epslanguage=en

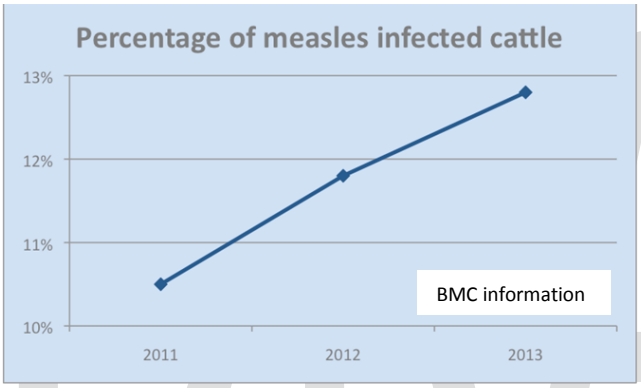
40 FAO Report

An estimated 6.2% of Botswana's cattle population lived in FMD affected zones in 2012. This had fallen from 7.5% in 2008.[41]
Current issues:

- Co-existence of cattle and wildlife poses challenges to the government's efforts to eradicate FMD.
- Existing heat treatment equipment leads to excessive loss of body mass (>40%).
- Lack of DVS resources in the field.
- Wildlife fences damaged by elephants.
- Lack of coordination amongst countries bordering Ngamiland and Caprivi Strip.
- No serious alternative for FMD vaccination zones cattle.

Measles

Figure 18: Trend in measles infection in cattle



The percentage of cattle infected with measles has been growing 10% annually the last three years, settling at 12.8% in 2013[42], reflecting the importance of eradicating the disease. In comparison, the average percentage for the neighbouring countries is around 3%. Unlike FMD, measles is not detected prior to slaughtering, therefore it is hard to predict and reduce the financial losses. Eradicating measles completely would require a nationwide program coordinated by the MOA with the active participation of Ministry of Health (MOH). Measles eradication should be taken seriously by all stakeholders in the beef sector, otherwise the sector risks to be confronted with a generalized crisis.

Current Issues:

- Lack of centralized strategy to tackle the growing measles threat.
- Cattles gets access to human faeces particularly during dry season.
- Lack of awareness amongst general public of measles impact on beef sector.
- Inadequate DVS resources in the field.
- Lack of meat inspectors at abattoirs to prevent infected meat entering the food chain.

4.2.2. LIVESTOCK IDENTIFICATION AND TRACE-BACK SYSTEM

Livestock branding originates in ancient Egypt, originally using a hot metal stick. Originally, branding served to identify the owners. This practice was particularly followed in countries with large grazing areas. In more recent times branding has been used to assist in traceability in addition to identification. In April 1997 in response to the BSE[43] crisis, the Council of the European Union implemented a system of permanent identification of individual animals enabling the traceability.

[41] Authors' calculations based on Annual Agricultural Survey information.
[42] Data provided by BMC
[43] *Bovine spongiform encephalopathy*, or 'mad cow disease'.

The key objectives were:

- The localization and tracing of animals for veterinary purposes, in order to control the spreading of infectious diseases.
- The traceability of beef for public health reasons.
- The management and supervision of livestock as part of the common organization of the market[44]
- The identification systems requires that:
    - Each animal has a unique identification number
    - Each holding area is registered in a database
    - All animal movements are registered.

Initially, Botswana chose an advanced system, using a bolus inserted through the mouth into the stomach of the animal. A portable scanner reads the unique information registered in the bolus emitted with Radio Frequency Identification (RFID) and uploads the information into the centralized server located at MOA.

Following the feedback from farmers and other stakeholders, on 1St January 2013 the government decided to replace the bolus system with ear tags. There has been a transition period during which both systems were used in parallel and the data from both systems was recorded in the MOA database.

Although upgrading the LITS to the ear tag used widely in Europe, Botswana's main export partner, the challenges in the implementation of the system are attributed to DVS internal processes rather than the system shortages[45]. Last but not least, the implementation of the analogue ear tag as an intermediary solution is adding complexity will lead to further delays of implementing the digital ear tags even further. It is therefore recommended to initiate immediately the implementation of the digital ear tag and phase out the use of both bolus and analogue ear tag.

The main problems surrounding LITS include:

- Owner's details are not correctly updated in the central MOA server
- A DVS member of staff is required to scan and issue movement permit at the farms, leading to delays and eventually disruptions to BMC's supply chain.
- Data is not updated by small-scale farmers due to lack of funds to purchase a scanner, failing to comply with export markets requirements.
- The government has invested over P230 million for a well-designed system but the project implementation has failed to deliver a reliable fully fledged solution.
- Unclear split or roles and responsibilities amongst the various stakeholders in the value chain.
- Delays or even failures to update the information into the central MOA database.
- Absence of combining multiple databases related to animal disease management, animal movement and traceability.
- Conflict of interest as DVS is both the implementation body as well as the auditor.

[44] http://ec.europa.eu/food/animal/identification/bovine/index_en.htm

[45] Cattle Identification and Traceability in Botswana, Moreki J. C., Ndubo N. S., Ditshupo T. and Ntesang J. B.

4.2.3. QUALITY CONTROL AND MANAGEMENT SYSTEMS

The LMIA requires that all slaughtering facilities are registered and their operations monitored by meat inspectors. The Act is based on *Codex Alimentarius*[46] international food safety standards and recognized for its completeness and quality. Nevertheless several years after its introduction, the Act has not been properly managed and the authorities have failed to reinforce it across the industry. Some of the current shortages in reinforcing the Act will be bridged when the newly approved Food Authority, under MOH is established. The issue is mostly related to the domestic consumption leading to double standards. BMC is both ISO and HACCP certified therefore this is not posing a problem for the export markets. Besides the food safety there are general skills and operating practices lacking within the beef sector, namely agricultural, hygiene and manufacturing practices. There is not coherent strategy implemented with respect to those and every farmer is applying his/her own.

Current issues related to quality control and management systems include:

- Inadequate enforcement of LMIA across the industry resulting to double standards for the domestic market
- Food safety responsibilities are currently scattered across different departments of MOA and MOH
- Lack of meat inspectors allowing potentially contaminated meat to enter the food chain (see measles)
- Slaughtering facilities lacking hygiene facilities and cold storage are allowed to be established
- Need for a coherent effort to implement good agricultural practices
- Scarce sanitary facilities and hygiene practices at holding level
- Inadequate manufacturing practice for slaughtering and processing of food leave with food processors to follow their own.

4.3. TRADE ASSOCIATIONS

The Botswana National Beef Producers Union (BNBPU)[47] acts as an apex institution for the country's network of local and regional beef producers' associations. The various associations at the village and local level collaborate in 17 regional beef producers' associations. The chairpersons and secretary generals of each of the regional associations form a National Beef Council. The Council elect the Executive Committee of the BNBPU. BMC charges a levy of P2 per head of cattle it purchases and this is collected by MOA to fund the secretariat of the union. To date, the CEO of BNBPU or its secretariat has not been formally funded. The regional associations lack resources and at present do not provide meaningful services to their members.

In addition to the network of beef producers' associations, there is a Botswana Meat Traders and Processors Association (BMTPA), which represents the interests of processors. It was established in 2009. Its objective is to represent members on matters affecting and concerning the business of meat industry. Membership is open to all butchery owners. Membership shall be open to individuals, companies, closed companies, sole proprietors and joint ventures. The chairman of BMTPA represents the association at BOCCIM. The association has 15 members.[48]

[46] See http://www.codexalimentarius.org

[47] The BNBPU has superseded the Botswana Cattle Producers Association (BCPA).

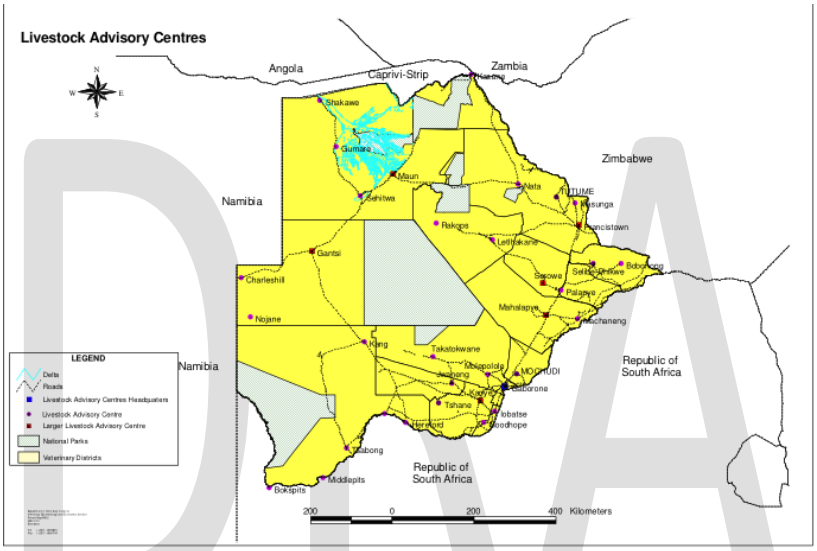
[48] BMTPA information

Some of the challenges facing the beef producers associations include:

- Weak regional and local farmers associations.
- Lack of coherent strategy for farmers associations.
- Associations lacking financial independence and secretariat support.
- Weak networks within trade associations.
- Need for capacity building amongst associations members.

4.4. LIVESTOCK ADVISORY CENTERS

Figure 19: Geographic distribution of Livestock Advisory Centers



36 Livestock Advisory Centres (LAC) are scattered around Botswana. Their primary purpose is to sell livestock inputs such as feeds, medicines, vaccines, and husbandry equipment. Figure 19[49] shows the distribution of LACs across the country.

In the past LAC were the sole feed vendors in rural areas. The prices were heavily subsidized. Over the years and due to budgetary constraints it has been challenging for LAC to keep an adequate amount of feeds, vaccines and medicines stock. Their limited scope includes the provision of inputs at subsidized prices. LAC staff cannot always meet their demands in terms of making on-site visits for inspection, issuing movement permits etc. Due to budgetary restrictions the availability of inputs is not always guaranteed for the farmers, thus leading to delays in cattle treatment and productivity loss. The services provided by LAC are free for all farmers irrespectively of the size of their herd or their financial capability. Sales and uses of medicines are not registered or captured centrally by MOA.

LAC require further attention in the following areas:

- Optimize the location of LAC to ensure accessibility and reduce transport costs.
- Separate the veterinary advice from the commercial aspect within the LAC.
- Increase the availability of LAC staff.
- Ensure the availability of inputs[50]

[49] http://www.moa.gov.bw/downloads/lac_history.pdf
[50] FAO Report

4.5. TRANSPORT

In the past when the transportation network had not yet been developed the transfer of cattle from the farm to the abattoir was done by foot. Ever since roads were built, trucks of all kids are used to transport cattle. Before the cattle are transported, a movement permit needs to be issued by the DVS staff. This is a cumbersome process that affects both farmers and DVS. For the EU market export, all cattle are exported to South Africa, where they are stored in BMC's owned cold facilities in Cape Town. The lack of alternative route, poses a significant risk to Botswana. If there is an FMD outbreak in South Africa, cattle from Botswana would no longer be able to travel through the country.

Transportation poses a series of issues in the value chain, including:

- Large amount of farms are not easily accessible by road.
- Lack of organized transportation system for cattle movements.
- Cattle movement is a cumbersome bureaucratic process.
- Many small scale farmers sell their cattle to middle-men or local butchers due to lack of transport.

4.6. RESEARCH AND DEVELOPMENT

The MOA's Department for Agricultural Research is the principal body responsible for research in the livestock sector. The main beef sector-related carried out by the department is relating to breeding stock and practices. There is currently a considerable need for additional research in the beef sector. In order for the research to be applicable, it should be conducted with a market-driven focus. Otherwise it risks remaining a desk exercise. The areas where research could benefit the beef sector include:

- Scientific research on FMD development and spread in Ngamiland.
- Scientific research on cattle and wildlife movements in Ngamiland.
- Indigenous plants-based feeds and fodders.
- Dry-season feeding.
- Nutritious content and mass uptake for food supplements.

4.7. TRAINING

The principal training provider in the sector is the Botswana College of Agriculture (BCA). It was established in 1991 under an Act of Parliament, which abolished the then Botswana Agricultural College that had existed since 1967. The College is a parastatal under MOA and an associate Institution of the University of Botswana. BCA offers higher diploma and degree programs in agricultural sciences, as well as short courses offered by its Centre for In-service and Continuing Education.[51]

[courses (degree, technical], research into livestock sector, no. of students, etc.]

In addition, the MOA Division of Farmer Training operates five Rural Training Centres in Denmam, Francistown, Southern, Ngamiland and Mahalapye. They offer training in different aspects of

[51] http://www.bca.bw

agricultural production, including livestock production. Courses range from one to six weeks and are offered free. Enrolment is secured through extension officers.[52]

Training courses offered tend to be of high quality. However, they often lack commercial and economic content. In addition, there is a dearth of training offered to technicians and field workers, doing day-to-day work in the farms.

4.8. FINANCE AND INSURANCE

Beef production, especially on a commercial basis, requires substantial funding. In addition to capital investment in land, infrastructure such as fencing and plant, and cattle holdings, the long production cycle extending to three-to-five years requires working capital support.

Both the National Development Bank (NDB) and the Citizen Entrepreneurial Development Agency (CEDA), which are government funded, provide concessional finance to the sector. The latter also provides grant. CEDA has outstanding loans of P1.6 billion to the agricultural sector, of which approximately half is to the livestock sectors. Most of these are to cattle producers and CEDA is keen to finance other parts of the value chain, including small abattoirs and processors. The government also provides significant direct commercial support to BMC.

The FAO Report highlighted that in 2010, the amount of commercial credit to the beef sector was significant, with total credit from the five domestic commercial banks estimated at P742 million. Nevertheless, in the absence of land and other fixed collateral, communal farmers find it difficult to borrow. Lending against supply contract is not common, although BMC has entered into a guarantee scheme with Standard Chartered Bank in respect of some of its suppliers.

In 2010 the Botswana Insurance Company launched a range of livestock insurance products developed in South Africa. These are mainly aimed at larger commercial farmers.

[52] http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/Tools--Services/Agricultural-Training/Farmer-Training-Services/?p_id=3995

5. GOVERNMENT POLICIES RELATING TO THE BEEF SECTOR

5.1. INTRODUCTION

Agricultural sectors are typically characterized by widespread government activity across the world, particularly as they affect the livelihoods of the rural poor. This is particularly the case in Botswana's beef sector, which is of strategic importance for the country. Over the years, the government has implemented a number of initiatives to provide support to the sector as a whole, or to particular segments within it, often with mixed results. Currently, the government's participation, or strong influence, is prevalent across the beef value chain.

In this section we highlight the legal and regulatory framework of the sector, as well as some of the principal government policy actions. We are not aware of any donor programs aimed at directly supporting the beef sector.

5.2. LAWS AND REGULATIONS AFFECTING THE SECTOR

The FAO Report lists the following laws as being important for the sector:

1. Law 36:01 Control of Livestock Industry
2. Law 36:02 Branding of Cattle
3. Law 36:03 Livestock and Meat Industries, covering *inter alia*:
    a. Grading and Carcass regulations
    b. Livestock and Meat Industries (Meat Inspection, Control of Red Meat Abattoirs)
    c. Livestock and Meat Industries (Producers' Agent Regulations)
    d. Livestock Bones (Export Levy Regulation)
4. Law 36:04 Registration of Livestock. This was replaced in 2009 (implemented in 2012) by the Livestock Improvement Act)
5. Law 36:05 Pounds
6. Law 36:06 Matimela (relating to stray livestock)
7. Law 37:01 Diseases of Animals
8. Law 37:02 Cruelty to Animals
9. Law 51:01 Cattle Export and slaughter Levy
10. Law 74:04: Botswana Meat Commission.

The following laws and regulations are also relevant to the sector:

- BSE Control (Removal of Specified Risk Material), 2004
- Livestock Identification and Trace-back Regulations, 2004
- Stock Feed Regulations, 2004
- Prohibition of Use of anabolic Hormones and Thyrostatic Substances Regulations, 1987
- Food Control Act of 1993
- Public Health Act of 1971 (amended 1981)
- Agrochemicals Act of 1999
- Township Act of 2004
- Local Government (District Councils) Act of 1965 (amended 2004)
- Standards Act of 1995.

The MOA is has been steering for some time a draft Food Control Act for approval and enactment. Under the proposed law a Botswana Food Control Authority and a National Food Control Board will be established. The objective is 'to provide consumer protection and ensure that all foods during production, handling, storage, processing, and distribution are safe, wholesome and fit for human consumption; conform to safety and quality requirements; and are honestly and accurately labelled as prescribed by law.'[53]

To the extent that a substantial element of the value chain is focused on exporting to the EU markets, various EU regulations also affect the sector, including those related to the transport of animals; animal identification and registration; and packaging.

5.3. POLICY FRAMEWORK

The six-year National Development Plans (NDP) provide the government's objectives for the sector over their life. The current plan, NDP 10, covers the period 2009 to 2016[54].

NDP 10 sets out the following goals, objectives and programs aimed at the agricultural sector in general, and livestock in particular:

Goals

1. To facilitate the growth and competitiveness of the agricultural sector.
2. To enhance farmers' capability and willingness to use resources sustainably and safeguard rangeland resources.
3. To provide the necessary human resource needs.

Strategies

The goals are intended to be achieved through the implementation of the following strategies:

- Support to household security and SMME enterprises, to enhance production levels and sustain livelihoods of small scale farmers. This strategy involves the provision of subsidized services, inputs and skills and the promotion of clustering through nationwide service centres.

- Commercialization based on competitive advantage, aimed principally at promoting private sector investment in horticultural and crop production. Of relevance to the livestock sector are the objectives of:

    - Increasing private investment in infrastructure such as roads, electricity, water and telecommunications and technology.
    - Facilitating farmers' access to credit, markets and insurance.
    - Continuing to support genetic improvement through crossbreeding.
    - Hiving off services currently provided by government to the private sector.

- Pest and disease management, with particular focus on managing the spread of major diseases such as FMD. For the latter, the strategy envisages the establishment of buffer zones along FMD high risk areas, as well as implementation of effective management and monitoring tools for disease control.

[53] Draft Food Control Act

[54] Exceptionally for seven years, to coincide with meeting the aims of Vision 2016

- Building institutional capacity, which recognizes the extension system as being 'very deficient', aims to build skills and transfer technology; strengthen farmers associations; decentralize key services and manpower to farming communities; and ensure skills development is demand driven.

- Conservation of agricultural resources, which seeks to sensitize and empower farming communities to manage resources efficiently and rehabilitate degraded areas, promote more scientific research to back indigenous knowledge, and harness the benefits of intellectual property and associated rights.

The plan sets a number of targets for the agricultural sector, the most pertinent for the beef sector being increased beef production, being measured by increase in off-take from 10.5% in 2009 to 15% in 2016.

Programs

The NDP 10 outlines the following programs aimed at the beef sector:

Livestock Development Program

Aimed at the wider livestock sector in general, the program aims to assist farmers develop basic infrastructure for farming and purchase of some inputs, and with the drilling and equipping of boreholes in areas with water scarcity.

Agricultural Business Development Program

The program seeks to develop the livestock supply chain through:

- Increasing cattle off-take and throughput at processing plans by removing supply barriers posed by requirements of veterinary and police permits and transport logistics between markets and production areas.
- Improving product quality and consistency.
- Reducing the seasonality of supply by improving base load production levels.
- Liberalizing beef markets and expanding the export base for agricultural products.
- Capacity building in organizational, business management and technical skills for farmers.
- Facilitating market access through infrastructure development.

National Plant and Animal Health Regulatory Services Program

The plan highlights that around 10% of animals that reach BMC have measles, reducing annual export earnings by approximately P50 million. The program aims to train beef cattle farmers on the public health risks and negative impact on revenues. In addition, it focuses on:

- Building infrastructure and capacity to manage risks associated with animal and plant pests and diseases.
- Implementing measures to boost customer confidence with regard to food of animal and plant origin.

Agricultural Research and Technology Development Program

The program is intended to develop appropriate technologies to mitigate production constraints to provision of various services, including conservation of animal genetic resources.

Support to Enhance Service Delivery Program

Aimed at improving capabilities and access to research information to extension service deliverers, the program has four components:

- Fleet expansion to improve farm visitations.
- Computerization.
- Integrated office and residential facilities to improve work environment.
- Research support for technical development of arable and livestock production.

The mid-term review of NDP 10[55] highlighted that the following strategies would be implemented that are relevant for the beef sector:

- 'Transforming the livestock traceability system from the use of the bolus to ear tags.
- Adopting a value chain approach to the development of the beef industry.
- Community grazing areas will be demarcated to facilitate good range management and adoption of good husbandry practices.'

Status of these programs

5.4. OTHER CORE SUPPORT POLICIES AND INITIATIVES

Land allocation and fencing policy[56]

One of the principal government policies affecting the livestock sector is that related to the allocation and management of land for livestock husbandry. The 1975 Tribal Grazing Lands Act moved the allocation and management of land from tribal chiefs to local land boards. Currently, it is possible for individuals to apply for the lease of a plot of land for exclusive use. However, the lack of finance for the necessary investment in fencing, boreholes, farm infrastructure and working capital often precludes the effective use of such land, especially in developing commercially managed farms. One of the problems highlighted about the current land usage policy is a 'dual rights' system, whereby the farmer allocated land for exclusive use can at the same time have access to communal resources, thereby depleting communal pastures and water resources, whilst saving on own land as reserves.

Since the 1950s, commercial farmers have been allowed to fence their plots. In the early 1980s, there was a move toward fencing parts of communal lands for exclusive use, but this was slowed down as a result of community resistance. Land allocated for exclusive use by the land boards is allowed to be fenced.

[55] Mid-Term review of NDP 10. Ministry of Finance and Development Planning. June 2013.
[56] FAO Report

Support programs

The government's Livestock Management and Infrastructure Development (LIMID) program, which came into existence in 2002 through the consolidation of two initiatives, is currently the core support program for the sector. It provides grants to cattle farmers for establishing fencing and boreholes, and direct subsidy-based support for inputs and fodder. Some of these are distributed through LAC.[57] Between September 2010 and August 2013 a total of P86.6 million had been disbursed for LIMID operations. Among other projects, 169 related to animal husbandry and fodder support and 118 borehole drilling projects had been implemented. In the 2013-2014 financial year LIMID had a budget of P50 million[58]

DVS also provides free or subsidized services and vaccinations to cattle farmers. In addition, relief measures are effected in drought affected years, for example through subsidies on selected livestock feeds.

The Integrated Support Programme for Arable Agricultural Development (ISPAAD) was introduced in 2008 to increase productivity in arable sub-sector. It provides a range of support including the provision of potable water, seeds, fertilizers and access to credit.[59] It indirectly supports the livestock sector through increasing the availability of fodder crops.

BEAC[60]

Under a 2008 strategy entitled Botswana Excellence: A Strategy for Economic Diversification and Sustainable Growth, earmarked to be coordinated by a Business and Economic Advisory Council (BEAC), an action plan was developed for implementation. The MOA reports to the National Strategy Office (NSO) on the implementation status of this action plan, under the title of BEAC.

The goal for the cattle industry is to commercialize it and 'create a comprehensive, integrated recovery and structural change strategy, involving herd restructuring, pricing, BMC efficiency improvement and changes in marketing. It envisages a gradual deregulation and privatization of BMC as the cheapest vehicle for achieving substantial diversification.

The action plan aims to:

- Create a threefold increase in cattle sector contribution to GDP over five years.
- Create programs to actively promote switch from oxen production to a weaner-based substantially feedlot-based cattle production.
- Incentivize traditional farmers to clear out old livestock by paying temporary premium.
- Provide government financial and expertise support for herd restructuring and rebuilding, by teaching commercial farming expertise to traditional farmers and supplying breed stock, by using Banyana farm as a platform.
- Restructure BMC and increase and diversify exports.

The MOA report to the NSO highlights the progress achieved in realizing these goals, and various bottlenecks and obstacles to their implementation.

[57] FAO Report.
[58] Ministry of Agriculture, National Strategy Report. 8 October 2013.
[59] http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/Departments-of-MOA/MOA-Departments1/ISPAAD-Programme/
[60] Information in this section is from Ministry of Agriculture, National Strategy Report. 8 October 2013.

Initiatives reported on include: promoting weaner production; strengthening artificial insemination services; restructuring of Banyana farm; promoting fodder production; facilitating the availability of breeding stock; achieving the elimination of subsidies to BMC; restructuring BMC for immediate efficiency and ultimate privatization; and significantly increasing export and downstream activities.

Banyana farm

In 1998, the government acquired the Banyana farm from the Commonwealth Development Corporation to promote cattle breed improvement and act as a centre for training traditional farmers on improved and commercialized cattle production. Lack of resources and technical support led to limited success of this initiative. In 2008, the MOA sought to revive the initiative through a National Beef Herd Improvement Plan, the objectives of which included the strengthening of pricing and marketing; production management; genetics and the national herd; and education.[61] However, the Banyana farms, which have three bore holes and capacity for up to 15,000 cattle, are currently used very sparingly and attempts are being made to restructure them and find alternative uses.

5.5. TRADE POLICY RELATING TO THE BEEF SECTOR

The beef sector in Botswana is highly protected. As highlighted previously, BMC enjoys a monopoly in the export of beef and livestock from the country. Beef imports into Botswana are banned. The South African and wider SACU market is protected from external competition by a tariff of 40%.[62]

A number of studies and reports have recommended the lifting of the BMC monopoly, at least for live animals in the first instance, to enable farmers to achieve higher prices, and improve the viability of producers. In addition, consideration needs to be given to importing lower grade beef in order to substitute higher grade beef for export and also for processing.

5.6. PROFESSOR MICHAEL PORTER'S RECOMMENDATIONS

In November 2012, Professor Michael Porter made a presentation to the Cabinet entitled Botswana: Towards a New Economic Strategy. The recommendations of the presentation focus on developing a cluster-based approach to develop the country's competitiveness and progress the government's EDD. The Cabinet has broadly accepted the recommendations and they are being implemented through NSO.

Cattle is one of the emerging sectors identified for development. The presentation recommends the following relating to the sector:

- 'Upgrade the cattle value chain, positioning Botswana beef as a high-end naturally produced product.
- Set quality standards and guarantee achievement of high standards in naturally produced cattle.
- Diversify end markets through a focus on new consumer groups in emerging economies.
- Review the structure for international sales and marketing.'

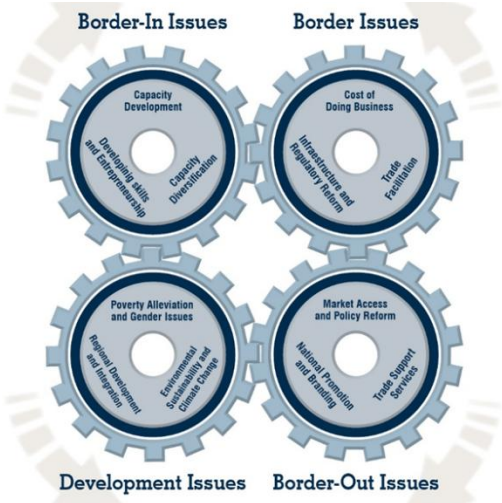
[61] The National Beef Herd Improvement Plan. Agricultural Hub. MOA. October 2008.

[62] Botswana Development Policy Review: An Agenda for Competitiveness and Diversification. World Bank. September 2012.

6. COMPETITIVE CONSTRAINTS

6.1. INTRODUCTION

Figure 20: The four gears of export competitiveness



The Four Gears Framework[63] highlights the aspects, within the country as well as outside it, that contribute to a country's or sector's export success.

The Border-In Gear identifies supply-related competitiveness constraints, relating to matters such as capacity limitations, degree of diversification in the product base, as well as the entrepreneurialism and skills available in the sector. Border issues relate to the sector's business environment, in particular the strength of its support services, legal and regulatory environment, and the relative cost of doing business in the sector. The Border-Out Gear analyses the constraints the sector faces in entering export markets with respect to the trade support services, trade policy and practice related barriers within the country and in export markets, as well as the effectiveness of branding and promotion of the sector's promotion and services. Finally, the Development Gear addresses long-term sustainability issues such as poverty alleviation, gender and youth development and the environment, as well as matters relating to regional cooperation.

Competitive constraints identified under these four gears impair export performance both in isolation and by interacting with each other. It is therefore important that all the key constraints are addressed by way of a coordinated strategy to ensure that the sector's export performance is optimized.

In this section, the preceding information has been built on to identify the Botswana beef sector's key export competitiveness constraints, by applying the Four Gears Framework. The vision, strategy and roadmap provided in the subsequent sections aim to alleviate these constraints.

[63] This framework has been created by ITC for developing its export strategies.

6.2. BORDER-IN GEAR: SUPPLY SIDE CONSTRAINTS

BORDER-IN GEAR: SUPPLY-SIDE ISSUES

Capacity development

- The sector is dominated by small, potentially uneconomic holdings.
- Weather fluctuations, droughts and shortage of underground water hamper the sector's performance.
- Seasonality of supplies to slaughtering facilities reduces supply chain efficiency.
- Persistent FMD in red zone reduces volumes and prices achievable for exports.
- High overhead costs at BMC imposes a cost to the entire sector.

Capacity diversification

- There is a need to invest in technology, R&D and production capacity to produce different cuts, packaging, etc. for export.
- The range of secondary processed beef available is very limited.

Gear

Development of skills and entrepreneurship

- Traditional pastoral methods often hamper introduction of modern husbandry techniques.
- Most communal farmers and some commercial farms do not commercially approach livestock farming.

Capacity development

The sector is dominated by large, potentially uneconomic holdings

Botswana's population has a long tradition of herding cattle. The majority of the population own cattle irrespectively of their employment and social status. This results to a large number of small holdings that are not economically viable. According to Statistics Botswana, in 2012 over 74% of cattle holdings hold a population of up to 15 heads on average[64]. The majority of the holdings are located in communal areas and full-time farmers operate some of them with no official farming training. Some are owned by part-time farmers who consider farming as a weekend activity on top of their official employment leaving the day-to-day management to herd boys residing at the holdings, the majority of which has no official training.

Weather fluctuations, droughts and shortage of underground water hamper the sector's performance

Botswana experiences extremes in temperatures and weather variability over the year. The summer months of October to April are characterized by high humidity and unbearable heat exceeding 40^{oC} in most areas of the country. Winter days between May and September are notably warm and sunny whilst temperatures drop to freezing points over the night hours. In the medium to long term Botswana experiences persistent drought periodic cycles of approximately a decade long. The guaranteed water availability is essential for both humans and animals.

[64] 2012 Annual Agricultural Survey Report, Statistics Botswana

Seasonality of supplies to slaughtering facilities reduces supply chain efficiency

Traditionally cattle farmers prefer to let their cattle graze during wet summer months until the beginning of winter. During this period there is plenty of grass and the cattle gain weight. On the contrary, towards the middle and the end of the dry season, the pastor areas are overgrazed and the grass quantities are scarce. Therefore traditional farmers unless in need, they tend to hold on selling their cattle. If plotted on a piece of paper, the beef supply over the twelve months of the year would look very similar to a normal distribution or "bell curve"[65], with the oversupply being around June-July months and the scarce of cattle supply in December-January.

Persistent FMD in red zone reduces volumes and prices achievable for exports

The cattle population in Botswana has been divided in the North and the South with a veterinary fence. The country regions are then sub-divided in veterinary zones that ensure that the impact new Foot and Mouth Disease (FMD) outbreaks are limited. Approximately 10% of communal cattle are located in areas identified as "FMD with vaccination region". No cattle can be exported to EU from this red zone and cattle from this region is typically used for canned food as heat processing kills the virus but reduces the value of the meat by 40%[66]. The restriction to access the lucrative EU market has resulted in the cattle located in Ngamiland worth the least in Botswana with an average price per head of P2.569 vs. a national average of P3.136.

High overhead costs at BMC imposes a cost to the entire sector

Botswana Meat Commission's (BMC) results have been disappointing over the last years. In some cases external factors have contributed towards significant losses like for example the period 2011-2012 when the exports ban to the EU was introduced. In addition, the administrative staff costs have been mentioned by both the GRM Consultants report and the FAO value chain study as being excessive and that they should be reduced. [The cost of staff salaries represented 16.5% of sales in 2008] Any data on MeatCo to compare?

Capacity diversification

There is a need to invest in technology, R&D and production capacity to produce different cuts, packaging, etc. for export

Botswana Meat Commission main products include carcasses, cuts in boxes and canned food. This portfolio is product-driven rather than market-driven. No extensive market intelligence data has been conducted. BMC should invest in R&D capabilities. The National Food Technology Research Centre (NFTRC) could be a key partner due to the knowledge on food technology and the pilot plant capabilities. BMC should also run a feasibility study for installing new packing lines or adapt existing ones to produce smaller consumer packs using a better quality packaging to communicate a premium image. An improvement of the consistency and quality of cuts should also be evaluated by BMC export customers.

[65] http://www.regentsprep.org/Regents/math/algtrig/ATS2/NormalLesson.htm
[66] BMC data

The range of secondary processed beef available is very limited

In addition to the chilled and frozen product expansion, BMC should look into expanding the processed food portfolio with new products and improve the existing portfolio. BMC should evaluate the opportunity of developing a new brand for canned corned beef and limit the ECCO brand to pet food. The canned food portfolio could be expanded with new local varieties of stew. Food recipes for this type of products have been previously been developed by NFTRC but haven't been introduced in the market due to lack of interest by BMC.

Development of skills and entrepreneurship

Traditional pastoral methods often hamper introduction of modern husbandry techniques

The 88% of the nation's cattle population held by traditional farmers is farmed with traditional methods lacking scientific and technical background. Traditional pastoral methods have been developed considering the scarcity of resources and simplicity for the farmer and they are not necessarily the most productive. When comparing the traditional beef sector to the commercial, both the off take rates and the death rates of the traditional sector are worse (6.9% vs. 11.99% and 9.9% vs. 3.3% respectively). Clearly there is a potential for the traditional sector to improve and match the performance of the commercial sector.

Most communal farmers and some commercial farms do not commercially approach livestock farming

According to 2012`s Annual Agricultural Survey, there are 1.985.595 cattle in the traditional farming sector shared amongst 72.116 holdings, resulting to an average headcount per holding of 27.5 heads. These holding are not commercially oriented and they owners lack knowledge of up to date skills and practices. They lack the means to modernize their farms and very often the owners see farming as an afternoon or weekend activity on top of their full time employment.

6.3. BORDER GEAR: QUALITY OF BUSINESS ENVIRONMENT ISSUES

BORDER GEAR: QUALITY OF THE BUSINESS ENVIRONMENT

Infrastructure and regulatory issues

- Underdeveloped transport and communication infrastructure increases costs and disrupts access to supplies and markets.
- BMC lacks of modern, flexible packaging facilities for exports.
- BMC monopoly on exports disrupts the value chain and the lack of competition limits innovation and export growth.
- There is a lack of technology at BMC to promote CBT in Ngamiland.
- Politicization of sector prevents strict enforcement of some regulations.
- Import restrictions distort the market and can reduce scope for exporting higher quality beef.

Trade facilitation

- There is limited technical and economic information available to sector participants.
- Botswana does not have access to meaningful independent export market intelligence.
- There is very limited research into the sector's economics, diseases, etc.

Quality of the institutional support

- Limitations in capacity at DVS leads to including lack of flexibility, low commercial orientation and inconsistent official controls and enforcement.
- There is dispersal or export responsibilities among MOA departments and MTI needs to increase its involvement in trade negotiations affecting the sector.
- Beef producers associations are underdeveloped.

Cost of doing business

- There is a high reliance on expensive imported inputs including feeds, energy.
- Inefficiencies in the sector's support framework increase costs and risks for participants.
- The need to comply with a wide range of certification requirements and limitations in local testing facilities causes delays and increases costs.

Infrastructure and regulatory issues

Underdeveloped transport and communication infrastructure increases costs and disrupts access to supplies and markets

Botswana covers an area of 581,730 km^2 with a population of 2,038,228[67]. The population density of 3.5 inhabitants per square kilometre poses a challenge for the government to establish linkages between communities and industries. Large amount of cattle farms are located in remote areas, often tens of kilometres away from a tarred road and only accessible by a 4x4 vehicle. Similarly the communication networks of fixed lines and ADSL are limited to the main towns. Mobile phone

[67] 2011 census data [AGA: Where is this data from? Which document?]

communication is substituting for the lack of fixed line infrastructure but it is limited in big towns and partially alongside the main roads.

BMC lacks of modern, flexible packaging facilities for exports

BMC manufacturing infrastructure has been lacking modernization and investments to bring its standards to the 21st ones. This is also reflected by the product portfolio current available. BMC is currently focusing in selling big packs with limited branding with lacking high-end packaging. BMC should invest in modernizing the packaging facilities ensuring adequate flexibility that will allow BMC operations to adapt to ever changing demands from its customers.

BMC monopoly on exports disrupts the value chain and the lack of competition limits innovation and export growth

Private sector participation to the exports of beef meat has been restricted by the BMC Act, allowing only BMC to export beef. The only export opportunity for private sector is through sales of processed meat products. There is a growing trend of value chain participants that expect to see the BMC monopoly being lifted. Such a decision although considered necessary, it should not be taken light hearted due to multidimensional implications it will result to. A liberalized export market risks to result to an oversupply of export grade meat benefiting few big private firms. If not rightly regulated, lifting the BMC monopoly could damage the image of Botswana's beef abroad.

There is a lack of technology at BMC to promote CBT in Ngamiland

The value of the cattle located in FMD zones is very low primarily due to the difficulty of accessing the domestic, regional and international markets. Besides, the ongoing veterinary efforts to eradicate FMD from those zones, no alternative have been considered for increasing the local communities' income. The lack of the appropriate treating technologies mean that these cattle cannot be e.g. heat treated and sold to South Africa as pre-cook processed meat, nor maturing the meat to the point that the Ph drops below 6.0 and kills the FMD virus. Cattle from FMD with vaccination zones once properly treated and meat inspected could supply the domestic or regional markets whilst the cattle from FMD-free zones supply the export markets.

Politicization of sector prevents strict enforcement of some regulations

The financial contribution of the beef sector to exports has been reduced from 85% during independency to less than 2% in 2013[68]. Despite this drop, beef ownership is both part of Botswana's culture and it is very common across all socioeconomic layers of the population. Implementation of the legal framework related to beef has been facing challenges. These challenges are attributed to the lack of resources of qualified personnel in the field, the existence of temporary slaughtering facilities, the renewal of licenses for facilities that do not comply with the LMIA Act. Despite the technical shortages, the political sensitivity is a key contributor for the lack of implementation of the legislation.

Import restrictions distort the market and can reduce scope for exporting higher quality beef

The government has banned the import of chilled and frozen beef in order to protect and promote the development of the national beef sector. The lack of importing cheaper beef from e.g. Brazil or India means that some of the domestic cattle that could be exported are consumed domestically. Should the production yields are improved and export sales prices increase due to quality

[68] 2012 Annual Agricultural Survey Report, Statistics Botswana

improvement and branding, there is a risk of reducing the availability of beef meat for domestic market consumption unless beef imports are allowed.

Trade facilitation

There is limited technical and economic information available to sector participants

Sector participants do not have access to technical information, such as modern husbandry practices, latest EU standards and disease control methods. In addition, economic information, such as benchmarking performance indicators, prices in different cities and regions is lacking. This is partly contributed to by the lack of adequate extension officers, as well as limitations in the latters' training. The dissemination of BMC prices often breaks down due to limitations in the information chain between BMC, the extension officers and local associations.

Botswana does not have access to meaningful independent export market intelligence

Since 2012 BMC has outsourced all commercial activities to Global Protein Solutions (GPS) leaving BMC with no in-house expertise in market intelligence. The overreliance on GPS is restricting BMC to directly access market data. All information related to market trends and specific consumer requirements are channelled via GPS. After the closure of the inefficient and costly UK branch, BMC Sales & Marketing department has been left understaffed, lacking the necessary skills to open new markets and/or develop new products.

There is very limited research into the sector's economics, diseases, etc.

The MOA's Department of Agricultural research is the main entity responsible for research in the sector. The department's research agenda is principally focused on areas such as breeding stock. There is very little research available in areas such as the technical and economic implications of the adoption of technology and the economics of different models of farming. Also, limited coordinated efforts have been invested into understanding how, for example, FMD is generated and spread amongst the cattle and wildlife.

Quality of the institutional support

Various stakeholders when interviewed concentrated their feedback on the poor service quality they receive from the institutions. The lack of qualified people in the field is important and the limited resources are occupied in multiple tasks, sometimes of secondary importance for the sector.

Limitations in capacity at DVS leads to including lack of flexibility, low commercial orientation and inconsistent official controls and enforcement

DVS has accumulated a wide range of responsibilities, some of them not part of the department's strategy. Various stakeholders have expresses their unhappiness for the quality of services provided by DVS. The key feedback focuses on the availability of extension officers, the lack of means of transportation and the inefficiency of implementing the LITS system.

There is dispersal or export responsibilities among MOA departments and MTI needs to increase its involvement in trade negotiations affecting the sector.

Export related responsibilities are spread among different departments of MOA (for example between DVS, responsible for regulatory issues, and DAP, in charge of animal production, genetics

and breeding matters), BMC and MTI. As a result, in areas such as trade negotiations, efforts are often not pooled and there have been instances where different representatives of these institutions have attended meetings on the same topic in separate occasions. A more coherent team-oriented approach is needed. Similarly, more coordinated effort is needed in developing export markets, including BMC, MOA and MOFAIC.

Beef producers associations are underdeveloped

The role of the livestock producers is weak and there is a lack of coordinated efforts amongst their members. Most of the associations are lacking necessary funds to operate making them financially unsustainable. Communication with their members is limited particularly when the members are in remote areas. Most of the associations have been established based on geographical criteria and as a result represent a wide spectrum of farmers with very diverse needs (small and large scale farmers, ranchers and communal farmers).

Cost of doing business

There is a high reliance on expensive imported inputs including feeds, energy

Despite numerous government efforts and initiative over the years to diversify the manufacturing sector, very little has been achieved and the manufacturing sector is limited, leaving for the majority of goods to be imported mostly from South Africa. Livestock feeds and inputs are not exceptions to this rule. The majority of the raw materials are imported, increasing the costs for the farmers.

Inefficiencies in the sector's support framework increase costs and risks for participants

The support institutions have acquired responsibilities that with the current resources and capacities are unable to honour. The inefficiencies of the support institutions lead to delays, increase costs for the farmers and disturb the national and export supply chain. The Livestock Identification and Traceability System is an example where despite the investment exceeding P200 millions over ten years, the system is poorly implementing bringing losses for the farmers.

The need to comply with a wide range of certification requirements and limitations in local testing facilities causes delays and increases costs

The prospect of exporting to lucrative European markets has come at a cost for the local producers and local compliance authorities. A portfolio of tests on the quality of the meat is necessary to ensure that the meat is fit for export. The National Veterinary Laboratory (BNVL) does not have all the necessary experience to conduct tests such at chemical residues and hormones. It therefore outsources the task of conducting these tests at laboratories as far as Europe causing delays that could have been avoided should these tests were locally available.

6.4. BORDER-OUT GEAR: MARKET ENTRY CONSTRAINTS

BORDER-OUT GEAR: MARKET ENTRY

Market access and policy reform

- There is a shortage of people, knowledge, expertise and focus on trade among policymakers.
- There is limited trade coordination at the SADC level and possible misaligned priorities for South Africa weakens export negotiations.
- Reliance on exporting through SA poses risks of disruption.

Trade services support

- Reliance on one outsourced export agent presents a range of risks.

National promotion and branding

- Lack of national and product level branding.
- Botswana beef has limited product differentiation & targeting.
- There is heavy concentration on exports to South Africa and EU, especially UK.

Market access and policy reform

There is a shortage of people, knowledge, expertise and focus on trade among policymakers

In addition to the existing agreements with the EU and South Africa, there appears to be a knowledge gap in how to conclude negotiations on trade agreements with other nations and unions of countries. People with the necessary skills and expertise are in short supply and there is a lack of clarity on roles and responsibilities.

There is limited trade coordination at the SADC level and possible misaligned priorities for South Africa weakens export negotiations

The majority of the trade and policy making negotiations in the SADC regions is currently handled by individual countries. In the example of FMD policies at OIE, SADC region has a disadvantage being the only region worldwide where humans, cattle and wildlife share the same areas and resources. A regional coordination could benefit all the countries in the region. In addition, trade agreements at regional level are potentially weakened because South Africa has been granted separate free trade agreements with the EU, and is in a different position to other SADC members.

Reliance on exporting all Botswana beef through South Africa poses risks of disruption

South Africa and Botswana have long lasting cultural and trade links. BMC has owned cold facilities in Cape Town where all the beef intended for exports is stored before being sent to the markets. Botswana's over dependency on South Africa is posing a risk for future exports if the transport of meat is disrupted for some reason (FMD outbreak in South Africa, political and social unrest, etc.). Alternative routes for export, such as through Walvis Bay in Namibia, need to be explored.

Trade services support

Reliance on one outsourced export agent presents a range of risks

Similarly to developing a country diversification program, BMC as the sole national exporter, should strongly consider developing a strategy that would extend the sales agency network. These agencies do not necessarily have to be external companies like in the case of GPS, but BMC could benefit from strengthening its Sales & Marketing team to explore and develop new markets in Africa, Europe and beyond.

National promotion and branding

Lack of national and product level branding

Botswana beef is of equal to higher quality compared to other countries in the region and worldwide. Despite that, it is sold as a commodity and lacks branding and relevant market claims. At both national and international level there is no communication with the public on the superiority of the Botswana beef. Despite the fact the majority of the cattle could be considered "free range", no such claim accompanies Botswana beef in the market. Botswana could benefit from a nation-wide campaign to promote beef as a national product and work hand-in-hand with GPS to develop a relevant brand as it has been done in Namibia.

Botswana beef has limited product differentiation & targeting

As mentioned earlier in this report Botswana's beef exports are product rather than market-driven. The production facilities at BMC are set up for a limited range of cuts and there is an inconsistency of the quality of cuts. In order to diversify and explore higher valued markets, BMC should invest in the diversification of the products by understanding better the market needs and investing in the human capital of the abattoirs.

There is heavy concentration on exports to South Africa and EU, especially UK

With the exception of 2011[69], EU countries and South Africa contribute over 99% of national beef exports. This poses a strategic risk as it was demonstrated in 2011 when beef exports to the EU fell by 80% to US$17.8 million. Botswana Meat Commission should proactively explore different markets, especially in Africa[70]. For example in 2013, compared with South Africa's average boneless meat import price of US$3,390 per ton, Mozambique paid US$4,622; Tanzania paid US$5,257; and Angola US$6,622. The UK paid one of the lowest average beef prices among the more developed EU countries.[71]

[69] In 2011, EU and South African exports represented 82% of the exports.
[70] Mozambique, Angola, Nigeria.
[71] Authors' calculations based on ITC Trade Map data.

6.5. SOCIAL DEVELOPMENT GEAR

DEVELOPMENT GEAR

Poverty alleviation and employment generation
- Traditional communal practices limit income potential.
- Lack of commercialization limits capacity to generate employment.

Environmental sustainability and climate change
- Overgrazing, especially near boreholes, is contributing to environmental degradation and its impact is aggravated by disease outbreaks.
- Poor hygiene practices contaminate grazing areas.
- Livestock and wildlife co-management including fencing creates problems.

Regional development and integration
- There is a need for increased effectiveness in regional cooperation in areas such as trade negotiations, research and disease control.

Gender and youth inclusiveness
- There is low involvement of women and youth in sector.

Poverty alleviation and employment generation

Traditional communal practices limits income potential

Over 80% of the cattle population is owned and managed by communal farmers. Three quarters of the cattle holdings own less than 50 heads. These farmers are located in remote areas and they most of them use practices passed to them from their ancestors. These practices are not necessarily the most efficient or productive. In addition, most of the farmers have been herding their cattle in isolation not benefiting from economics of scales or cooperatives.

Lack of commercialization limits capacity to generate employment

According to the Annual Agricultural Survey Report, the average off-take[72] amongst the commercial farmers in 2012 was 11.9% whilst the same rate for traditional farmers was only 6.9%. This is explained by the lack of commercialization amongst traditional farmers. Generating regular income from cattle is not always the traditional farmers' priority. The statistics illustrate the opportunity for the traditional farmers to increasing farm performance and income, closing by the gap with the commercial counterparts.

[72] Off-take = Sales – Purchase + Home Slaughter.

Environmental sustainability and climate change

Overgrazing, especially near boreholes, is contributing to environmental degradation and its impact is aggravated by disease outbreaks

Large parts of Botswana are very dry lacking easy access to fresh water. In order to overcome this shortage, rural populations have drilled boreholes to serve both human and cattle consumption. Humans and cattle are therefore concentrated in small areas sharing same resources. Cattle unlike small livestock need a lot of water and cannot be grazed very far from water points. Particularly for public and communal boreholes the phenomenon is greater since the resources are shared amongst the community members too. The sharing of boreholes and pasture areas amongst the community members and the relative limited means for disease management leads to disease outbreaks becoming more regular. The long-term impact includes loss of ecosystem function and productivity as well as reduction of quality of pastures and crop yields.

Poor hygiene practices contaminate grazing areas

Data provided by Botswana Meat Commission (BMC) shows that in 12.8% of the cattle that went through their abattoirs were contaminated with measles. Measles has been growing by 10% on average the last couple of years. This is a growing concern for the country and should be addressed swiftly. Measles is transmitted by human faeces due to poor sanitary practices in communal holdings particularly peri-towns and peri-village.

Livestock and wildlife co-management including fencing creates problems

Tension between humans and wildlife is an ongoing problem in Botswana that causes frustration amongst farmers. Very often there is fear that predators will be a threat to attack the herds. In many places wildlife and cattle share the same resources having considerable effects on the quality of the landscape.

Regional development and integration

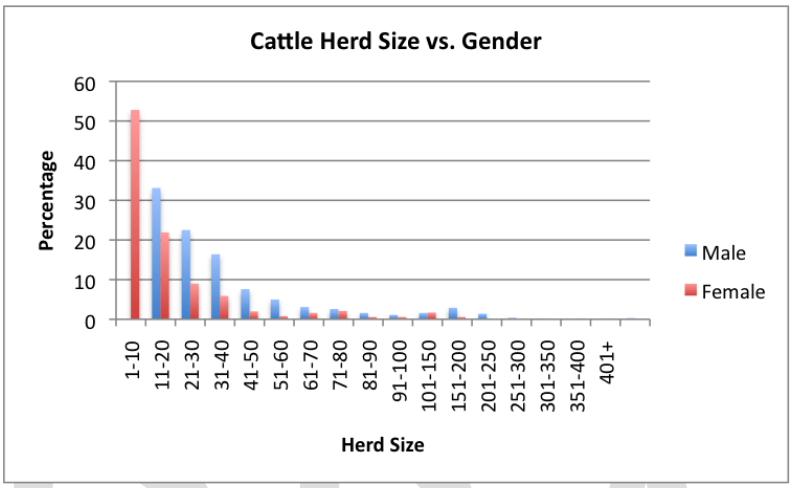
There is a need for increased effectiveness in regional cooperation in areas such as trade negotiations, research and disease control

There are various regional bodies, committees, associations and initiatives at SADC and SACU levels aimed at enhancing economic and developmental efforts. Nevertheless, at times due to differences in interests between members, or the lack of resources, the results are often limited. It is critical that effectiveness of cooperation is enhanced in areas such as trade negotiations, research and disease control as most countries working independently on these efforts will achieve limited impact. Initiatives such as the SADC Promotion of Regional Integration (PRINT) Project have had limited impact to date.

Gender and youth inclusiveness

There is low involvement of women and youth in sector

Figure 21: Gender distribution of traditional cattle holdings



The cattle farming sector is dominated by male farmers. This could be explained by the fact that traditionally in Botswana society men were the herders. Women own 35% of holdings and 24% of cattle. 75% of communal holdings owned by female farmers have 20 or fewer head. The equivalent proportion for males is 55%.

At the same time the participation of youth in the sector is worrying small, with only 0.6% of the holdings owned by farmers aged 24 years or less. This can be explained by the lack of financial capacity to enter the sector through acquisition of cattle and land. Maun region shows the highest percentage of young female holder owners with 61% of females farmers equal of less than 24 years old coming from that region.[73]

[73] Data for this section was drawn from the 2012 Annual Agricultural Survey. Statistics Botswana. April 2014.

7. BEEF SECTOR EXPORT MARKET DEVELOPMENT AND VALUE OPTIONS

7.1. INTRODUCTION

There is considerable scope for improving the export performance of the Botswana beef sector. The sector's exports are currently concentrated in a very narrow range of frozen and chilled beef cuts, targeted mainly at South Africa, the UK and Norway. The principal options for diversifying the country's beef export base are considered in this section, broadly categorized into:

- Market penetration: increasing exports of existing products in current markets;
- Market diversification: increasing exports of existing products in new markets;
- Product diversification: increasing exports of new products in current markets; and
- Full diversification: increasing exports of new products in new markets.

In addition, the main options for strengthening the beef value chain are outlined in Section 7.3.

7.2. MARKET DEVELOPMENT OPTIONS

Export market development options for Botswana beef	
Market penetration **Existing products to current export markets**	**Market diversification** **Existing products to new export markets**
Existing products: ▪ Chilled ▪ and frozen cuts **Currently exported to main existing markets:** ▪ UK ▪ South Africa ▪ Norway	**Existing products:** ▪ Chilled and frozen cuts **To be exported to new markets:** ▪ Italy ▪ Russia ▪ Sweden ▪ China, Hong Kong, Taiwan ▪ Angola ▪ Nigeria ▪ Zambia ▪ Middle East
Product diversification **New products to current export markets**	**Full diversification** **New products to new export markets**
New products: ▪ New specifications/tailored cuts ▪ Natural/certified beef ▪ Canned products ▪ Offal **To be exported to main existing markets:** ▪ UK ▪ South Africa ▪ Norway	**New products:** ▪ New specifications/tailored cuts ▪ Natural/certified beef ▪ Canned products ▪ Offal **To be exported to new markets:** ▪ Asian markets ▪ West Africa

As the box above highlights, considerable potential exists for developing export markets. Nevertheless, to the extent that BMC is almost entirely reliant on GPS for its exports, and lacks any meaningful capacity to access market intelligence, has very limited export marketing and sales capacity, and its plants can produce a very narrow range of cuts, these constraints need to be addressed as a prerequisite for launching an effective export diversification strategy.

Market penetration of existing markets with current products

Botswana's beef exports are currently almost exclusively concentrated on chilled and frozen boneless beef cuts. These are sold principally in 22kg boxes, although some initiatives are currently being undertaken to deliver more specific tailored cuts to targeted markets.

There is limited scope for expanding volumes in the existing main export markets. South Africa is a relatively unattractive market, mainly for lower margin frozen beef, and becoming increasingly competitive. It started importing chilled beef for the first time in 2013, but this segment remains very small. Norway is a very attractive market, paying prices that are more than twice that of other countries, but an annual quota of 1,600 tonnes limits further growth. UK is already the largest EU export destinations, but further targeting of new customer segments could be undertaken to increase export volumes. Nevertheless, at its peak in 2010, total exports to these markets were US$158.4 million, so efforts can be undertaken to recapture lost customers and volumes, from the current export levels of US$116.6 million

The principal options for product penetration lies in improving the mix of exports by increasing the share of higher priced chilled beef, and strengthening the marketing of Botswana beef to achieve higher prices. In 2010, chilled beef accounted for 62% of the total, but in 2013 this segment accounted for only 35%. As Figure 4 has highlighted, there is a significant gap in prices between the two categories and a change in mix would make a significant contribution to increasing revenues.

The main unrealized potential for increasing product penetration, however, lies in effectively positioning Botswana beef as a premium brand. The country's beef has a number of premium characteristics, such as being grass-fed, hormone free and being naturally produced. Although the trend toward feedlotting potentially impairs some of these features, Namibia's successes in creating its Natures Reserves and Savannah brands highlights the potential. This is an important priority for Botswana's beef export strategy, which will also positively impact on the country's targeting of new markets.

Market penetration are considered as to be the most important of the four market development options, offering the largest potential for return on investment, and should be prioritized accordingly.

Product diversification with new products into existing markets

Opportunities exist in developing new cuts and secondary processing, although investment in technology and building capacity would be required to realize most of these. For example, cap off topsides could realize significant premiums over existing cuts in the existing markets such as the UK, and new markets, including Italy. Canned beef produced by BMC used to be compliant with UK requirements, but investment in new cannery technology and capacity would be needed to resume exports of these products to high value markets such as the UK. Potential also exists for exporting to South Africa beef from the FMD affected Ngamiland area, if investment can be made in the requisite heat treatment technology, estimated at P10 million.

As highlighted above, a key product diversification strategy should be to develop certified premium line products, such as grass-fed, hormone free, etc. Namibia's MeatCo Savannah brand would be a good example. Organic beef could be considered, but our understanding is that given Botswana's relatively low scale of production and export potential, the costs involved throughout the value chain in developing organic beef produce may outweigh the benefits.

Product diversification options should be considered medium-term objectives, although certain elements of it, such as the export of Ngamiland beef to South Africa, require more immediate action.

In the medium-term, one of the critical requirements for developing a sustainable canned beef export supply would mean high volume, consistent supply of non-premium quality supplies. Given the production constraints in Botswana, this is likely to require the country's beef exporting restrictions, for example for beef destined for secondary processing and re-export.

Market diversification into new export markets with existing products

Market diversification should be an important objective for Botswana beef. An important aim would be to reduce the reliance on, and the consequent risks associated with, a very narrow range of markets. BMC has been targeting alternative markets over an extended period, but this needs to be done more systematically, based on robust market research and a coordinated and sustained set of actions. Potential markets for existing products are listed in the matrix in Section 7.2 and include:

- Italy: a promising new market for specific cuts, especially for new cuts being piloted. Customers are prepared to pay high prices for Botswana produce.
- Certain other EU and wider European markets, including Sweden and Switzerland, offer premium prices and are likely to be attractive markets.
- Angola: High prices can be achieved for frozen and chilled beef (Botswana has been supplying this market with low volumes intermittently) and existing relationships can be strengthened. Barriers to export through Namibia need to be overcome.
- Middle East. BMC has entered into a Memorandum of Understanding with a Kuwaiti distributor for supplying the entire Middle East, and this and other relationships need to be proactively pursued, especially given BMC's ability to produce Halal certified beef.
- Russia is a potential markets for certain targeted cuts.
- Taiwan, China and Hong Kong are likely to be attractive markets for low volume, premium cuts.
- West African markets, including Nigeria, are also potential targets, although trade barriers may need to be overcome.
- Zambia is likely to be a fertile market for quarter carcasses.

Full diversification of new products into new markets

Given BMC's current capacity and access to technology, and the inherent advantages offered by Botswana's premium quality beef, strengthening the country's positioning in fresh and chilled beef should be the priority. Nevertheless, exports of products such as offal and canned beef provide attractive opportunities for targeting new markets.

Asian and West African markets, the latter subject to overcoming trade barriers, could be targeted for offal, including cuts such as cow feet. Canned beef can also be used to target regional markets, where Botswana would have the advantage of being able to tailor recipes for local taste.

The above analysis excludes the potential for BMC being able to increase its supply of secondary processed beef to the local market once the necessary investment in canning technology and skills has been made.

7.3. VALUE OPTIONS

The value options analysis is intended to identify opportunities for strengthening the effectiveness and efficiency of a value chain through:

- Acquiring value by improving efficiency within the national component of the value chain (and thereby enhancing the sector's competitiveness).
- Retaining greater value by reducing leakage from the national component of the value chain.
- Adding value by developing new product lines and/or extending the national component of the value chain.
- Creating value by increasing production of existing or new product lines or by entering the value chains of related sectors.
- Distributing value within the economy by increasing the sector's direct contribution to such national development goals as employment generation, poverty reduction, rural and regional development, gender equality and sustainability of the environment.[74]

The analysis of the Botswana beef value chain suggests there is a large range of options for improving its performance. Some of the principal ones are:

Acquiring value

1. Develop more technically modern and commercial livestock management practices, especially at communal farms, to improve the sector's productivity and efficiency.
2. Improve efficiency and reduce cost at BMC.
3. Implement an upgraded and more effective LITS system and improve extension services.
4. Lift BMC export monopoly and introduce competition for exports to promote innovation and penetration and diversification of export markets.
5. Increase the availability of technical and economic information for sector participants.

Retaining value

1. Reduce reliance on import of expensive feed by increasing domestic production and promoting practices such as integrated farming.
2. Develop more export capacity at BMC to reduce high reliance on a single exporting agent.
3. Consider allowing the import of lower value consignment meat for secondary processing including canning to build sustainable export capacity in this area and also releasing higher quality domestic beef for premium priced exports.

Adding value

1. Implement national and product level branding for Botswana beef in order to position it in higher price segments.
2. Develop capacity at BMC to export more tailored cuts in specified packaging to target new markets and segments.

[74] Drawn from ITC guidance on identifying value options

Creating value

1. Invest in canning capacity and implement a strategy for the export of canned beef products.
2. Implement strategy to increase the export of offal products to selected markets.
3. Develop linkages with the value chain of other sectors, such as ruminants and game, to share infrastructure and services.
4. More proactively promote Botswana and BMC branded meat in the domestic tourism sector to enhance brand recognition and acceptance.

Distributing value

1. Improve hygiene and other practices, especially in peri-urban and peri-village areas, to reduce environmental degradation and spread of diseases.
2. Introduce land and water management practices around boreholes to reduce overgrazing and bush encroachment.
3. Strengthen current initiatives to promote the engagement of women and youth in the sector.

8. PROPOSED STRATEGY

8.1. INTRODUCTION

This section presents the key elements of the proposed strategy for strengthening the performance of Botswana's beef exports, drawing on the analyses in the preceding parts of the report and the SWOT analysis below.

The vision statement seeks to serve as a guide for the future direction of the sector and summarize its aspirations. Seven strategic objectives have been identified to provide the implementation framework to achieve the vision. Section 9 provides a roadmap of activities that require implementation to achieve each of the objectives.

8.2. SWOT ANALYSIS

Strengths	Weaknesses
▪ High proportion of free-range naturally produced beef. ▪ Stringent production standards. ▪ Meeting EU requirements. ▪ Botswana's positive image compared with many other African countries. ▪ Long cattle producing tradition.	▪ Ineffective and inefficient LITS system. ▪ High proportion of cattle in FMD-infected zone and outbreaks of measles. ▪ Weak extension services. ▪ High cost structure. ▪ Lack of commercial and modern farming practices. ▪ Poor infrastructure. ▪ Inconsistent enforcement of standards. ▪ Lack of branding and absence of marketing capability. ▪ Support infrastructure for industry not meeting needs fully. ▪ Lack of competition in exports limits product innovation and market development.
Opportunities	**Threats**
▪ Preferential access to EU markets. ▪ Unexplored markets in region and internationally, with increasing imports in emerging markets. ▪ Import substitution to export higher value beef. ▪ Reduce input costs by producing feeds locally. ▪ Targeting higher value segments and commanding better price with branding and premium cuts.	▪ Reliance on a small number of markets targeted with a very narrow range of products. ▪ Reliance on one outsourced entity for entire country's exports. ▪ Disease outbreaks and droughts. ▪ Increasing competition in global markets. ▪ Reliance on imported inputs.

The FAO Report provides a comprehensive SWOT analysis of the entire beef value chain. The above SWOT summary, with an emphasis on exports highlights:

- The sector's strengths lie mainly in its production of high quality beef, drawing on historic traditions. Botswana's positive image as a politically stable country in the region also provides advantages.

- The sector suffers from a number of weaknesses. The majority of cattle production is carried out inefficiently, in communal areas. Heavy government intervention, occasionally distortive (such as the BMC export monopoly) and at times ineffectively implemented (as in the LITS) system increases costs and risks. The support environment is often weak, or absent, or absent. The absence of branding and effective market positioning represent an opportunity foregone for the entire value chain.

- Many of the weaknesses also reflect substantial opportunities for improving the beef sector's performance. There is considerable scope to increase export prices, farm productivity and the support infrastructure, and reduce costs in the value chain. These, together with more proactive export diversification could have a significantly positive impact on the economic performance of all the segments in the value chain. Nevertheless, a concerted and coordinated course of action, and targeted investments, would be required to realize these opportunities.

- Many of the threats posed to the sector consist of risks, such as increasing competition, droughts and reliance on imported inputs are external to the sector. Nevertheless, action can be taken by its participants to alleviate their impact, such as by increasing competitiveness and implementing better environmental practices. Of immediate concern are risks posed by concentration in in export markets and products, and reliance on one outsourced export agent. It is critical that effective, immediate action is taken to diversify and limit these risks.

8.3. STRATEGIC VISION FOR EXPORT MARKETS

Our proposed vision statement for the export channel of the beef value chain is:

'Be a highly recognized producer associated with premium quality meat competitively targeting high value markets and segments'

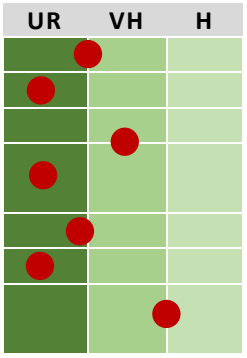
The statement is intended to highlight the objectives of:

- Achieving recognition, through branding and promotion.
- Association with premium quality meat, which entails implementing action throughout the value chain and its support services to produce high quality products that are delivered consistently and efficiently.
- Competitiveness, which requires increasing efficiency and reducing costs in the value chain.
- Targeting of high value markets and segments, through a range of tailored premium products aimed at a diverse set of export markets.

Botswana is a relatively low volume producer of exporter of beef in the global context. Unless import restrictions, for instance of lower cost and quality beef, are lifted, the amount of beef available for export will reduce further over time. The cost-benefit of activities would need to be carefully analyzed in meeting various strategic objectives and implementing the proposed roadmap. For example, although diversification in products and markets is desirable, there are limits to how much this can be achieved before the resources required outweigh its benefits.

8.4. STRATEGIC OBJECTIVES

The sector's export vision could be realized through achieving the seven strategic outlined below. Each objective has been prioritized as urgent (UR), very high (VH), or high (H).



1. Strengthen the performance of communal livestock farming.
2. Improve the effectiveness of DVS and its services to the sector.
3. Develop a more useful support network for the sector's value chain.
4. Intensify efforts to find multiple solutions for cattle from FMD-infected areas.
5. Further restructure BMC and lift its export monopoly.
6. Enhance market positioning and diversify beef exports.
7. Improve regional cooperation on issues affecting the countries' livestock sectors.

Strategic Objective 1: Strengthen the performance of communal livestock farming

This is a critical objective, on which the performance of the entire sector depends. Whilst it is inevitable that a significant proportion of the smaller livestock holders will continue to operate at a subsistence level for the foreseeable future, there remains potential to considerably improve the performance of many communal farmers, impacting on the sector's profitability. This will require capacity building at the farm level; building scale through the encouragement of syndications; reducing costs through promotion of integrated farming; and considerably enhancing the availability and quality of support services.

Various attempts have been made in this area by the government and international donors, but our analysis suggests that interventions could be designed and implemented more effectively to improve the prospects of success. One of the interventions proposed by us, and summarized in Section 10.2[75], relates to carrying out pilots in communal farming in order to achieve this strategic objective.

Strategic objective 2: Improve the effectiveness of DVS and its services to the sector

DVS is the most important support provider for the beef sector, affecting all aspects of the value chain. Its successes and limitations have equally benefited and hampered the sector. Whilst the quality of DVS staff generally is high, in accumulating a range of responsibilities over an extended period it now lacks adequate resources to discharge all its activities effectively. Of urgent importance is the effectiveness of a new LITS framework. A coherent and well-coordinated approach is also needed to outsource or privatize a range of its services, including those relating to LITS, food inspection and perhaps extension services. Capacity building, restructuring and research are also required in various areas within its remit.

Section 10.3 outlines a set of projects that we recommend be undertaken to contribute toward the achievement of this objective.

[75] Details of proposed projects are provided in Annex II.

Strategic objective 3: Develop a more useful support network for the sector's value chain

Although the beef sector benefits from considerable government assistance in relation to its economic contribution, its support institutions and the business environment continues to have important gaps and weaknesses. The strategic objective is aimed at strengthening a wide range of services including: the availability of technical and economic information; improved targeting of training; strengthening beef producers associations; enhancing the capacity of and coordination between government agencies; and improving trade negotiations.

Strategic objective 4: Intensify efforts to find multiple solutions for cattle from FMD-infected areas

FMD affected areas cover 10% of the cattle population, but impact disproportionately on the small farmers seeking to grow livestock in them. In addition to enhancing the effectiveness of the current focus on controlling and eradicating FMD in the affected zones, for example through more targeted research, this strategic objective is aimed at developing alternative parallel solutions. These include more coordinated research and trade negotiations on CBT; investing in technological solutions to enable the export of FMD zone beef; removing current bottlenecks in trading beef from the red to green zones; and improving the awareness of policymakers and consumers on the risks and risk management practices associated with FMD beef.

Strategic Objective 5: Further restructure BMC and lift its export monopoly

BMC dominates the beef value chain, and in particular its export channel. Its procurement activities, and sales in the domestic market, affect the prospects of other processors. It is the only route to export for all producers. Botswana's beef export performance is therefore integrally connected with that of BMC.

This strategic objective seeks to open up the export channel by lifting BMC's monopoly. At the same time, it recognizes that there is a need to address the impact such a move would have, for example on smaller farmers who are currently subsidized by BMC. In preparation for the lifting of the monopoly and to improve the institution's operating efficiency, various restructuring activities would need to be undertaken at BMC. The BMC Act would also need to be reformed to provide BMC independence from the government and enable it to operate commercially.

Strategic objective 6: Enhance beef product and market positioning and diversify beef exports

One of the most important strategic objectives, effective branding and market positioning of Botswana beef would enable BMC to realize higher prices from its beef exports. Combined with its own restructuring and reduced operating costs, this would enable the distribution of greater value along the entire value chain and facilitate the commercialization of especially beef production. This objective would aim to achieve branding; capacity building in market research and marketing; development of new cuts and products targeted at new markets; installation of new packaging lines at BMC; and increased capacity for supporting beef exports at Botswana's trade missions.

Strategic objective 7: Improve regional cooperation on issues affecting the countries' livestock sectors.

As a small exporter in markets dominated by large beef producers, it is critical that Botswana coordinates its efforts with other regional exporters to achieve scale and negotiating power. In addition, cooperation in areas such as research, disease control and among industry associations would benefit the value chains in all the partner countries.

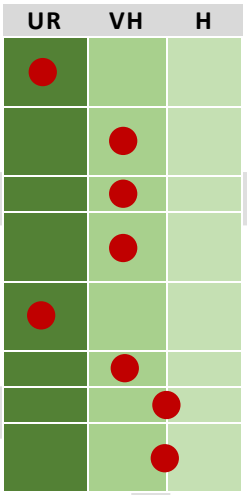
9. STRATEGIC ROADMAP FOR THE BEEF SECTOR

9.1. INTRODUCTION

The section below outlines the roadmap for achieving each of the strategic objectives. Each of the proposed actions has been marked as either urgent (UR), very high priority (VH), or high priority (H).

9.2. STRENGTHENING COMMUNAL FARMING

Strategic Objective 1: Strengthen the performance of communal livestock farming.



1.1 Strengthen and commercialize traditional livestock management practices.
1.2 Promote clustering and syndication among small and medium-sized farmers.
1.3 Promote cattle and feed integrated farming.
1.4 Improve access to finance for small and medium-sized cattle farmers.
1.5 Develop more effective coordination between the MOLH and MOA on allocating land for livestock.
1.6 Develop and implement Farm Quality Assurance Standards.
1.7 Promote FDI into the livestock sector.
1.8 Review longer-term impact on sector of BMC pricing policy and trend toward feedlotting.

Strengthen and commercialize traditional livestock management practices

The productivity of communal farmers, which account for 88% of Botswana's cattle holdings, is by many measures less than half of those of Botswana's communal farms. It is even lower compared with international competitors. Although resources have been spent in improving farming practices, more intensive work is required, appropriately resourced and targeted, to achieve results. Research is needed into the economics of different farming models. Training is required targeted at all levels, including technical training for farm labourers. Dissemination of best practices would also be included in the action plan. Our proposed pilot on strengthening communal farming practices (see Section 10) is aimed at addressing many of these issues.

Lead responsibility: MOA

Promote clustering and syndication among small and medium-sized farmers

One of the major constraints faced among farmers to achieve economic viability and implement commercial farming practices is their lack of scale. In 2012, the average holding in communal farms was only 27.5, and 81% of holdings had 150 or less cattle. More systematic collaboration is required among farmers ranging from sharing feeds and supplements, administration and marketing to achieve viability. A concerted policy with incentives needs to be implemented to encourage clustering and syndications, especially in the communal farming segment.

Lead responsibility: MOA

Promote cattle and feed integrated farming

Input supplies have to be imported almost entirely and is relatively expensive compared with other regional countries. Supplementary grass or grain feed is required to reduce total reliance on natural grasslands and reduce overgrazing, to promote more consistent quality of beef and to generate a more even supply of cattle throughout the year. Policies need to be introduced to promote integrated farming, whereby feed are grown alongside cattle.

Lead responsibility: MOA

Improve access to finance for small and medium-sized cattle farmers

Third party finance is unlikely to be viable for the smaller farmers that are not producing cattle on an economic scale. Nevertheless, there is a significant segment of the communal holdings that are potentially commercial and at present one of the major constraints they face is the lack of capital, and more importantly working capital finance to grow their herds to slaughter weight. As a result they sell their cattle as weaners, foregoing potential profits. Supply chain finance, based on contracts with processors such as with BMC, needs to be promoted more systematically. BMC currently has a guarantee scheme with Standard Chartered, and this type of approach needs to be extended to a wider range of farmers.

Lead responsibility: MOA

Develop more effective coordination between the MOLH and MOA on allocating land for livestock

At present, the system of land allocation is very fragmented, with district land Boards allocating land for cattle farmers on different bases and sizes. As a result, land allocated is often not appropriate for the type of farming envisaged, and a significant proportion of land earmarked for livestock farming is not utilized. More systematic coordination is needed between MOA and MOLH, and between the latter and Land Boards, so that appropriate type, location and size of land is allocated for cattle farming and land that is not used for a period is reallocated to farmers that seek to engage in cattle farming.

Lead responsibility: MOA

Develop and implement Farm Quality Assurance Standards

[At present, although the LMIA provides basic safeguards on production and processing practices, quality standards only apply to beef earmarked for exports to EU.] A national Farm Quality Assurance Standard that would give assurance to consumers about the quality of the production methods used, the quality of care for animals which is practiced, the quality of the farm environment, and the quality of practices in producing beef and lamb which is wholesome, safe and free from unnatural substances. This would incentivize farmers, through greater acceptability and higher prices, to improve production methods. A model for this could be the Meat Board of Namibia's Farm Assured Namibian Meat (FAN Meat) scheme, which promotes free-range, hormone-free beef with guaranteed veterinary and animal welfare standards.[76]

Lead responsibility: MOA, BOBS

[76] FAO Report.

Promote FDI into the livestock sector

We have been unable to determine the magnitude of FDI in cattle production, but consultation with stakeholders suggests that this is very low. The BITC website[77] lists only one feedlotting opportunity, and some general cattle and game ranching possibilities. In addition to finance, FDI would enable the enabling of know-how of modern management practices in the sector and should be promoted. However, the BMC monopoly is likely to remain an important barrier to FDI in the sector and needs to be addressed as a prerequisite.

Lead responsibility: BITC

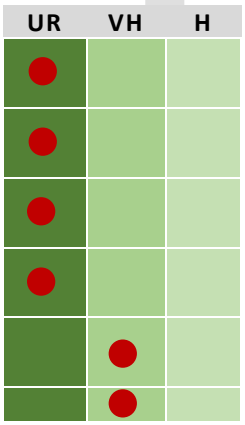
Review longer-term impact on sector of BMC pricing policy and trend toward feedlotting

BMC's pricing policy, whereby its quality grading and pricing favours weaners compared with more mature cattle encourages farmers to sell their stock as weaners, encouraging the trend toward feedlotting. As more premium priced segments in export markets demand more naturally grown beef, this trend could be counterproductive in the long-run and act as a barrier to Botswana beef's positioning as a premium brand. Moreover, producers of EU quality beef are underpaid in order to subsidize producers of lower quality or un-exportable beef, reducing the returns and incentives related to producing premium quality beef. These potential consequences need to be studied and appropriate action taken to safeguard the sector's future potential.

Lead responsibility: MOA, BMC

9.3. FURTHER ENHANCING DVS PERFORMANCE

Strategic objective 2: Improve the effectiveness of DVS and its services to the sector.



2.1 Realign DVS organization and strategy to meet user needs and outsource selected non-core activities.
2.2 Implement initiatives to control the spread of FMD and measles in cattle.
2.3 Improve cattle traceability and compliance with LITS regulations by moving rapidly to electronic ear tags.
2.4 Increase degree and consistency of the enforcement of food safety regulations.
2.5 Enhance Botswana National Veterinary Laboratory's capacity to meet industry needs.
2.6 Strengthen Livestock Advisory Centers.

Realign DVS organization and strategy to meet user needs and outsource selected non-core activities

The DVS has over the years accumulated a wide range of activities. Some of them are beyond its mandate and scrutinize the department's efforts to deliver quality services to farmers. There needs to be a realignment of DVS strategy vs. its mandate and outsource all those activities that are not core for DVS and can be handled by the private sector (SMEs, farmer associations, etc.). DVS will then be able to reallocate resources improving the services provided to the farmers as a result.

[77] www.bitc.co.bw reviewed in early July 2014.

Lead responsibility: DVS

Implement initiatives to control the spread of FMD and measles in cattle

Botswana's FMD policy focuses on the eradication of the disease, as per OIE's standards. This task is very difficult to success due to the co-existence of wildlife and cattle at the Ngamiland and the lack of coordination amongst SADC cattle not to omit the fact that the wildlife lives and moves beyond national borders. An alternative approach should look at the available market channels for the Ngamiland cattle besides being destroyed or used for canned food.
For example a pilot to monitor the movement of both cattle and wildlife in the region could help understand how the disease is generated and spread. In addition, the sale of the meat could be used for the local market once it is deboned and the lymph nodes are removed.

Lead responsibility: DVS

Improve cattle traceability and compliance with LITS regulations by moving rapidly to electronic ear tags

The LITS system came first in the stakeholders complains and as the single area where a difference needs to be made. The LITS needs e.g. to be outsourced to a third party who will be responsible for uploading the information on the central server promptly and accurately, and ensure that all cattle carry the eat tag. LITS database should integrate all other databases related to diseases, inputs and medicines. Finally the implementation of the digital ear tag should be finally launched.

Lead responsibility: DVS

Increase degree and consistency of the enforcement of food safety regulations

The LMIA act is based on *Codex Alimentarius*[78] and it is arguably a solid piece of legislation. There should be an enforcement of LMIA across the beef sector primarily focusing on the abattoir and slaughtering slabs operations. There should be no temporary slaughtering facilities, particularly when the temporary license has expired and access to finance should be provided to those who are interested in starting up a private abattoir. Private meat inspectors should be enabled to apply the same quality and hygiene standards for the domestic market as for the export market.

Lead responsibility: DVS

Enhance Botswana National Veterinary Laboratory's capacity to meet industry needs

The BNVL has a strong technical team and most of the tests are carried out internally. Nevertheless, the residue tests have been outsourced to a laboratory in the UK although the necessary equipment has been acquired more than 6 years ago. The BNVL staff need to be capacitated to be able to use this equipment, reduced the lead times for the tests currently carried out internally and communicate results back to the abattoirs and the farmers both with consistency and in a timely manner. A local laboratory should be identified for outsourcing a number of tests, should BNFL does not have adequate resources, enabling private sector participation.

Lead responsibility: DVS

[78] http://www.codexalimentarius.org/

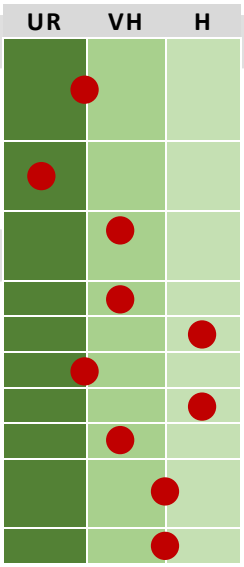
Strengthen Livestock Advisory Centres

The role of the LAC needs to be clarified particularly after the proposed merge with Botswana Agricultural Marketing Board. The advisory role of LACs needs to be retained if the merge goes ahead. The supply chain bottlenecks should be identified and tackled so that the availability of goods will be improved. Also, in collaboration with DVS and DAP the right inputs and medicines should be identified and sources to make the LACs stock more relevant to the farmers. LACs would also benefit from a centralized procurement mechanism and an improvement of the stock management.

Lead responsibility: DVS, MOA

9.4. IMPROVING THE SECTOR'S SUPPORT NETWORK

Strategic objective 3: Develop a more useful support network for the sector's value chain.



3.1 Improve availability and distribution of scientific, economic, standards, regulations, markets and consumer-related data and information.
3.2 Develop and deliver appropriate technical training for farmers at all levels on all aspects of farming.
3.3 Strengthen local livestock associations and Botswana National Beef Producers Union.
3.4 Enhance capacity of government agencies to support sector.
3.5 Produce and disseminate more relevant research for sector.
3.6 Improve process related to certification of cattle movement.
3.7 Increase investment in farm infrastructure.
3.8 Enhance DAP's effectiveness.
3.9 Build capacity in conducting trade negotiations related to beef sector.
3.10 Improve BVI's capacity and sustainability.

Improve availability and distribution of scientific, economic, standards, regulations, markets and consumer-related data and information

Our consultations with the sector's participants suggest that there is very little technical or commercial information available. BMC publishes its prices regularly, which act as benchmark for other cattle prices, but there are often barriers and gaps in their distribution. The extension services lack capacity to undertake this responsibility effectively. An analysis of the sector's information needs at different parts of the value chain needs to be undertaken and action taken to meet the needs identified. The beef farmers' associations, provided they are suitably strengthened, can play an important role in this area.

Lead responsibility: MOA

Develop and deliver appropriate technical training for farmers at all levels on all aspects of farming

The Rural Training Centres, along with the BCA, provide good quality technical training in the sector. The curriculum often has gaps in in-depth training on the economics and commercial consideration

of farming. Moreover, training is directed at farm owners and not necessarily the workers undertaking day-to-day activities. A training needs analysis needs to be conducted for the different groups of workers in the value chain, in particular in farms, and appropriate modifications made to the curriculum. This needs to be then rolled out to a wider range of targeted participants in the sector [NZ project?]

Lead responsibility: MOA

Strengthen local livestock associations and Botswana National Beef Producers Union

The local beef producers' associations need to develop and implement sustainable strategies based on meeting needs their members' needs for services and support. Technical capacity building would be required, as well as networking and partnerships with regional or European beef associations. The associations can play a useful role in disseminating technical and economic information and assist their members in benchmarking their performance against those achieved in Botswana and comparable countries. Section 10.5 presents a proposed project aimed at achieving some of the objectives in this area.

Lead responsibility: BNBPA, MOA

Enhance capacity of government agencies to support sector

More training is required among policymakers on matters such as international standards and those in export markets; technical issues and latest research on various aspects of the sector's performance; and the key factors affecting economics of the sector. A training needs analysis needs to be conducted, appropriate curriculum developed targeted at policymakers, and delivered on a rolling basis. BCA could play the role of the training provider. A system to improve coordination between MOA departments, MTI, MOH and MOLH is required to be developed and implemented.

Lead responsibility: MOA

Produce and disseminate more relevant research for sector

The FAO Report highlights that most of the research conducted at the MOA Department of Agricultural Research is focused on breeding stock. There is also some research on areas such as cattle diseases. A wider research agenda needs to be developed, including the economic determinants in the sector. Equally importantly, an effective dissemination strategy for the research findings needs to be developed and implemented. The department needs to be resource adequately and appropriate human resources strategy implemented to train and retained qualified researchers.

Lead responsibility: MOA

Improve process related to certification of cattle movement

[At present, there are a number of barriers to cattle movement and the system for certification is cumbersome, costly and often susceptible to breaking down. An action plan needs to be developed and implemented based on a diagnosis of the major bottlenecks in the system.]

Lead responsibility: MOA

Increase investment in farm infrastructure

A more concerted investment strategy needs to be implemented in improving farm infrastructure, such as access roads and fencing. For example, MOA unallocated budgets at the fiscal year ends could be used for this purpose.

Lead responsibility: MOA

Enhance DAP's effectiveness

There is a need for increasing staff resources at DAP, as well as the mix of different specialisms required by the sector. A mapping of skills available and those needed should be undertaken, followed by recruitment and training to fill the gaps identified. There is a need for more species-specific specialists at both district and headquarters levels. There is also a need to improve coordination with DVS, with other parts of MOA for example on improving fodder production, and also with agronomists.

Lead responsibility: MOA

Build capacity in conducting trade negotiations related to beef sector

Technical training in standards relating the beef sector, as well as on negotiating positions in the region and internationally needs to be implemented across the range of government departments involved in trade negotiations. The capacity building should be reinforced with greater coordination between the various agencies.

Lead responsibility: MOA

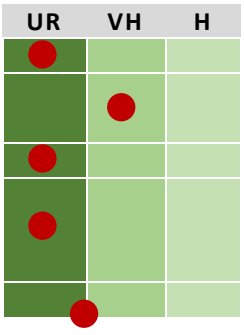
Improve BVI's capacity and sustainability

BVI's capacity needs to be strengthened to enable its laboratories are appropriately quipped and staff trained for quality control and certification as an OIE reference laboratory. It needs improvement in infrastructure and capacity of its old labs to be GMP/biosafety compliant. In addition, marketing support should be provided for it to sell its vaccine to new customers and improve its plant capacity utilization.

Lead responsibility: MOA, BVI

9.5. FINDING CO-ORDINATED SOLUTIONS FOR FMD

Strategic objective 4: Intensify efforts to find multiple solutions for cattle from FMD-infected areas.



4.1 Improve epidemiological understanding and control over FMD.
4.2 Review and improve layout and condition of buffalo fencing in Ngamiland.
4.3 Increase export of FMD beef
4.4 Enhance awareness and acceptability of risk management and risks related to FMD area beef and carry out risk assessment study to demonstrate effectiveness of risk management.
4.5 Develop more systematic and strategic regional cooperation on

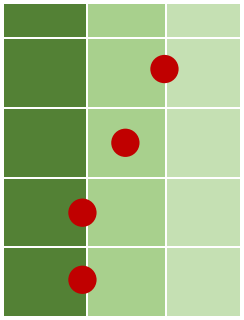
CBT exports.

4.6 Explore quarantine of FMD area cattle for export to other eligible import countries.

4.7 Build capacity for CBT-related trade negotiations and develop inter-agency coordinated strategy for negotiations.

4.8 Study/validate effectiveness of purified FMD vaccine and implement strategy for its use.

4.9 Diversify processing capacity outside BMC to achieve technical requirements for selling to green zone.



Improve epidemiological understanding and control over FMD

In addition to the efforts to eradicate diseases such as FMD, the DVS should take the lead to conduct scientific research on understanding scientifically the impact of FMD across the value chain for both humans and cattle, identify and propose solutions for using the cattle from the FMD with vaccination zones. Additionally, pilots should be undertaken to validate the efficacy of purified FMD vaccines, being produced by BVI.

Lead responsibility: DVS

Review and improve layout and condition of buffalo fencing in Ngamiland

With a better understanding of the wildlife movements an improved layout of the fences can be implemented. This can be done in partnership with international organizations such as WWF and OIE, to ensure that the solution is benefiting both the farmers and the wildlife. The recent inclusion of Okavango Delta to UNESCO's world heritage list[79] as the 1000th site is increasing the sensitivity of this necessary task.

Lead responsibility: DVS

Increase export of FMD zone beef

Botswana needs to find a viable long term solution for the cattle in FMD zones (Ngamiland and Tuli block). These animals are either destroyed or sold as canned food leaving the local farmers are unable to make a living out of them. The way forward in addition to eradicating FMD, is to sell the matured chilled meat[80] to the domestic market, after the bones and lymph nodes are removed. This step will increase production at the BMC abattoirs in Maun and Francistown. Additionally investment at the right heat treatment technology will enable selling the meat to South Africa for further processing.

Lead responsibility: MOA, DVS, and MTI

Enhance awareness and acceptability of risk management and risks related to FMD area beef and carry out risk assessment study to demonstrate effectiveness of risk management

The general public have the right to better communication on the health risks posed by the FMD virus on both animals and humans. In addition, the risk assessment practices should be better communicated to ensure the general public that the meat sold is FMD free. A pilot program to

[79] http://whc.unesco.org/en/news/1159

[80] Foot and mouth virus cannot survive when ph drops below 6.0 inside chillers.

demonstrate the effectiveness of the risk assessment will be necessary. In addition, awareness raising workshops and training aimed at politicians and policymakers need to be implemented.

Lead responsibility: DVS

Develop more systematic and strategic regional cooperation on CBT exports

A regional approach to address the FMD problem needs to be taken by the SADC countries. Wildlife movements across borders will put at question any local and national efforts to eradicate FMD. Instead the countries surrounding the Caprivi Strip and the Okavango Delta need to coordinate their efforts for developing a CBT-based trade that would benefit farmers and consumers alike. At policymaking level, Southern Africa has the particularity of the co-existence of human, cattle and wildlife at the same territory. A SADC committee should be formed to advocate the region's interests at OIE.

Lead responsibility: MOA, DVS, and MTI

Explore quarantine of FMD area cattle for export to other eligible import countries

This option relates to the export of live cattle from the FMD affected zone, after quarantining the animals for between 14 and 21 days. Such animals could potentially be exported to Zimbabwe and South Africa., This approach has been discussed over the period, and a more concerted regional approach is now required to agree the parameters and proceed with implementation.

Lead responsibility: DVS, MOA

9.6. FURTHER REFORMING BMC AND LIFTING EXPORT MONOPOLY

Strategic Objective 5: Further restructure BMC and lift its export monopoly.

		UR	VH	H
5.1	BMC to meet international benchmarks in processing.	●		
5.2	Introduce regional procurement centers at BMC.		●	
5.3	Explore supply chain finance solutions with range of finance providers.		●	
5.4	Review and update ECCO brand.		●	
5.5	Reform the BMC Act.	●		
5.6	Lift the BMC export monopoly.	●		
5.7	Establish institution similar to the Meat Board of Namibia to provide sector-wide support after export liberalization.		●	

BMC to meet international benchmarks in processing

Various studies have highlighted that BMC's processing performance needs to be considerably improved in order to meet international standards. Efforts to date need to be considerably accelerated in order to realize cost and processing efficiencies. Benchmarking targets, best on industry averages and eventually industry best practice (see Section 3.4) need to be established and implemented over a five year period. Areas of focus would include: reduction of non-processing costs; improvements in compliance systems; strengthening of procurement practices; integration of

accounting systems; and review of current and future viability of Francistown plant and appropriate action.

Lead responsibility: BMC

Introduce regional procurement centres at BMC

One of the key barriers for small cattle farmers in supplying BMC is the lack of efficient transport infrastructure in delivering cattle to BMC plants. As a result, they often have to forego the opportunity to earn BMC prices even if they produce high quality cattle, or have to sell to middle-men who extract a margin. Establishment of regional procurement centres would remove a major barriers to supply for exports and increase incentives for producing higher quality cattle. The commercial viability of such centres would need to be determined before they are established.

Lead responsibility: BMC

Explore supply chain finance solutions with range of finance providers

BMC currently has an arrangement with standard Chartered Bank to guarantee finance for [farms] supplying it with cattle. This arrangement needs to be extended to a wider range of finance providers to reach more suppliers.

Lead responsibility: BMC

Review and update ECCO brand

The ECCO brand, which is * years old and has not been refreshed, requires updating. In addition, the practice of selling both food for human consumption and pet food under the same brand name should be stopped and different brands developed for these two markets.

Lead responsibility: BMC

Reform the BMC Act

The BMC Act needs to be reviewed and updated to provide BMC with independence and enable it to operate commercially. This would require it to be separated from MOA (especially independence from the Minister), incorporate and secure private investment. A model of ownership by livestock farmers should be considered. In parallel to legislative issues, a solution needs to be found for BMC's current indebtedness to the government.

Lead responsibility: MOA

Lift the BMC export monopoly

This urgent action needs to be taken strategically. Risks, for example of the potential impact on key stakeholder groups such as smaller livestock farmers need to be assessed *a priori* and appropriately addressed. A regulatory framework would also need to be developed to ensure parity of treatment for all exporters.

Lead responsibility: MOA, BMC

Establish institution similar to the Meat Board of Namibia to provide sector-wide support after export liberalization

In a de-monopolized beef export environment, a wider range of exporters and domestic producers, rather than just BMC, would require a number of appropriately coordinated services, including the marketing and promotion of the industry as a whole. Other services could include market research, benchmarking studies and developing and promoting the proposed Farm Quality Assurance Standards. An appropriate support institution, led by the private sector but also involving the government, for example such as the Meat Board of Namibia[81], should be established.

Lead responsibility: MOA

9.7. REPOSITIONING BOTSWANA BEEF AND STRENGTEHING BMC EXPORT CAPACITY

Strategic objective 6: Enhance beef product and market positioning and diversify beef exports.

		UR	VH	H
6.1	Diversify beef export product range and target new markets.		●	
6.2	Build market intelligence gathering and analysis and R&D capacity at BMC.	●		
6.3	Develop appropriate brand, packaging, logo, etc. for Botswana beef.	●		
6.4	Install new packaging lines at BMC.	●		
6.5	Develop export marketing and sales capacity at BMC.	●		
6.6	Increase capacity of Botswana trade missions to promote beef exports.		●	

Diversify beef export product range and target new markets

BMC should develop a better understanding of the existing consumer needs and expand its portfolio of products. In addition, BMC should also investigate new markets both in Africa as well as within European Union. For example ITC Trade Map[82] data shows that the UK, Botswana's focus market in the EU pays on average 25% less than Italy and 33% lower than Germany for boneless bovine cuts. New products and markets, such as those highlighted in the market development analysis in section 7.2, should be explored systematically through market surveys related to product, segment, packaging, cuts, etc. in key existing and target markets.

Lead responsibility: BMC

Build market intelligence gathering and analysis, and R&D capacity at BMC

BMC has never had in-depth market intelligence gathering and analysis capacity in Botswana, having previously relied on BMC UK and currently dependent on GPS. This capacity needs to be developed systematically, through the strengthening of its sales and marketing function and investing in appropriate systems and training. In addition, a R&D function should be established to test different specifications and secondary processed products. In addition to in-house capacity, and especially at early stages, BMC should outsource its R&D activities, for example to National Food Technology Research Centre (NFTRC) and BCA.

[81] http://www.nammic.com.na/
[82] http://www.trademap.org/

Lead responsibility: BMC

Develop appropriate brand, packaging, logo, etc. for Botswana beef

There is very little awareness outside Botswana on the quality of Botswana beef. Following the example of Namibia, Botswana should invest in developing a brand for Botswana beef, increase awareness amongst consumers. The development of an appropriate logo and the use of innovative, quality-oriented packaging would assist to promote the premium nature of Botswana beef.

Lead responsibility: BMC

Install new packaging lines at BMC

Packaging is one of BMC's weak areas, with a lot of the final packing done at wholesalers and large retailers abroad. BMC should take more control of packing meat in consumer-ready packs. Selling packed goods will allow BMC to fetch higher prices from retailers and enable BMC to promote Botswana beef brand appropriately applying the appropriate labels on the packs.

Lead responsibility: BMC

Develop export marketing and sales capacity at BMC

BMC's Sales and Marketing department is current understaffed, lacking the necessary skills to seek and develop new markets for the Commission. BMC has historically relied on its UK subsidiary, BMC UK, for its marketing efforts and currently relies on GPS. There is effectively no local marketing and sales capacity to target markets. This capacity needs to be developed through increased staffing with relevant skills, training and investment in appropriate systems. In addition, the importance of the strengthened function needs to be recognized through a change in the organization structure so that it reports directly to the Board (currently the marketing function reports to the chief financial officer).

Lead responsibility: BMC

Increase capacity of Botswana trade missions to promote beef exports

The government acknowledges the strategic position of the beef sector in its efforts to diversify the economy. These efforts need to be coordinated at institutional level to promote Botswana beef abroad. Officers of the national diplomatic missions, supported by the Ministry of Foreign Affairs and International Cooperation (MOFAIC) and DVS management should join trade experts to compose a strong national delegation.

Lead responsibility: BMC, MOFAIC

9.8. IMPROVING REGIONAL COOPERATION

Strategic objective 7: Improve regional cooperation on issues affecting the countries' livestock sectors.

	UR	VH	H
7.1 Implement more effective trade coordination at SADC, SACU			●

level.

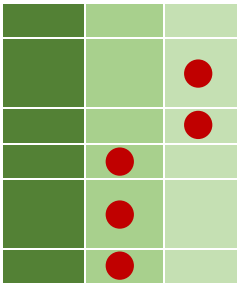
7.2 Strengthen regional cooperation on research into the issues affecting the sector.

7.3 Support CCARDESA

7.4 Improve dissemination of research.

7.5 Improve results-oriented collaboration on disease related issues.

7.6 Increase cooperation between beef industry associations.



Implement more effective trade coordination at SADC, SACU level

Countries members of SADC and SACU regions should collaborate to strengthen their trade agreements particularly on trade of essential and strategic products such as beef amongst their members. They should also enhance their cooperation with long terms trade partners in the North of Africa and beyond.

Lead responsibility: MOA, MTI, and BMC

Strengthen regional cooperation on research into the issues affecting the sector

The beef sector would also benefit from research carried out at regional level for issues such as disease management and commodity based trading. The research could eventually expand to more commercial areas such as market intelligence, beef meat certification requirements and new products and markets.

Lead responsibility: MOA

Support CCARDESA[83]

The recently established Centre for Coordination of Agricultural Research & Development for Southern Africa (CCARDESA) is a regional effort to enable farmer to get easier access to the market, develop the right type of technologies and promote knowledge sharing as well as access to information. These are areas that would benefit the farmers in Southern Africa. The role of CCARDESA thus should be enhanced so that it will be enabled its mandate.

Lead responsibility: MOA

Improve dissemination of research

Very little is known among sector stakeholders of the research results produced across the beef sector (husbandry, breeding, productivity improvement, feed nutrition, indigenous plants as fodder, etc.). The knowledge gap, which has been generated, is calling for a better management and dissemination of research. An electronic database should be created and managed with clear roles and responsibilities. It might be a good opportunity to take advantage of the upcoming upgrade of BCA to the new agricultural university.

Lead responsibility: MOA, BCA

Improve results-oriented collaboration on disease-related issues

[83] http://www.ccardesa.org/

The SADC nations could benefit from results-oriented collaboration on disease-related issues such as measles, FMD. Clear targets could be set based on work done in other countries of the region and the partnerships established could enhance knowledge sharing amongst scientific teams. The role of the agricultural universities should be upgraded and the movement of regional scientists should be eased.

Lead responsibility: MOA, BCA

Increase cooperation between beef industry associations

Beef industry associations in Botswana work in silos with limited cooperation amongst them. In addition, the associations have been set up based on geographical criteria instead of e.g. a common characteristic (small scale farmers vs. large scale ranchers). Inevitably due to the wide range of types of farmers amongst their members, the beef industry associations cannot advocate the needs and constraints of all their members, but rather those of the most important ones. It will be beneficial for the beef sector if the collaboration amongst beef industry associations improves, a better segmentation of their member base is made and separate sub-groups are created.

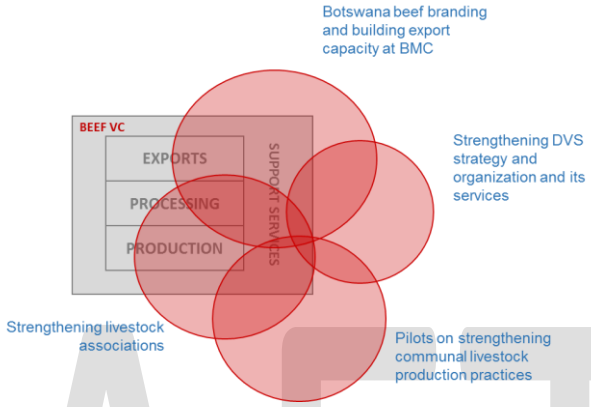
Lead responsibility: BNBPA, MOA, and BOCCIM

10. PRIORITY PROJECT IDEAS FOR PSDP

10.1. INTRODUCTION

Drawing on the roadmap for the beef sector, we have formulated four priority project ideas that merit PSDP support. These could be funded wither by the PSDP itself, or in partnership with other donors. The wider government, and in particular, MOA, would be expected to play a role in the funding and coordination of all of these projects.

Figure 22: Outline of proposed PSDP interventions in the beef value chain



The criteria applied in selecting and designing the projects have been:

- Achievability
- Private sector /SMME development, or strengthening support environment
- Ownership
- Clustering/embedded partnerships
- Focus on exports, but also impacting on domestic environment
- Linkages/reinforcement between projects.

The four proposed projects are inter-linked and aim to strengthen the different components of the beef value chain. As Figure 20 highlights, the projects are:

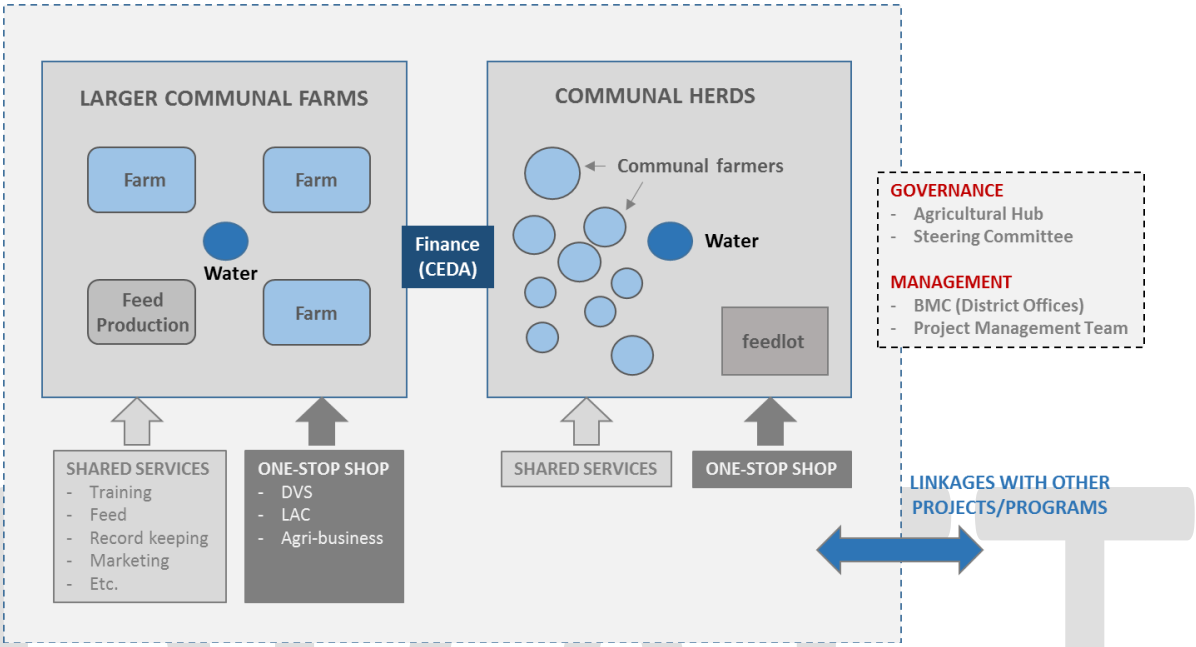
1. Implementing pilots to strengthen communal farming practices.
2. Improve DVS service delivery.
3. Introducing branding of Botswana beef and developing BMC export marketing capacity.
4. Strengthening beef associations.

The communal farming pilots are principally aimed at addressing the constraints identified in the production component of the value chain. Although the DVS project is principally aimed at the production and processing components, it will support efforts in the exports component by improving product quality and compliance with export market standards. Similarly, the branding and marketing project will focus on developing the export component of the value chain, but at the same time will impact on the processing and production component through improving capacity in packaging and producing beef meeting targeted export segment standards. Finally, the beef producers' associations support project will primarily assist the beef farmers, but will indirectly benefit the more upstream value chain components.

Annex II provides detailed developments of the projects, including their rationale, outcomes, outputs and the preliminary estimations of their budgets. The projects' main objectives and activities are summarized in this section.

10.2. PILOTS FOR STRENGTHENING COMMUNAL FARMING PRACTICES

Figure 23: Structure of proposed communal farming pilots project



The communal beef farmers' pilots are aimed at strengthening livestock production practices among traditional SMME beef producers. Although the pilots would focus on producing beef for the EU market, it is envisaged that the pilots would be rolled out in the domestic channel as well.

The principal objectives of the project would be to achieve:

- Improved net income for SMME producers participating in pilots.
- Increased production yields in pilot farms and herds including:
  - Reduced mortality
  - Increased calving rates
  - Increased offtakes
  - Improved breeding practices.
- Higher average prices achieved for outputs from pilot farms.
- Reduced incidence of diseases in pilot farms.
- Better information recording, reporting and financial management practices in pilots.
- Better trained farmers, extension officers, and other support service providers.
- Increased access to finance for pilot producers.
- Increased awareness of effectiveness and results of better farming practices nationwide.

Four pilots are envisaged, three with larger communal producers with cattle holdings of over 250 each, and one with a mix of smaller and larger producers. Total cattle in each pilot would be around 2000 head. The participating SMME producers would share water and land, as well as administration and reporting, input purchases, and sales and marketing. BMC would be an integral partner in the project and its District Officers would play a supervisory and monitoring role. Agro-hub would be the coordinator, and a steering committee involving representatives from key stakeholder groups would provide governance support.

The pilots would be supported by a range of support services, including those provided by LAC, veterinary inspection services, etc. Other projects aimed at strengthening these would be coordinated with the pilots.

The project is planned to last for an initial four years, covering set-up time and one cattle management cycle.

An experienced project manager with an appropriate mix of professional and practical experience, along with more junior project support in each of the pilots, would provide day to day technical advice and hands on training. The latter would be augmented by more formalized training and study tours.

Establishing the options for developing economically viable models of farming of different methods (e.g., feedlotting vs backgrounding) and different sizes of farms or holdings would be a priority and research would be carried out in this area to provide input into structuring the pilots.

Identification of suitable land would be a key prerequisite. In addition to MOA land available at Banyana Farms, communal land with existing or potential boreholes would be considered. In addition, it may be necessary to find controlled and approved land for finishing before slaughter.

A key contributor to success would be the participation of competent and motivated farmers. An appropriate method, such as a competition, is proposed to ensure this objective is achieved. In addition, it would be critical to ensure that their engagement and implementation of improved practices continues throughout the project. Various incentives are proposed, including:

- BMC contract for EU supply
- Access to 40-day finishing compound
- Supply chain finance (with insurance)
- Input subsidies, increasing over time.

Availability of finance for investment and working capital to hold cattle until they are required for slaughter would also be an important input, and CEDA, with appropriate guarantees from BMC, could play a role.

Various dissemination activities, including public relations, study visits, linkages with associations, etc. would be undertaken.

The preliminary estimate of the budget for this project is P20.3 million (€1.7 million).

10.3. FURTHER ENHANCING DELIVERY OF DVS SERVICES

The objectives of this project would be to improve the availability of extension services and make the services more responsive to user needs.

Figure 22 highlights the project's principal components.

Figure 24: Components of proposed DVS project

DVS strategy and organization

The main element of this component would be:

- Map needs vs supply of services, by type of need and magnitude to improve targeting of resources.
- Outsource non-core DVS activities to SMMEs, including:
  - Routine vaccinations
  - LITS
  - Fence maintenance
  - Meat inspection
  - Cattle movement permits.
- Update DVS strategy and organisational structure to facilitate above.
- Build capacity at DVS to manage outsourced services.
- Link with BCA and the New Zealand Aid training program to increase extension officer capacity.
- Provide adequate means of transportation for those in the field.
- Improve IT capacity for those in the field with use of means of mobile communication (tablets, smartphones).
- Address any legislative or regulatory changes necessary as a result of the changes proposed in the project.

Strengthening disease management

The objective of this element of the project would be to further strengthen DVS capacity and effectiveness to address FMD and measles. The main components would be:

- Initiate scientific research in Ngamiland on:
  - Cattle and wildlife movements
  - Generation and spread of FMD
  - Barriers to CBT (including awareness generation).
  - Risk assessment of management processes.
- Improve and/or reinforce hygiene and other best practices to prevent/eradicate measles.
- Hire and allocate more veterinarians in the field.
- Realign human resources to increase proportion of veterinarians in the field as per OIE Gap Analysis.
- Outsource cattle movement permits to private sector.

Livestock Identification and Trace-Back System

This component of the project is of urgent priority, as shortcomings in the current system is costing the beef value chain participants substantial amounts on a daily basis. This was also the principal contributor to Botswana's withdrawal from the EU market in 2011 and 2012. The main activities would involve:

- Develop strategy and implement move to digital ear tags.
- Outsource LITS execution to private sector with DVS having a regulatory role:
  - Database management
  - Ear tagging
  - Tracking and updating of information on MOA central server.
- Improve interface between all relevant MOA databases in LITS (cattle movement, inputs, cattle ID, farm, holding, cattle owner).
- Realign flow of communication within and between DVS and MOA departments.

Food safety inspection

Uneven enforcement of the LMIA is a problem for the value chain and this component is aimed at addressing the challenges in this area. The main objectives are:

- Enhance enforcement of certain provisions of Livestock and Meat Industries Act (LMIA), by identifying critical areas of enforcement that require strengthening and implement action plan.
- Develop and implement strategy to outsource meat inspections for selected activities.
- Train and strengthen DVS staff capacity to act as regulator as opposed to the implementor of LMIA.
- Facilitate (along with CEDA and LIMID) small private abattoirs to replace temporary slaughtering facilities (slabs).

Livestock Advisory Centres

The proposed merger with Botswana Agriculture Marketing Board (BAMB) recently approved by Cabinet presents some risks by way of diminishing the advisory role of LAC and reducing the scope of PSDP intervention. Nevertheless, even as part of BAMB, LAC performance could be improved and the proposed project would include :

- Conducting market research on demand for LAC services and client experience from different types of livestock producers in different locations.
- Improving LAC supply chain efficiencies to deliver better services, quicker.
- Staffing LAC adequately and training them with skills needed by clients.
- Promoting and enabling coordination amongst LAC, DVS and DAP to ensure right inputs and medicines are sourced to ensuring tailored availability of supplies.
- Reinforcing systems for recording of inputs and medicines for cattle and LITS.
- Determining activities that could be outsourced to the private sector.

BNVL

Objectives of the project activities targeted at BNVL would be to:

- Strengthen BNVL's capacity to conduct and disseminate research (e.g. FMD, measles, etc)
- Reduce lead time for testing and delivery of results.
- Secure outstanding accreditation (ISO, SANAS, SADCAS).
- Conduct market research and re-assess the test portfolio offered (residues, hormones, heavy metals).
- Build internal capacity and seek local partners to outsource some of the tests.
- Consider CEDA partnership to build private labs after feasibility study.

Privatization and outsourcing strategy

This is an important element of the DVS project, ensuring any privatization our outsourcing of services is carried out coherently and sustainably. Objectives would be to:

- Develop a coordinated strategy for privatisation of different DVS activities, by
  - Evaluating feasibility and cost benefit for different privatisation schemes.
  - Conducting income survey and drawing on existing surveys to determine farmers' capacity to pay for different services.
  - Conducting price sensitivity research to determine appetite for paying for different services.
- Consider and choose among different outsourcing models and establish appropriate one:
  - Full outsourcing, including variations to hiving off services to one company, to many individuals, small enterprises etc.
  - Outsource management
  - Private Public Partnership
- Assess implications for DVS strategy, organisation and skills needed for the outsourcing strategy:
  - Build appropriate systems for contracting and monitoring outsourced services.
  - Provide training to DVS staff for managing outsources services.
- Develop private sector capacity to carry out outsourced services
  - Conduct skills/training needs analysis
  - Develop and provide training program for interested SMMEs to deliver outsourced services.
  - Partner with CEDA for capital and working capital needs.

The preliminary estimate of the budget for this project is P5.4 million (€445,000).

10.4. BRANDING OF BOTSWANA BEEF AND DEVELOPING EXPORT CAPACITY AT BMC BEEF

This project aims to firmly establish Botswana beef in premium segments in export markets, and develop BMC's capacity to effectively market its products.

The main objectives of the project are to:

- Establish more effective positioning of BW beef in different market segments.
- Gain better understanding of export market needs and trends.
- Reduce reliance on one outsourced export agent.
- Develop capacity and enhance the supply chain at BMC to export effectively.
- Create a Botswana beef brand and drive awareness as a premium brand.
- Upgrade ECCO canned food brand.
- Expand product lines.
- Enter new export markets.

The main activities relating to the project would be:

- Build market intelligence gathering and analysis capacity at BMC.
- Carry out product, segment, packaging, cuts, cans related markets demands survey in key existing and target export markets.
- Develop appropriate brand, packaging, logo etc. for export.
- Install new packaging lines at BMC to meet identified export requirements.
- Develop export and sales targeting capacity at BMC.
- Review and update ECCO brand.

Our preliminary estimate of the budget for the technical assistance component of this project is P1.8 million (€150,000).

10.5. INCREASING EFFECTIVENESS OF BEEF PRODUCER ASSOCIATIONS

The project would aim to strengthen the ability of Botswana's beef associations' capacity to provide more effective support to its members. The main activities of the project would include:

- Financial viability analysis including identification of sources of funding.
- Survey of members to identify needs and services associations can offer.
- TA to help develop sustainable strategies for the associations.
- TA and workshops to exchange ideas with regional and international associations.
- Training to associations on providing services to members.
- Partnership or twinning with other regional or EU association(s).

The major risk associated with this project is that any TA provided is wasted because associations cannot achieve financial sustainability. Therefore, the viability study needs to be carried out before any other activity is envisaged.

Preliminary budget estimate: P4.1 million (€340,000).

BIBLIOGRAPHY

2007 and 2008 Annual Agricultural Survey Report. Statistics Botswana. January 2012.

2012 Annual Agricultural Survey Report. Statistics Botswana. April 2014.

Botswana 2014: African Economic Outlook. African Development Bank.

Botswana Agricultural Marketing Strategy (2011-2016). Commonwealth Secretariat and Ministry of Agriculture. September 2011.

Botswana Agrifood Value Chain Project: Beef Value Chain Study. Food and Agricultural Organization and Ministry of Agriculture. 2013.

Botswana Development Policy Review: An Agenda for Competitiveness and Diversification. World Bank. September 2012.

Botswana Excellence: A Strategy for Economic Diversification and Sustainable Growth. Government Implementation Coordination Office. November 2008

Botswana International Merchandise Trade Statistics No. 2014.01. Monthly Digest. Statistics Botswana. November 2013.

Botswana Meat Commission Annual Report 2013.

Botswana: Towards a New Economic Strategy. Professor Michael E. Porter. Harvard Business School. Presentation. 27 November 2012.

Cattle Identification and Traceability in Botswana, Moreki J. C., Ndubo N. S., Ditshupo T. and Ntesang J. B.

Challenges and actions for increasing meat exports to EU countries. W. Schutz. Meat Board of Namibia. Undated presentation.

Economic Diversification Drive: Medium to Long-term Strategy 2011-2016. Ministry of Trade and Industry. July 2011.

Final Report of the Special Select Committee of Inquiry on the Botswana Meat Commission and the Decline of the Cattle Industry. February-August 2013. Draft.

Livestock and Poultry: World Market and Trade. Foreign Agricultural Service. United States Department of Agriculture (USDA). April 2014. 2013 information.

Mid-Term review of NDP 10. Ministry of Finance and Development Planning. June 2013.

Ministry of Agriculture, National strategy Office Report. 8 October 2013.

National Development Plan 10 2009-2016. Ministry of Finance and Development Planning. February 2010.

Private Sector Development Strategy 2009-2013. Botswana Confederation of Commerce, Industry and Manpower (BOCCIM) and Ministry of Trade and Industry (MTI). PSDS National Team with Technical Assistance from the Commonwealth secretariat, September 2008.

PVS Gap Analysis Report: Botswana. OIE. November 2011.

The National Beef Herd Improvement Plan. Agricultural Hub. MOA. October 2008.

Pilots for strengthening communal livestock farming practices

1. Background

1.1. The sector's current position

The livestock sector is of critical importance to Botswana's ambitions in diversifying its economy. Although its share of GDP, at marginally more than 1%, is small and has been diminishing over an extended period, the sector remains an important contributor to generating rural employment and generating exports and foreign exchange. Building on the country's long tradition in producing high quality beef produced naturally and within the constraints of strict regulations, the sector has strong comparative advantage over other beef producing and exporting countries. The sector accounts for 62% of the country's agricultural GDP and 1.5% of total exports. Around 50% of the country's beef production is currently exported.

Nevertheless, the sector has been in crisis in recent years, due to a number of factors including:

- High dependency on an increasingly competitive EU market, which accounts for almost half of exports.
- Increasing cost of compliance with tightening EU standards, which are enforced for all beef production in the country.
- An export monopoly, Botswana Meat Commission (BMC), which has conflicting objectives of providing livelihoods for farmers whilst being run commercially and where various studies have found that improvements in efficiency and effectiveness is required.[84]
- A failed cattle identification system that has imposed considerable regulatory and marketing costs on the sector.
- Ineffective land management systems for controlling herds.
- An extension and livestock support service that is not commercially oriented and not aligned to the needs of livestock farmers.
- A large FMD-infected area in the north of the country, covering *% of grazing area and *% of livestock, that significantly impairs the commercial viability of livestock production.
- Poor hygiene and livestock health practices, particularly in densely populated human settlements, contributing to outbreaks of diseases such as measles, adversely affecting the saleability and price of beef.
- Relatively high cost of feed, most of which has to be imported from neighbouring countries.

In addition to the above, a key area where the sector lags behind those of more dynamic beef exporting countries is in practicing modern livestock rearing and management techniques and a consequent high cost and low yield of production.

[84] Various reports, including Botswana Agrifood Value Chain Project: Beef Value Chain Study. FAO and Ministry of Agriculture (MoA). 2013, and The final report of the special select committee of enquiry on the Botswana Meat Commission and the decline of the cattle industry. February – August 2013.

1.2. Weaknesses in current livestock management practices

A recent FAO study[85] estimates that there were approximately 77,000 cattle farmers in Botswana in 2008. 76,300 communal households occupy 80% of pasture land, while 700 ranch farmers operate in the remaining 20%. Of the 77,000 cattle farmers, roughly 40,000 (52%) have fewer than 20 cattle, 60,000 (78%) had fewer than 40 cattle, and 75,000 (97%) had fewer than 150 cattle. Between 2005 and 2010 total cattle numbers fluctuated between 2 and 3 million, with 2.7 million in 2010. Botswana's beef production system significantly underperforms those of its peers. For example, the FAO study finds that overall offtake rates, at 12%, are significantly lower than those in Namibia (20%), Brazil (18%) and Australia (24%). Botswana's calving rates, at between 50% and 60%, compare with up to 85% in neighbouring countries.[86] Part of the explanation for the differences may be due to variations in permitted practices in the different countries. Nevertheless, actual performance with respect to calving percentages, mortality rates and offtake rates fall below targets for the National Development Plan (NDP) set by the Central Statistical Office.[87]

A number of factors contribute to the weaknesses in livestock production. These include:

- Traditional pastoral herding that involves relatively little proactive management of cattle stock.
- Often seen as an asset and an insurance against unforeseen cash needs, livestock may not be sold at the commercially optimum time.
- A large proportion of absentee farmers who leave herd management to predominantly untrained farmhands, and who have other income (exacerbated by disincentives such as ability to offset farm losses against other income) and therefore have low motivation to adopt more commercial practices.
- A move over several decades from a traditional foraging system, where farmers move with their cattle to grazing areas, to a cattle post system around watering points has increased grazing density, environmental degradation, bush encroachment and ensuing lowering of grazing capacity in grasslands.[88]
- As highlighted previously, poor hygiene practices such as lack of clean water and toilets, contributing to illness (due to increased prevalence of *Cystercercus bovis*) in cattle.
- Poor breed management, contributed to by lack of control over bulls mating in communal areas.
- Limited use of scientifically-based feeding techniques, such as the use of approved supplements.
- The large number of small holdings makes (commercial) cattle production less viable.
- Land usage and ownership practices making it difficult for communal farmers to fence off land and effectively control and manage their herds. Gazetting of land, including land ownership policy is controlled by the Land Boards. Presently, the policy does not allow communal farmers to fence off pieces or communal land except by way of small plots around their individual boreholes.
- Poor access to training in farm management techniques by farmers and an extension service that does not have the capacity to provide advice on up-to-date and commercially-oriented practices.

[85] Botswana Agrifood Value Chain Project: Beef Value Chain Study. FAO and MOA. 2013

[86] Botswana Development Policy review: an Agenda for Competitiveness and Diversification. World Bank. September 2012.

[87] National Development Plan 10. Government of Botswana. June 2010

[88] Botswana Development Policy review: an Agenda for Competitiveness and Diversification. World Bank. September 2012.

- Limited marketing capacity and price information, although BMC regularly publishes cattle prices in newspapers, and also uses social media. Producers are at liberty to sell to any business in the local market. The exception is for exports where only BMC is eligible.
- Absence of focus on commercial and financial parameters of livestock production, rather than technical ones.
- Lack of ready access to finance for working capital (feeds, medicines, etc.) and investment (in herds, fencing, etc.).
- Poor infrastructure (gravelled roads, telephone coverage) in cattle farming areas making travelling and communication between centres for supply of farming services and farm requisites difficult and time-consuming.

Over recent years, the country's production systems have seen the increasing move from the traditional oxen-based to feedlotting. This has been significantly driven by BMC, which needs to have access to more secure and regular supply of cattle of consistent quality to maintain throughput in its abattoirs. The EU regulations requiring export animals to be kept in an approved area for at least 90 days and a holding area for 40 days prior to slaughter (90/40 residency rule) has also contributed to this trend since feedlots, because of their enclosed nature, are readily compliant with the EU residency rules. In addition, suppliers to domestic supermarkets are also engaged in feedlotting to produce more consistent supplies. However, given the relatively high cost of feeds in Botswana, there is some debate about the commercial attractiveness of this practice.[89] Moreover, given the trend in EU towards more naturally and humanely grown animal produce, the move toward feedlotting arguably makes Botswana's exports less attractive in international markets, a situation that calls for increased efficiency at all stages of the country's value chain.

1.3. Potential results from improvement in management practices

The FAO study highlights that with improved management practices, Botswana's beef production could double, even with the current herd size. Table 1 below provides an outline of the study's underlying assumptions relating to improving the proportion of breeding cows, higher calving rates, reduced mortality and improved offtake.

	2010 Oxen + weaner	Future Expanded weaner system
Herd size	2,700,000	3,000,000
Mature livestock units	1,944,000	1,980,000
Breeding cows (%)	40	45
No. of breeding cows	1,080,000	1,350,000
Calving rate (%)	55	65
Calves born	594,000	877,500
Mortality (%)	9	6
Net herd increase	297,500	644,850
No-growth off-take (%)	11	21
Potential beef production	45,821,160	99,306,900

Source: FAO Report

The analysis opposite is based on average parameters. Larger, more commercialized farms could perform better, whist relatively small communal herders would benefit less than the projected increases in yields.
Whilst highlighting the considerable potential for improving production yields, the FAO study nevertheless raised some uncertainties about the commercial impact of improved farm management practices. For example, based on the study's assumptions, it was suggested that the increased costs of better livestock management may not be fully recoverable given current pricing practices (although it was clear that financial performance improved with size of holdings). This commercial aspect of

[89] The final report of the special select committee of enquiry on the Botswana Meat Commission and the decline of the cattle industry. February – August 2013.

livestock management requires more detailed research, particularly in view of price increases that have effected since the date the report was published.
Nevertheless, based on the above analysis, and comparing Botswana's livestock production performance with similar countries, it is clear that considerable potential exists for improvement.

2. The project

2.1. Overview

The project will establish or identify four suitable locations for piloting variations of communal farming practices, introduce improved livestock management practices, train farmers and herders, draw on support services through piloting one-stop shops, disseminate the results of the pilots and develop a methodology for rolling out the pilots nationwide. It will be coordinated by the Agricultural Hub and managed by BMC with technical assistance (TA) and project management support being funded by the project. It will be coordinated to the extent possible with existing and planned Government and donor initiatives.

The project would run for an initial period of four years.

2.2. Goal

The goal of the project is to improve the livelihood and income of communal farms and farmers in Botswana.

2.3. Outcomes

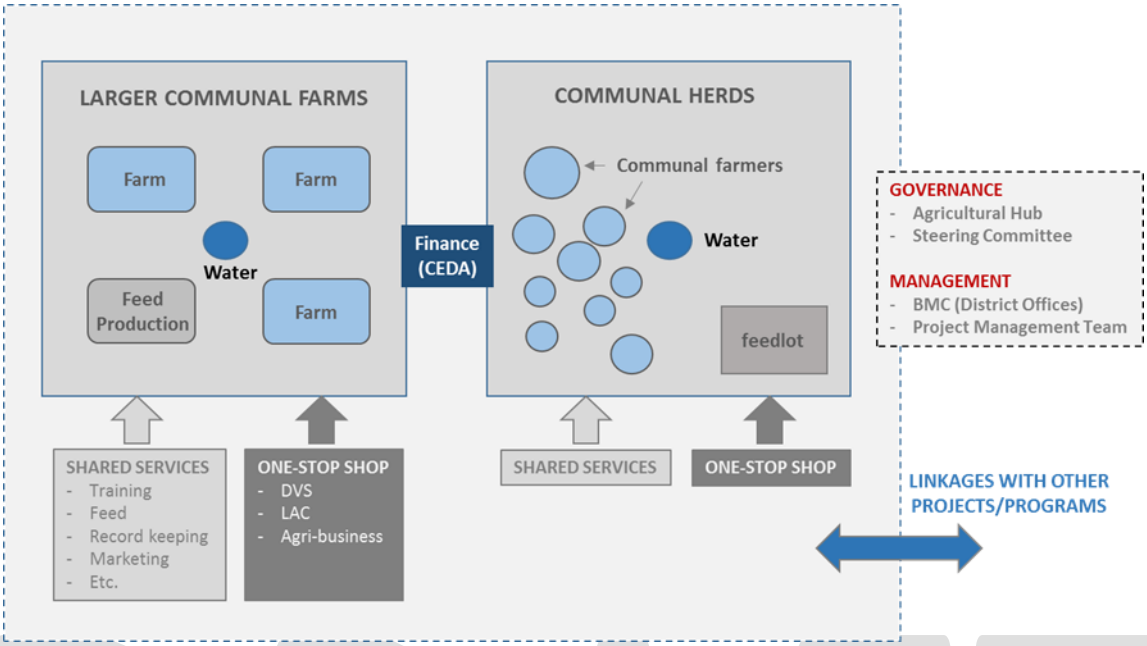
The envisaged outcomes of the project are:

- Improved net income for farmers participating in pilots.
- Increased production yields in pilot farms and herds including:
  - Reduced mortality
  - Increased calving rates
  - Increased offtakes
  - Improved breeding practices.
- Higher average prices achieved for outputs from pilot farms.
- Reduced incidence of diseases in pilot farms.
- Better information recording, reporting and financial management practices in pilots.
- Better trained farmers, extension officers, livestock advisors.
- Increased access to finance for pilot producers.
- Increased awareness of effectiveness and results of better farming practices nationwide.

The verifiable indicators for the goal and outcomes, along with baselines, would be developed as part of the detailed design of this project.

2.4. Activities and outputs

Chart 1 below illustrates some of the key components of the proposed structure of the project.



Outputs would be defined as part of the detailed design of the project, which will be based on the following structure and activities. Some illustrative outputs are included below, but they are not intended to be exhaustive.

Pilot farms/holdings and participants

The pilot farms or holdings would be established in fenced-off or otherwise controlled and approved areas to hold cattle for the entire production cycle. It is suggested that four pilot areas are developed as part of the project. They will have the following features:

- They will pilot a selection of different cattle farming or herding options. Each piloting option would be selected to demonstrate good farming practices in one or a combination of features from the following (all of the options listed below will not necessarily be addressed):
  - Small communal herders, with average herd sizes of around 100.
  - Larger communal farms, with average herd sizes of over 150.
  - Oxen and weaner based farming systems, respectively in different pilots.
  - The communal farmers or would be grouped together around a borehole (commercial operations with existing fenced farms/holdings would typically have own borehole(s), and communal farmers with a commercial mindset would be targeted), with total cattle numbers of around 2,000.
  - The farmers will share water and services such as sales and marketing, herd monitoring and reporting, feed and supplement procurement, administration, breeding, fencing (where relevant).
  - A range of locations.
  - To the extent that wider programs are developed in branding/marketing such lines, certified grass-fed, natural, organic, etc.
  - To the extent possible, linkage with various options of irrigated fodder production in fenced holdings, communally owned or commercial farms.

Illustrative outputs

Some illustrative outputs from the project are provided below:

- Research report on economic viability of farms/communal holdings of different sizes and production approaches (e.g., feedlotting and growing cattle to slaughter weight).
- Detailed business plans for pilots, including production plans, financing plans and financial projections.
- Periodic budgets and action plans for each key stakeholder involved in the project.
- Manuals on different aspects of livestock management.[90]
- Training material relating to different aspects of livestock management and workshops/training sessions and participant feedback and assessment.
- Marketing plans for the pilots.
- Budgets and plans relating to development of feed producing capacity.
- Periodic monitoring reports on pilots.
- Dissemination plan.
- Roll-out plan.

Activities

Once the four pilot models are finalized, a key first step would be to develop a detailed financial model, along with sensitivities, to establish their financial viability. The project will also provide support and training to the pilot herders and farmers in the following areas:

- Disease management
- Breeding
- Nutrition
- Commercial and financial management.
- Record-keeping
- SPS measures
- Wider livestock rearing related education.
- Supplementary fodder production
- Livestock identification systems (this is essential for their ability to market produce).

Particular emphasis will be placed on developing the technical capacity of herders and commercial awareness of farm managers. Targets for yields and profitability will be established and monitored.

[90] See Namibia national Farmers Union (NNFU) and Namibia Agricultural Union (NAU) websites for examples.

Land

Suitable land owned by BMC and the Ministry of Agriculture would be used for the pilots. In addition, tribal communal ranches would also be considered. A key consideration when selecting the location would be to ensure that it has ready access to water, feed, support services, access to markets, etc. An appropriate fencing strategy would also need to be developed to meet the EU 90/40 day rule, and the land selected must be suitable for implementing such a strategy.

Support services

In addition to the herders and farmers, the provision and capacity building of various support services would be integral to the activities of the project. These support providers would include:

- Extension services
- Livestock Advisory Centres
- Agri-business services.

To the extent possible, the pilots should also consider the establishment and trial of one-stop shops for delivering such support services. Training of such support providers would be an important component of the project. The support services would not be tied exclusively to the pilots and will additionally serve their respective catchment areas.

Selection of herders and farms and incentives

The selection of suitable, motivated, commercially-oriented participants would be critical for the success of the pilots. An appropriate process to identify participants would be developed as part of the project's inception. Options would include, for herders, submission of competitive proposals by relevant livestock associations, and for groups of larger commercial livestock farmers, submission of competitive business plans based on published parameters.

It is important that farmers, herders and other participants are appropriately incentivised to attract the highest quality candidates and also to keep them motivated. Incentives might, for example, include BMC commitment to purchase beef from the pilot farms at guaranteed prices. The details of appropriate incentives would be developed as part of the design of the project.
Similarly, provision needs to be made for removing participants from the pilots who do not deliver on their commitments.

Dissemination and roll-out

A dissemination strategy including site visits, workshops and publicity would need to be developed and budgeted for as part of the project. One of the key outputs of the project would be a roll-out strategy.

Finance

A MoU with CEDA would be entered into for providing credit as necessary for working capital and asset financing to the farmers, on CEDA's usual terms and subject to meeting eligibility criteria. The rigorous commercial and financial management as well as the close monitoring of performance envisaged as part of the project would make the pilot participants attractive candidates for credit.

Linkage with other projects and programs

There are a number of Government and donor initiatives and projects currently being implemented in the livestock sector. Linkages and partnerships would be developed with appropriate programs to leverage resources and avoid duplication. At the same time it would be critical to ensure that the project can be implemented on a stand-alone basis should the cost or complexity of coordination start exceeding its benefits, or should the other projects start to fail achieving their objectives. Candidates for linkages and coordination include:

- New Zealand aid Program funded Botswana Beef Sector Training Initiative.
- BMC market diversification programs
- Any relevant programs developed from the revised National Agricultural Policy.

In addition to the above initiatives, this study has recommended a number of interventions that would complement and reinforce this project.

2.5. Key risks and assumptions

Some of the principal risks and assumptions relating to the project include:

- Economic viability of the piloted livestock management models.
- Identification of committed, commercially oriented, and motivated communal herders and beef farmers for the pilots.
- Committed participation of all key stakeholders in the project.
- Availability of land that meets the appropriate selection criteria.
- Absence of any external shocks, including significant deterioration in EU/regional beef export prices, material increase in food prices, outbreak of diseases, etc.
- Identification and engagement in commercial terms of a project management team.
- Availability of grant funding from external donors and the relevant Government agencies.
- Availability of commercial finance for capital and working capital requirements.
- Provision of effective training and appropriate incentives for implementation of better livestock management practices.
- Strengthening of wider policy environment and restructuring of beef industry in Botswana to address its current weaknesses (some of which are highlighted in the background section).

2.6. Project management

Implementation of the project will be complex, requiring proactive coordination of a large number of participants, support organizations, TA deliverers, other TA initiatives and wider stakeholder groups. To the extent these are pilots, unforeseen events will be encountered and the project should be able to react quickly and effectively to address any emerging issues.
The Agricultural Hub will the principal sponsor of the project, taking responsibility for its strategic guidance and management of stakeholders. The Hub would be supported in strategic matters by an advisory committee comprising BMC, DVS, the proposed Food Control Authority, DAP, Department of Agri-business, a private sector representative (such as Techno Feeds), and the National Beef Farmers Union.

BMC will play the leading operating management role, being responsible for providing operational guidance and monitoring and reacting to the pilots' performance through its District Offices. The District Officers would ensure the pilots are integrated into the beef value chain, and in fact help to strengthen the value creation chain. The project manager will liaise with these District Officers with the aim to consistently improve performance and results. The pilots will be integrated into BMC's strategy and work plan and related milestones established and reported on within the organization. The project will fund a full time project manager, with some support staff, to manage the pilots on a day to day basis. He or she will also provide some of the required technical advice and training to participants and support staff. The project manager will have in-depth technical and commercial experience of managing livestock operations in a similar environment.

The project is also provide a pool of funds to operate a call-down facility, to be managed by the project manager with appropriate streamlined and quick-reacting approval processes. The call down facility will be drawn on to procure national, regional and international expertise in livestock management as required by the pilots.

3. Preliminary budget estimate

udget Costing Estimate	**Annually (BWP)**	**4 Years (BWP)**
1 Project Manager	550,000	
4 Project Managers (record keeping, reporting, monitor)	1,000,000	4,000,000
M&E Specialist (part time) Monitor & Evaluation	80,000	
Transport	-	300,000
Fuel/maintenance	40,000	160,000
Training	100,000	400,000
Accommodation	80,000	320,000
Technology (accounting, software, hand held LITS reader)	250,000	1,000,000
- Subsidies on inputs, borehole running costs, medicines, borehole maintenance, transport	1,200,000	4,800,000
Land		
- Annual rental (contribution in kind)		
- Borehole open 2 and refurbish another 2	-	750,000
Fodder production		4,000,000
Study visits	400,000	1,600,000
Dissemination (field visits, celebration, communication, publication)	750,000	3,000,000
Total	**4,450,000**	**20,330,000**

4. Next steps

The following are the suggested next steps in the detailed design and implementation of the project:

1. Agreement of all key stakeholders on the key parameters of the project and their roles in it.
2. Securing funding in principle.
3. Detailed design of the project, including terms of reference for each key participant (or groups thereof); a detailed budget; detailed logframe(s); a procurement plan for project management team; a plan for identifying and appointing livestock farmers; a training plan; details of scope of coordination with other projects/programs; and an outline dissemination and roll-out plan.
4. Commissioning of research into economic viability of the pilot models and incorporating in the project design and adjustments necessary to reflect the findings.
5. Securing land for the pilots.
6. Finalization of funding agreements.
7. MOUs with government agencies providing key support to the project.
8. Recruitment of project management team.
9. Execution of contracts with providers of support services.
10. Publicity and selection of participating farmers in the project, and entering into appropriate contracts with them.
11. Commence implementation of project.

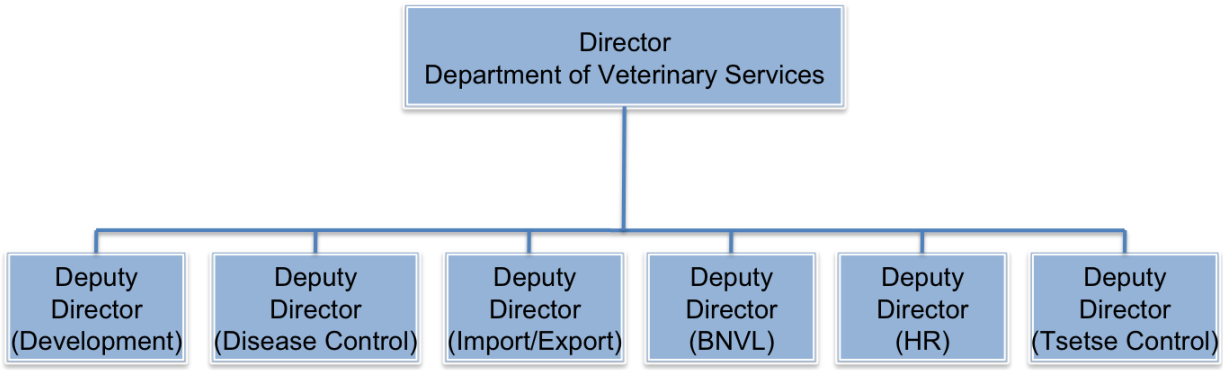
Pilots for strengthening the extension services

1. Background

The importance of the beef sector in Botswana spans a number of dimensions: economic, social, environmental, and even political. The sector's impact transcends there merely economic. The cattle industry has been a key focus area since colonial times. In fact, the colonial administration invested heavily in veterinary fences and abattoirs prior to independence in order to meet the import requirements of European importers. The result of these coordinated efforts was to raise beef exports to 85% of the total value of the country's exports just before independence. By the 1970s the government of Botswana achieved preferential tariffs as part of the Lomé Convention, ensuring that beef retained its position as the country's most significant agricultural export[91].
Cattle are very often considered as a long-term savings option and, in some cases, a status symbol. The government regards the beef sector as a priority for rural poverty eradication. The large majority[92] of the cattle belong to communal farmers, leaving a small percentage of the herds in the hands of professional farmers. The communal farmers group can be also classified according to the size of the hard, the full time farmers and the part-time farmers.

2. The Department of Veterinary Services (DVS)

In 2008 the former Department of Animal Health and Production was divided in two independent departments; the Department of Animal Production (DAP) and the Department of Veterinary Services (DVS). These two departments have national responsibility. In line with the strategy of the Ministry of Agriculture (MoA), DVS focuses on rural development and beef exports. Under DVS there are six divisions led by Deputy Directors, all veterinarians by background. In addition to the centralized structure at MoA, the veterinary services include 10 District Veterinary Offices and 28 sub-districts offices, some of which are co-located with the District Veterinary Offices (DVOs). The next level of the veterinary services structure is clusters, then extension areas and finally crushes. Whilst all DVOs are headed by veterinarians, not all the Sub-District Veterinary Offices (SDVO) are headed by veterinary officers and in some cases they are led by non-veterinary scientific officers. Chart 1 showing an overview of DVS' structure[93].



[91] Botswana: A Development-Oriented Gate Keeping State, Ellen Hillbom
[92] 80-90% according to the literature
[93] OIE PVS Gap Analysis Botswana Nov 2011

Overall, DVS personnel are considered highly skilled with the majority of the veterinarian officers having been qualified at reputable international institutions. Some of them hold postgraduate degrees. Positions at the top of the Chart 1 are dedicated to veterinarians whereas the staff that are in daily contact with the farmers and the cattle are mostly veterinary para-professionals. The latter normally receive official training but are not always supervised by a veterinarian. This is attributed mainly to the multi-layer hierarchical structure of the "organization".

3. The project

3.1. Overview

The project will create a strong demonstration effect by setting up pilot operation in four to five areas across the country. The process and results will be recorded to enable MoA to reliably evaluate the results. The project will introduce scalable methodology in such a way to ensure that a nationwide roll-out will be feasible and sustainable. It will be coordinated by the Agricultural Hub and managed by the Director of DVS. Synergies with other Government of Botswana (GoB) initiatives and institutions such as the Botswana Beef Sector Training Initiative funded by the New Zealand International Aid and Development Agency, Botswana College of Agriculture (BCA), Meat Inspection Training Institute (MITI) will be sought. The project will be run for a period of 4 years.

3.2. Goal

The project aims at streamlining the DVS operations in order to allow the DVS staff to focus on their core responsibilities and provide better valued services to the farmers. In parallel the project is seeking opportunities for SMEs to participate in the value chain. All above changes will have to take into considerations the budgetary restrictions DVS is facing.

3.3. Potential results from improvement in the delivery of extension services

The anticipated results of the proposed project would improve availability and quality of the services provided by extension services where they are mostly needed. This result coupled with more market-oriented services will lead to:

- Improvement of extension officers availability where and when are needed and enhance the quality of services provided
- Further strengthen capacity and effectiveness to address animal diseases
- Improvement of the LITS system to comply with the export markets requirements
- Enhance reinforcement of certain provisions of Livestock and Meat Industries Act (LMIA)
- Further strengthen capacity and accreditation of Botswana National Veterinary Laboratory (BNVL)
- Refine efficiencies, capacitate staff and improve supply chain practices at Livestock Advisory Centres (LACs)
- Eventually the above steps will improve BMC's supply chain one of the bottlenecks in the beef sector that would benefit all farmers

3.4. DVS Organisational Strategy

In 2011 OIE published the PVS Gap Analysis[94] aiming at assist Botswana's Veterinary Services (VS) to identify the gaps in the current system and propose a strategic action plan that aims to strengthen the VS to meet the future challenges and remain compliant with the OIE standards. The OIE PVS Gap Analysis clearly states that the overall challenge for Botswana's VS is to be able to improve the overall efficiency. It also mentions that the current lack of veterinarians on the ground does not meet the OIE requirements. During the consultations we held by the ITC team, interviewees agree that the current veterinary services are not optimal, requiring far-reaching reform. Over the years the department of veterinary services has accumulated a vast array of responsibilities including:

- Vaccinations, both routine and critical
- Fence maintenance
- Health inspection
- Disease management
- Livestock Identification & Traceability System (LITS)
- Cattle movements
- Meat inspections, and
- Effective and up to date advice on inputs

There is currently a shortage of qualified personnel, particularly close to the farms. Also, extension officers must cover long distances on daily basis. This situation has led to the following:

- Unavailability of the extension officers when and where needed
- Increasingly high workload with multiple requests to attend different sites simultaneously
- Lack of resources for transportation since often these means are shared with other departments of the MoA
- Shortage of qualified veterinarians on the ground and in contact with the farmers
- Not up to date knowledge on best practices and information in relation to animal diseases

Outcomes

The envisaged outcomes of the project are:

- Improve availability of extension services (ES) and make the services more market-oriented Streamline DVS operations

Outputs

The envisaged outputs of the project are:

- Improve competence of the DVS personnel in the field
- Improve geographical distribution of DVS staff nationwide
- Improve flow of communication within various DVS departments as well as across departments

[94] OIE PVS Gap Analysis Botswana Nov 2011

Activities:

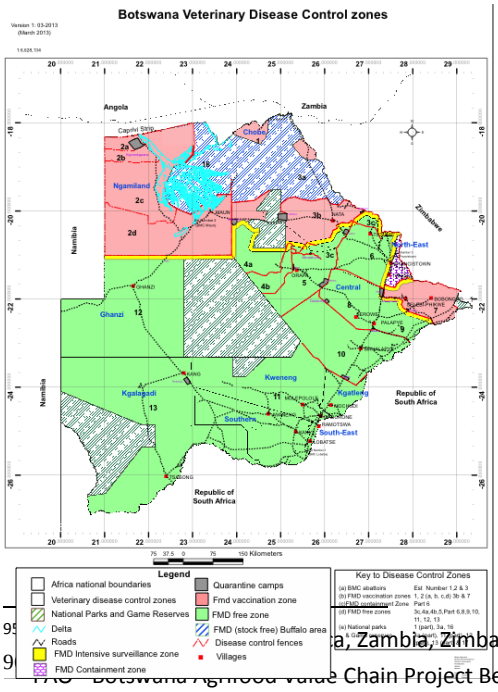
The envisaged activities of the project are:

- Restructure the DVS organization to reflect the outsourcing of non-core responsibilities
- Outsource non-core DVS responsibilities to SMEs
- Map out cattle, farms, area coverage by extension officers vs extension officers distribution
- Outsource non-core DVS activities to SMEs
  - Routine vaccinations
  - LITS
  - Fence maintenance
  - Meat inspection
  - Cattle movement permits
- Liaise with BCA and New Zealand Aid program to capacitate EOs

3.5. Disease management

When the United Kingdom became part of the European Union, it continued the efforts to import beef from the former colonies. Exporting to the EU meant that the Batswana farmers had to comply with a new set of legislation that included amongst other disease management controls. Particular attention was given to highly contagious diseases such as food and mouth disease (FMD). In Southern Africa land is often shared amongst humans, small and large domesticated animals, as well as wildlife. This fact poses an additional challenge to the authorities to eradicate contagious animal diseases or at least control them.

In order to overcome this situation, selected governments in Southern Africa[95] initiated the zoning system. Areas with high occurrence of both wild buffaloes and FMD ("red zones") were separated from disease-free areas ("green zones"). Between the two areas lies a buffer zone where cattle form a first level of warning in the case of breakouts. Only cattle in the red zones are vaccinated. EU exports originate from the "green zone".



As part of the disease prevention measures, DVS staff travel nationwide to ensure that crushes and fences are well maintained. The FMD-free status of the green zones is confirmed through regular tests conducted at Botswana National Veterinary Laboratory (BNVL). Complete eradication of FMD in Southern Africa is not a realistic goal, since the disease is carried by wildlife, mainly buffalos. Ann alternative approach to today's efforts to manage the disease could be to initiate a risk assessment based program such as the Commodity Based Trading (CBT) helping to avoid new outbreaks and at the same time maximize the value of the cattle from FMD-prevalent areas such as Ngamiland[96]. Such programs although technically feasible, they are yet to be accepted by international organizations such as OIE and governments.

95 [illegible]a, Zambia, Zimbabwe

96 FAO – Botswana Agrifood Value Chain Project Beef Value Chain Study

The percentage of infected with measles[97] cattle in Botswana is estimated at 10% where the average percentage for other countries in the region is around at 3%. Only last year measles reportedly cost Botswana Meat Corporation (BMC) an estimated BWP 73 million. As a comparison, the cost of FMD vaccination is estimated at USD 7million (BWP 62 million). Unlike FMD, measles is not detected prior to slaughtering, therefore it is hard to predict and reduce the financial losses. Eradicating measles completely would require a nationwide program coordinated by the Ministry of Agriculture (MOA) with the active participation of Ministry of Health (MOH).

Outcomes

The envisaged outcomes of the project are:

- Further strengthen capacity and effectiveness to address FMD and measles
- Improve efficiencies, enabling DVS to focus on their core activities

Outputs

The envisaged outputs of the project are:

- Scientific research pilot at Ngamiland on:
  - Cattle and wildlife movement and
  - Generation and spread of FMD
- Review of the slaughtering act and update based on scientific research data
- Enhanced measles disease eradication practises

[97] http://www.depi.vic.gov.au/agriculture-and-food/pests-diseases-and-weeds/animal-diseases/beef-and-dairy-cows/beef-measles

Activities

The envisaged activities of the project are:

- Allocate budget and human resources to conduct research on FMD in Ngamiland
- Hire and allocate more DVS veterinarians in the field
- Supply de-worming tablets to humans via clinics and cattle via extension officers
- Media communication to promote the importance of measles eradication
- Reinforce hygiene practises such as sanitary facilities
- Prevent grazing areas becoming contaminated by human faeces.

3.6. Livestock Identification and Traceability System (LITS)

Livestock branding originates in ancient Egypt, originally using a hot metal stick. Originally, branding served to identify the owners. This practice was particularly followed in countries with large grazing areas. In more recent times branding has been used to assist in traceability in addition to identification. In April 1997 in response to the BSE crisis, the Council of the European Union implemented a system of permanent identification of individual animals enabling the traceability.

The key objectives were:

- The localization and tracing of animals for veterinary purposes, in order to control the spreading of infectious diseases
- The traceability of beef for public health reasons
- The management and supervision of livestock as part of the common organisation of the market[98]
- The identification systems requires that:
  - Each animal has a unique identification number
  - Each holding area is registered in a database
  - All animal movements are registered

Initially, Botswana chose an advanced system, using a bolus inserted through the mouth into the stomach of the animal. A portable scanner reads the unique information registered in the bolus emitted with Radio Frequency Identification (RFID) and uploads the information into the centralized server located at MOA.

[98] http://ec.europa.eu/food/animal/identification/bovine/index_en.htm

Following the feedback from farmers and other stakeholders, on 1St January 2013 the GoB decided to replace the bolus system with ear tags. There has been a transition period during which both systems were used in parallel and the data from both systems was recorded in the MOA database. Although upgrading the LITS to the ear tag used widely in Europe, Botswana's main export partner, the challenges in the implementation of the system are attributed to DVS internal processes rather than the system shortages[99]. Last but not least, the implementation of the analogue ear tag as an intermediary solution is adding complexity will lead to further delays of implementing the digital ear tags even further. It is therefore recommended to initiate immediately the implementation of the digital ear tag and phase out the use of both bolus and analogue ear tag.

The main complaints surrounding the LITS include:

- Owner's details are not correctly updated in the central MoA server
- A DVS member of staff is required to scan and issue movement permit at the farms, leading to delays and eventually disruptions to BMC's supply chain
- Data is not updated by small-scale farmers due to lack of funds to purchase a scanner, failing to comply with export markets requirements
- The government of Botswana has invested over BWP230 million for a well-designed system but the project implementation has failed to delivered a reliable fully fledged solution
- Unclear split or roles and responsibilities amongst the various stakeholders in the value chain
- Delays or even failures to update the information into the central MoA database
- Absence of combining multiple databases related to animal disease management, animal movement and traceability
- Conflict of interest as DVS is both the implementation body as well as the auditor

Outcomes

The envisaged outcomes of the project are:

- Develop strategy and implement for moving to digital ear tag

Outputs

The envisaged outputs of the project are:

- Improve LITS efficiencies to comply with export markets
- Improve flow of communication within DVS and outside with respect to LITS
- Outsource the execution of LITS to SMEs with DVS having an auditor role.

[99] Cattle Identification and Traceability in Botswana, Moreki J. C., Ndubo N. S., Ditshupo T. and Ntesang J. B. [date]

Activities

The envisaged activities of the project are:

- Record, upload and keep up to date LITS information
- Integrate all MoA disease related databases within LITS
- Outsource cattle, holdings and cattle movements registration to the private sector
- Outsource diseases and medications information registration to the private sector
- Outsource ear tagging to SMEs or farmers associations
- Register slaughtering and butchery information by meat inspectors
- DVS to monitor LITS activity and intervene where necessary
- Merge all relevant MoA databases into LITS.

3.7. Food safety inspection

The Livestock and Meat Industries Act (LMIA) introduced in 2006 has transferred to DVS the responsibility of all abattoirs and other slaughtering facilities. The Act requires that these facilities are registered and their operations monitored by meat inspectors. Despite this legal framework and the continuous efforts by the officials to drive compliance, the industry is facing serious challenges, namely:

- Significant quantities of cattle slaughtered in the bush or temporary slaughtering facilities that do not follow any sanitary requirements and without inspections. This phenomenon leads to an increasing risk for the health of consumers and unfair cost advantage for the operators of these facilities.

- The LMIA intended to introduce common food safety standards across the meat industry and ensure that all consumers whether in Botswana or abroad receive product that follows the same standards of hygiene and practises. Nevertheless over 8 years since the introduction of the Act, a number of facilities still receive automatically renewed temporary licences. This practice promotes double standards within the industry favouring a few and continuing putting the health of the general public at risk, particularly because DVS lacks the resources to monitor these facilities[100].

Outcomes

The envisaged outcomes of the project are:

- Reinforce the LMIA across the value chain with no exceptions
- Improve efficiencies, enabling DVS to focus on their core activities

[100] FAO - Botswana Agrifood Value Chain Project Beef Value Chain Study

Outputs

The envisaged outputs of the project are:

- Evaluate current LMIA status, identify shortages and areas for improvement
- Identify areas where SMEs could participate in the value chain
- Enable private meat inspectors
- Bring awareness within public for importance of LMIA

Activities

The envisaged activities of the project are:

- Partner with CEDA to allocate funds and LIMID program to incentivize for private abattoir investors
- Close down all temporary abattoirs and slaughtering slabs
- Media communication to public on the importance of good hygiene practices and abattoir operations
- Change the legal framework to allow private entities to inspect meat and abattoirs
- Capacitate DVS to act as regulator vs executor of LMIA

3.8. Botswana National Veterinary Laboratory (BNVL)

One of DVS unique capabilities is Botswana's only veterinary laboratory. BNVL analyzes specimens from abattoirs, extension areas and processing facilities.[2] Reportedly, the laboratory still faces difficulties in receiving samples from remote areas and execute the tests within short lead-times. BNVL is adequately staffed with several accreditations in place by ISO and South African National Accreditation System (SANAS). DVS has built up a significant amount of knowledge over the years through on the field presence and the laboratory test results. Yet, the institution has some difficulties in sharing is knowhow within its staff outside the main offices. . Furthermore the databases generated by e.g. the veterinary laboratory, the animal tracking system are managed individually making for a missed opportunity to leverage efforts. In addition to improvements in information management, there are opportunities to initiate research, particularly in the disease eradication and disease management areas. Last but not least there is a potential to outsource locally the National Residue Monitoring tests currently conducted in the UK.

Outcomes

The envisaged outcomes of the project are:

- BNVL to commence research activities
- Improve efficiencies within BNVL, enabling to deliver better services
- Improve BNVL accreditation capabilities

Outputs

The envisaged outputs of the project are:

- BNVL to actively engage into FMD-related clinical research
- Improve turn around timings for tests execution
- BNVL to complete accreditation for all related tests and equipment
- Increase internal capacity and seek local partners for outsourcing the residue tests

Activities

The envisaged activities of the project are:

- BNVL take the leadership to link with a potential disease management pilot in Ngamiland to scientifically prove how FMD is generated and spread
- BNVL to reassess the portfolio of tests currently offers vs what is needed by the industry and legislation
- BNVL to optimize operations and reallocate resources accordingly to reduce test lead times
- BNVL to assess what are the necessary tests and equipment and complete the accreditation process
- BNVL to seek support from BOBS, BVI and SADCAS for the accreditation process
- CEDA to allocate funds and incentivize private investors to invest in private laboratories

3.9. Livestock Advisory Centres (LACs)

36 LACs are scattered around Botswana. Their primary purpose is to sell livestock inputs such as feeds, medicines, vaccines, and husbandry equipment. In the past the LACs were the sole feed vendors in rural areas. The prices were heavily subsidized.

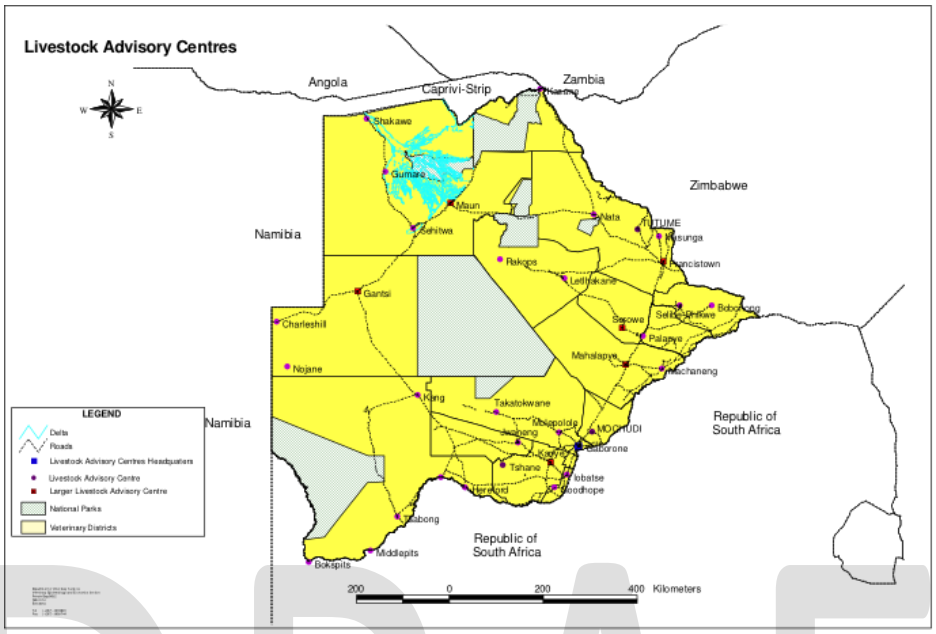
Over the years and due to budgetary restrictions it has been challenging for the LACs to keep an adequate amount of feeds, vaccines and medicines stock. Their limited scope includes the provision of inputs at subsidized prices. LAC staff cannot always meet their demands in terms of making on-site visits for inspection, issuing movement permits etc. Due to budgetary restrictions the availability of inputs is not always guaranteed for the farmers, thus leading to delays in cattle treatment and productivity loss. The services provided by the LACs are free of charge for all farmers irrespectively of the size of their herd or their financial capability. Sales and uses of medicines are not registered or captured centrally by MoA.

LACs require further attention in the following areas:

- Optimize the location of LACs to ensure accessibility and reduce transport costs
- Separate the veterinary advice from the commercial aspect within the LACs
- Increase the availability of LAC staff
- Ensure the availability of inputs[101]

[101] FAO - Botswana Agrifood Value Chain Project Beef Value Chain Study

Chart 3[102] shows the distribution of LACs across the country.



Outcomes

The envisaged outcomes of the project are:

- Improve LACs supply chain efficiencies enabling to deliver better services
- Capacitate and where needed staff LACs with the right people

Outputs

The envisaged outputs of the project are:

- Identify and recruit staff based on skills required (commercial, technical, medical, etc.)
- Enable the coordination between DVS, DAP and LAC to ensure the right inputs and medicines are sourced
- Reinforce inputs, supplements and medicines recording

Activities

The envisaged activities of the project are:

- Review LACs supply chain and tackle bottlenecks
- Increase product range and source products based on feedback from other MoA departments and based on scientific research
- Implement and where possible improve the stock management system
- Introduce a centralised procurement organisation to benefit from economies of scale

[102] http://www.moa.gov.bw/downloads/lac_history.pdf

4. Privatisation

The process of privatization is not new and has been dating since the times of ancient Greece when the governments had outsourced most of their activities to the private sector. Since then it has taken different forms and a variety of models have been tested depending on the industry and the country. There are different definitions of privatization, and OECD[103] describes it as: "…any material transaction by which the state's ultimate ownership of corporate entities is reduced." Prior to the privatization taking place the necessary legal and regulatory frameworks are needed in place. These frameworks aim at increasing the transparency of the process and clearly defined the roles and responsibilities between the public and private sector. In most cases a restructuring process of the industry or entity to be privatized is required which continues through the privatization process.

Particularly for the DVS activities, the types of participation of the private sector could include:

- Full outsourcing of activities, e.g. in the case of LITS private entities could take the responsibility of daily management of the system.
- Partial privatisation of sector e.g. more private abattoirs should be constructed nationwide to replace temporary slaughtering facilities, and a local specialised laboratory could be used for some of BNVL`s tests
- Outsourcing of management, e.g. in the case of LACs it is obvious that a better management of the supply chain and improvement of the procurements practises are needed.
- Private Public Partnership (PPP), e.g. where private extension officers would co-share the responsibilities of extension services with DVS staff.

Currently all the services mentioned earlier are provided by DVS staff for free. When these activities are privatized the costs will be bared by the farmers. It is highly recommended that an income survey followed by a price sensitivity study is conducted to better understand:

- The percentage of farmers that could afford the cost of privatization. As a result the remaining percentage of the farmers population will have to be subsidized by the government
- The price at which these services should be set. The result of this work will enable both the government and private sector evaluate the potential business case

4.1. Areas of consideration

Physical Resources

A possible fusion of the services provided by the LACs, SDVO or DVO as well as input suppliers could be the right way forward. These services could be co-located for improving productivity by providing better access to the farmers. In partnership with BMC, its district managers could also be co-located at the future one stop shop to provide commercial inputs to the services provided.

Establishment of clusters

A key success factor of the pilot projects is the establishment of clusters at district or sub-district level for the delivery of all inputs and technical support services. The decision of the exact location and size of the cluster will be taken by the project team as the project unfolds.

[103] http://www.oecd.org/daf/ca/corporategovernanceofstate-ownedenterprises/48476423.pdf

Selection of DVS extension officers, private extension services firms and incentives

The selection of suitable, motivated, commercially oriented participants would be critical for the success of the pilots. An appropriate process to identify participants would be developed as part of the project's inception. Options would include, for DVS extension officers, selection according to their competences, previous performance and submission of motivation letter to the managing committee. The private extension services firms will be selected based on experience with providing veterinary services, the geographical reach and submission of competitive business plans based on published parameters.

It is important that DVS extension officers, private firms and other participants are appropriately incentivized to attract the highest quality candidates and also to keep them motivated. Incentives might, for example, include for DVS extension officers a senior role during roll out phase and for private firms' preliminary commitment by DVS to expand partnership during roll out. The details of appropriate incentives would be developed as part of the design of the project.
Similarly, provision needs to be made for removing participants from the pilots who do not deliver on their commitments.

Dissemination and rollout

A dissemination strategy including site visits, workshops and publicity would need to be developed and budgeted for as part of the project. One of the key outputs of the project would be a rollout strategy.

Finance

A MoU with CEDA would be entered into for providing credit as necessary for working capital and asset financing to private extension services firms, on CEDA's usual terms and subject to meeting eligibility criteria. The rigorous commercial and financial management as well as the close monitoring of performance envisaged as part of the project would make the pilot participants attractive candidates for credit. OIE PVS Gap Analysis has gone in great detail to demonstrate that DVS could be able to operate within the tight budgetary constraints once certain actions are taken such as reduction of the non-veterinary staff, hiring more veterinaries and increase of their salaries to bring the gap with the private sector[104,105]. Since the participation of the private sector in the input industry will lead to increasing costs for the farmers, the government could continue support poorer farmers through a voucher system as suggested by FAOs value chain report[106]. In order to implement a cost efficient voucher program that will benefit only those in need a detailed income survey should be conducted to identify those farmers that can pay for the services by the private extension officers.

Linkage with other projects and programs

There are some government and donor initiatives and projects currently being implemented in the livestock sector such as Livestock Management and Infrastructure Development Program (LIMID) aiming to support small herd farmers. Linkages and partnerships would be developed with appropriate programs to leverage resources and avoid duplication through the leadership of the Agricultural Hub, which was established in 2008 to "as a catalyst for the greater commercialization

[104] OIE PVS Gap Analysis Botswana Nov 2011
[105] JITAP - A Strategy for developing the Beef Sector of Botswana, Dec 2005
[106] FAO - Botswana Agrifood Value Chain Project Beef Value Chain Study

and diversification of the sector, as well as to improve food security.[107]". At the same time, the project's design also allows for implementation on a stand-alone basis should the cost or complexity of coordination start exceeding its benefits, or should the other projects start to fail achieving their objectives.

Foreseen partners for creating linkages and enhancing coordination include:

- Botswana Beef Sector Training Initiative funded by the New Zealand International Aid and Development Agency.
- Other PSDP-related projects such as the one focusing on improving the practises of communal farming
- BCA as the nation`s veterinary officers training college
- MITI as the nation`s meat inspectors training institute
- CEDA for providing funds for financing the establishment of SMEs.

4.2. Key risks and assumptions

- Some of the principal risks and assumptions relating to the project include: Economic viability of the piloted private extension officers model. For this reason a farmers income survey followed by a price sensitivity is necessary.
- Identification of committed, commercially oriented, and motivated DVS extension officers for the pilots.
- Committed participation of all key stakeholders in the project.
- Adequate capacity and qualifications of private extension officers.
- Quality of project implementation.
- Effective coordination of activities amongst DVS and private extension officers.
- Availability of physical resources that meets the appropriate selection criteria.
- Absence of external shocks, including significant deterioration in EU/regional beef export prices, substantial increase in meat prices, outbreak of diseases, etc.
- Identification and engagement of a project management team with the necessary skills to implement the project.
- Provision of effective training and appropriate incentives for implementation of better livestock management practices.
- Improvement of wider policy environment and restructuring of beef industry in Botswana to address its current weaknesses (some of which are highlighted in the background section).

4.3. Project management

Implementation of the project will be complex, requiring proactive coordination of a large number of participants, support organizations, TA deliverers, other TA initiatives and wider stakeholder groups. To the extent these are pilots, unforeseen events will be encounter and the project should be able to react quickly and effectively to address any emerging issues.

[107] http://www.moa.gov.bw/?nav=agrichub

The Agricultural Hub will be the principal sponsor of the project, taking responsibility for its strategic guidance and coordination with stakeholders. The Hub would be supported in strategic matters by an advisory committee comprising BMC, DVS, the proposed Food Control Authority, DAP, a private sector representative (such as Techno Feeds).

DVS will play the leading operating management role, being responsible for providing operational guidance and monitoring and reacting to the pilots. The pilots will be integrated into DVS strategy and work plan and related milestones established and reported on within the organization.
The project will employ a full time project manager, with the help of one support person to manage the pilots on a day-to-day basis. He or she will also provide technical advice and training to participants and support staff. The project manager will have in-depth technical and commercial experience of managing livestock operations in a similar environment.

The project will also be supported by CEDA for the areas where private entities are willing to participate as part of CEDA`s ongoing efforts to promote entrepreneurship and expand the private sector share of the pie.

4.4. Preliminary budget estimate

Budget Costing Estimate	**4 Years (BWP)**
DVS Organisation (strategy and organisational consulting, training, equipment)	1.060.000
Disease Management	750.000
LITS	
- Interface of LITS	250.000
- strategy of digital ear tag	250.000
- Implementation of digital ear tag	400.000
LACs	500.000
BNVL	700.000
Privatisation	
- strategy+systems+training	750.000
- training of private sector	500.000
Food Safety	200.000
Total	**5.360.000**

5. Next steps

The following are the suggested next steps in the detailed design and implementation of the project.

1. Agreement of all key stakeholders on the key parameters of the project and their roles in it.
2. Securing preliminary expressions of interest for funding the project.
3. Detailed design of the project, including terms of reference for each key participant; a detailed budget; detailed logframe(s); a procurement plan for project management team; a plan for identifying and appointing livestock farmers; a training plan; details of scope of coordination with other projects/programs; and an outline dissemination and roll-out plan.
4. Commissioning of farmers income survey and price sensitivity research to better assess the economic viability of the pilot models and incorporating in the project design and adjustments necessary to reflect the findings.

5. Securing office space (DVOs, SDVOs, LACs) for the pilots.
6. MoUs with government agencies and MoA departments providing key support to the project.
7. Recruitment of the project management team.
8. Selection of participating extension officers (veterinarians and non-veterinarians) in the project, and entering into appropriate contracts with them.

Proposal for enhancing marketing of Botswana beef

1. Background

As early as the 1930s, Bechuanaland's national herd had been identified by colonial administration as a comparative advantage. The administration rapidly invested in access to water, fencing and an abattoir allowing the state to establish beef exports monopoly. The aim of the monopoly was to ensure that the state had a viable income stream, since no other economic sector was successful. After independence the abattoir, located in Lobatse was taken over by the newly established Botswana Meat Corporation (BMC). A series of investment efforts led to beef representing up to 85% of the exports at independence. In 1975 the government of Botswana signed the Lomé Convention that allowed exports to a new lucrative market (EU) at above the world markets prices. The cattle production industry remained the most successful and important agricultural sector, even though the discovery of diamonds in the 1960s gradually dropped the sector's contribution to the national exports to 2% in 2006[108]. One cannot evaluate the importance of cattle production sector in terms of GDP contribution but it should also consider the social contribution footprint, since almost every Batswana is cattle owner.

Since its independence, Botswana has developed its economy very rapidly, been hailed across the water for the quality of governance giving the country titles such as "The Switzerland of Africa". Despite the substantial growth, Botswana's economy remains one of the least diverse with the mining sector being the major contributor.

In 2011 the European Union (EU) imposed an export ban for all Botswana beef which lasted 19 months[109], after observing deficiencies in official controls, abattoir operations and certification procedures. Although the exact cost (direct and indirect) of the ban is not easy to calculate, some estimates rate the loss for BMC at BWPXX millions. The ban exposed Botswana's overreliance on the EU market and the lack of strategic diversification and alternative revenue streams.

When the export ban was lifted in July 2012, there was a strong need for Botswana's beef to reach the export markets. At the time BMC opted for the quickest[110] solution to outsource all sales and marketing efforts to Global Protein Solutions (GPS). Advocates of this decision argue that BMC could benefit from GPS' experience in the region, having a long-standing commercial success, exporting beef and brand building for Namibia beef. Before the agreement with GPS was signed the BMC's UK branch was leading the efforts to represent the mother company in the EU. There have been claims that BMC's UK branch was undervaluing beef prices as stated by a report issued by GRM Consultants to BMC's board at the time[111].

With the great majority of its sales and marketing efforts outsourced from the HQs in Lobatse to GPS and the scope of its UK branch reduced significantly, BMC has reduced notably reduced its ability to gather valuable market intelligence data.

[108] Ellen Hillbom, Botswana: A Development-Oriented Gate Keeping State
[109] FAO, Botswana Agrifood Value Chain Project: Beef Value Chain Study
[110] Arguably not a long term solution for the sector or the farmers.
[111] http://www.gazettebw.com/?p=1604

2. Outcomes of a potential project to enhance BMC's marketing capabilities

- More diversified export base
- More effective positioning of BW beef in different market segments
- Better understanding of market needs and trends
- Less reliance on one outsource exportee (GPS)
- Capacitate and enhance the supply chain at BMC to export effectively
- Create the BMC as a brand and drive awareness as a premium brand
- ECCO canned food brand to be upgraded appropriately
- Product Diversification:
    - Chilled: Focus on market-driven cuts
    - Processed:
        - Expand portfolio of processed foods; invest in new packing lines and heat treatment technology
        - Upgrade and expand product offerings by ECCO brand
- Market diversification:
    - Existing: Where possible grab outstanding opportunities in EU, RSA and Norway
    - New markets: Identify new markets.

3. Outputs

- Strategy report outlining BMC's priorities and directions to follow
- Strategy report outlining steps needed for brand awareness and brand building
- Identified new market and needs for new and existing products in existing markets
- Brand development for both chilled and processed food
- Increased capacity for processed food including more offerings for processed foods, in terms of pack sizes, product types
- ECCO brand packaging artwork modernized reflecting including claims such as "100% beef meat", "100% Botswana beef", etc.

4. Activities

- Consulting work to define new strategy
- Consulting work to define key steps for BMC brand[112] awareness and brand building
- Consulting work to understand market needs and consumer trends
  - Identify need for new products in existing markets
  - Identify need for existing products in new markets
  - Identify new markets
- Consulting work to identify new lucrative markets
- Install a new packing line for processed food.

5. Preliminary budget estimate

	Pula
BMC Branding & Strategy	
- *Strategy drafting*	500,000
- *Branding*	750,000
- Staff training	400,000
- Travel & Accommodation	150,000
Total	**1,800,000**

[112] Including ECCO canned food brand

Proposal for strengthening Botswana's cattle farmers associations:

1. Background

The roles and responsibilities of Botswana's farmers associations are limited and there are a number of reasons. Firstly the association members have a wide range of herd sizes, ranging from a handful up to those who own 100s of cattle, leading to a diverse range of needs too. The association members rely mostly on methods and practices transferred to them from previous generations of farmers, notably parents and grandparents. They lack market intelligence skills and the majority of them do not have visibility on the needs and requirements of the end consumers in the export markets. Furthermore, these associations mostly staffed by part time personnel, they lack infrastructure and structured communication channels with their members. Last but not least the associations lack a clear strategy and direction.

At national level the first effort to establish a farmers' association was the Botswana Cattle Producers Association (BCPA). It represented the regional farmer associations. BCPA's Board was made up of the Chairperson of each member farmer association. The BCPA was formed on an interim basis as a hybrid organization of 14 regional general farmer associations. This association was successful in spurring the current mechanism for setting export parity price for beef. It has since been replaced by the National Cattle Producers' Council, which consists of the chairmen of locally elected district cattle producers' councils[113].

There is a clear need for capacity building of the cattle producers associations at district and national level. Some of the intervention areas could include the drafting and implementation of viable strategy, strengthened networks amongst members and across associations and expansion of the membership base. Particular attention should be given to setting up a viable subscription system that will be both affordable for the members and sustainable for the future of the association. The increase of the productivity for the members should be at the forefront of the associations priorities. One should not omit the establishment of secretariats and the upgrade the premises to host them.

Some of the services farmers associations could offer:

- Following South Africa's example:
    - Product competitiveness
    - Product value adding
    - Animal welfare
    - Animal health
    - Sustainable use of natural resources
    - Consumer understanding and market intelligence
    - Beef cattle management software[114].

[113] FAO, Botswana Agrifood Value Chain Project Beef Value Chain Study

[114] For example look at www.bengufarm.co.za It is a professional beef cattle management software package developed to make record keeping, administration, performance testing, selection, breeding, registration and general beef cattle management more easy and efficient.

- Following Namibia's example:
    - Policy education and advocacy
    - Business advise
    - Information collection and dissemination
    - Networking
    - Project implementation
    - Land and environment
    - Livestock production and marketing
    - Agricultural labour issues
    - Support to agricultural shows
    - Auction Kraal Program.

2. Outcomes of a potential project to strengthen Botswana's cattle farmers associations

- Strengthen cattle industry
- Sustainable strategies
- Viable and effective networks
- Develop range of products and services
- Expand the pool of active members
- Sustainable funding
- Increase member productivity.

3. Outputs

- Diagnostics that looks at association needs
    - Members requirements
- Strategy report on recommendations
    - How to develop the services and products to provide to association members
    - How association funding will be generated and managed
- Benchmark with other associations in region and in the EU countries
    - Great Britain
    - Germany
    - France
- Validate associations' strategy
- Define membership cost by completing an income survey for the association members
- Capacity building.

4. Activities

- Consulting work to define strategy for associations
- Identify capacity building opportunities and knowledge gaps for associations
- Organize workshop with EU farmer associations
- Identify production methods shortages and capacity building opportunities.

	Pulas
Associations Strategy	
- Strategy drafting	500,000
- Infrastructure	700,000
- Equipment	650,000
- Workshops	750,000
- Members training	750,000
- Travel & Accommodation	750,000
Total	**4,100,000**

ANNEX II: LIST OF MEETINGS AND INTERVIEWS

Organisation	Position	Name
Agrifeed	Managing Director	Mr. Ronak Upadhyay
Botswana Bureau Of Standards	Deputy Managing Director	Mr Teko T Fako
	Director of Standards	Ms Keolobogile Segomelo
	Manager Certification Services	Mr Adam E. Sehuhula
Botswana Meat Commission	Acting CEO	DR. Akolang. R. Tombale
	Executive Manager Compliance	Dr Boitumelo Mogome-Maseko
	Cattle Feeding Manager	Mr Galenyatsege Bathuseng
	Plant Manager (Lobatse)	Mr Marcus Kgosiemang
	Cannery Manager (Lobatse)	Mr. Mpho Molokwe
	Sales & Marketing	Mr. Oabona Ramotshwara
Botswana Institute for Development Policy Analysis (BIDPA)	Senior Research Fellow	Prof. Roman Grynberg
Botswana Vaccine Institute	General Manager	Dr. Onkabetse G. Matlho
Choppies	??	
Citizen Entrepreneurial Development Agency (CEDA)	Chief Operations Officer	Mr Lesego Selotate
	Assistant to the Chief Operations Officer	Ms Otlaarongwa Chilume
David (Photographer)	??	
GPS Food	[position]	Mr. Brian Perkins
	Consultant	Mr. Steve Homer
Meat Inspection Training Institute	Director	Prof. Andrew Aganga
	[ ]	Dr. K.P. Sehularo
Ministry of Agriculture	Director, Department of Animal Production	Dr. T.K. Phillemon-Motsu
	Deputy Director Animal Disease	Mr. Kobebi Segale
	Agricultural Hub Coordinator[115]	Mr. Edmond B. Moabi
	Agricultural Hub Coordinator[116]	Mr Neil Fitt
	Director, Department of Veterinary Services	Dr Lethogile G. Modisa
	Director, Agricultural Hub	Ms Mmadima Nyathi
	Deputy Director	Ms Chada Koketso
	Department of Animal Production	Ms Joyce Kapele
	Deputy Director, Field Services	Dr Kefentse Motshewa
	Deputy Director, Botswana National Veterinary Laboratory	Dr Marobela Raborokgwe
	PVO, Veterinary Public Health	Dr K. C. Thema
Ministry of Health	Principal Scientific Officer	Dr Hussain Tarimo
National Food Technology Research Centre	Acting Managing Director	Dr Martin Kebakile
	Director of Research and Development	Professor Lewis Ezeogu
	Chief Research Scientist - Food Safety and Nutrition	Dr Bernard Bulawayo
Organic Fertilizer Manufacturers Botswana	Sales and Marketing	Mr Ralph Ferreira
Pick n Pay	??	
Quality Meat	Managing Director	Jaco De Villers
Senn Foods		
Southern District Beef Farmers Association	President	Mr Boyce O. Mhutsiwa
	Committee Member	Mr. Gahkwe Mojaphoko
Technofeeds	Owner	Mr Rihan Swanepoel
TAD Scientific	CEO	Dr Gavin Thomson

[115] As of 1st January 2013
[116] Until 31st December 2012

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