



## WILDLIFE-FRIENDLY BEEF

### *Working Towards a Win-Win Solution for Livestock Agriculture & Wildlife Conservation in Ngamiland*



**Maun, Botswana  
8-9 November 2017**

## PROCEEDINGS

*Hosted by the Department of Veterinary Services, in collaboration with the Animal & Human Health for the Environment And Development (AHEAD) programme, with additional support from The Rockefeller Foundation and the David R. Atkinson Center for a Sustainable Future.*



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## **ABOUT THE REPORT**

The proceedings of the inception workshop, “Wildlife-Friendly Beef: Working Towards a Win-Win Solution for Livestock Agriculture & Wildlife Conservation in Ngamiland,” were prepared by Diane Skinner and the AHEAD Programme team, who drew on contributed presentations and papers as well as discussions at the workshop.

### **Disclaimer**

*The contents of this report are the responsibility of the authors and do not necessarily reflect the views of the donor organizations who supported the meeting, or the views of our governmental and / or regional partners.*

## **ABOUT THE TOPIC**

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## TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS .....	ii
EXECUTIVE SUMMARY .....	iii
INTRODUCTION .....	1
WELCOME & WORKSHOP OVERVIEW.....	2
SETTING THE SCENE .....	3
IMPLEMENTING CBT IN NGAMILAND (PART 1): WHERE ARE WE AND WHAT DO WE NEED?.....	8
IMPLEMENTING CBT IN NGAMILAND (PART 2): WHERE ARE WE AND WHAT DO WE NEED?.....	10
IMPLEMENTING CBT IN NGAMILAND (PART 3): WHERE ARE WE AND WHAT DO WE NEED?.....	12
ADVANCING WILDLIFE-FRIENDLY BEEF IN NGAMILAND: KEY NEXT STEPS .....	15
ANNEXES .....	17
ANNEX 1: AGENDA.....	18
ANNEX 2: SPEECH TRANSCRIPTS .....	21
ANNEX 3: BREAKOUT GROUP OUTPUTS .....	27
ANNEX 4: LIST OF PARTICIPANTS.....	33

## ABBREVIATIONS AND ACRONYMS

AHEAD	Animal & Human Health for the Environment And Development
AU-IBAR	African Union InterAfrican Bureau for Animal Resources
BAITS	Botswana Animal Information and Traceability System
BMC	Botswana Meat Commission
BVI	Botswana Vaccine Institute
CBT	Commodity-based trade
CBNRM	Community-based natural resource management
DVS	Department of Veterinary Services (of the Government of Botswana)
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FMD	Foot and mouth disease
HACCP	Hazard Analysis Critical Control Points
HWC	Human / wildlife conflict
KAZA TFCA	Kavango Zambezi Transfrontier Conservation Area
OIE	World Organisation for Animal Health
SADC	Southern African Development Community
SAT	South African Territories (serotypes of FMD viruses)
SOP	Standard Operating Procedure
TFCA	Transfrontier Conservation Area
UNDP	United Nations Development Programme
VCF	Veterinary cordon fence
WDA	Wildlife Dispersal Area
WWF	World Wildlife Fund

## EXECUTIVE SUMMARY

Both wildlife conservation and livestock agriculture are critical components of Ngamiland's economy. However, conflict between these two sectors is common due to the prevalence of animal diseases – especially foot and mouth disease (FMD) – that can be transmitted between wildlife and livestock. Historically, international trade standards for livestock commodities have required that production areas be free from FMD. This situation restricts market access and constrains the success of livestock owners who share the land with wildlife. In addition, attempts to meet international standards related to "freedom from disease" under currently applied policies for addressing FMD have had significant negative repercussions for free-ranging wildlife, largely related to disease control fencing.

Fortunately, new beef value chain-based approaches, known as commodity-based trade (CBT), have now been developed. These, combined with recently amended international standards for beef export from areas where wildlife maintain FMD viruses, could help resolve this conflict. It is in this context that a workshop entitled *"Wildlife-Friendly Beef: Working Towards a Win-Win Solution for Livestock Agriculture & Wildlife Conservation in Ngamiland"* was held from 8-9 November 2017 in Maun, Botswana. Close to 80 participants attended the forum, including technical experts from both the wildlife and livestock sectors, farmers and farmers association representatives, and stakeholders from the private sector and civil society organizations based in Botswana and further afield. With major shifts in the international policy environment having occurred, the workshop provided an opportunity for stakeholders to explore how Ngamiland farmers could take advantage of new ways to get their beef into markets, and to discern what technical assistance, partnerships, infrastructure, or other resources might be needed to move forward to practically implement commodity-based beef trade. In essence, the workshop represented the beginning of a CBT feasibility assessment for Ngamiland.

Key themes that emerged during two days of interactive discussions included (also see Annex 3):

- There is overwhelming support for implementing CBT in Ngamiland. The status quo is failing and not serving Ngamiland well. Opportunities afforded by establishing market access through CBT could well be a 'win-win' for sustainable and diversified land use and livelihoods.
- There is a need for less market disruption. Reliable markets need a reliable supply which requires a different approach to FMD outbreak response (e.g.- a 3-month shutdown after an outbreak is a major problem, particularly for attracting private sector investment). A plan needs to be developed and implemented that doesn't preclude trade across the entire area during an isolated outbreak.
- Awareness-raising, training, and education are required at all levels. Farmers need to be educated to understand the possibilities that CBT brings, as well as the requirements to ensure the quality, consistency, and quantity of beef that are critical to sustained access to desirable markets.
- Policy makers need to understand how CBT can and should work, and ensure an enabling environment for its implementation. Markets need to be educated to understand that CBT is a safe approach to managing risk from FMD.
- Communication and information-sharing emerged as critical to long-term implementation success. Wide consultation with communities as well as the establishment of multi-stakeholder committees / fora are needed to maintain open channels, delineate roles and responsibilities, build trust, and ultimately drive CBT forward. In addition, there is a need for the ministries overseeing livestock, wildlife, trade and finance to work together, and collaboratively with the private sector and civil society.

- There is a need to evaluate specific constraints or gaps along the value chain including quarantine / abattoir infrastructure and management, transport, and prerequisite protocols, and to consider innovative ideas like mobile abattoirs, or even mobile quarantines.

In the final session, participants provided further reflections on the deliberations and the work to come. CBT represents an opportunity to: use science to enhance trade and particularly the export of beef products; build economic activity along the entire beef value chain; and foster human / wildlife coexistence and wildlife-related economic benefits both within Botswana and in collaboration with its neighbours in the KAZA TFCA region. However, urgent action is required to implement CBT in Ngamiland before the livestock industry in the area collapses.

This *Proceedings* summarizes the November 2017 meeting hosted by the Government of Botswana's Department of Veterinary Services (DVS), in collaboration with Cornell University's AHEAD (Animal & Human Health for the Environment And Development) Programme. Funding was graciously provided by the Atkinson Center for a Sustainable Future, The Rockefeller Foundation, and the United Nations Development Programme (UNDP).

## INTRODUCTION

In 2017, the Department of Veterinary Services (DVS) of the Government of Botswana, in collaboration with Cornell University's AHEAD (Animal & Human Health for the Environment And Development) programme, hosted an inception workshop entitled *"Wildlife-Friendly Beef: Working Towards a Win-Win Solution for Livestock Agriculture & Wildlife Conservation in Ngamiland."* Additional support was provided by The Rockefeller Foundation, the Atkinson Center for a Sustainable Future, and the United Nations Development Programme (UNDP). The workshop was held from 8-9 November in Maun, Botswana and close to 80 participants attended the forum, including technical experts from both the wildlife and livestock sectors, farmers and farmers association representatives, and stakeholders from the private sector and civil society organisations based in Botswana and further afield.

Both wildlife conservation and livestock agriculture are critical components of Ngamiland's economy. However, the prevalence of animal diseases – especially foot and mouth disease (FMD) – that can be transmitted between wildlife and livestock means that these sectors are often in conflict with each other. International trade standards for livestock commodities have historically required that production areas be free from FMD. This situation restricts market access and constrains the success of livestock owners who share the land with wildlife. In addition, attempts to meet international standards related to "freedom from disease" under currently applied policies for addressing FMD have had significant negative repercussions for free-ranging wildlife, largely related to disease control fencing.



Figure 1. Ngamiland (North West District), Botswana. Source: Adapted from Google Maps.

Fortunately, new beef value chain-based approaches, known as commodity-based trade, have now been developed. These, accompanied by recent amendments to international standards for beef export from areas where wildlife maintain FMD viruses, could help resolve this conflict. Commodity-based trade (CBT) approaches focus on the safety of the beef production process, rather than on the animal disease



situation in the locality of production. The successful development of this approach in Ngamiland could well be a ‘win-win’ for sustainable and diversified land use and livelihoods.

At the 2016 KAZA-AHEAD-FAO workshop held in Victoria Falls, Zimbabwe, representatives from various sectors from Botswana agreed in a breakout session that the country is ready to pursue CBT / value-chain approaches to producing beef and related products. Botswana representatives again reiterated the need for such innovative approaches during planning sessions in April 2017 in Namibia under the auspices of the Kavango Zambezi Transfrontier Conservation Area (KAZA TFCA), of which Ngamiland forms a critical component.

With assistance from AHEAD and support from WWF, a CBT beef market analysis ([http://www.wcs-ahead.org/kaza/171003\\_rpt\\_final\\_marketopportunitiesforcbtbeef\\_ngamiland.pdf](http://www.wcs-ahead.org/kaza/171003_rpt_final_marketopportunitiesforcbtbeef_ngamiland.pdf)) was recently completed for Ngamiland. In addition, AHEAD has secured some basic resources to provide, in collaboration with DVS, technical support to Botswana, and Ngamiland in particular, over a period of 18 months to consider and prepare for the practicalities of implementing this innovative approach.

In this context, the inception workshop provided an opportunity to:

1. Establish a common understanding of CBT approaches to beef production;
2. Explore all of the components that are key to successfully implementing CBT within the context of Ngamiland; and
3. Identify the needs and gaps with respect to each of these components.

## **WELCOME & WORKSHOP OVERVIEW**

Dr. John Moreki, Deputy Permanent Secretary of the Ministry of Agricultural Development and Food Security, and Dr. Letlhogile Modisa, Director of the Department of Veterinary Services, moderated the welcome session. The North West District Council Chairman, Mr. Duncan Enga, introduced the dignitaries, each of whom delivered opening remarks.

On behalf of Paramount Chief Moremi, Kgosi B. S. Majatsie welcomed the participants and the Minister of Agricultural Development and Food Security.

Honourable Minister of Agricultural Development and Food Security Patrick Pule Ralotsia welcomed the participants to the workshop (see Annex 2 for speech transcript). He emphasized the critical importance of the agricultural sector in Botswana, and noted in particular the importance of disease management in the livestock sub-sector. He drew attention to Botswana’s historical success using the geographic-based approach to managing FMD, but noted that there had been an increase in the frequency of FMD outbreaks, requiring innovation, particularly through the use of commodity-based approaches. With the updated Terrestrial Animal Health Code of the World Organisation for Animal Health (OIE), no doubt influenced by the *Phakalane Declaration on Adoption of Non-Geographic Approaches for Management of Foot and Mouth Disease* ([http://www.wcs-ahead.org/phakalane\\_declaration.html](http://www.wcs-ahead.org/phakalane_declaration.html)), drafted in Gaborone, Botswana, such approaches are now possible.

The Honourable Minister suggested that Botswana should expand its approach to marketing livestock products outside of the European Union (EU), to include markets across the African continent, where emerging middle-class consumption of livestock products is increasing, and Asia. He welcomed local and international experts to provide their collective experience and wisdom to help to transform the livestock economy of Ngamiland, and particularly welcomed partnership with the Ministry of Environment, Natural Resources Conservation and Tourism.



Ms. Ingrid Otukile, National TFCA Coordinator in the Ministry of Environment, Natural Resources Conservation and Tourism, gave apologies on behalf of Honourable Minister Tshekedi Khama. She welcomed discussion around issues of coexistence that would allow the improvement of livelihoods through both wildlife-based tourism and agriculture. She encouraged participants to put aside the idea of eradication of FMD, but rather to use all tools available to reach a common understanding of CBT and to take concrete steps towards implementing all necessary components of a CBT approach to disease risk management. She welcomed the partnership with the Ministry of Agricultural Development and Food Security and thanked the meeting organizers and sponsors for their support.

## **SETTING THE SCENE**

Dr. Letlhogile Modisa and Ingrid Otukile moderated the first two sessions of the workshop, which set the scene for discussions and for establishing a common understanding of CBT approaches to beef production.

Dr. Steve Osofsky (AHEAD Programme Coordinator, Cornell University) provided an overview of the purpose, objectives, and expectations of the workshop (see Annex 2). He noted that wildlife and livestock both represent critical economic growth opportunities for countries like Botswana. Dr. Osofsky drew attention to the 2015 revisions of the OIE's Terrestrial Animal Health Code (see Box 1), an update that now provides a flexible policy environment in which to explore mechanisms to ensure that livestock farmers living closest to wildlife are no longer largely excluded from global beef markets, and veterinary fencing is no longer necessarily the go-to option for managing FMD in southern Africa. With major shifts in the policy environment having occurred, Dr. Osofsky emphasized that the workshop was intended to explore how Ngamiland farmers could take advantage of new ways to get their beef into markets, and to discern what technical assistance, partnerships, infrastructure, or other resources might be needed to move forward to practically implement commodity-based beef trade. In this context, the workshop represented the beginning of a CBT feasibility assessment for Ngamiland. Dr. Osofsky closed by thanking the Government of Botswana, in particular Dr. Modisa and DVS, for their ongoing commitment and support, and other sponsors including Cornell University's Atkinson Center for a Sustainable Future, UNDP, and The Rockefeller Foundation.

Following his address, six presentations provided background on the history of FMD management in Botswana, the multi-sectoral impacts of the geographically-based approach to managing FMD, and the opportunities afforded by adoption of CBT for both the livestock and wildlife sectors in Ngamiland. Two discussion sessions provided further details on key issues.

Across Botswana, but particularly in Ngamiland, wildlife and livestock represent major economic growth opportunities. However, while Ngamiland is rich in both wildlife and livestock resources, it is the second poorest district in Botswana, with increasing conflicts at the interface between wildlife and livestock agriculture. With less than 1% arable land in Botswana, livestock are very important for the country. Moreover, traditional communal farming is a basic component of rural livelihoods. However, the majority of the national herd is owned by a small proportion of livestock farmers and production for export predominantly takes place in the southern part of the country, which is free of FMD. At the same time, northern Botswana is home to the largest elephant population in the world. This growing wildlife resource underpins the tourism industry, with travel-related activities contributing approximately 11% to Gross Domestic Product (GDP) in 2016 as well as 25,000 direct jobs—critical in regards to the economy of Ngamiland. Livestock are estimated to contribute 3 % to GDP.

**Box 1: Provisions of Article 8.8.22 in the OIE's Terrestrial Animal Health Code dealing with recommendations for the importation of fresh meat (excluding feet, head and offal) from cattle located in FMD infected countries or zones with an official control programme for FMD including compulsory vaccination of cattle**

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat*:

1. comes from animals which:
  - a. have remained, for at least three months prior to *slaughter*, in a *zone* of the *exporting country* where cattle are regularly vaccinated against FMD and where an *official control programme* is in operation;
  - b. have been vaccinated at least twice with the last *vaccination* not more than six months, unless protective immunity has been demonstrated for more than six months, and not less than one month prior to *slaughter*;
  - c. were kept for the past 30 days in an *establishment*, and that FMD has not occurred within a 10 kilometre radius of the *establishment* during that period, or the *establishment* is a *quarantine station*;
  - d. have been transported, in a *vehicle* which was cleansed and disinfected before the cattle were loaded, directly from the *establishment* of origin or *quarantine station* to the approved *slaughterhouse/abattoir* without coming into contact with other animals which do not fulfil the required conditions for export;
  - e. have been slaughtered in an approved *slaughterhouse/abattoir*:
    - i. which is officially designated for export;
    - ii. in which no FMD has been detected during the period between the last *disinfection* carried out before *slaughter* and the shipment for export has been dispatched;
  - f. have been subjected to ante- and post-mortem inspections within 24 hours before and after *slaughter* with no evidence of FMD;
2. comes from deboned carcasses:
  - a. from which the major lymphatic nodes have been removed;
  - b. which, prior to deboning, have been submitted to maturation at a temperature greater than + 2 °C for a minimum period of 24 hours following *slaughter* and in which the pH value was less than 6.0 when tested in the middle of both the longissimus dorsi muscle(s).

Source: FMD Chapter, OIE TAHC 2017

([http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre\\_fmd.htm](http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_fmd.htm))

Highlighting the critical challenges posed by animal diseases to achieving a diversified economy for the people of Ngamiland, several presentations noted that since the late 1950s, management of FMD has been achieved through a paradigm of geographic separation of livestock and wildlife by fencing. Dr. Tico McNutt (Botswana Predator Conservation Trust) pointed out that this approach has had negative impacts for both ecosystems and people. Fragmented landscapes have impacted wildlife populations directly and indirectly, and have disrupted ecological processes and functions. At the same time, socioeconomic impacts have been largely negative, with benefits accruing to the commercial agricultural sector, with small-scale farmers living near wildlife areas having been further marginalized.

As noted by Dr. Gavin Thomson (TAD Scientific / University of Pretoria), creation of FMD-free zones has been achieved by Botswana, Namibia, and South Africa, but large parts of these countries have been excluded because the presence of African buffalo makes elimination of FMD viruses impossible. The true cost of maintaining FMD-free zones has not been fully quantified (in particular fence maintenance), and could exceed benefits that are gained through access to EU markets. There are other challenges to the geographical management of FMD, many of which are well illustrated in Ngamiland (see Table 1).

*Table 1: Advantages and disadvantages of FMD freedom (country or zones) in southern Africa.*

Factor	Pro	Con
<b>International acceptance</b>	<ul style="list-style-type: none"> <li>• Widely accepted for countries although not completely for zones</li> <li>• International standards exist; not controversial</li> </ul>	<ul style="list-style-type: none"> <li>• Only 3 SADC countries have FMD-free zones; contain ~ 18/60 million (&lt;30%) of mainland cattle population</li> <li>• No new FMD-free zones in 40 years</li> <li>• 70% of cattle in FMD-free zones in the SADC region are located in RSA</li> </ul>
<b>Efficacy</b>	<ul style="list-style-type: none"> <li>• Highly effective in Namibia, less so in RSA, i.e. variable but generally effective</li> </ul>	<ul style="list-style-type: none"> <li>• In southern Africa, SAT-type FMD virus causes repeated outbreaks of disease on periphery of FMD-free zones; poses constant risk to free zones</li> </ul>
<b>Cost</b>		<ul style="list-style-type: none"> <li>• True cost of FMD-free zones is unknown but possibly exceeds the economic benefit of beef market access (Research needed – problem: access to data!)</li> </ul>
<b>Effect on economic development</b>	<ul style="list-style-type: none"> <li>• Enables access to high-value livestock commodity markets in the developed world</li> <li>• Underpins the cattle industries of Botswana, Namibia &amp; RSA</li> </ul>	<ul style="list-style-type: none"> <li>• Skews investment in livestock agriculture both within &amp; between countries of region</li> <li>• Retards economic development in rural areas not free of FMD</li> </ul>
<b>Promotion of regional integration</b>		<ul style="list-style-type: none"> <li>• Clear disincentive to regional trade in livestock commodities (resulting from within &amp; between country disparities)</li> <li>• Complicates development of some trade corridors</li> </ul>
<b>Environmental impact / wildlife conservation</b>	<ul style="list-style-type: none"> <li>• Some veterinary cordon fences (VCFs) designed to protect FMD-free zones may benefit conservation (i.e. - by keeping livestock out)</li> </ul>	<ul style="list-style-type: none"> <li>• Other VCFs in SADC have and have had devastating effects on wildlife</li> </ul>

Commodity-based trade (CBT) could potentially optimize economic and environmental trade-offs and effectively integrate livestock and wildlife-based enterprises, while being compatible with modern animal production and trade standards. In the case of FMD and beef production, the natural acidification (pH change to below 6) that occurs in muscle after death destroys the virus and thereby renders beef a basically safe product. A CBT-based approach works by integrating the management of biohazard risks, encompassing both food safety and animal disease risk mitigation along a value chain, and is especially useful for beef production. This is possible because CBT is founded on the same principles upon which global food safety standards are based (i.e. HACCP – Hazard Analysis Critical Control Points). The system involves step-wise application of specific FMD risk management measures along the value chain (e.g. deboning and removal of lymph nodes from the beef, testing the pH of matured beef, etc.). These measures are focused on so-called critical control points that can be actively managed and monitored.

Using this approach, sequential barriers against the presence of FMD virus can be created to ensure a safe product.

An additional important development with regard to CBT is that, in 2015, the OIE made significant changes to Articles 8.8.12 and 8.8.22 of the Terrestrial Animal Health Code. These changes open the door to non-geographic management of FMD, through use of official control programs, quarantine facilities, and pre- and post-slaughter risk mitigation. In providing an OIE perspective, Dr. Moetapele Letshwenyo (OIE Sub Regional Representative for Southern Africa) noted that the OIE operates as a standard-setting organization, with the world's Directors of Veterinary Services as primary representatives and decision-makers. He indicated that further changes to the Terrestrial Animal Health Code are pending and southern African voices with experience and knowledge on FMD management will be critical in these ongoing, dynamic processes. In particular, Chapter 4.3 on Zoning is currently under consultation, and will likely be proposed for adoption in May 2018; further revisions of Chapter 8.8 on FMD will be considered for adoption in May 2019.

While some of the prerequisites for successfully implementing CBT are in place in Chobe District (e.g. 90% cattle vaccination rate; minimal cattle / buffalo contact achieved through herding and kraaling), DVS Director Modisa stated there is still some way to go in Ngamiland. 75% of the livestock in the district have been identified, but challenges remain with the overall vaccination programme. Quarantine facilities also require expansion and rehabilitation, and the two export-approved abattoirs (BMC Maun and Ngamiland Abattoirs) can only service less than 10% of the cattle in the district.

The adoption by OIE of options for non-geographic management of FMD should facilitate the management of FMD risk without the expense and negative impacts of fencing (see Figure 2). Dr. Richard Fynn (Okavango Research Institute) noted that fences are vulnerable to a large and expanding elephant population, and such barriers to wildlife movements are a factor in the declining status of other wildlife resources in the region, critical for the tourism economy.

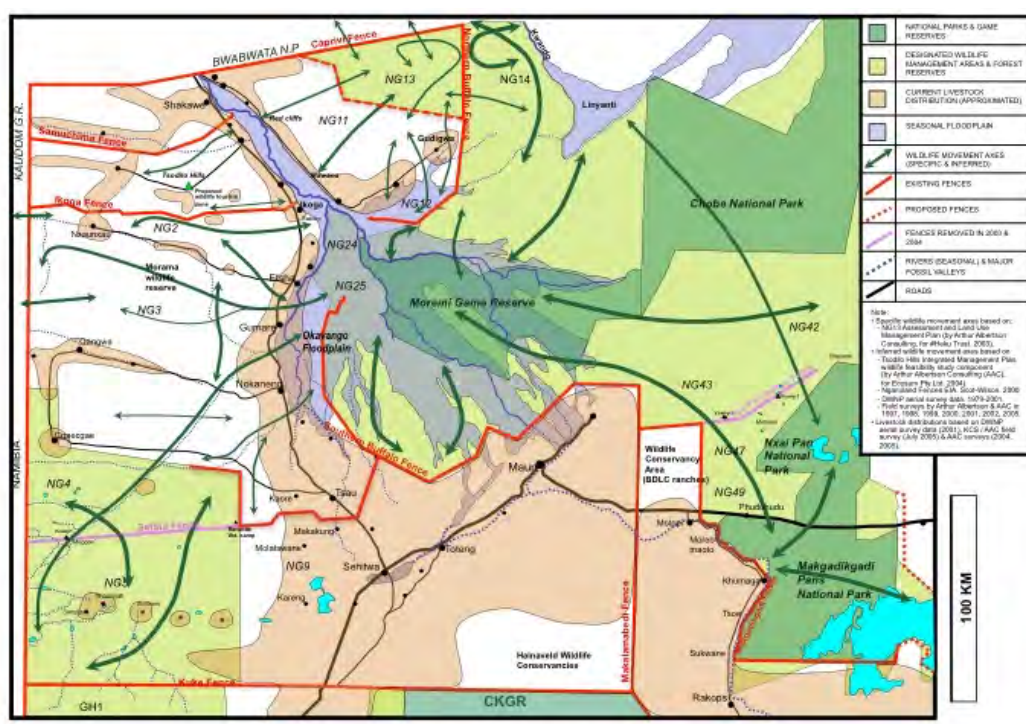


Figure 2. Northwest Botswana: Fences and wildlife movements (updated 2016). Source: Albert Albertson.



Sustainable and profitable tourism relies on large, unfragmented conservation areas. Tourism is thus not viable in many areas because fences limit options, decreasing the potential for more diversified income streams for communities. With little access to either the wildlife or livestock economy, the population of Ngamiland is highly disenfranchised, poor, and suffers all of the costs of living with wildlife, but receives few of the benefits. Dropping untenable requirements to separate wildlife from the broader rural landscape means that the rural communities of Ngamiland will have opportunities to engage directly in wildlife tourism as well as small-scale farming, thereby providing immediate economic diversification. The potential of developing a ‘wildlife-friendly’ beef industry may allow the Ngamiland beef producers to access competitive niche markets, in addition to developing value-addition industries, such as leather production. The strengths, weaknesses, opportunities, and threats (SWOT) of implementing this new system in Ngamiland were presented by Dr. Tico McNutt and are outlined below in Table 2.

*Table 2: SWOT analysis on implementing a “Wildlife-Friendly Beef” industry in Ngamiland.*

<b>Strengths</b> <ul style="list-style-type: none"> <li>- Traditional ecological knowledge</li> <li>- Traditional culture</li> <li>- Habitat intact and unfragmented</li> <li>- Free-ranging wildlife populations</li> <li>- Growing value of wilderness</li> <li>- Potential tourist circuits (mobile, self-drive)</li> <li>- Policy support for tourism expansion linked to poverty eradication</li> <li>- High levels interest in wildlife utilization and tourism development</li> </ul>	<b>Weaknesses</b> <ul style="list-style-type: none"> <li>- Relatively low wildlife densities</li> <li>- Lack of knowledge of community land-use patterns and ecological dynamics</li> <li>- Poor community participation in plans that affect them</li> <li>- Lack of sense of ownership of natural resources</li> <li>- Limited surface water</li> <li>- Poor ground water</li> <li>- Poor agricultural potential</li> <li>- Community Trust difficulties</li> <li>- Poor local tourism development capacity</li> <li>- Minimal tourism infrastructure</li> </ul>
<b>Opportunities</b> <ul style="list-style-type: none"> <li>- Potential for integrated approach to livestock</li> <li>- Habitat management and human-wildlife conflict mitigation through water points</li> <li>- Capitalize on wilderness and cultural attributes</li> <li>- Linkages with emerging Namibia self-drive circuits</li> <li>- Start local businesses, supported by private sector (Trusts not the only option)</li> <li>- Participatory community-based mapping and land-use research and planning</li> <li>- Land-use plans and wildlife research strategies with community inputs (use your local ecologists!)</li> <li>- Potential for low cost – low impact tourism enterprise development</li> <li>- Cultural sensitivity - identify viable community support structures from community-based planning</li> <li>- Start small but start!</li> </ul>	<b>Threats</b> <ul style="list-style-type: none"> <li>- Unemployment</li> <li>- Dependence on Government</li> <li>- Barriers to community enterprise and ability to use natural resources sustainably</li> <li>- Loss of livelihood income from hunting ban</li> <li>- Poaching</li> <li>- Human disturbance of wildlife access to Okavango Delta</li> <li>- Land grabs</li> <li>- Habitat loss: especially around key pans</li> <li>- Livestock damage to veld products</li> <li>- Loss of traditional ecological knowledge</li> <li>- Predator / elephant-related conflicts</li> <li>- Poisoning</li> <li>- Fences</li> <li>- Fires</li> <li>- Degradation of wilderness attributes</li> </ul>

In addition, a 2015 set of “Guidelines on Management of FMD Risk through Value Chain Approaches for Beef Exporting Enterprises in Southern Africa” has just been updated and provides a critical roadmap for implementing CBT (<http://www.wcs-ahead.org/kaza/170904-guidelines-for-implementing-cbt-final.pdf>). It outlines general provisions, and protocols for good management, animal identification and traceability, as well as monitoring of compliance at the producer level. Step-by-step guidance is provided on the specific requirements for both food safety and FMD management, including in the areas of transportation, quarantine, and slaughtering, as well as on the roles and responsibilities of each stakeholder in the value chain. In discussing the requirements, Dr. Mary-Lou Penrith (TAD Scientific / University of Pretoria) noted, however, that achieving export quality beef is a process and not an event. Value chain risk mitigation using a HACCP approach to achieve CBT (see Figure 3) can help open the door to new opportunities for cattle producers in zones that are not free of FMD, but it is up to all stakeholders to open up these doors fully.

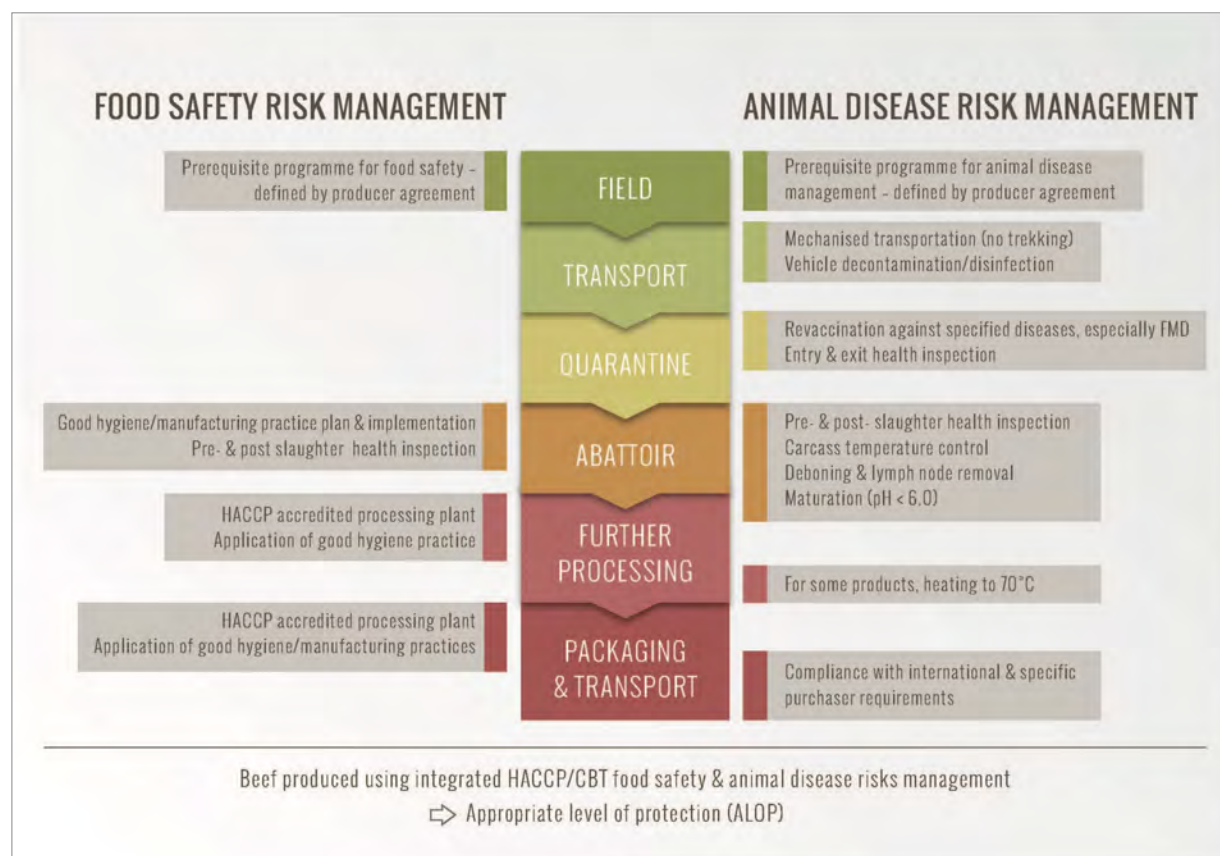


Figure 3: Parallel application of food safety and animal disease risk management measures along a value chain for beef production (Thomson, Penrith, Atkinson, and Osofsky, 2017).

## IMPLEMENTING CBT IN NGAMILAND (PART 1): WHERE ARE WE AND WHAT DO WE NEED?

The next three sessions of the workshop focused on the practical considerations for successfully implementing CBT in Ngamiland. The first of the three sessions was moderated by Dr. Boitumelo Mogome-Maseko, Executive Manager of Compliance at the Botswana Meat Commission (BMC). Presentations in this session considered the unique features of FMD in southern Africa, as well as marketing opportunities and farmers’ perspectives.

While major policy changes have now opened the door for the implementation of CBT, the situation for wildlife as well as for livestock farmers continues to deteriorate in Ngamiland – there is less wildlife than in the past, few cattle are reaching markets, and poverty is increasing. FMD outbreaks continue to cause trade shutdowns, and concrete action is required.

Dr. Gavin Thomson noted that the FMD problem confronting most of southern Africa results from inadequate recognition of the fundamental differences between South African Territories (SAT) serotype FMD and the Eurasian serotypes, the latter mostly prevalent in other regions of the world. This has resulted in international standards on the control of FMD and sanitary standards governing trade in commodities and products derived from cloven-hoofed animals being based on Eurasian serotype FMD, rendering them inappropriate for southern Africa in some cases. The SAT-type viruses behave differently and therefore must be managed differently, through a deeper understanding of their epidemiology and more intensive field observation during outbreaks. In particular, it is critical to understand why vaccines appear to be getting less effective. Local realities are poorly understood and the possibility of buffalo viruses adapting to survive in cattle in some areas of the region is a grave threat. A more honest awareness of the challenge of FMD is required, and more practical and effective strategies for addressing FMD outbreaks in SAT-type endemic regions need to be identified and implemented.

Findings from a recently completed CBT beef market opportunities analysis for Ngamiland ([http://www.wcs-ahead.org/kaza/171003\\_rpt\\_final\\_marketopportunitiesforcbtbeef\\_ngamiland.pdf](http://www.wcs-ahead.org/kaza/171003_rpt_final_marketopportunitiesforcbtbeef_ngamiland.pdf)) were also provided in three separate presentations. These focused on identifying beef value chains, export opportunities, and farmer perspectives towards the current beef industry in Ngamiland.

With respect to identifying beef value chains, Ngamiland has a major overburden of cattle, resulting in low prices and low producer confidence. There is sporadic live trade to Zimbabwe, but otherwise only local commercial slaughter of older cattle – a situation under which it is impossible to create upward price pressure. Mr. Clive Marshall (Marshall Cattle Services) noted that CBT opens the door to allowing the management of the Ngamiland herd for maximum wealth creation. To achieve this, however, the overburden must be removed and the demography of the herd changed. The overall herd size needs to be reduced, oxen production limited, and the proportion of breeding cows increased. Such changes would allow a larger production of weaners. While there is some controversy over the use of feedlots, a weaner / feedlot production model would add value, reduce risk during drought and enhance quality. Innovative solutions for removing unmanageable (feral) cattle need to be considered, and the use of regional abattoirs, such as the one at Katima Mulilo in Namibia, should be considered.

The market opportunities analysis (referred to above) determined that FMD should not be a barrier to trading with lucrative markets. Expanding on this, Dr. Mark Bing (Vetswana) explained that while exporting beef from areas like Ngamiland that are not free of FMD has been a challenge, this has not been the case for India. Although differences are apparent between Ngamiland's extensive production system and India's water buffalo dairy industry (with beef as a byproduct), India is now the largest exporter of beef (carabeef) by volume in the world, with annual exports of approximately 2 million tonnes to its trading partners in the Middle East, Africa and Southeast Asia. This is possible even though India is not free of FMD and has no FMD-free zones. Currently, Ngamiland beef is exported to other parts of Botswana, as well as the Democratic Republic of Congo, Mozambique, Kuwait and Vietnam. The South Africa market should become available again once vaccination rates above 75% are achieved. Under the OIE's Terrestrial Animal Health Code, however, marketing opportunities to countries with FMD equivalence to Botswana should now be possible. As a result, access to many middle and far eastern markets may also be possible. Another potential market is the tourism industry in northern Botswana, which currently imports most of its beef from the south (i.e. the FMD-free Green Zone), rather than sourcing locally.



Along with market and value chain analysis, an analysis of farmer perspectives towards the local beef industry was undertaken through a series of interviews conducted by Mr. Mokadi Masedi (North West Integrated Farmers Association). Trust levels with government agencies are low, and human / wildlife conflict is growing, further disillusioning farmers in the district. There is major rangeland degradation, with water the most important determinant of cattle distribution. Furthermore, unreliable sales are disincentivizing good husbandry practices (cattle are typically unattended and unkraaled at night) and other investments in the quality of cattle. Many animals are lost before making it to the market, and there are a large number of unmanaged or unmanageable cattle. There is need for a reliable market with competitive price structures as an incentive to practice and improve animal husbandry. In order to reduce the impact of poor pricing, there is an opportunity to develop a wildlife-friendly brand and possibly a dedicated abattoir in western Ngamiland to reduce transport costs.

Following these presentations, discussion and breakout group sessions considered the practical needs for rolling out CBT in the district. Each group considered a set of questions, and the full outputs of the groups are available in Annex 3.

## **IMPLEMENTING CBT IN NGAMILAND (PART 2): WHERE ARE WE AND WHAT DO WE NEED?**

The opening session on 9 November was chaired by Dr. Mokganedi Mokopasetso, Chief Veterinary Officer for the Botswana Vaccine Institute (BVI), and focused on additional key components needed for successfully implementing CBT, including improved vaccination and surveillance approaches and enhanced infrastructure – with possible use of mobile abattoirs, producer-level protocols, and the management of disease risk along value chains being discussed. To open this second day of the forum, Dr. Steve Osofsky provided a *Recap of Day 1*, in the form of a poem (see Box 2).

### **Box 2: *Recap of Day 1* (a poem by Dr. Steve Osofsky)**

All now seem to understand CBT,  
Farmers, DVS and BMC.

Trust and communication are a genuine need,  
for livestock *and* wildlife to thrive and breed.

Stable markets must be well-ensconced,  
and a more clear approach to outbreak response.

Community outreach and education are a high priority.  
We heard that from you– from the vast majority.

Herding is key, but incentives matter.  
Should I watch my cattle as the market gets sadder?

The future of wildlife 100 years hence,  
may well depend on where we fence.

Thus, livestock and wildlife sectoral harmonization  
may well depend on market liberalization.

So, CBT seems to have genuine traction,  
as we all keep in mind the cost of inaction.

A major concern for managing FMD is the apparent reduction in the effectiveness of vaccination in preventing outbreaks. The Botswana Vaccine Institute (BVI) was established by the Government of Botswana in 1978, in response to widespread outbreaks of FMD in northern Botswana; it gained OIE reference laboratory status in 1985. While there were no outbreaks in Botswana for the 20 years prior to 2002, there have since been a number of outbreaks (mostly SAT-2). BVI produces FMD vaccine (mostly trivalent - SAT 1, 2 & 3) for the region, and works to ensure that the vaccines match the viruses currently circulating in the field. Vaccination coverage across the region is relatively good, although Ngamiland and western Zimbabwe have low coverage. Dr. Mokopasetso pointed out, however, that vaccination is not a panacea. It is one of the tools in the management of FMD and must be supported by other control measures including animal identification, herding, and movement protocols. In addition, many factors can influence the effectiveness of vaccination programmes – monitoring, coordination and partnership with farmers are critical to achieve high vaccination coverage.

An overview / lessons learned from a pilot project in Namibia's Zambezi Region (ZR) was presented by Dr. Alexander Toto (SATOTO Livestock Projects). The project aimed to improve access to beef markets for local livestock farmers through a commodity-based trade approach that included piloting a producer protocol for managing FMD and enhancing quality of product. The protocol included enhancements related to: record keeping; husbandry; health management; grazing and pasture management; feeds and mineral supplementation; and transportation. The project highlighted that without clear benefits from a functional market, adoption of producer protocols would be very slow. Starting with the minimum requirements and then progressively implementing additional requirements was recommended. Extensive support services are also critical, and the process should be implemented as a shared responsibility between farmers, support organizations and government agencies.

A preliminary analysis of the necessary and existing infrastructure to support CBT was outlined by Dr. Odireleng Thololwane (DVS). Ngamiland is home to three abattoirs. BMC Maun has capacity for 120 head per day, with deliveries controlled by a quota committee. It has a cooking plant, which is not currently in use. Ngamiland Abattoirs (private) has capacity of 100 head per day and is currently exporting to DRC through Zambia. While it pays lower live weight prices than BMC Maun, farmers generally prefer it because the speed of payment is higher. Ngamiland Abattoirs is currently working to adopt CBT. A third abattoir (also private) is under construction and will have a slaughter capacity of 100 head per day. It will be adding quarantine and feedlot facilities. BMC Francistown sometimes processes Ngamiland cattle, particularly as it is operating below capacity, but it is hard to reach, so is not a commonly used option. Automatic shutdowns in the face of FMD outbreaks are, however, a major problem for abattoir viability.

Quarantine infrastructure in the district is poor, with only one (Makalamabedi) of four original facilities, under the management of DVS, currently functioning. Major issues are fence maintenance, water provision, rangeland degradation and bush encroachment. However, the rehabilitation of quarantine facilities presents a number of business opportunities. Feedlots could be added to quarantine facilities, utilizing silage from nearby agricultural zones and providing manure back into those agricultural areas. The clearing of bush encroachment presents opportunities for charcoal production.

There are three meat processing plants in Ngamiland that provide for the tourism industry in Maun. These plants generally source whole carcasses from the FMD-free zone except when the carcass quality rises in Ngamiland from April to July.

Mobile abattoirs were also discussed. A trial on the western periphery of Kruger National Park has had some success. Mobile abattoirs allow those producers that are furthest from the market (and smallest scale) to participate in the market. The core principle is that it is easier to disinfect a mobile abattoir than it is to move animals. The system is spatially and temporally flexible, and does not require heavy

operating costs that would be compromised in the event of a shutdown or reduction in supply. The Kruger pilot benefitted from the proximity of a processing plant that could monitor critical control points, such as pH, as well as a ready market in the tourism facilities of the park itself. The pilot also benefitted from a very close collaboration with veterinary services and conservation organizations.

While all of these components are important, it is critical to ensure that disease risk (e.g. for FMD) is managed along the beef value chain at a system level, through a HACCP system that identifies, evaluates, and controls specific hazards. In his presentation, Dr. Randy Worobo (Cornell University) explained that a HACCP system can be combined with other prerequisite programmes so as to control as many of the hazards as possible. In order to build consumer confidence, a HACCP approach can ensure that the process is well planned, controlled and documented. A strong HACCP system, with support and inputs from veterinary services as well as strong private-public sector cooperation, is critical for implementing a commodity-based approach to FMD risk management.

### **IMPLEMENTING CBT IN NGAMILAND (PART 3): WHERE ARE WE AND WHAT DO WE NEED?**

The final of the three “Implementing CBT in Ngamiland” sessions was chaired by Dr. Cyril Taolo, Deputy Director in the Department of Wildlife and National Parks. Presentations focused on community-level approaches to successfully implementing CBT, disease cordon fence considerations, and alignment of disease management with the livestock trade.

Accessing untapped markets for Ngamiland beef will require an understanding of what importers, and their clients, require. Mr. Kadi Seisa (Botswana Beef) provided some thoughts from a buyer’s perspective. He noted that Botswana has made some inroads into new markets such as Angola, marketing a differentiated product (pasture-raised, 6-month shelf-life, unique taste) to a high-end market. Results from Botswana Beef’s marketing analysis underscored the importance of consistency and quality in order to access better paying markets. Market access can be quickly erased, particularly in new markets, if the quality is not consistently high. Likewise, while grass fed beef is sought after in many parts of the world, it is recognized internationally as being tougher than feedlot finished beef, and for this reason should be marketed under two years of age. Feedlots for finishing weaners may assist Ngamiland in this regard.

Dr. Jacques van Rooyen (University of Pretoria) summarized the “Herding for Health” project currently being piloted in South Africa. Implementation of CBT in an area has two options: 1) to comply with minimum standards through critical control points or, 2) to use CBT and associated market access as a catalyst for community-level change – that is, to make livestock and wildlife mutually beneficial for rural communities. Herding for Health focuses on the latter. Participating farmers commit to complying with a set of requirements, including traditional risk mitigation (herding and kraaling), HACCP compliance, etc. In return, market access is facilitated by mobile abattoir technology and conservation sector-community collaboration in the form of access and benefit sharing models which also promote sustainable enterprise development linked to ecosystem services. While still in the pilot phase, CBT-adopting cattle farmers now earn up to twice as much per animal and enjoy local market access despite an ongoing FMD outbreak.

Herding, and kraaling cattle at night, are effective risk migration measures for reducing livestock contact with buffalo (and of course with predators), and hence for reducing FMD transmission. As noted by Dr. Jess Isden (WildCRU), mobile kraals / bomas have been piloted in various places in southern Africa, particularly related to lion / livestock conflict mitigation efforts. These light, flexible structures provide a visual barrier that is very effective in reducing predation. Moreover, the dung from a concentration of cattle housed at night also provides an intensive nutrient load that can be used as a crop fertilizer, and bomas can be moved from farm to farm. Communal kraaling can be culturally challenging in some places, but provides a number of benefits, including allowing easy vaccination and accounting for the

whereabouts of cattle. Cattle-cattle disease transmission risk may be increased by bringing a number of cattle together, but the mobility of the kraals results in a lower incidence of foot rot (compared to what is seen with fixed kraals).

Ngamiland is a central part of the regional elephant range and a key part of two Wildlife Dispersal Areas (WDAs) within the Kavango Zambezi Transfrontier Conservation Area (KAZA TFCA), namely the Kwando River WDA and the Khaudom-Ngamiland WDA. A major management issue under consideration in the KAZA context is the position of cordon fences, i.e. the northern buffalo fence and the Namibia-Botswana border fences – and the impact these may have on impeding wildlife movement and exacerbating human / wildlife conflict. Dr. Anna Songhurst (EcoExist) explained that research on elephant movements in the Panhandle is looking at various scenarios. Simulating different scenarios involving fence realignment or fence section decommissioning will allow for useful predictions of the likely consequences of different management decisions.

In the final presentation, Dr. Gavin Thomson explained that the heart of the issue lies with aligning disease management and livestock trade promotion. The current FMD management strategy in southern Africa has rested on four pillars (see Figure 4). Despite these efforts, the effectiveness of FMD control appears to be declining, with 28 outbreaks so far in this decade. Possible reasons include increasing livestock populations (more intense interactions at the wildlife / livestock interface), and less effective preventative mass vaccinations programmes. There are, however, an array of potential improvements that can be instituted to improve FMD control and facilitate trade in livestock commodities in FMD-endemic areas like Ngamiland. He noted, however, that CBT is a mechanism designed to address trade risks. It is not a disease control mechanism. CBT cannot flourish without adequate FMD control. Thus, FMD control and CBT application need to be complementary, or at least not incompatible.

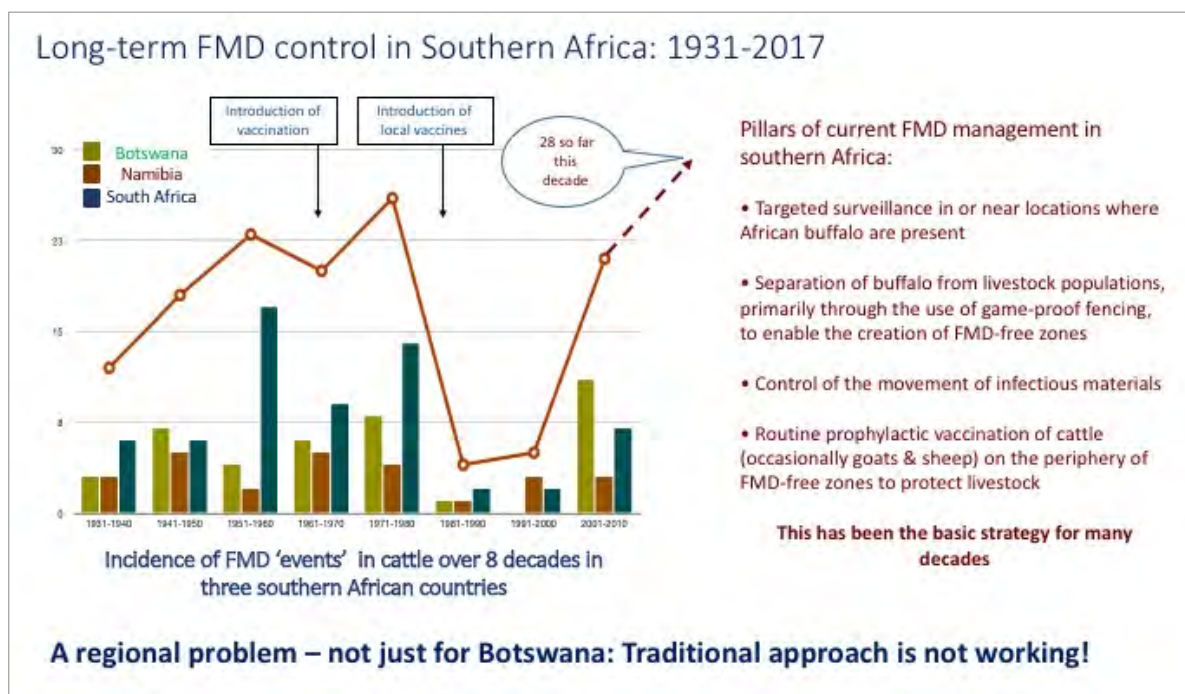


Figure 4: Long-term FMD control in southern Africa 1931-2017. Source: G. Thomson, 2017.

Throughout plenary discussions over the two-day meeting, the importance of education was frequently noted. Farmers need to be educated to understand the possibilities that CBT brings, as well as the requirements to ensure the quality, consistency, and quantity of beef that are critical to sustained access to desirable markets. Policy makers need to understand how CBT can and should work, and ensure an enabling environment for its implementation. Markets need to be educated to understand that CBT is a safe approach for managing risk from FMD.

Finally, based on presentations delivered during the preceding sessions and associated discussions, a second breakout session was dedicated to outlining what gaps remained. Breakout group members remained in the same teams as the previous day. The full outputs of the groups' deliberations over the two days are summarized in Annex 3. Key themes that emerged are outlined in Box 3 below.

### **Box 3: Summary of Breakout Group Sessions\***

#### **Key themes that emerged from the breakout groups include:**

- There is overwhelming support for implementing CBT in Ngamiland. The status quo is failing and not serving Ngamiland well. Opportunities afforded by establishing market access through CBT could well be a 'win-win' for sustainable and diversified land use and livelihoods.
- There is a need for less market disruption. Reliable markets need a reliable supply which requires a different approach to FMD outbreak response (e.g.- a 3-month shutdown after an outbreak is a major problem, particularly for attracting private sector investment). A plan needs to be developed and implemented that doesn't preclude trade across the entire area during an isolated outbreak.
- Awareness-raising, training, and education are required at all levels. Farmers need to be educated to understand the possibilities that CBT brings, as well as the requirements to ensure the quality, consistency, and quantity of beef that are critical to sustained access to desirable markets.
- Policy makers need to understand how CBT can and should work, and ensure an enabling environment for its implementation. Markets need to be educated to understand that CBT is a safe approach to managing risk from FMD.
- Communication and information-sharing emerged as critical to long-term implementation success. Wide consultation with communities as well as the establishment of multi-stakeholder committees / fora are needed to maintain open channels, delineate roles and responsibilities, build trust, and ultimately drive CBT forward. In addition, there is a need for the ministries overseeing livestock, wildlife, trade and finance to work together, and collaboratively with the private sector and civil society.
- There is a need to evaluate specific constraints or gaps along the value chain including quarantine / abattoir infrastructure and management, transport, and prerequisite protocols, and to consider innovative ideas like mobile abattoirs, or even mobile quarantines.

*\* Please see Annex 3 for detailed Breakout Group notes.*

## ADVANCING WILDLIFE-FRIENDLY BEEF IN NGAMILAND: KEY NEXT STEPS

The final session of the workshop was moderated by Dr. Steve Osofsky, AHEAD Programme Coordinator based at Cornell University.

Shirley Atkinson (AHEAD Regional Coordinator) noted a number of AHEAD programme commitments for action following the workshop:

- Prepare proceedings of the meeting, post them online (<http://www.wcs-ahead.org/dvs Ahead Maun Workshop 2017/dvs Ahead Maun Workshop 2017.html>), and share with all workshop participants; presentations will also be made available as PDFs on the AHEAD website (<http://www.wcs-ahead.org/dvs Ahead Maun Workshop 2017/agenda.html>).
- Facilitate a team to host a 2018 CBT workshop for DVS field officers, followed by a review of the historical response to FMD outbreaks and potential modifications to outbreak response / management in the context of CBT.
- Support reconvening of the KAZA Animal Health Sub-Working Group, which brings together the Directors of Veterinary Services and Senior Veterinary Officers from wildlife departments from each KAZA Partner Country, along with other relevant stakeholders.
- Assist with the re-establishment of Botswana's Ad Hoc Committee on Fencing.
- Support development of CBT, including technical assistance regarding HACCP.
- Based on the breakout group outputs, identify further areas for the provision of technical support.

A number of other commitments for action were made by meeting participants:

- Conservation International will conduct a feasibility analysis on applicability of conservation agreements in livestock production systems in Ngamiland, starting with a three-month pilot project due to start in December 2017.
- Conservation International is preparing a full project proposal (USD 20 Million) for the Green Climate Fund to build resilience in communal areas in Botswana.
- Communities Living Among Wildlife Sustainably (CLAWS - Richard Fynn) will provide support to herder training in at least one village in the Panhandle, and hope to expand to all villages across that area.
- Habu Elephant Development Trust will hold a CBT workshop in collaboration with Conservation International from 17-18 November 2017 in Gumare.
- Four of the five KAZA partner countries have proposed to set aside a proportion of Phase 3 funding for a CBT feasibility study.
- Peace Parks Foundation (PPF) will be supporting CBT across southern Africa, and is planning to undertake feasibility studies across eight projects in five landscapes, as well as directly support some components, such as mobile abattoirs.
- KPMG, on behalf of the Ministry of Agricultural Development and Food Security, is undertaking a feasibility study on the liberalization of the beef export market in Botswana, the draft report for which is due at the end of 2017.

The importance of wide consultation with DVS and the communities *before* project development and implementation was noted, as was the importance of engaging with the Ministry of Investment, Trade and Industry.

Finally, a number of workshop participants provided reflections on the deliberations and the work to come. CBT represents an opportunity to: use science to enhance trade and particularly the export of beef products; build economic activity along the entire beef value chain; and foster human / wildlife coexistence and wildlife-related economic benefits both within Botswana and in collaboration with its

neighbours in the KAZA TFCA region. However, urgent action is required to implement CBT in Ngamiland before the livestock industry in the area collapses.

The presence of a wide variety of stakeholders and intellectual capital in the workshop was noted. Many participants welcomed the active participation of farmers from the district. The raising of awareness and understanding of CBT approaches was noted as critical, but attention was also drawn to the need to ensure consistency of quality and supply of beef products in order to enhance Ngamiland's livestock industry in terms of how it will be perceived by international markets. Trust, honesty, and clear protocols in the context of outbreaks were noted as urgent requirements, as was cross-Ministry cooperation and engagement.

The workshop was closed on behalf of Paramount Chief Moremi by Kgosi Majatsie, who thanked the organizers and encouraged further efforts to enhance management of FMD for the benefit of Ngamiland.



## **ANNEXES**

### **Wildlife-Friendly Beef: Working Towards a Win-Win Solution for Livestock Agriculture & Wildlife Conservation in Ngamiland**

**Maun, Botswana**

**8-9 November 2017**

- Annex 1:      Agenda
- Annex 2:      Speech transcripts
- Annex 3:      Breakout group outputs
- Annex 4:      List of participants

## ANNEX 1: AGENDA



## PROGRAMME AGENDA

<b>WILDLIFE-FRIENDLY BEEF: WORKING TOWARDS A WIN-WIN SOLUTION FOR LIVESTOCK AGRICULTURE &amp; WILDLIFE CONSERVATION IN NGAMILAND</b> <i>Maun, Botswana – 8-9 November 2017</i>		
Arrival Day – 7 November 2017		
17:30	Registration	
Day One – 8 November 2017		
TIME	SESSION/ACTIVITY/PRESENTATION TITLE [SESSION CHAIR]	PRESENTER
7:30	Morning registration opens; tea & coffee available	
	<b>SETTING THE SCENE [Chair: L. Modisa]</b>	
8:00	Around the Room Introductions	
8:25	Purpose and Objectives of the Workshop	S. Osofsky
8:40	The Importance of a Diversified Economy for Ngamiland	T. McNutt
8:55	What is Commodity-Based Trade (CBT) of Beef?	G. Thomson
9:10	Commodity-Based Trade (CBT) of Beef: A Win-Win for the Livestock and Wildlife Sectors?	L. Modisa
9:25	Q & A, Discussion	
9:45	TEA / COFFEE BREAK	
	<b>SETTING THE SCENE (continued) [Chair: I. Otukile]</b>	
10:10	What Has Changed? Practical Implications of 2015 Changes in the OIE Terrestrial Animal Health Code for Beef Producers in Northern Botswana	M. Letshwenyo
10:25	What Could an Alternative to Fence-Based FMD Management Mean for the Wildlife Sector and Sustainable Tourism?	R. Fynn
10:40	Overview of Updated (2017) “Guidelines on Management of Foot and Mouth Disease Risk through Value Chain Approaches for Beef Exporting Enterprises in Southern Africa” or Achieving Wildlife-Friendly, FMD-Free, Tasty and Wholesome Beef from Ngamiland	M.-L. Penrith
11:00	Q & A, Discussion	
	<b>IMPLEMENTING CBT IN NGAMILAND (PART 1): WHERE ARE WE AND WHAT DO WE NEED? [Chair: B. Mogome-Maseko]</b>	
11:25	Unique Features of FMD in Southern Africa that Need to Be Considered	G. Thomson
11:40	Identifying Beef Value Chains in Ngamiland	C. Marshall
11:55	Market Analysis for Ngamiland Beef: Preliminary Findings	M. Bing
12:10	Market Analysis for Ngamiland Beef: What Do Farmers Think?	M. Masedi
12:25	Q & A, Discussion	
12:40	LUNCH	
13:40	Breakout Groups: Where Are We and What Do We Need? [Facilitator: S. Osofsky] <i>Guidance on breakout group objectives will be provided, and each group will have an assigned facilitator and volunteer scribe.</i>	
14:40	TEA / COFFEE BREAK	
15:10	Report back from breakout groups to plenary & discussion	
	<b>WELCOME &amp; WORKSHOP OVERVIEW [Master of Ceremonies: L. Modisa]</b>	
16:15	Introduction of Dignitaries: North West District Council	
16:20	Welcome: Representative of Paramount Chief Moremi	





16:30	Opening Address: Hon. Minister Ralotsia, Ministry of Agricultural Development & Food Security	
16:45	Closing Remarks: I. Otukile, Ministry of Environment, Natural Resources Conservation & Tourism	
17:00	Group Photo	
17:15	DAY 1 ADJOURNED	
19:00	GROUP DINNER – All Participants	

Day Two – 9 November 2017		
	<b>IMPLEMENTING CBT IN NGAMILAND (PART 2): WHERE ARE WE AND WHAT DO WE NEED? (continued) [Chair: M. Mokopasetso]</b>	<b>PRESENTER</b>
8:15	Recap of Day 1	S. Osofsky
8:30	Importance of Vaccines for Managing FMD	M. Mokopasetso
8:45	Developing Producer Protocols & Lessons from Namibia's Zambezi Region	A. Toto
9:00	Assessment of Infrastructure (Abattoirs & Quarantine)	O. Thololwane & M. Bing
9:15	Regional Innovations: The Utility of Mobile Abattoirs	J. van Rooyen
9:30	Hazard Analysis & Critical Control Points (HACCP) to Manage FMD and Food Safety Risk along Beef Value Chains	R. Worobo
9:45	Q & A, Discussion	
10:00	TEA / COFFEE BREAK	
	<b>IMPLEMENTING CBT IN NGAMILAND (PART 3): WHERE ARE WE AND WHAT DO WE NEED? (continued) [Chair: C. Taolo]</b>	
10:30	Towards Quality Improvement: Thoughts from a Buyer's Perspective	K. Seisa
10:45	Herding for Health: Implementation Lessons Learned from CBT in the Great Limpopo TFCA	J. van Rooyen
11:00	Mobile Kraals and Other Management Approaches to Human / Wildlife Conflict Mitigation	J. Isden
11:15	Potential Impacts of Strategic Fencing Realignment for Reducing Human / Wildlife Conflict and Enhancing Conservation Success	A. Songhurst & G. McCullough
11:30	Towards Alignment of Disease Management and Livestock Trade Promotion in Ngamiland	G. Thomson
11:45	Q & A, Discussion	
12:15	LUNCH	
	<b>ADVANCING WILDLIFE-FRIENDLY BEEF IN NGAMILAND: KEY NEXT STEPS [Chair: S. Osofsky]</b>	
13:15	Breakout Groups: Where Are We, What Do We Need - and Key Next Steps? <i>Guidance on breakout group objectives will be provided, and each group will have an assigned facilitator and volunteer scribe.</i>	
14:30	Report back to plenary & discussion	
15:00	TEA / COFFEE BREAK	
15:30	Report back to plenary & discussion (continued)	
16:00	Summary of Key Next Steps for Advancing Wildlife-Friendly Beef in Ngamiland	S. Atkinson / S. Osofsky
16:20	Reflections & Feedback	Panel TBD
16:45	Closing Remarks- Representative of the Paramount Chief of the Batawana	Chief B. S. Majatsie
17:00	ADJOURN	



## ANNEX 2: SPEECH TRANSCRIPTS

**Hon Patrick Pule Ralotsia's Official Opening Speech of the Workshop on *Wildlife-Friendly Beef: Working Towards a Win-Win Solution for Livestock Agriculture and Wildlife Conservation in Ngamiland*, 8<sup>th</sup> to 9<sup>th</sup> November 2017 at Maun Lodge, Maun, Botswana**

Fellow Honorable Ministers here present  
Permanent Secretaries here present  
Kgosi ya Batawana le marara otlhe a a fano  
The District Commissioner  
Experts from Ministry of Agricultural Development and Food Security  
Experts from Ministry of Environment, Natural Resources Conservation and Tourism  
Heads of Government departments and parastatals  
Esteemed Non-Governmental colleagues  
Cornell University AHEAD Programme and other university representatives  
OIE and FAO representatives  
Chairpersons of Farmers Associations  
All farmers present  
Conservationists  
Distinguished guests  
Ladies and Gentlemen

Good morning,

I am delighted to be in your midst today to open this important workshop entitled “***Wildlife-Friendly Beef: Working Towards a Win-Win Solution for Livestock Agriculture and Wildlife Conservation in Ngamiland***”. On behalf of the Government of Botswana, I wish to welcome you to this invaluable forum. Thank you for inviting me

Director of Ceremonies,

The agricultural sector remains critical to the sustenance of the livelihoods of our people and is key to improving food security at household and national levels. Agriculture provides us with food, employment, income, raw materials and investment opportunities. Consequent to this, my Ministry continues to put great emphasis on enhancing Botswana's prosperity, and on capitalizing on the natural resources at our disposal as a nation and regionally. In my opinion, this workshop has come at a very opportune time.

I would like to mention a few issues that I believe are of great relevance to this esteemed group, recognising that management of disease remains an important aspect in the livestock sub-sector.

Director of Ceremonies,

It is well known that the historical approach to managing FMD has been defined on a geographic basis, that is, through creation of disease-free countries or zones with the objective of progressive eradication of this disease. Botswana is no doubt a shining example of the success of this approach. However, the frequency of FMD outbreaks across southern African has increased in the last 10 years, implying some inherent deficiencies in the approach.

Director of Ceremonies,

The focus of most countries in our region has been to access the lucrative European markets. Therefore, other approaches to production and marketing have to be explored. For example, markets in Asia, within SADC itself and across the African continent should not be overlooked, especially as the African middle

class' consumption of livestock products is increasing. I hope information on the recent market assessment for Ngamiland beef will be shared at this forum.

Ladies and gentlemen,

We take note that commodity-based trade of beef relies on process standards that are similar to Hazard Analysis and Critical Control Points (HACCP) management system. HACCP is adopted universally in the management of food safety issues. In the case of beef, commodity-based trade focuses on how the meat is produced rather than on the geographic origin of the animal itself. Under the right conditions, liberated from geographically-based disease management standards, a greater proportion of our nation's herd could find its way into lucrative markets. This implies that more work needs to be done to help Ngamiland produce beef that is perceived desirable and safe from a wider array of partners than we have traded with historically.

Ladies and gentlemen,

It was at a meeting co-hosted by SADC and AHEAD in 2012, where the SADC Livestock Technical Committee put forward the "Phakalane Declaration on Adoption of Non-Geographic Approaches for Management of FMD". There is no doubt that the *Phakalane Declaration*, drafted here in Botswana, helped convince the World Organization for Animal Health (OIE) to update the FMD Chapter of the Terrestrial Animal Health Code to make commodity-based trade of beef from areas not free of the disease for the first time in generations possible. We are poised to take advantage of an unprecedented opportunity to rethink our region's approach to FMD management, in a partnership amongst Governments, private sector, farmers, NGOs, the OIE, FAO and technical partners such as Cornell University's AHEAD Programme.

Ladies and gentlemen,

I am hopeful that at the end of this workshop you will be able to 1) establish a common understanding of commodity-based trade approaches to beef production; 2) explore all of the components that are key to successfully implementing commodity-based trade within the context of Ngamiland; and 3) identify the needs and gaps with respect to each of the identified components.

Director of Ceremonies,

I look forward to your collective experience and wisdom to inform us how we can increase the effectiveness of FMD control, promote more effective access to markets with minimal environmental consequences. Given the importance of both animal agriculture and wildlife conservation to Botswana and other countries in the region, it is quite reasonable to re-evaluate how best to manage risks from diseases like FMD in a manner that helps Africa's pastoralists and farmers without threatening free-ranging wildlife, which is also very important to our economy, as I am sure my esteemed colleague, Honourable Minister Tshekedi Khama will agree.

In conclusion, I commit staff to working with the Ministry of Environment, Natural Resources Conservation and Tourism and with all of you to chart a path towards implementing approaches to animal disease management and beef production that mitigate conflicts at the livestock / wildlife interface, and benefit all Batswana. I look forward to receiving the outcomes of your deliberations.

Ladies and Gentlemen, with these few words, it is now my singular honour and privilege to declare this workshop officially open.

I thank you all.



**Dr. Steve Osofsky's "Purpose and Objectives of the Workshop" opening overview at the Inception Workshop, Wildlife-Friendly Beef: Working Towards a Win-Win Solution for Livestock Agriculture and Wildlife Conservation in Ngamiland, 8<sup>th</sup> to 9<sup>th</sup> November 2017 at Maun Lodge, Maun, Botswana**

Honorable Ministry Officials, esteemed governmental and nongovernmental colleagues, members of the farming community, colleagues from the private sector, friends of the AHEAD Program (which I hope you all are), and all of you who care about the future of Ngamiland, the people of Botswana and the wider KAZA region....

Good morning. It's a great honor to be here with you today – thank you so much for coming. In many ways, I feel like southern Africa is my professional home. As Botswana's first Wildlife Veterinary Officer in the early 1990s, I have many fond memories from this inspiring part of the world – although I must say Maun has changed a bit over the years. I am sure many of you remember well when the Maun-Nata road was not tarmac....

It was in the early 1990s that I first experienced, very directly, some of the policy challenges that an ever-intensifying livestock / wildlife interface poses. While I left Botswana in 1994, I think in many ways it was this experience in the early 1990s "on the front lines" that led me to found the AHEAD Program in 2003, at the IUCN World Parks Congress in Durban. Quite a number of you were there. AHEAD stands for Animal & Human Health for the Environment And Development, and our focus has very much been on trying to equitably resolve land-use planning conflicts between livestock agriculture and wildlife conservation. I have been back here in the region virtually every year since 1994, as these issues are so very important to me professionally, and personally – and of course are of great importance to the people of Botswana, and to the entire region's economy. Our deliberations here in Maun are in many ways a culmination of more than two decades of work, and I thank you again for agreeing to bring your expertise to the table.

Across the SADC region, both wildlife and livestock represent economic growth opportunities at a time when southern Africa finds itself in competition with other parts of the world. Given the importance of both the livestock and wildlife sectors to Botswana, there has never been a more opportune time to reevaluate how to best manage risks from diseases like foot and mouth in ways that are positive for both livestock agriculture *and* wildlife conservation, while also providing confidence to beef importing countries that the products they might like to buy pose minimal threats to their own agricultural sectors.

Fortunately, due in large part to work many of you in this room have done over the years – including your contributions to the drafting and dissemination of the *Phakalane Declaration on Adoption of Non-Geographic Approaches for Management of Foot and Mouth Disease* at a meeting much like this one held in Phakalane in 2012, the world is now thinking differently. Thanks to the SADC Livestock Technical Committee, to Chief Veterinary Officers from southern Africa and around the world, such as Dr. Modisa, as well as to colleagues within the African Union (AU-IBAR) – we had an international foot and mouth disease policy breakthrough in May of 2015, which Dr. Letshwenyo and others will be reviewing with us later today. The new **guidelines we now have for managing foot and mouth disease and beef production mean that, for the first time in several generations, livestock farmers living closest to wildlife in places like Ngamiland are no longer largely excluded from global beef markets, and veterinary fencing is no longer necessarily the go-to option for managing foot and mouth disease in southern Africa.** We will be discussing key aspects of these issues throughout our time together.

We will spend the next two days exploring how Ngamiland farmers can take advantage of new ways to get their beef into markets – markets here in the subregion, across Africa, and around the world. We'll need to evaluate what public-private partnerships are needed. What can the Government do to ensure

success? What technical assistance, infrastructure, and other resources are required? Which farming communities are ready to go down this path; which “low hanging fruit” markets should be targeted? If we can together answer some or all of these questions, if we can move towards an implementation phase taking advantage of what is called “commodity-based trade” of beef and at the same time better integrate land-use planning as it relates to livestock agriculture and wildlife conservation – well, then we will have used our time together this week extremely wisely.

I need to make a few things about the role of Cornell University’s AHEAD Program very transparent, very clear. Cornell University has a Center focused specifically on addressing sustainability challenges around the world. Sustainable land-use in southern Africa is of course of great development significance, and the AHEAD program was very fortunate in receiving a grant from this Cornell sustainability Center, which is called *the Atkinson Center for a Sustainable Future*. I want to be very specific about this funding, so that the opportunities it presents, as well as its limitations, are clear. We have been granted US \$143,000 (about 1.5 million Pula) over an 18-24 month period. The funding, which was from a Cornell source and thus only available to Cornell faculty, is specifically being made available for technical support to further the concept of commodity-based trade of beef. In order to meet the terms of the Atkinson Center, the funding is being used for workshops like this, and for other meetings of various types that may be needed in Botswana going forward – and to cover the professional time and travel, as needed, of a range of technical experts whom we want to make available to you, based on the needs we delineate together at meetings like this. While \$143,000 sounds like a lot of money, it doesn’t necessarily go that far when it comes to the actual costs of meetings and technical expert consultancies. But *it is* enough for us to progress this work with you, to work towards implementation of commodity-based trade of beef – if Ngamiland indeed wants to go in that direction. In short, we are here to help you however we can in terms of technical guidance and strategic convenings. All of the various technical experts this grant has allowed us to engage are here with us this week.

So, please let me also be clear about what we **don’t** have in hand. We don’t have funds available for infrastructure. We don’t have funds available to hire a lot of additional expertise just now. But starting with our deliberations this week, and over at least the next 18 to 24 months, we *are* interested in trying to help you identify additional resources that might be available for the needs you identify as key for implementing commodity-based trade, or CBT, of beef. Just as an example, it’s quite possible that a community will decide to move forward on CBT and recognize the need for an upgraded abattoir, or quarantine facilities that are up to the required international standards. Those are expensive capital investments, but there may well be opportunities to source additional support from the donor community, or from private investors, if we are strategic and build upon the work many of you in this room have been doing together for many years now.

I hope you’ll all agree that this effort offers a genuine opportunity to enhance prospects for sustainable land use and more diversified, resilient livelihoods. Regional stakeholders at the November 2016 KAZA / AHEAD / FAO CBT workshop held in Victoria Falls one year ago indicated strong support for moving forward with implementing CBT in KAZA partner countries. In response to that strong interest in moving forward with CBT, we have been able to attract, as I’ve mentioned, a highly regarded interdisciplinary team of collaborators, with experience in, for example, international agricultural trade standards, beef markets, FMD, food safety, HACCP, human / wildlife conflict, and wildlife ecology. Some of this expertise is of course coming from Botswana itself, as well as from the wider region and beyond.

I’d now like to summarize the four main objectives behind this week’s launch of what is essentially a CBT Feasibility Assessment Project:

- *Objective 1:* work with key stakeholders – you – to explore community willingness / political will to embark on a CBT pilot project. Well, we feel we have already made progress on that – and that that is why you all took the time to be here.
- *Objective 2:* determine current knowledge of key stakeholder groups related to CBT, and provide inputs as appropriate to create and strengthen technical understanding. Again, this workshop is essentially a launch of a process through which information will be flowing in multiple directions – from you to us, and us to you.
- *Objective 3:* formulate a limited number of implementation scenarios, explore the advantages and disadvantages of each, in partnership with Ngamiland farmers, officials, and other stakeholders – thereby enabling identification of the most promising strategy or strategies. To be clear, we certainly won't be able to provide technical assistance to every community that might be interested in CBT right now. With your help, though, we hope to be very, very strategic in determining where in Ngamiland CBT currently has the best chance of getting off the ground. We all eventually need an initial, successful 'proof of concept,' so that other communities can then also move forward.
- *Objective 4:* Within 18 to 24 months, we basically want to have a roadmap of what is truly needed to implement CBT in at least one part of Ngamiland. To be clear, we realize that full implementation of CBT will quite likely not happen in such a short time-frame – that's not the expectation. But we do hope to deliver a clear analysis of *what it would take* to get CBT in Ngamiland up and running.

...I've been at this a very long time.... We are closer to reconciling foot and mouth disease-related conflict at the livestock / wildlife interface than we've ever been before. I personally believe we are at a truly historic juncture. There are obviously tensions at play here, in terms of the issues at hand and the range of different interests. That said, everybody in this room can win if we get this right – farmers, abattoir owners, beef exporters, the conservation community, the tourism industry, BMC, the Ministries – everyone.

Now I also want to quickly run you through the resource materials we've made available for the meeting. There are two sets of materials – your paper packets, and the thumb drives. [Dr. Osofsky runs through the hard copy and digital resource materials being provided.] We hope these materials will be useful during the workshop, and long afterwards.

To conclude, I'd like to thank the meeting's sponsors, including Cornell University's Atkinson Center for a Sustainable Future, The Rockefeller Foundation, UNDP, and the Government of Botswana – in particular, Dr. Modisa and the Department of Veterinary Services. Without the support of all of these entities and all of you, this meeting, and the years of work that have led up to it, would simply not have been possible. Thank you sincerely. And again, welcome.

### ANNEX 3: BREAKOUT GROUP OUTPUTS

## BREAKOUT GROUP 1

### **Do we want CBT, is it relevant in this area?**

- Yes, represents hope for market access for Ngamiland cattle / livestock producers.
- However, care should be taken not to paint it as a 'silver bullet' for market access, and the costs, responsibilities and infrastructure requirements must be quantified.

### **What are the challenges / blockages to CBT being achieved?**

- Cost needs to be very transparently understood and quantified: investment (infrastructure, capacity, human resources) and running costs; as well as the potential real profits.
- A roadmap must be developed that has buy-in and understanding of communities through a transparent set of consultations.
- BMC does not have the current capacity to implement.
- Current meat export processes are not perceived as transparent by communities.
- Comprehensive risk analysis must be implemented.
- Clear responsibilities at different levels must be clearly outlined.
- Research is required to understand some of the critical components of implementing CBT.
- Quarantine requirements are currently a blockage.
- Alternative ways to separate key wildlife areas and livestock need to be implemented.
- Political buy-in is critical.
- Fences are still relevant, but a mutual understanding of their applicability is needed.
- Auditable CBT requirements at the producer level are also needed.
- Integrated land-use management must be implemented so that both wildlife and livestock benefits can flow to Ngamiland communities.
- Training and education of local farmers is a challenge, particularly in the context of local cultures and livestock rearing methods.
- Tourism / wildlife economy must help to facilitate development of wildlife-friendly beef production, with a clear structure that allows this to happen.

### **What do we need to implement CBT?**

- Important that trade partners are also aware of risks / how they are mitigated.
- Herding component is critical for CBT to work.
- Is BMC able to re-organize themselves?
- CBT must learn lessons from CBNRM (governance at village level).
- Understand current power structures, understand challenges and mitigate gaps / shortcomings.
- Understand changing population dynamics, need to reach all stakeholders.
- Quarantine management – who is responsible and testing incentives.
- Wildlife sector is a critical component.
- Roadmap needs to identify responsibilities, costs and benefits.

## BREAKOUT GROUP 2

### **Do we want CBT, is it relevant in this area?**

- Yes, but not at expense of progressive control pathway that will take Ngamiland to 'green zone' status. [Editors' note: 'green zone' status cannot be achieved in Ngamiland, a location with African buffalo- that is why CBT is being focused upon.]

### **What are the challenges / blockages to CBT being achieved?**

- Reliable market requires a reliable supply which requires a different response to outbreak management (3 month shut down after outbreak is a major problem).
- Capacities and infrastructure needed.
- Quarantine facilities are a bottleneck. Existing quarantines are degraded. Potential to use feedlots as quarantine requires private sector investment, which requires government and private sector to collaborate.
- There is confusion over the 10 km radius in the red zone. [Editors' note: OIE's 2015 allowance for quarantine stations in TAHC Article 8.8.22 makes the "10 km rule" irrelevant if quarantine is used as part of a CBT-focused approach.]
- The high level of mobility between crushes requires identification and traceability (propose different eartag colors for different zones).
- An enabling environment for CBNRM is necessary before the fences come down to ensure that communities can benefit from wildlife rather than only bear the cost of living with wildlife.
- Acceptance of collective herding (will need extension services).
- The perception of Ngamiland being the 'guinea pig' for fence removal is a major problem.
- Fence realignment or removal, in some cases, could result in the reduction of the value of the tourism product.
- The tourism market in northern Botswana is securing its meat supply from outside of Ngamiland – that is a major missed opportunity.
- Training, particularly of producers in FMD control and of herders in management of disease risk in the field, is severely lacking.
- Lack of political will is a major barrier to ensuring (i) level playing field & (ii) equal market access, between BMC and the private sector.

### **What do we need to implement CBT?**

- Multi-stakeholder committee / governance structure / institutional arrangement to drive CBT forward and find markets.
- Farmer associations need to be strengthened.
- Establish incentive mechanisms.
- Processes and protocols are critical.
- Aggressive effort to identify markets.
- Awareness / training (farmer to farmer).
- Stakeholder analysis leading to a communication and awareness plan.
- EIA process for mobile abattoirs? Needs to be checked.
- Reduce cattle overburden: remove unmanageable cattle; link to Katima Mulilo; live trade; define ideal herd demographic.
- CBT needs to serve the poorest farmer:
  - o create the market; support the supply chain.
- Genetic degradation of the herd needs to be addressed.
- Mobile kraals need to be advocated based on local needs – food security and disease control. Acceptance of collective herding and extension services will be needed. May be most appropriate on the Delta periphery and for small-scale farmers who have smaller herds.

### BREAKOUT GROUP 3

#### **Do we want CBT, is it relevant in this area?**

- Yes, 100%. It will increase market for Ngamiland cattle, alleviating poverty and diversifying the economy.

#### **What are the challenges / blockages to CBT being achieved?**

- Trade in the face of an outbreak? Need to implement a plan that doesn't stop trade everywhere due to an outbreak & provides reliable markets for farmers.
- Need to distinguish whether we are implementing CBT with a view to marketing fresh, frozen, or processed products.
- Need to understand import requirements for target markets.
- At primary production level, critical to ID animals, undertake preventive health programmes, present vaccinated animals for slaughter.
- Farmer perception and understanding of husbandry needs is a challenge that requires long-term education.
- Need for herding mentorship for young people.
- Creating the market is critical, but how to do that before the farmers are on-board, and on the other hand, how to incentivize farmers in the absence of a market? Subsidies and pilot projects may be the only way forward.

#### **What do we need to implement CBT?**

##### Issues to be addressed

- Appropriate education for all stakeholders (herders, traditional leaders, government, etc.).
- Awareness raising about CBT.
- Capacity building.
- Needs assessment for all stakeholders.
- Develop SOPs for farmers to allow compliance.
- Consideration of fence realignment for access to grazing. Keep livestock and wildlife needs in mind, to help inform land-use planning.

##### Technical gaps

- Research to support disease control.
- Adherence to vaccination protocol and monitoring for compliance.
- Explore quality assurance programme and branding.
- Step-up implementation of BAITS.
- Review of control program.
- Collaboration with OIE reference laboratories.

##### Transportation

- Incentives for young people to work in transportation sector and education on transportation requirements.
- Competitive transportation.

##### Quarantine

- More distribution of quarantine camps, including mobile ones.
- Upgrading of quarantine facilities; re-assess the location of quarantines.

##### Abattoirs

- Mobile or community-run abattoirs.



#### BREAKOUT GROUP 4

**Do we want CBT, is it relevant in this area?**

- Yes!

**What are the challenges / blockages to CBT being achieved?**

- Protocols, qualified farmers, officers, trainings, crushes, kraals.
- BMC Act has to be liberalized – referee, marketer, player.
- BAITS causing problems in A2C.
- Management of quarantines.
- Markets are critical; at the moment only BMC can manage the market.
- Relationship between farmers, DVS, wildlife (compensation), BMC.
- 3-month shutdown is a huge issue – need consistency between DVS and OIE.
- Need rulebooks and trust between different players.
- Development of Standardized Operating Procedures is critical.

**What do we need to implement CBT?**

Where are we?

- Practically, DVS is stuck between geographic management and CBT.
- Need less market disruption.
- Increasing number of elephants destroying fences, need to be managed in the KAZA context.

What do we need?

- Reform / reinstate fencing committee and include farmers.
- Work with KAZA partner countries on elephant management.
- Education and capacity building for farmers.
- Quarantine rehabilitation.
- Local FMD research.
- Local quarantines (with feedlots?).
- Communication in value chain.
- Communication with Ministry of Investment, Trade and Industry.
- Remove BMC monopoly.
- Develop milk, small stock industry.
- Open communication channels, from farmer to DVS to abattoirs to markets.

#### BREAKOUT GROUP 5

**Do we want CBT, is it relevant in this area?**

- Yes.

**What are the challenges / blockages to CBT being achieved?**

- Large cattle herd with no market.

- Need more robust education for farmers.
- Need to make business in Ngamiland sustainable.
- Livelihoods and land being seriously degraded. CBT can help restore situation if competent authority devises a way to sell during outbreaks.

### **What do we need to implement CBT?**

What needs to be done?

- Close the gaps, and create opportunities.
- Need honesty and to work together.
- Frequent regional consultation between DVS and farmer, not only when there is something bad happening.
- Need formal commitment from government and farmers to CBT.
- Need government to repair quarantines and provide water.
- Farmers need to commit to kraaling and herding. Have to make herding as a profession / interesting / incentivized.
- Need farmers to undertake good farming practices.

General issues

- Policy development.
- Govt (DVS), private sector, farmer support and team to establish a timeline.

Pilot project in 1 village (Habu)

- Herding for Health model.
- Kraaling.
- Incentives.
- Water provision.
- Reduce HWC.
- Identify abattoir willing to support pilot.
- Need to establish the status of the herd in the pilot site and confirm acceptability to the abattoir.
- Establish type of stock and frequency of offtake.
- Price structure.

Other issues

- Protocol for quarantine.
- Collaboration - assemble team (farmers, BMC, abattoir, etc.).
- Manage any bad press.
- Marketing (need to link to the agribusiness sector).
- Farmer / community awareness / benefits / education (need team to deal with this).
- Team responsibilities (who, where, what, when, and how).
- Information-sharing must happen. Ensure that the information will trickle down to the whole community quickly and transparently.

Fence issues

- Directors should deal with this through a reinstated Ad Hoc Committee on Fences.
- Vaccination programme should mitigate problems of fence realignment from a disease management perspective.

#### ANNEX 4: LIST OF PARTICIPANTS

## **WILDLIFE-FRIENDLY BEEF**

### ***Working Towards a Win-Win Solution for Livestock Agriculture & Wildlife Conservation in Ngamiland***

A DVS-hosted Workshop, in collaboration with AHEAD

## **LIST OF PARTICIPANTS**

**8-9 NOVEMBER 2017**

**MAUN**

**BOTSWANA**

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