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TAD SCIENTIFIC

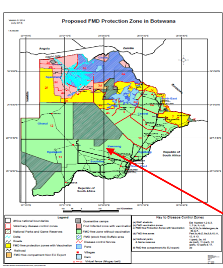
What is commodity-based trade (of beef)?

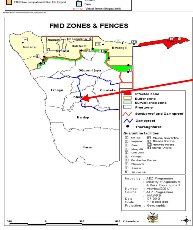
Gavin Thomson

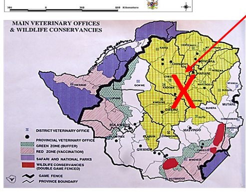
Wildlife Friendly Beef: Working towards a win-win solution for livestock agriculture and wildlife conservation in Ngamiland

Maun; 8-9 November 2017

Southern Africa: Internationally recognised FMD-free countries & zones



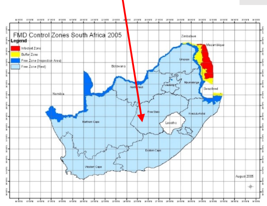


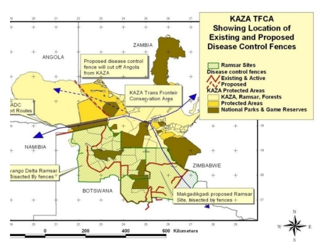


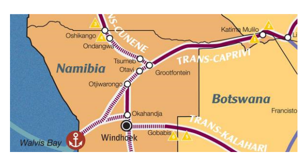
1970s-1980s

SADC Mainland Countries

Swaziland & Lesotho are FMD-free countries







Trade corridors

Tripartite Free Trade Area Agreement (TFTTA) – Initiative to promotes regional trade between 26 countries in eastern half of Africa

Regional Development Initiatives

Southern Africa: Pros & cons of FMD-freedom (country or zone)

Factor	Pro	Con
International acceptance	• Widely accepted for countries although not completely for zones • International standards exist; not controversial	• Only 3 SADC countries have FMD-free zones; contain ≈ 18/60 million (<30%) of mainland cattle population • No new FMD-free zones in 40 years • 70% of cattle in FMD-free zones in SADC Region are located in RSA
Efficacy	• Highly effective in Namibia, less so in RSA, i.e. variable but generally effective	• In southern Africa SAT-type FMDV causes repeated outbreaks of disease on periphery of FMD-free zones; pose constant risk to free zones
Cost		• True cost of FMD-free zones is unknown but possibly exceeds the economic benefit of beef market access (Research needed – problem; access to data)!
Effect on economic development	• Enables access to high-value livestock commodity markets in the developed world • Underpins the cattle industries of Botswana, Namibia & RSA	• Skews investment in livestock agriculture both within & between countries of region • Retards economic development in rural areas not free of FMD
Promotion of regional integration		• Clear disincentive to regional trade in livestock commodities (resulting from within & between country disparities) • Complicates development of some trade corridors
Environmental impact/ wildlife conservation	• Some VCFs designed to protect FMD-free zones benefit conservation	• Other VCFs in SADC have and have had devastating effects

What to conclude from all this?

- FMD-free zones (DFZs) have both pros & cons
- Three DFZs have long been established in the SADC Region; unlikely to be abandoned
- However, creation of new DFZs in the Region is improbable (none have been created in last 40 years)
- That being so, the livestock sector in non-DFZs is doomed to stagnate

Is there an alternative?

- In 2004 commodity-based trade (CBT) was proposed; on the basis that area (geographic) freedom from animal diseases is not the only way to manage the risk associated with trade in animal commodities
- A range of alternative, non-geographic, risk mitigation measures are available for managing animal disease risks, including FMD
- *So CBT is any process independent of the disease status of the area of production designed to ensure that traded animal commodities are safe in respect of 'sanitary' risk*

Methodologies for application of CBT

- ♦ Inherent safety (IS) of commodities, e.g. cows milk does not contain the BSE agent (mad cow disease)
- ♦ Pathogen inactivation, e.g. cooking & other processes that destroy infectious agents

Farmer's Choice (Pty) Ltd., Nairobi

Processing provides potential for additional sanitary risk management, beneficiation and employment creation

- ♦ Depending on the commodity or product & disease of concern, there are usually other mitigation measures available

The FMD/beef combination

Four factors can be used to render beef a safe commodity:

1. FMD virus is inactivated at pH below 6.0
2. Even in infected cattle, little (if any) FMD virus is present in striated muscle
3. Post-mortem pH change that occurs in striated muscle after death inactivates any FMD virus present
4. pH change does not occur in bone marrow or lymph nodes; therefore removal of bones & lymph nodes necessary to render beef safe from FMD

Adaption of CBT to value chain management

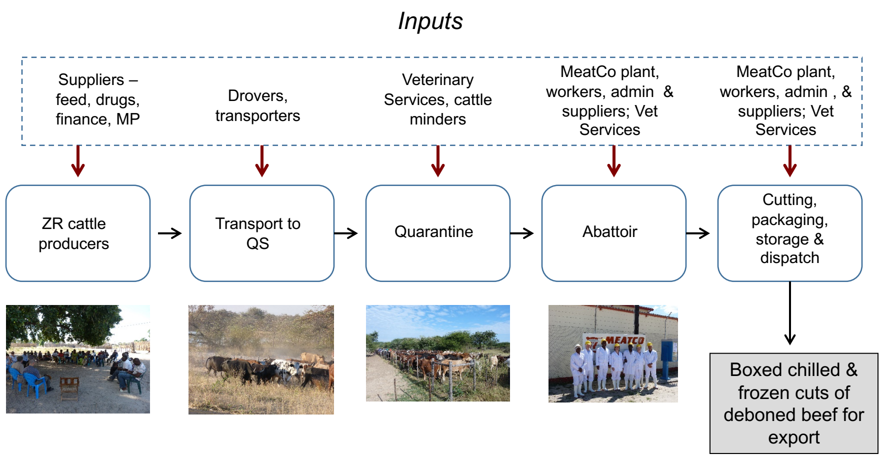
Management of modern production – irrespective of the commodity or product – is dependent on management of the value chain (basically steps of the productive process); whether this be financial or quality management, as examples

Food safety management has long used this approach incorporating a system known as HACCP

We showed in 2013 that CBT & HACCP are founded on similar principles and therefore can be applied in parallel along beef value chains

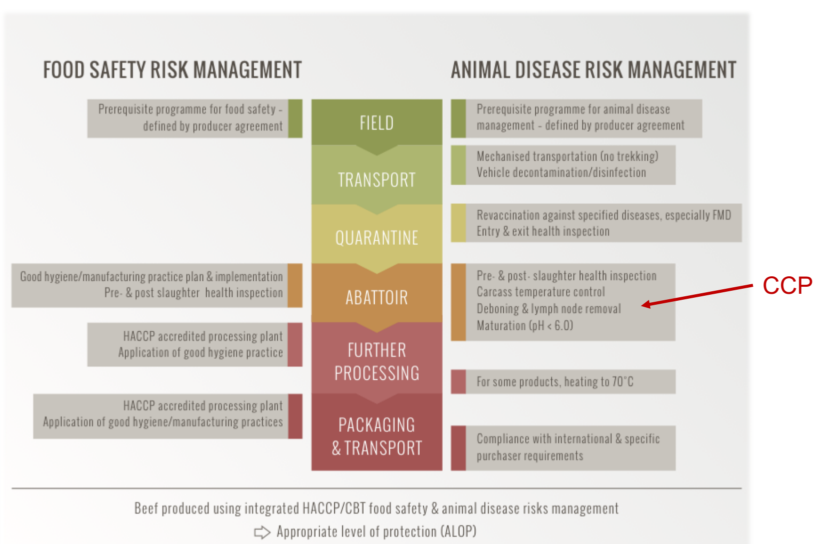
This enables application of critical control points (CCPs) that renders risk mitigation more robust & auditable

Zambezi Region (Namibia) beef value chain



A simple, uncomplicated beef value chain: Site of the MCA Project conducted in the Zambezi Region of Namibia – 2010-2014

Integrated FMD & food safety risk management system developed for the ZR Pilot Project



Conclusion

- CBT is essentially a non-geographic approach for management of animal disease risks associated with trade in commodities derived from animals (i.e. irrespective of the disease status of the locality of production)

- The concept has evolved making it ideal for integrated management of sanitary risks (encompassing both food safety & disease risk mitigation) along value chains (especially for beef)

Note: CBT is not a system for managing diseases like FMD (common misunderstanding!)