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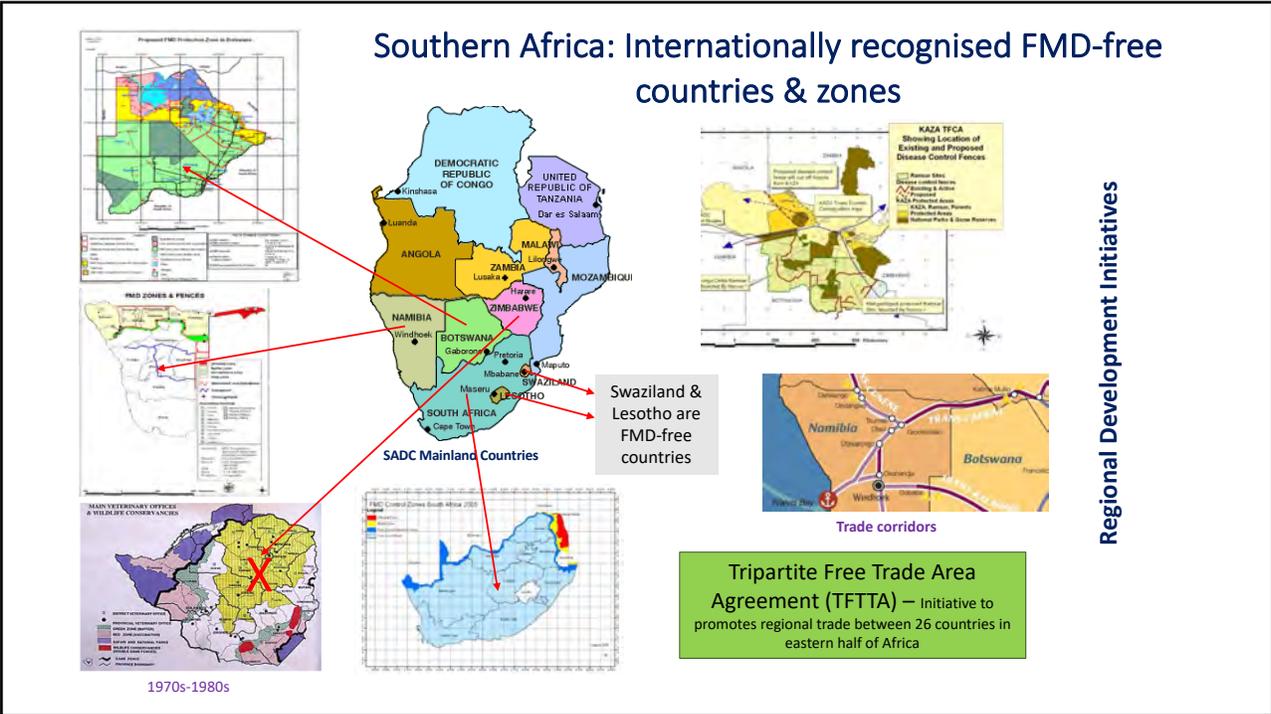
Principles of commodity-based trade (CBT) of beef

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COMMODITY-BASED TRADE OF BEEF AND ENHANCED MARKET ACCESS: THE VITAL ROLE OF THE
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OIE standards for safe trade in beef (*Terrestrial Animal Health Code*)

- Geographical standards – ensure that the animals produce the beef in areas that are demonstrably free from infection with FMD virus
 - Article 8.8.2: FMD free country or zone where vaccination is not practised
 - Article 8.8.3: FMD free country or zone where vaccination is practised
- Compartments – as above but freedom assured by biosecurity system
 - Article 8.8.4: FMD free compartment – can be established in either an FMD free or infected country or zone
- Non-geographical standards – focus on the absence of FMD virus from the beef, regardless of where it comes from (like food safety standards)
 - Article 8.8.31: Procedures for the inactivation of FMD virus in meat and meat products
 - Article 8.8.22: Importation of fresh meat from cattle from FMD infected countries or zones where an official control programme exists



Why have alternatives to free zones?

- FMD-free zones (DFZs) have both pros and cons
 - Pros: Original standard, widely accepted by high value markets, underpins cattle industries in Botswana, Namibia and RSA; particularly successful in Namibia
 - Cons: Contain <30% of SADC cattle population, 70% of which are in RSA; constantly at risk from outbreaks in neighbouring infected zones; costs may exceed benefits; hampers development in infected zones, disincentive to investment and regional trade; negative effects on the environment and conservation
- 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)
- Even if new DFZs were to be created, the livestock sector in non-DFZs is doomed to stagnate
- A major disadvantage of DFZs is that non-DFZs in the same country may suffer stringent measures if an outbreak occurs:
 - In the Zambezi Region of Namibia, a focal outbreak of FMD at one cattle post would result in closures of the abattoir at Katima Mulilo for up to 6 months
 - In a single 3-year period the abattoir was closed for 22 months
 - The abattoir closed its doors in 2016 as the owners found it was not viable

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 that, independent of the disease status of the area of production, is designed to ensure that traded animal commodities are safe in respect of 'sanitary' risk*
- CBT enables production of beef that can be certified as free of FMD even if part of the non-DFZ is affected by FMD
- It just requires confidence and good management on the part of DVS, with producer support

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 and 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 and disease of concern, there are usually other risk 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 and lymph nodes necessary to render beef safe from FMD

Adapting CBT to value chain management

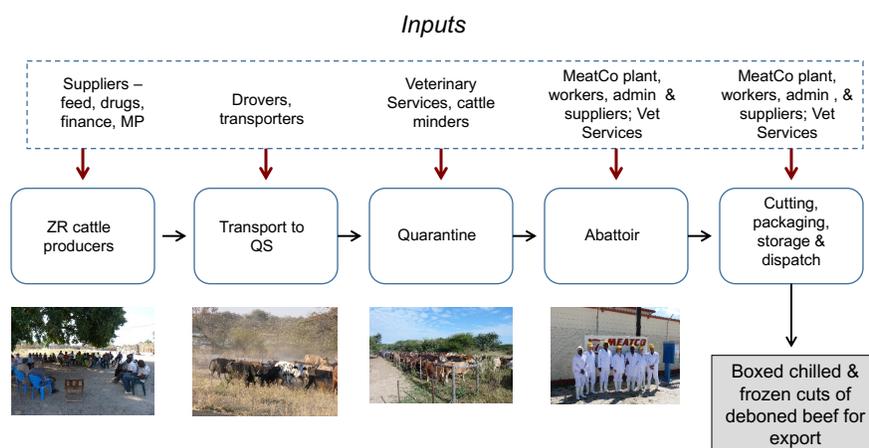
Management of modern production – irrespective of the commodity or product – is dependent on management of the value chain (basically steps of the productive process); whether this be financial or quality management, as examples

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

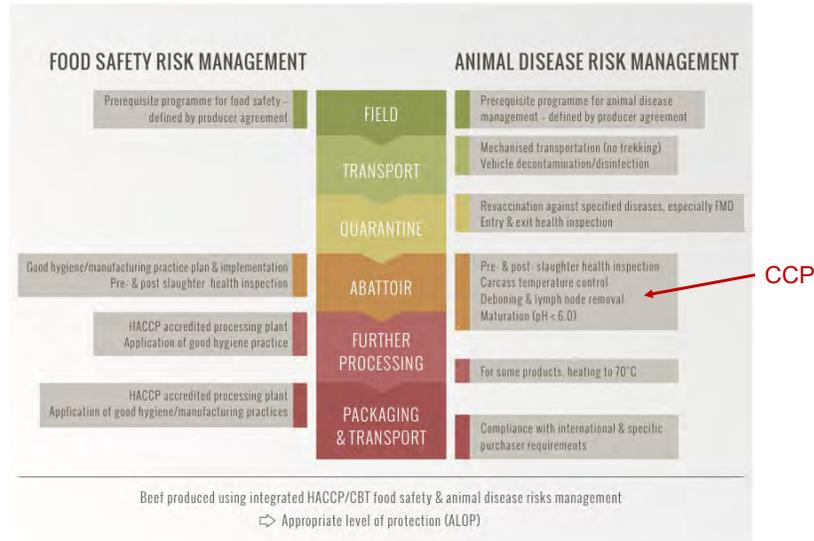
This enables application of critical control points (CCPs) that renders risk mitigation more robust and auditable

Zambezi Region (Namibia) beef value chain



An 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 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)
- It is designed, unlike geographic approaches, to prevent market exclusion of the whole population in an infected area either permanently or when only a small part of that population may be affected by an FMD outbreak
- The concept has evolved making it ideal for integrated management of sanitary risks (encompassing both food safety and disease risk mitigation) along value chains (especially for beef)
- NB: Like any OIE standard for trade in livestock commodities, CBT is not a system for managing diseases like FMD; it is a system for managing the risk of a pathogen being present in a commodity destined for trade in circumstances where the geographic absence of that pathogen cannot be guaranteed, e.g. presence in wildlife.