

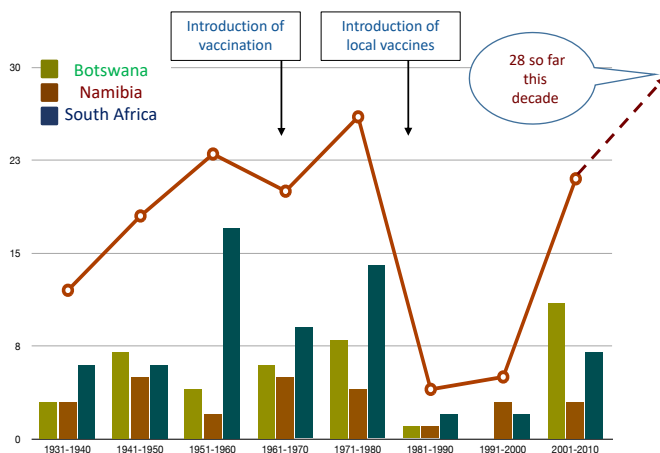
## Towards alignment of disease management and livestock trade promotion in Ngamiland

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Commodity-based trade and enhanced market access: The vital role of the Department of Veterinary Services

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### Long-term FMD control in Southern Africa: 1931-2017



Incidence of FMD 'events' in cattle over 8 decades in three southern African countries

#### Pillars of current FMD management in southern Africa:

- Targeted surveillance (physical inspection) in or near locations where African buffalo are present
- Separation of buffalo from livestock populations, primarily through the use of game-proof fencing, to enable the creation of FMD-free zones
- Control of the movement of infectious materials
- Routine prophylactic vaccination of cattle (occasionally goats & sheep) in high risk situations

**This has been the basic strategy for many decades**

**A regional problem – not just for Botswana: Traditional approach is not working!**

## Possible reasons for declining effectiveness of FMD control

- Increasing livestock numbers ⇒ more intense interaction at livestock/wildlife interface
  - creation of TFCA's could increase incidence of FMD outbreaks but currently not a significant factor because there have been few changes on the ground in TFCA's
- Preventive mass vaccination programmes appear less effective than formerly
  - vaccine quality has been improved but available vaccines still likely do not protect against all circulating FMD viruses (i.e. 'matching' of buffalo viruses & vaccine strains difficult)
  - poorly organised vaccination programmes that do not deliver adequate vaccine coverage
  - inadequate auditing of vaccination programmes & lack of corrective measures when post-vaccination monitoring indicates inadequate herd immunity
  - net result ⇒ poor protection of the susceptible cattle population
- Some claim veterinary services are less effective than formerly but difficult to measure

## Some realities

- In situations like Ngamiland, FMD cannot – with existing technology – be eradicated; explanation published (Thomson, Fosgate & Penrith, 2017 – Transboundary & Emerging Diseases)
  - not only because of wildlife involvement, i.e. includes other unique features of SAT serotype FMD
- So, if correct, southern Africa will have to learn to live with FMD, i.e. minimise both its direct & indirect impacts
- CBT is a mechanism designed to address the major indirect impact of contagious animal diseases, i.e. the trade effects of commodities not produced within disease-free areas
- For a number of reasons CBT cannot flourish if background control of FMD is inadequate
  - CBT benefits from improved FMD control generally
- So FMD control & CBT application need to be complementary (or, at least, not incompatible)
- The question is therefore: How can (1) more effective control of FMD & (2) complementarity between CBT & FMD control be achieved?

## Suggestions (short term)

- Sticking to the same old strategy against FMD management has little prospect of success
  - Time for re-evaluation is overdue!
- Currently FMD outbreaks are considered an unexpected crisis
  - Not logical
  - Better & more honest awareness creation is needed, especially among cattle owners
- Better understanding of the epidemiology of SAT-type FMD among animal health professionals
  - Need to improve understanding of SAT virus epidemiology and strengths/weaknesses of potential intervention strategies
- The OIE has introduced a new quarantine option in clause 1.c of Article 8.8.22
  - Requested by SADC Secretariat – ready for exploitation (including potentially in Ngamiland)
  - So its implementation needs to be planned & implemented
- Major issue: Management of FMD ‘outbreaks’ unnecessarily disruptive of trade
  - Due to the imposition of extensive quarantine & movement restrictions lasting many months (cover large areas for 3-18+ months)
    - unjustified based on current understanding of the epidemiology of SAT-type FMD
  - More practical & effective strategies could be developed that would benefit cattle owners of the region

## Suggestions (longer term)

- Prophylactic vaccination strategies need to be reassessed & more carefully audited
- International standards & recommendations do not cater for the SAT-type/wildlife problem
  - International organisations need to be persuaded that this issue needs to be urgently addressed (they know about it)
  - ‘Progressive Control Pathway for FMD’ does not even mention the SAT/wildlife problem
  - SADC was doing a good job in advancing the regional cause until recently but impetus seems lost; rejuvenation needed

## Sanitary risk mitigation (FS & AD) actions applicable along beef value chains

Location	Prerequisites and critical control points (CCP – bold)	Food safety CCP	Animal disease CCP
Field	<ul style="list-style-type: none"> <li>Animal ID, associated data base &amp; cattle traceability system</li> <li>Control of cattle movement</li> <li>Grazing &amp; kraaling strategies that avoid contact with buffalo as far as possible</li> <li>Compliance with vaccination programmes aimed at control of TADs (FMD, anthrax, CBPP)</li> <li>Avoidance of undesirable feeding practices (e.g. use of MBM), observance of treatment recommendations for control of parasites &amp; infectious diseases (including observance of withdrawal periods for medicinal treatments)</li> <li>Monitoring of compliance at farm level (MP)</li> </ul>		
Transportation	<ul style="list-style-type: none"> <li>Motorised transportation to QS &amp; abattoir (i.e. avoidance of trekking)</li> <li>Observance of good practice guidelines provided by Mentorship Programme (avoidance of overcrowding &amp; use of unsuitable vehicles)</li> <li>Decontamination of transport vehicles between batches of animals</li> </ul>		• •
Quarantine station	<ul style="list-style-type: none"> <li>Modification of management practices that do not comply with international norms plus development of corrective strategy</li> <li>Revaccination against FMD on entry to the quarantine facility</li> <li>Health inspection of all animals at start &amp; end of quarantine period</li> </ul>		• •
Abattoir	<ul style="list-style-type: none"> <li>Documented traceability system</li> <li>Washing down of animals on arrival at abattoir</li> <li>Cleanliness of the holding areas</li> <li>Ante- &amp; post-mortem health inspection (including carcass inspection)</li> <li>HACCP &amp; GHP implementation supported by independent certification</li> <li>Temperature control of carcasses and harvested cuts</li> <li>Prescribed carcass maturation over 24 hour period, including pH determination</li> <li>Thorough deboning &amp; removal of lymph nodes</li> <li>Microbiological monitoring</li> <li>Residue monitoring</li> <li>Screening of sera &amp; lymph nodes to certify achievement of standards set for FMD control (experimental)</li> <li>21 day 'quarantine of meat' (post-slaughter)</li> </ul>	• • •	• • • • •
Processing and packaging	<ul style="list-style-type: none"> <li>GHP</li> <li>HACCP certification</li> <li>Refrigeration control</li> <li>Metal detection</li> </ul>	• •	

## Abattoir actions & critical control points (CCPs)

Action	Food safety CCP	FMD CCP
Documented traceability system		
Washing down of animals on arrival at abattoir		
Cleanliness of the holding areas		
Ante- & post-mortem health inspection (including carcass inspection)	√	√
HACCP & GHP implementation supported by independent certification		
Temperature control of carcasses and harvested cuts	√	√
Prescribed carcass maturation over 24 hour period, including pH determination		√
Thorough deboning & removal of lymph nodes		√
Microbiological monitoring	√	
Residue monitoring		
Screening of sera & lymph nodes to certify achievement of standards set for FMD control (experimental)		
21 day 'quarantine of meat' (post-slaughter)		√

## Conclusion

- The management of FMD in the SADC Region has regressed in the last 15-20 years; that trend therefore needs to be turned around
  - Trying to do more of the same but better is unlikely to be the answer – in fact there are technical reasons why that is a recipe for failure!
- There is an array of potential improvements that could be instituted to improve FMD control & facilitate trade in livestock commodities in FMD-endemic areas like Ngamiland
- However, this is a complex field & selection of the best approach requires informed consideration (no magic bullet)
- Proposed initial steps:
  1. Reassessment of outbreak management strategy
  2. Investigate ways to align routine FMD management & the commodity-based trade approach