



## Complexities of the FMD situation confronting KAZA & other TFCAs

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Towards implementation of commodity-based trade in KAZA

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### Why is the FMD situation in KAZA complex?

- Occurrence of FMD considered in developed countries to be catastrophic!
- Therefore, trade in animals & animal products between regions where FMD is endemic & developed countries where it is not is rendered difficult
  - freedom from FMD currently a prerequisite for access to high value markets
- That constrains rural development in southern Africa
  - African buffalo maintain & occasionally transmit SAT FMD viruses to cattle & other cloven-hoofed animals, e.g. antelope
  - until recently only practical solution provided by international animal health community was regional (zonal) elimination of FMD from areas exporting animals & animal products; but that shown to be extraordinarily difficult in context of southern Africa (Thomson et al., 2015)
  - elimination of buffalo from KAZA or there TFCAs unrealistic & unthinkable!
- Conversely, non-geographic approaches becoming increasingly possible & present new opportunity .....

## Management of infectious diseases

Depends on 3 crucial factors:

- the epidemiology of the disease
- the ease and accuracy of detection (diagnosis and surveillance)
- effective intervention measures (bearing cost and practicality in consideration)

Corollary: If these factors collectively differ significantly between different forms of the same disease, the measures used against each form also need to differ

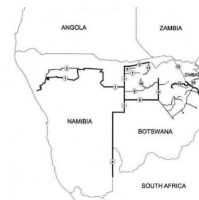
Finding: Statistically significant differences in these respects, individually & collectively, shown to exist between the Eurasian & SAT serotypes of FMDV, in southern Africa at least (Thomson et al., 2015)

Problem: Current international standards & guidelines assume that SAT & Eurasian serotypes of FMD behave identically; not true!  
 – creates fundamental difficulty for southern African countries

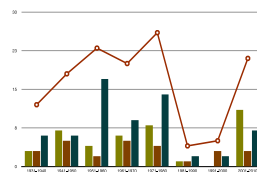
We are therefore attempting to develop more regionally appropriate approaches to management of SAT infections in southern Africa

## Geographic vs non-geographic management of FMD in southern Africa

- Geographic management of FMD in southern Africa (creation of FMD-free countries and zones, i.e. regional freedom) has provided *debatable* economic benefit but has also been environmentally costly & has resulted in socio-economic injustice (furthermore generally unsuccessful, particularly since +/- 2000 – Thomson et al. 2013; Maree et al., 2014)
- Non-geographic methods also effective for managing FMD risk but 'less costly'; therefore more appropriate and sustainable (Barnes, 2013; Cassidy et al., 2013)
- We contend, therefore, that international trade standards & conventions need to facilitate non-geographic approaches
  - progress made in form of amendments to FMD chapter of TAHC in 2015 but more needed .....

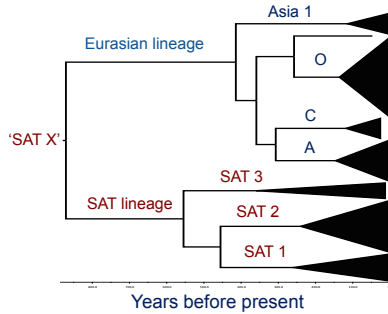


Cordon fences for the control of FMD in Botswana & Namibia



FMD outbreaks in cattle over 8 decades in 3 southern African countries

## SAT infections – distinguishing features



In sub-Saharan Africa SAT serotype FMDVs & buffalo (*Syncerus caffer*) co-evolved over the last  $\approx$  1000 years (distinct from the Eurasian lineage!)

SAT serotypes therefore represent an evolutionary separate form of FMD: SAT types = buffalo viruses; Eurasian types = livestock viruses

### Also differentiated epidemiologically:

- High frequency of mild disease & unapparent infection in both wildlife and livestock (Vosloo & Thomson, 2017)
- Usually slow and inefficient cattle-to-cattle transmission in extensive rangeland systems (Du Toit, 1932 – different in intensive systems)
- Vaccine efficacy compromised by much greater antigenic diversity within SAT serotypes; difficult to 'match' SAT viruses with available vaccines (Maree et al., 2014)



## As a consequence ....

- We have been trying to convey message that Eurasian & SAT lineages of FMDVs differ significantly; therefore ways of managing them also need to differ
  - at least partial explanation for deteriorating FMD control in southern Africa in last +/- 15 years
  - last week's EU-FMD Commission meeting in Portugal debated this issue & our argument apparently accepted
  - this represents a possible change in perception/fresh opportunity for improved international recognition of our (complex & difficult) situation
- Next two days; ongoing initiatives in this regard presented
  - interestingly other regions of the world now considering what advantages non- geographic approaches to FMD control may hold for them
- *We would like to hear opinions on these issues from those of you representing the Veterinary Services of KAZA countries!*
  - that's important!