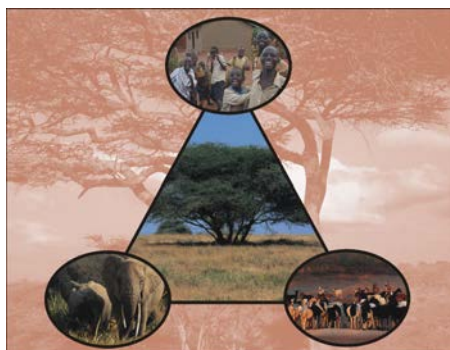


An Assessment of the Multi-Sectoral Impacts of Foot and Mouth Disease and of its Management and Control in Southern Africa



With a Focus on the Kavango Zambezi TFCA

Mark W. Atkinson, Christopher M. Foggin, Cyprian Zishiri, Chap Masterson, Mark Jago, Gavin R. Thomson,
Victor Siamudaala, Shirley J. Atkinson & Steven A. Osofsky



Introduction

Transboundary Animal Diseases (TADs)

- **Transboundary Animal Diseases (TADs):** epidemic diseases which are highly contagious or transmissible and have the potential for very rapid spread, irrespective of national borders, causing serious socio-economic and possibly public health consequences
- Foot and mouth disease, African swine fever, Rift Valley fever, African horse sickness, trypanosomosis, Newcastle disease, rabies, anthrax, lumpy skin disease, brucellosis, Avian influenza, contagious bovine pleuropneumonia, *Theileria* spp. infections, bluetongue, *peste des petits ruminants* etc.



TFCAs in Southern Africa

Three primary aims

- Socioeconomic development
- Promoting a culture of peace & co-operation
- Biodiversity conservation



Kavango Zambezi TFCA

Angola • Botswana • Namibia • Zambia • Zimbabwe



KAZA TFCA

- 440,000 km²
- 1-2 million people & their livestock
- Expanding buffalo populations
- 250,000+ elephants
- Limited opportunities for dispersal, migration, transhumance



The Conservation Conundrum

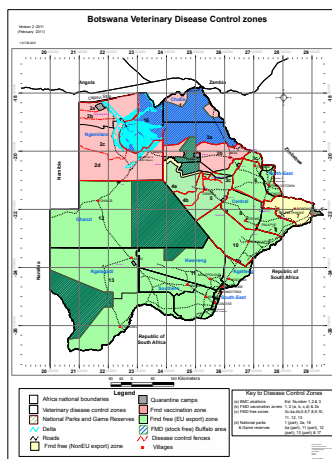
Fundamental Sectoral Differences

- Transfrontier conservation requires **free movement** of wildlife over large geographic areas
- Current internationally accepted approaches to FMD control **prevent movement** of susceptible animals between areas where FMD occurs and where it does not
- TFCA vision and geographic approaches to management of FMD are **not compatible**



FMD Control in Southern Africa

'Geographic' Approach



- International approach is **geographic** or **zonal** in nature
- Market access for animal commodities & products is linked to area-wide disease freedom
- Safe trade traditionally requires products to originate from a **Disease Free Zone (DFZ)**



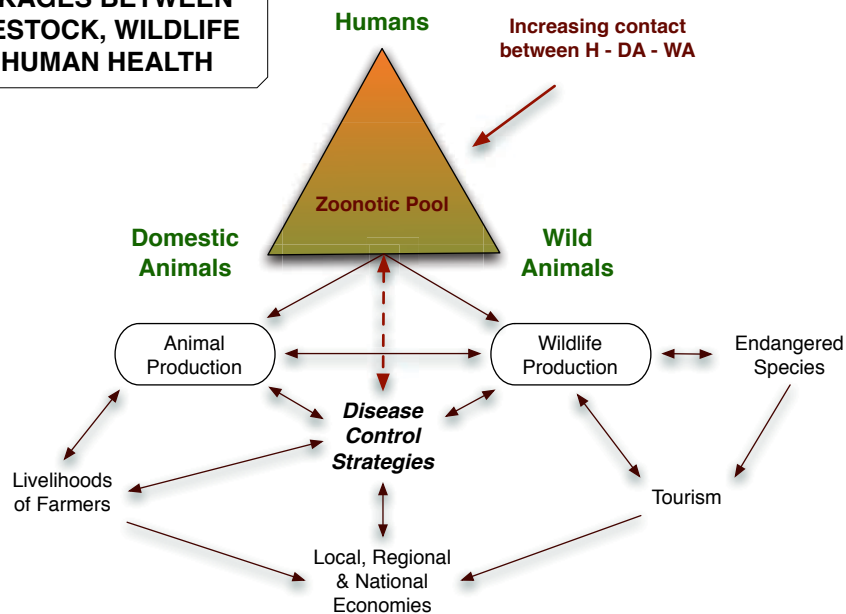
FMD in Southern Africa

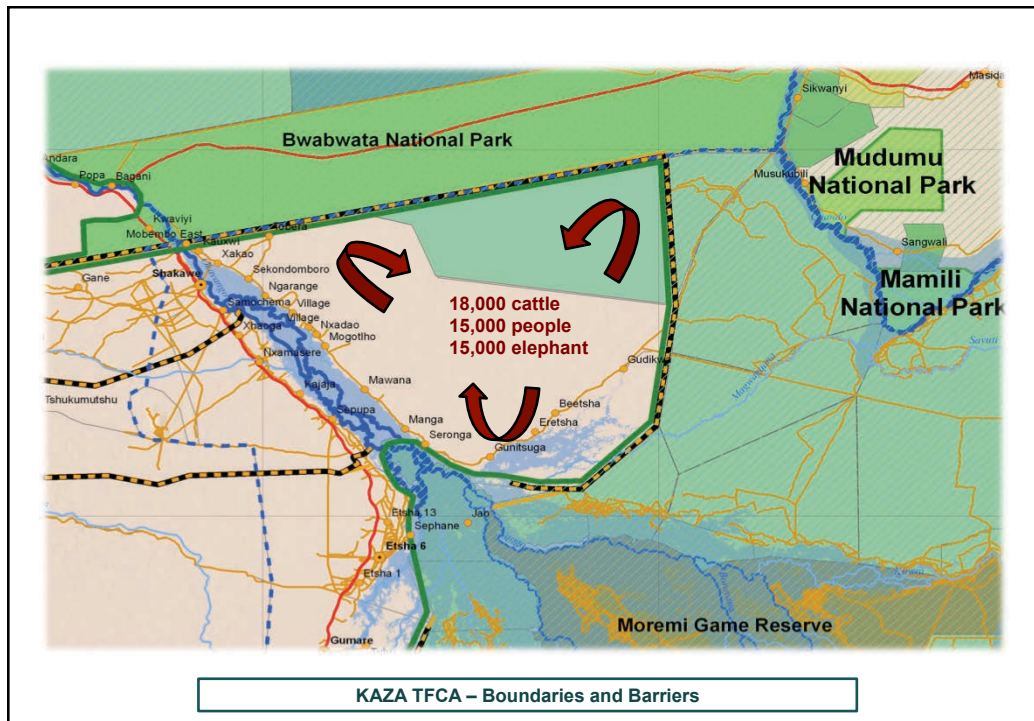
DFZs and the Geographic Approach

- DFZs cover large tracts of land, require:
 - Clearly defined borders
 - Controlled entry/exit
- Veterinary cordon fences
 - Considered effective & permanent solution to movement control problem on open unfenced communal land
 - Profound socioeconomic and environmental impacts



LINKAGES BETWEEN LIVESTOCK, WILDLIFE & HUMAN HEALTH





Historical Perspective

Commercial Beef Production and the Challenge of TADs

Colonial expansion, settlement, increase in global transport of cattle
 → introduction of foreign animal diseases



- Contagious Bovine Pleuropneumonia (CBPP) introduced to South Africa from Europe in 1854
- Rinderpest spread overland from north (reaching Botswana in 1886)



Historical Perspective

Commercial Beef Production and the Challenge of TADs

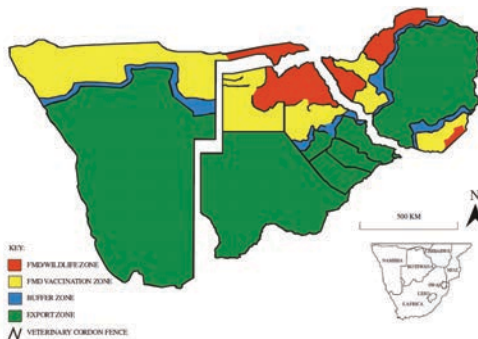
- Disease management strategies in southern Africa based on European disease **eradication** model:

- Slaughter of infected or susceptible stock
- Import bans
- Quarantine
- Movement embargoes (achieved on open communal land using fences)



Historical Perspective

Commercial Beef Production and the Challenge of TADs



FMD Control achieved based on four integrated activities:

- Separation of FMD endemic from FMD free zones (fences)
- Movement restriction in/out of endemic areas (permit system)
- Biannual vaccination of cattle close to buffalo (SAT viruses)
- Surveillance (based on physical examination of cattle)

Credit: McGahey (2011), adapted from Taylor & Martin (1987)



FMD Control in Southern Africa

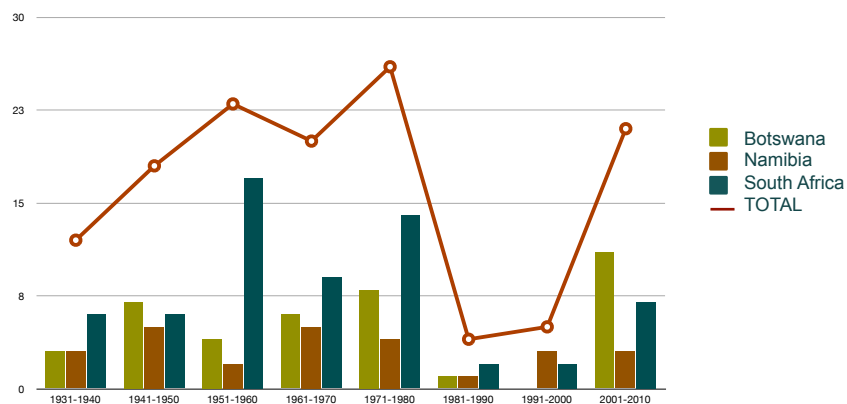
3 Key Challenges for Policy makers

1. FMD SAT virus serotypes are maintained by free-living wildlife populations, i.e.- African buffalo, and are **not eradicable**
2. Current internationally accepted approaches to the management of FMD conflict with wildlife conservation initiatives and constrain rural economic development
3. These approaches are failing to adequately control the disease

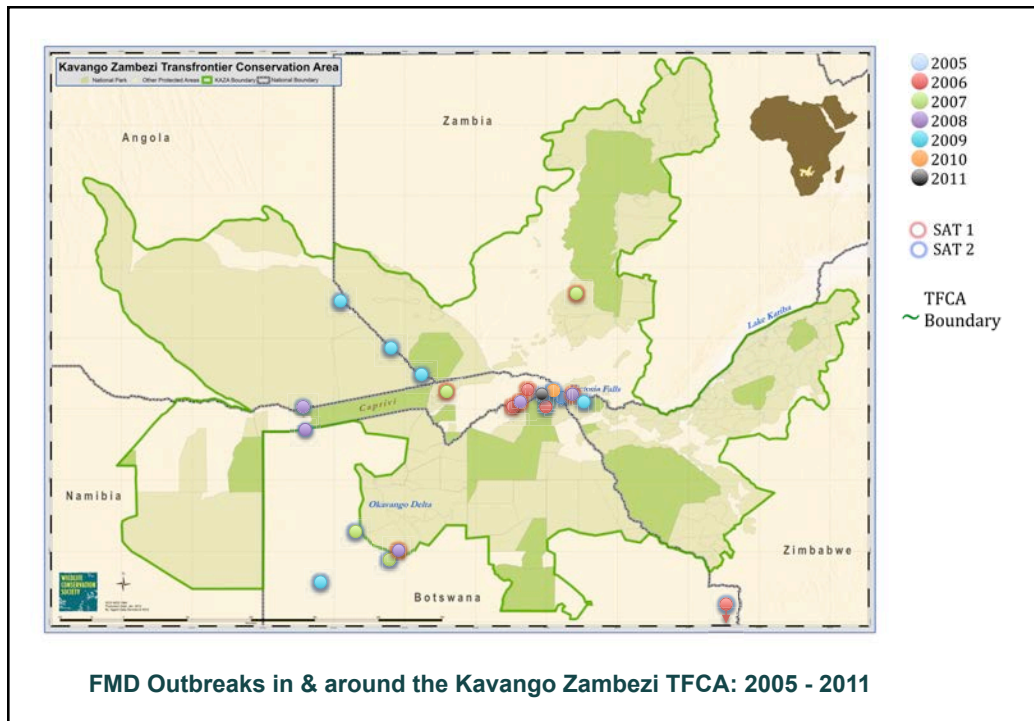


FMD Control

Current Approaches are Failing to Control the Disease



Incidence of FMD outbreaks in three southern African countries in last 8 decades



TFCAs

Rural Development, Poverty Alleviation, Wildlife Conservation



- Livestock agriculture and biodiversity conservation vital for balanced rural development; nature-based tourism now crucial to regional economic growth
- Attempts to control FMD geographically is complicated by developing conservation initiatives (e.g. KAZA TFCA) & ever-expanding human/livestock/wildlife interface
- Intensifying conflict between livestock interests & wildlife conservation



FMD Control

Rural development, poverty alleviation & wildlife conservation



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Conflict

Rural development, poverty alleviation & wildlife conservation



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The Expanding Interface

Solutions Needed

How best to manage the risks associated with FMD in southern Africa in ways that:

- Help southern Africa's pastoralists & farmers
 - Do not threaten free-ranging wildlife
- Provide confidence to beef importing countries that the products from this region pose minimal threats to their own agricultural sector



FMD Control

Potential Solutions for Southern Africa

- Adopt **non-geographic approaches** to disease management such as commodity-based trade (CBT) and value chain risk management
- OIE **TAHC Article 8.5.25**
- Commodity-based approaches focus on the *safety of the process* by which products are produced *rather than on their regional origin*



CBT: an array of alternatives that can be used to ensure the production and processing of a particular commodity or product are managed so that identified food safety and animal health hazards are reduced to appropriate risk levels



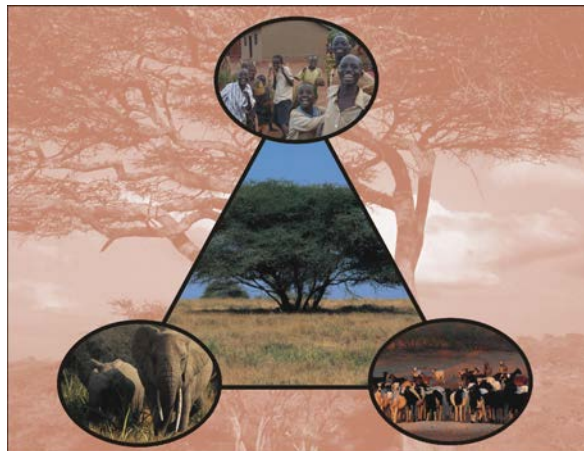
Multispecies System

Realistic future for KAZA



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