



# RECENT OUTBREAKS OF RVF IN SOUTHERN AFRICA

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# History of RVF

- Disease of both ruminants and humans
- Outbreaks have been reported from continental Africa to Madagascar
- Characteristics:
  - animals - abortions and high mortality in young animals  
cattle, goats, sheep and camels  
host susceptibility depends on age and animal species  
young lambs, calves and kids
  - humans – moderate to severe flu-like febrile illness  
nausea and haemorrhage syndrome  
- farmers, veterinarians, abattoir staff and animal caretakers
- Transmission:
  - transovarial – *Aedes* species
  - absence of transovarial – *Anopheles* and *Culex* species
  - Humans - direct contact and through mosquito bites

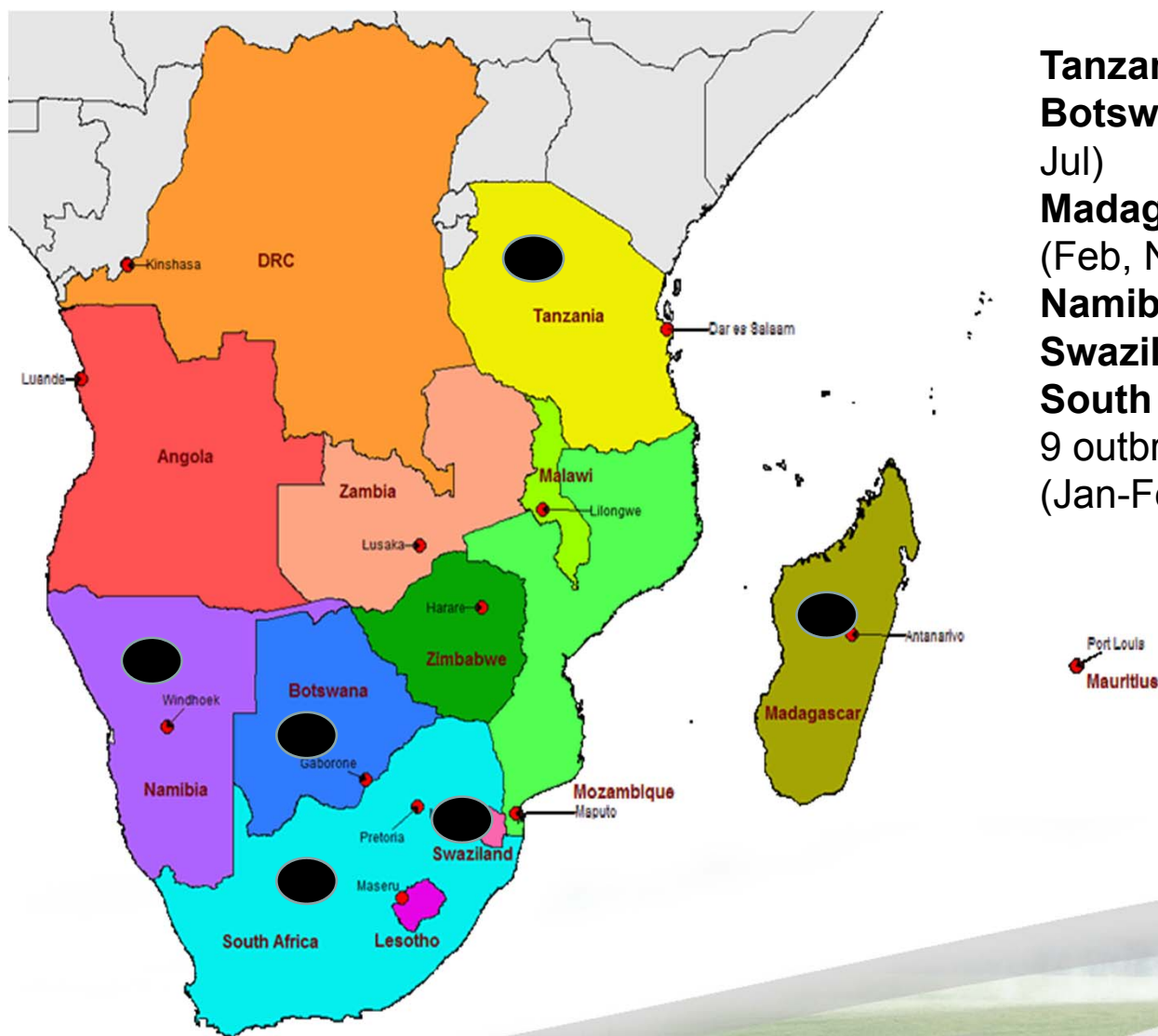
## Periods of outbreaks

- Historic information – outbreaks occurred during or after periods of heavy rainfalls
- Occurrence may be endemic or epidemic depending on the climate and vegetation of different geographic regions
  - endemic - high rainfall forest zones
  - epidemic – occurs after 5 to 15 years
- Countries that had outbreaks previously have the likelihood of outbreaks in future

## Effects of the disease

- The disease has severe socio-economic impact
  - a threat to animal and human health
    - cattle and sheep that survive abortion suffer infertility and loss of production
    - health of people in contact with animals is at risk
    - small communities poorly served by communication and other services
    - threaten the livelihood of those who depend on livestock products and related activities for labour opportunities
  - affects animal trade, serious economic loss
  - affects market - wool production decrease, milk and beef production decrease

## Reported Rift valley fever outbreaks in SADC during the period (2005-2014)



**Tanzania:** 2007 – 6 outbreaks (June)

**Botswana:** 2010 and 2014 (Jun & Jul)

**Madagascar:** 2008 – 6 outbreaks (Feb, Nov and Dec), 2009 - Mar

**Namibia:** 2010 and 2011

**Swaziland:** 2008 (Jun)

**South Africa:** 2008 (Jan-Feb), 2009 – 9 outbreaks (Feb-Mar, Oct), 2010 (Jan-Feb) 2011 (Dec-Jan)

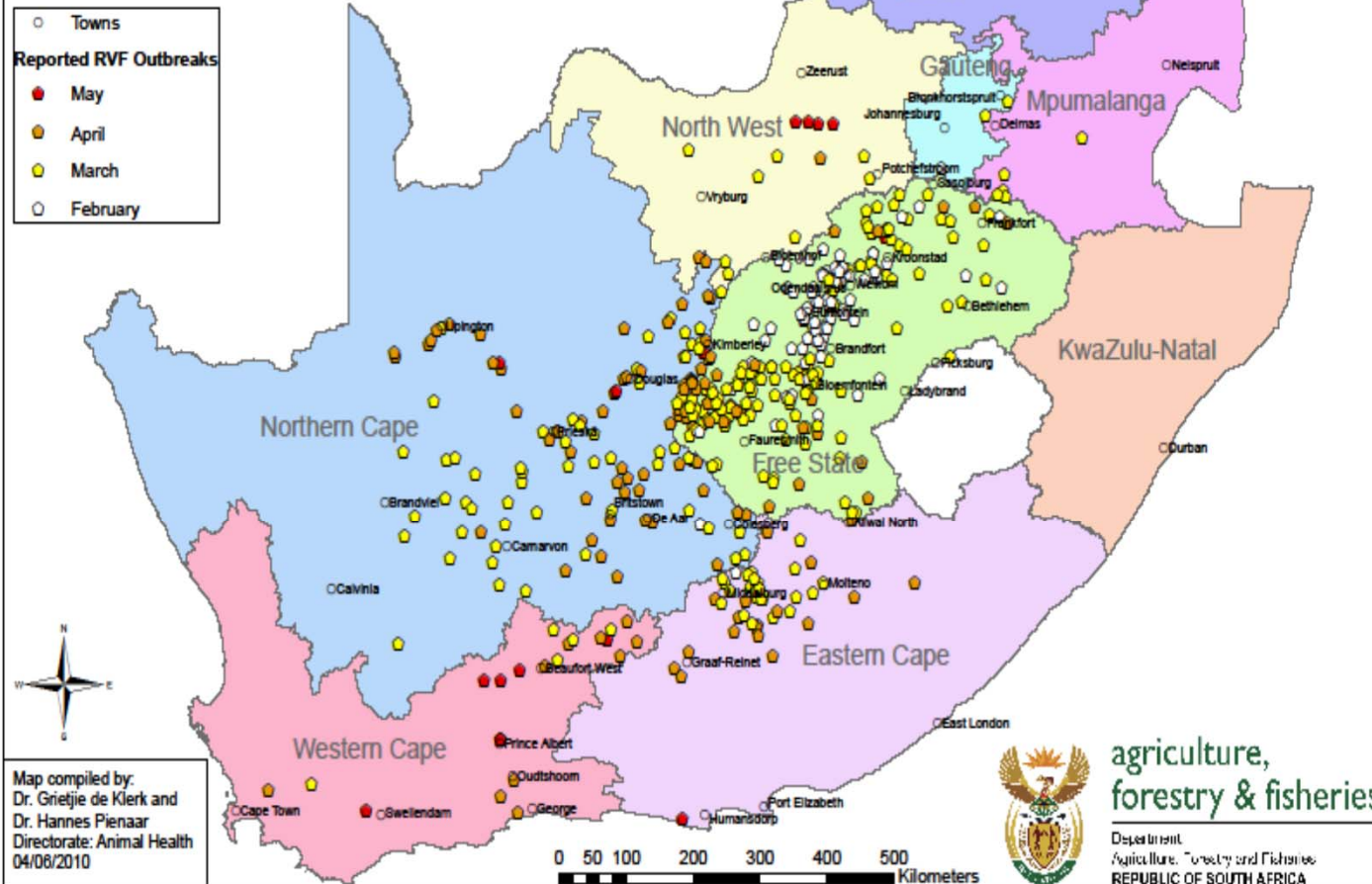
**Table 1: Areas of SA that experienced RVF outbreaks from 2008 to 2011**

<b>Year (month)</b>	<b>Area of outbreak</b>	<b>Animal cases reported</b>	<b>Animal deaths</b>
2008 January -June	Limpopo, North West, Gauteng and Mpumalanga	353	103
2009 February-June	Mpumalanga, Eastern Cape, KwaZulu Natal	210	66
October- November	Northern Cape	53	35
2010 January-June	Free State, Limpopo, Gauteng, North West, Eastern Cape, Western Cape, Northern Cape, Mpumalanga,	14 342	8 877
2011 November 2010- June 2011	Eastern Cape, Western Cape, Northern Cape	4 139	442

## Rift Valley Fever Outbreaks in South Africa 2010

Acute disease occurred mainly in cattle, sheep and goats, with high mortalities reported in lambs. RVF was also confirmed in Springbok, Bontebok, Waterbuck, Buffalo, Sable, Nyala, Gemsbok, Fallow Deer, Llama, Alpaca, Asian Buffalo and Ibex. Intensive vaccination was applied and is ongoing.

The first outbreak was confirmed by RT-PCR and IMP staining on 12 February 2010.



**Animal cases: 14 342,**  
**deaths 8 877**  
**Human death: 26**



- Possibilities: RVF virus may be there in very low levels  
no surveillance was done  
outbreaks were not reported
- Cases were confirmed by laboratory tests
  - OIE Reference laboratory
- Outbreaks followed heavy rainfalls



- Management:
  - vaccination in response to the outbreaks except in Madagascar
  - movement control inside the country
  - dipping/spraying of animals
  - controls of arthropods

## Control strategy and vaccination guidelines in South Africa

- Notifiable disease
- Farmers are advised to vaccinate their animals
- 3 vaccines currently available and used in South Africa
  - **Smithburn** (live attenuated RVF virus)
  - **Inactivated vaccine** (inactivated formalized RVF virus with aluminium hydroxide as adjuvant)
  - **Clone 13** (live attenuated RVF virus)
- High rate of abortion, mortality in young animals and people becoming ill, RVF suspected
  - surveillance should be done
  - veterinary officials should be contacted

**Table 2. Opportunities and challenges in South Africa**

Opportunities	Challenges
Vaccines available in SA	The disease is sporadic, people are not always ready when the outbreaks come
surveillance is done regularly	Vaccines cannot be produced in large quantities because they will expire.
	People wait for the clinical signs/symptoms before they vaccinate their animals
	Initial symptoms may be confused with other diseases that cause abortion
	Vaccination is not compulsory and not implemented by government. Although government advise farmers to vaccinate, it's up to the individual's decision.

## ARC-OVI as OIE Reference lab

- Suspected RVF samples are sent to ARC-OVI either for testing or for confirmation of the disease  
samples received may be animal tissues or blood
- During the period 2005-2014, about 8 600 samples were tested
  - 5 000 samples from SA (outbreaks of 2008-2011)
  - 2 056 samples from Botswana (outbreak of 2010 and 2014)
  - 1 544 samples from other countries (Namibia, Swaziland, Zambia and Zimbabwe)
- Farmer awareness/education programmes and other publicity campaigns
- Stakeholders - aware of nature of disease
  - consequences of livestock diseases
  - benefits derived from their prevention

# Acknowledgements

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THANK YOU

