

VIRUS POOL 6 – SOUTHERN AFRICA

M. Mulumba¹, P. Bastiaensen², B. Hulman¹, G. Matlho³, G. Thomson⁴

1. Secretariat of the Southern African Development Community (SADC), Private Bag 0095 Gaborone, Botswana

2. World Organisation for Animal Health (OIE) P.O Box 25662 Gaborone, Botswana

3. Botswana Vaccine Institute (BVI, Private Bag 0031, Gaborone, Botswana

4. TADScientific, P O Box 1607 Brooklyn Square, Pretoria 0075, South Africa

The epidemiology of FMD in southern Africa is complicated by maintenance of SAT viruses by free-living wildlife, African buffalo particularly. Most healthy buffalo populations maintain SAT viruses in what appears to be a commensal relationship. So far most countries of the Region have prevented SAT viruses from becoming endemic in livestock populations by rapid elimination of infection when it has spilled over into cattle. However, there are indications that in some locations SAT serotype infections may now also be endemic in cattle. Serotypes O and A also occur in the region even though their impact is not as widespread as the SATs. There is no indication that wildlife maintain non-SAT serotypes in the Region although reliable data on this matter are lacking.

In Botswana, Namibia, South Africa and Swaziland excellent progress was made in managing FMD from the late 1970's to the turn of the 21st Century. The dramatic fall in the rate at which outbreaks occurred over that period was probably largely due to the production of FMD vaccine locally from the late 1970s onwards. However, since 2001 the situation has deteriorated, with intervals between FMD outbreaks becoming shorter while individual outbreaks lasted longer and were more difficult to control.

FMD control in the Southern African Development Community (SADC) region is based on various combinations of the methods below depending on the export status of countries:

- Separation of livestock from infected wildlife populations
- Routine vaccination of cattle in high-risk areas
- Movement control of susceptible animals and their products
- Intensive disease surveillance.

Countries in the Region that export beef to high value markets employ all four measures while non-exporting countries rely on the last three in the event of an outbreak. It is worth highlighting that the current disease control measures in the SADC Region, even for exporting countries, are proving increasingly ineffective. There is a clear need to urgently adapt control measures to accommodate local circumstances if the region is to regain its competitiveness.

In 2003, due to the dramatic rise in FMD outbreaks, SADC was compelled to launch an emergency appeal for international assistance. The last decade has furthermore coincided with economic difficulties faced by a number of SADC Member States. The main reason underlying this request for assistance was the recognition that better management of FMD needed concerted regional efforts to overcome. Additional funding to support those countries that were not in a position to fully implement adequate control and surveillance measures was therefore a necessity. At the same time, it was imperative that a regional FMD control programme be designed to operate in tandem with national control programmes to turn the situation around.

The rolling out of two projects, one by the European Union in 2007 and the other by the *African Development Bank* (AfDB) in 2008, was partly in response to this plea. The EU-funded *SADC Foot and Mouth Disease Control Project* (SFMDP), operating in Malawi, Mozambique and Zimbabwe and working together with the *Botswana Vaccine Institute* (BVI), provided valuable details on the effectiveness of routine vaccination campaigns that many countries in the region were undertaking. The AfDB-funded *Strengthening Institutions for the Risk management of Transboundary Animal Diseases* (SADC TADs) project, in collaboration with BVI, *Onderstepoort Veterinary Institute* (OVI) in South Africa and the World Reference Laboratory for FMD in Pirbright, UK, has focused on mapping the FMD viruses circulating in wild buffalo populations and cattle at the wildlife/livestock interface of six countries: Angola, Malawi, Mozambique, Tanzania, Zambia and Zimbabwe.

Since 2011, SADC has been fully engaged in the *progressive control pathway* (PCP) that is coordinated by the World Organization for Animal Health (OIE) and the Food and Agriculture Organization of the United Nations (FAO). A first consultation, focusing on those Member States that have no formal OIE-recognised FMD status as yet was organized in March 2011 with the aim of enabling these countries to enter the pathway, in some cases through the recognition by OIE of a national FMD control programme. The work of the two projects mentioned above and that of OIE and FAO have provided the main impetus to address the current FMD problem. However, to sustain the turn-around will require renewed energy, organization, finance and more innovative approaches.

To guide achievement of this end a roadmap for FMD management in the SADC region is foreseen. The main tenets of the strategy under development hinge on:

1. Knowledge of viral variants circulating in endemic situations, to improve virus matching and development of vaccines with appropriate antigenic profiles on an on-going basis;
2. Design of more effective vaccination programmes in the region, including post-vaccination sero-monitoring and adaption of vaccination programmes where indicated;
3. Improved early detection and identification of the infection at field level and relay of this information to veterinary services' headquarters for rapid response and containment where appropriate (based on up-to-date emergency preparedness plans);
4. Agreement on minimum standards for improved surveillance in member states;
5. Improved speed, accuracy and reporting of laboratory diagnoses;
6. Development of disease management systems that enable co-existence of traditional livestock production and trans-frontier conservation areas (TFCA's);
7. Advocacy for implementation of the commodity based trade (CBT) concept to benefit livestock farmers in areas where strict separation of animal populations (especially wildlife) is not implementable or environmentally sound;
8. Advocacy of compartmentalisation where possible/practicable;
9. Research into non-geographic FMD management methodologies that will enable integration of all important sectors involved in rural development in southern Africa, particularly livestock agriculture and wildlife conservation (i.e. improved disease management that is more effective while minimizing unintended environmental impacts and socio-economic consequences).