



- The Green area in the picture was called the FMD Protection Zone. This zone was so-called because it creates a barrier to FMD to prevent introduction into the **FMD Free Zone** (White in the picture). The Protection zone was historically free from FMD, since the disease has not occurred in this area for a period of around 40 years. Due to the open border with Angola, however, this zone could not obtain freedom status.
- The FMD Protection Zone is now called the **FMD Containment Zone** due to the current outbreak in this area. The physical barrier between the FMD Containment Zone and the FMD Free Zone is a double stock proof and game proof fence called the Veterinary Cordon Fence (VCF).

### DYNAMICS IN THE NORTHERN COMMUNAL AREA (NCA)

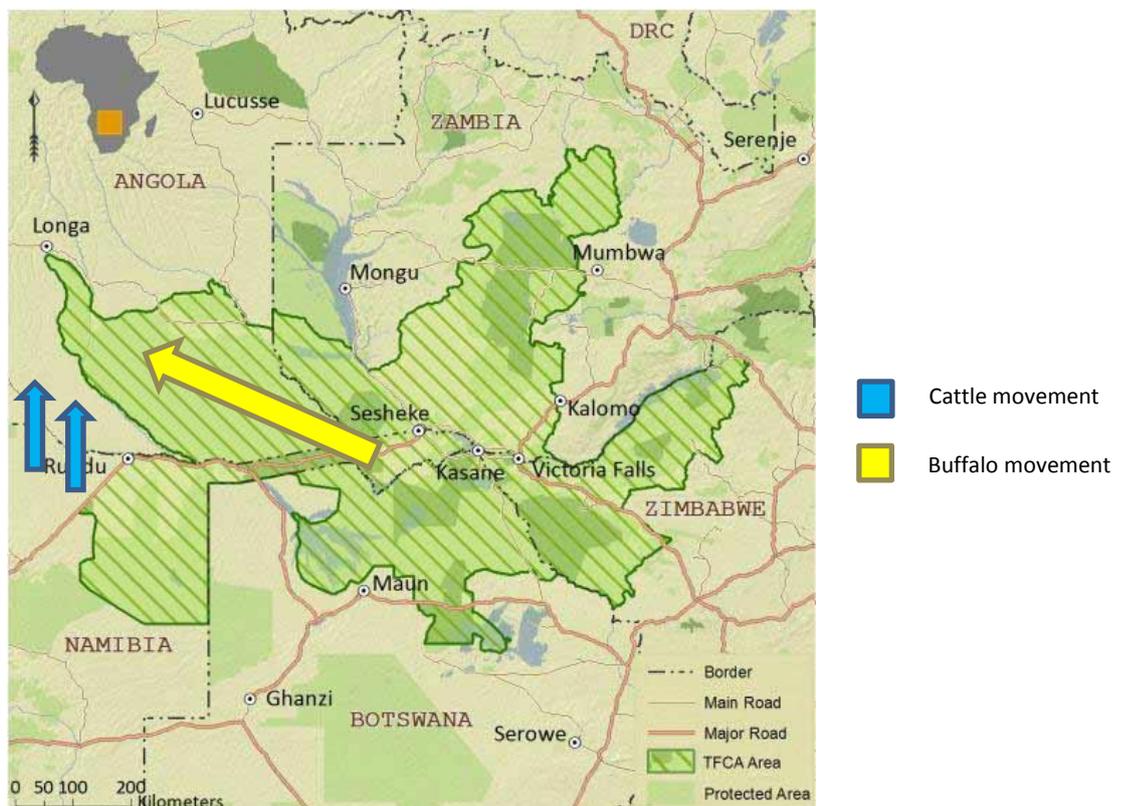
Since 1990, the number of cattle in the NCA have increased from 600 000 to about 1.25 million. An increase in cattle numbers has considerably increased the grazing pressure, necessitating farmers to utilize grazing inside the borders of Angola where vast fields of grazing exist.

Over a number of years, this custom has led to the establishment of villages and families on either side of the border, and Namibian cattle can be found as far as 200 km north into Angola. Movement of cattle across this border is a daily occurrence, with cattle in some instances drinking in Namibia and grazing in Angola.

The establishment of crops as a means of income and self-sustainability mean that less land in the NCA is available for grazing. Seasonal movements of cattle also occur, as after the harvest time cattle return to Namibia to feed on the residue.

From the above information it can be seen that the movement of cattle into and out of Angola has become a part of everyday life in areas along the border.

The establishment of the Kavango-Zambezi Transfrontier Conservation Area (KAZA) has resulted in the restoration of elephant herds in the South-Eastern Part of Angola. The possibility exists that African Buffalo have also moved towards this area, creating a greater opportunity for cattle – buffalo contact in Southern Angola.



KAZA Trans-frontier Conservation area and the suspected movement of buffalo and cattle

## TRANSMISSION OF FMD

The African Buffalo is the only true carrier of SAT-type FMD virus, as declared by the World Organisation for Animal Health (OIE). Being a carrier of the virus, the buffalo is not affected by the virus i.e. does not show any symptoms. Transmission of the virus from buffalo to cattle can occur through close contact as the virus is present in all secretions and in aerosols from the respiratory tract.

Once infected, cattle to cattle transmission can occur. Large quantities of virus are excreted for up to 14 days after development of lesions. The most common route of infection from cattle to cattle is via aerosols from the respiratory tract. Urine and faeces contain low quantities of virus. Mechanical transmission by contaminated products (milk and meat), fomites and people (handling FMD infected animal and not disinfecting hands and clothes) can occur.

Cattle may carry the virus after lesions have healed, but DOES NOT transmit the disease.

## CONTROL OF FMD

The control of FMD in Sub - Saharan Africa is a challenge due to the presence of African Buffalo and their seemingly natural carrier status of the virus. Countries privileged to have large game populations, and in specific, buffalo populations, will thus permanently struggle with the control of FMD and the trade-barriers it creates.

An added challenge is the antigenic variance of the SAT-type FMD virus. What this means, is that the virus changes its surface proteins to act like a new virus. When an animal is infected by a virus, or any pathogen, the immune system develops antibodies against the pathogen. These antibodies bind the pathogen and render it ineffective. If, however, the virus changes its surface proteins, the immune system will not recognise the virus, and the antibodies cannot bind the pathogen. By figure of speech, the virus is putting on a new jacket and in such a way the immune system does not recognise the virus and launches a new response. Thus, this creates problems for developing immunity from both natural infection or from vaccination. For this reason, a "new" vaccine must be produced for every new outbreak of FMD. Samples are collected from infected animals to match the vaccine to the virus.

Since FMD is such a highly contagious disease, movement restrictions are very important in the containment of the disease. By preventing the movement of animals and infectious materials like meat, the spread of the disease can be controlled.

Upon diagnosis of the first case of FMD in the NCA on 13 May 2015, the following control measures were put in place by the Directorate of Veterinary Services:

- **Movement restrictions** – no livestock movements are permitted between regions or crush pens. Livestock needed for cultural reasons like weddings and funerals are allowed to move under veterinary supervision, and must be slaughtered upon arrival at the new destination. No cattle are allowed to return from Angola to Namibia.
- **Ring vaccination around areas of infection** – all cattle in areas of infection are to be vaccinated twice at an interval of 30 days to reduce the number of animals susceptible to the virus and thus, the spread of the infection. All cattle in a 30km band north of the VCF are also being vaccinated in an attempt to prevent spread of the virus into the free zone.
- **Surveillance** – surveillance of cattle is being conducted in a 30km radius area surrounding the infected areas in order to determine the extent of the outbreak. Whenever a new case is detected, the infected area is enlarged and the surveillance area broadened. This is being done in order to detect all cases during an outbreak, and to determine the extent of the spread of the disease. Surveillance is also being

conducted in a 10km band immediately south of the VCF in order to detect spread of the virus into the free zone as soon as possible.

- **Roadblocks** – a total of about 38 roadblocks have been set up at strategic points in order to contain the outbreak. At the roadblocks within the infected area, vehicles are being inspected for any infectious material like meat and for livestock. At roadblocks at the edge of the infected area, vehicles are disinfected, passengers are required to disinfect shoes and vehicles are inspected for any infectious material and livestock.
- **Awareness** – a number of channels have been utilised for creating public awareness regarding the current outbreak. A toll-free telephone and sms line have been created for reporting of any suspicious cases.

## **GOVERNMENT SUPPORT**

There was an immediate positive response from Government to support the control of the FMD outbreak. Staff members are fully committed, and with GRN and stakeholder support, adequately equipped to control the outbreak.

GRN Support:

- A total of N\$ 109 million was made available for operational costs within 24 hours of submitting the request.
- 1.1 million vaccines purchased
- 148 vehicles made available
- N\$ 11 million worth in equipment purchased
- 631 temporary staff appointed (Cost of around N\$ 50 000 per day)
- 320 permanent staff dedicated to containment of outbreak

## **STAKEHOLDER SUPPORT**

An enormous response from the Industry was received and contributes immensely toward the containment and control of the FMD outbreak. Financial contributions were utilised to purchase foodstuffs to support the temporary staff members. Producers are also assisting with monitoring and repairing the VCF.

Other stakeholder support:

- Namibian Police at all roadblocks
- Traditional Authority support
- Other Ministry of Agriculture directorates offering support
- MeatCo
- Meat Board of Namibia

## **CHALLENGES WITH CURRENT OUTBREAK**

- The availability of vaccines proved to be a major challenge, and seems it will remain a challenge in the future as a number of SADC countries are experiencing FMD outbreaks at the moment. Only one laboratory, the Botswana Veterinary Institute, is manufacturing the vaccine. The production of the vaccine is a slow process. The estimated number of cattle to be vaccinated in the infected area of Namibia is 600 000 and in the 30 km band north of the VCF is 80 000. This means a minimum of 1.36 million vaccines are needed to complete the two rounds of vaccination. The short period of immunity

after vaccination, along with the other problems with the SAT-type virus as discussed before, are more challenges experienced.

- The prevailing drought is a major challenge, as movement restrictions will not be able to be maintained, as livestock will have to be moved to better grazing. As mentioned before, movement control is a very important part of disease control.
- Manpower and other resources needed on a 24H basis are proving to be challenging. Staff members currently in the field have now been deployed for a total of 3 months and replacements will soon be needed to replace the current staff members. Basic support of casual labourers in the form of foodstuffs is needed to support and motivate these labourers.
- Livelihood of livestock owners is deteriorating as livestock cannot be marketed.
- The open border between Namibia and Angola is a constant challenge and threat to the control of the current FMD outbreak.
- Conditions in the field create its own set of challenges, as the method of farming in the NCA means that not all animals in a herd might be presented for vaccination on the given vaccination days, and also that the respective animals might not receive 2 vaccinations as necessary.



DVS performing vaccinations against FMD and CBPP

## WAY FORWARD

Uncompromising commitment and persistence will be needed to control the current FMD outbreaks experienced in the NCA. Maintained support from the industry, the farming communities and the public is of integral importance in reaching a successful outcome.

The Namibian NCA freedom programmes to declare the NCA free from both FMD and Bovine Lung sickness (CBPP) were endorsed by the OIE in May 2015. The goal ultimately is to continue with the programmes and press forward to obtaining such freedom. The current outbreak is a setback in the progress made by Namibia and the road to freedom will be a long one.



Dusty conditions at crush pens during vaccination campaigns in NCA