

Foot and Mouth Disease outbreak report

31 August 2024



agriculture, land reform
& rural development

Department:
Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA

Report compiled by:
Directorate: Animal Health

1. Introduction and summary

South Africa had a Foot and Mouth Disease (FMD) free zone without vaccination prior to January 2019. Since January 2019, ten (10) outbreak events were reported in South Africa that compromised the status of the FMD free zone without vaccination. Six (6) of these FMD outbreak events were resolved and closed with the World Organisation for Animal Health (WOAH), and four (4) FMD outbreak events are open.

The three (3) outbreak events that occurred prior to 2021 have been resolved and closed with the WOAH. The details of these outbreak events were captured in previous technical update reports and are available on request.

The details of the outbreak events that occurred since 2021 are included in this report. This entails the following:

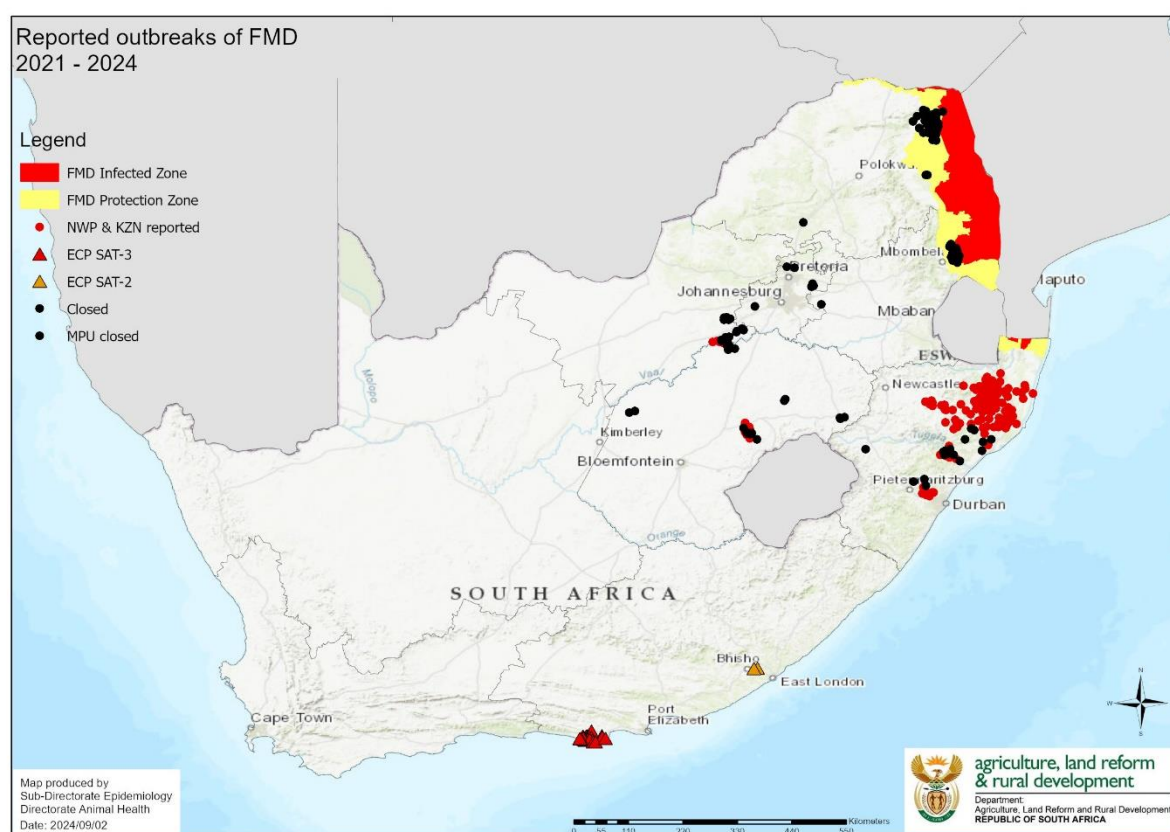
- SAT3 FMD outbreak event in Limpopo Province, with limited spread to Gauteng Province. This outbreak event has been resolved.
- SAT3 FMD multi-province outbreak event, which involved North West, Free State, Gauteng and Mpumalanga Provinces. This outbreak event is in the process of being resolved.
- FMD outbreak event of undetermined SAT type in the Free State Province, which has been resolved.
- SAT1 FMD outbreak event in the Mpumalanga Province FMD Protection Zone, which was resolved with the WOAH.
- SAT2 FMD outbreak event in KwaZulu Natal Province, with limited spread to the Free State Province. This outbreak event is still open.
- SAT3 FMD outbreak event in the Eastern Cape Province, which is open.
- SAT2 FMD outbreak event in the Eastern Cape Province, which is open.

Currently, there are two (2) Provinces with open outbreaks in the previous FMD free zone, while all other outbreaks in the previous FMD free zone have been resolved and closed with the WOAH or are in the process of being resolved.

Table 1: Summary of open and closed outbreaks per province in the previous FMD free zone without vaccination since 2021

Province	Number of open outbreaks	Number of closed outbreaks	Total number of outbreaks	Start date of last reported outbreak
Free State	19	22	41	07 Feb 2024
Gauteng	0	7	7	30 Aug 2022
KwaZulu Natal	137	17	154	04 July 2024
Limpopo	0	8	8	25 Apr 2022
Mpumalanga	0	21	21	2 Aug 2022
North West	0	18	18	22 Nov 2022
Eastern Cape	32	0	32	09 July 2024
Totals	188	93	281	

Map 1: Open and closed FMD outbreaks in the previous FMD free zone without vaccination since 2021



2. Provinces with no outbreaks/resolved outbreaks

2.1 Northern Cape Province and Western Cape Province:

No cases of FMD were reported in these two provinces and they remain FMD free without vaccination.

2.2 Gauteng Province:

Gauteng Province is regarded as FMD free as from 13 March 2024 and there are no premises under quarantine due to FMD. There have been no clinical or serological signs of virus circulation in the Province since August 2022.

All seven (7) outbreaks in Gauteng from the 2022 SAT3 FMD events have been closed with the WOA. Two (2) outbreaks that were reported in Gauteng Province as part of the 2022 Limpopo Province SAT 3 event had already been resolved and closed with the WOA in May and July 2022. Five (5) outbreaks that were reported in Gauteng Province as part of the 2022 multiple-province SAT 3 FMD event (see below) were also closed progressively.

Two (2) of these premises (a farm and a feedlot) were depopulated through controlled slaughter and the outbreaks resolved and closed with the WOA on 26 May 2023. Three (3) commercial farms were tested to confirm the absence of circulating virus after a period of 12 months since clinical end point had passed. These locations were closed with the WOA on 13 March 2024.

2.3 Limpopo Province:

There have been no outbreaks of FMD in Limpopo Province since 29 August 2023. A SAT 3 outbreak event was reported in April 2022 and affected 7 diptanks¹ in a communal grazing area. Seropositive animals were also detected at an auction, whereafter the animals were sent for controlled slaughter. The outbreak event was resolved and closed with the WOA on 29 August 2023.

¹ The word "diptank" in this report does not refer only to the physical structure where dipping is done. It refers to the area from where cattle come to the central point (the diptank) for dipping, inspection, vaccination, or any other veterinary procedures. The diptank area can thus be seen as an epidemiological unit, where cattle share common grazing and water sources.

The previous SAT2 outbreak events reported in January and November 2019 had already been resolved and closed with the WOA on 30 May 2020 and 12 August 2021 respectively. Limpopo Province has a legislated FMD controlled area, with a protection zone, where routine vaccination is done in diptanks close to the FMD infected zone. In addition, a Disease Management Area, encompassing parts of the previous FMD free zone without vaccination, was declared following the January 2019 SAT2 FMD event and has remained in place with slightly amended boundaries following the 2022 multiple province SAT3 FMD events.

2.4 Mpumalanga Province:

The historical FMD free zone of Mpumalanga Province is regarded as FMD free from 26 June 2023 and there are no premises under quarantine due to FMD. One (1) affected feedlot that was reported as part of the 2022 multiple-province SAT3 FMD event (see below) in August 2022, was effectively depopulated through controlled slaughter and the outbreak closed with the WOA on 26 June 2023. Mpumalanga province has a legislated FMD controlled area, with a protection zone, where routine vaccination is done in diptanks close to the FMD infected zone.

A SAT1 FMD outbreak event was detected in this protection zone in January 2024. This event does not affect the status of the historical FMD free zone of this province and has no implications for exports from South Africa, as movements into the rest of the country are permanently prohibited from this area. This event was caused by a SAT1 FMD strain and affected 21 diptanks with communal cattle. Cattle in affected as well as adjacent diptanks were vaccinated to arrest the spread of the virus. The last clinical cases were reported on 26 February 2024 and the outbreak was resolved on 31 May 2024.

2.5 North West Province:

North West Province is regarded as FMD free as from 5 March 2024 and there are no premises under quarantine due to FMD. There have been no clinical or serological signs of virus circulation in the Province since November 2022. All eighteen (18) outbreaks in North West Province that were reported as part of the 2022 multiple-province SAT3 FMD event (see below) were closed progressively with the WOA until February 2024.

Two (2) farms and feedlots were depopulated through controlled slaughter and the outbreaks resolved and closed with the WOAAH by 11 April 2023. Sixteen (16) farms, comprising commercial breeding herds and stud farms, were tested to confirm the absence of circulating virus once a period of 12 months after clinical end point had passed. These locations were closed with the WOAAH between 10 October 2022 and 27 February 2024.

3. Provinces with unresolved outbreaks

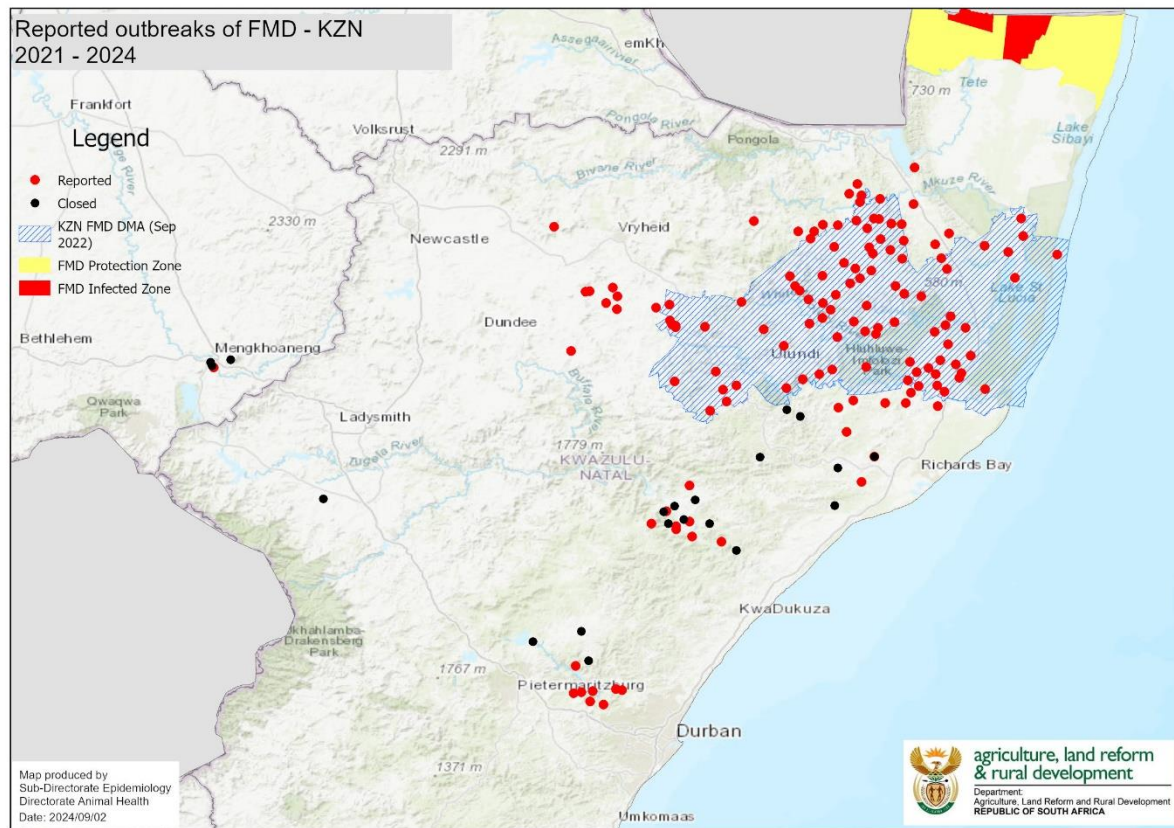
3.1 KwaZulu Natal Province:

A total of 154 outbreaks were reported in the KZN Province as part of the SAT2 FMD event that started in May 2021. The start date of the most recent outbreaks in this KZN event were reported to the WOAAH on 04 July 2024. There are still 132 open outbreaks in communal dip tanks and a few small-scale farms, as well as 5 affected game reserves, all within close proximity of each other. Resolution of this event is being complicated by the FMD carrier status of the buffalo populations in these affected game reserves.

Seventeen (17) outbreaks in KZN have been resolved and closed with the WOAAH. Two (2) feedlots outside the main outbreak area were depopulated through controlled slaughter and closed with the WOAAH in 2021. Quarantine was also lifted on fifteen (15) diptanks after negative testing and absence of clinical disease, and consequently closed with the WOAAH on 3 April 2024.

Movement control is applied on affected diptanks, and the control measures are still in place in the Disease Management Area that was instituted in 2021, with amended boundaries in 2022 (see 4.1.2). Clinical surveillance is ongoing to ensure early detection of disease, and to determine absence of disease in previously affected diptanks. Vaccination is continuing in diptanks around infected game reserves.

Map 2: Open and closed FMD outbreaks in KwaZulu-Natal Province



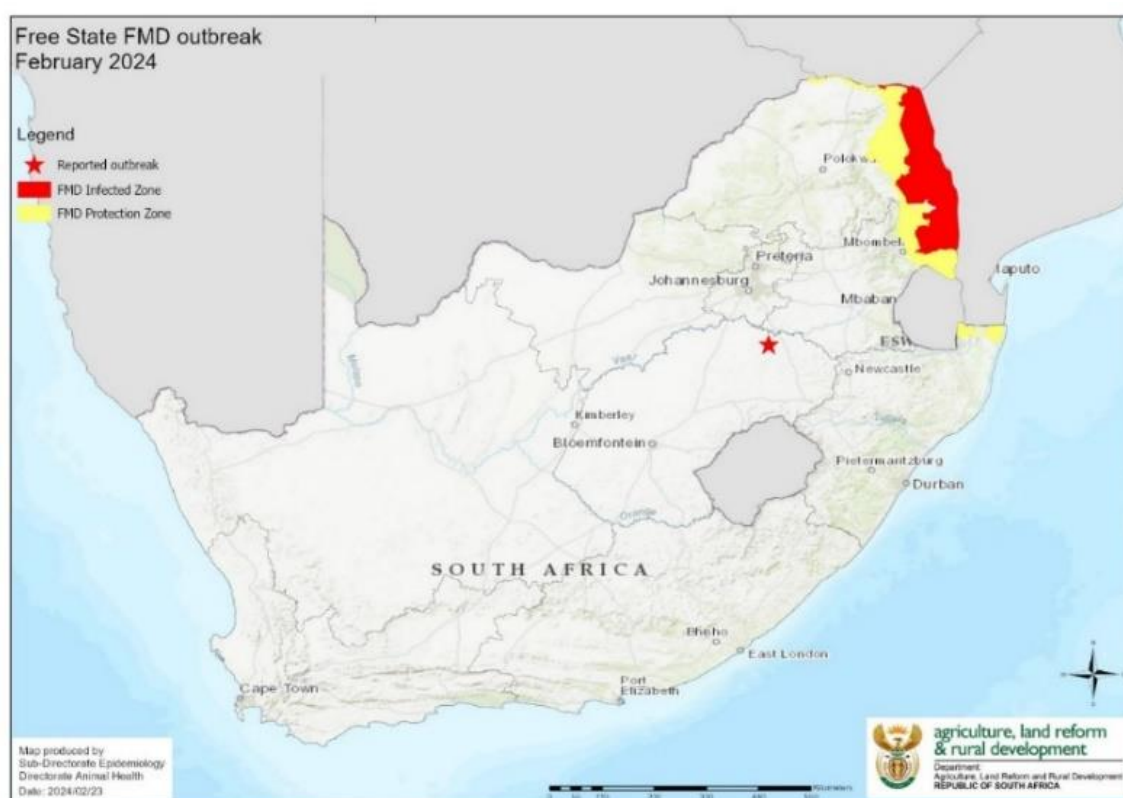
3.2 Free State Province

3.2.1 Frankfort outbreak February 2024

An outbreak event of an undetermined FMD SAT-type was reported on 21 February 2024 and remained localized in one commercial farm situated in Frankfort State Vet Area in the Free State Province. The index farm was placed under quarantine and neighbouring farms were subjected to clinical and serological surveillance. All results of clinical and serological surveillance on adjacent farms have been negative.

There is no clinical or serological evidence that FMD virus circulated on either the index farm, or the adjacent farms. The animals that tested positive on the index farm were subjected to controlled slaughter. A representative number of animals on the farm were retested after 28 days and results were negative which confirms the absence of virus circulation on the farm. This outbreak was resolved and closed with the WOA. H.

Map 3: February 2024 outbreak in the Free State province



3.2.2 Outbreaks linked to the 2021 KZN SAT2 FMD event

Two (2) outbreaks that were reported in the Free State Province as part of the 2021 KZN Province SAT2 FMD event were resolved by 29 August 2023. One (1) outbreak occurred in a communal area adjacent to an affected feedlot. This outbreak was resolved by absorbing the animals into the affected feedlot. One (1) feedlot was depopulated through controlled slaughter. Two (2) farms in this event are still open, pending the completion of the post-12-month testing.

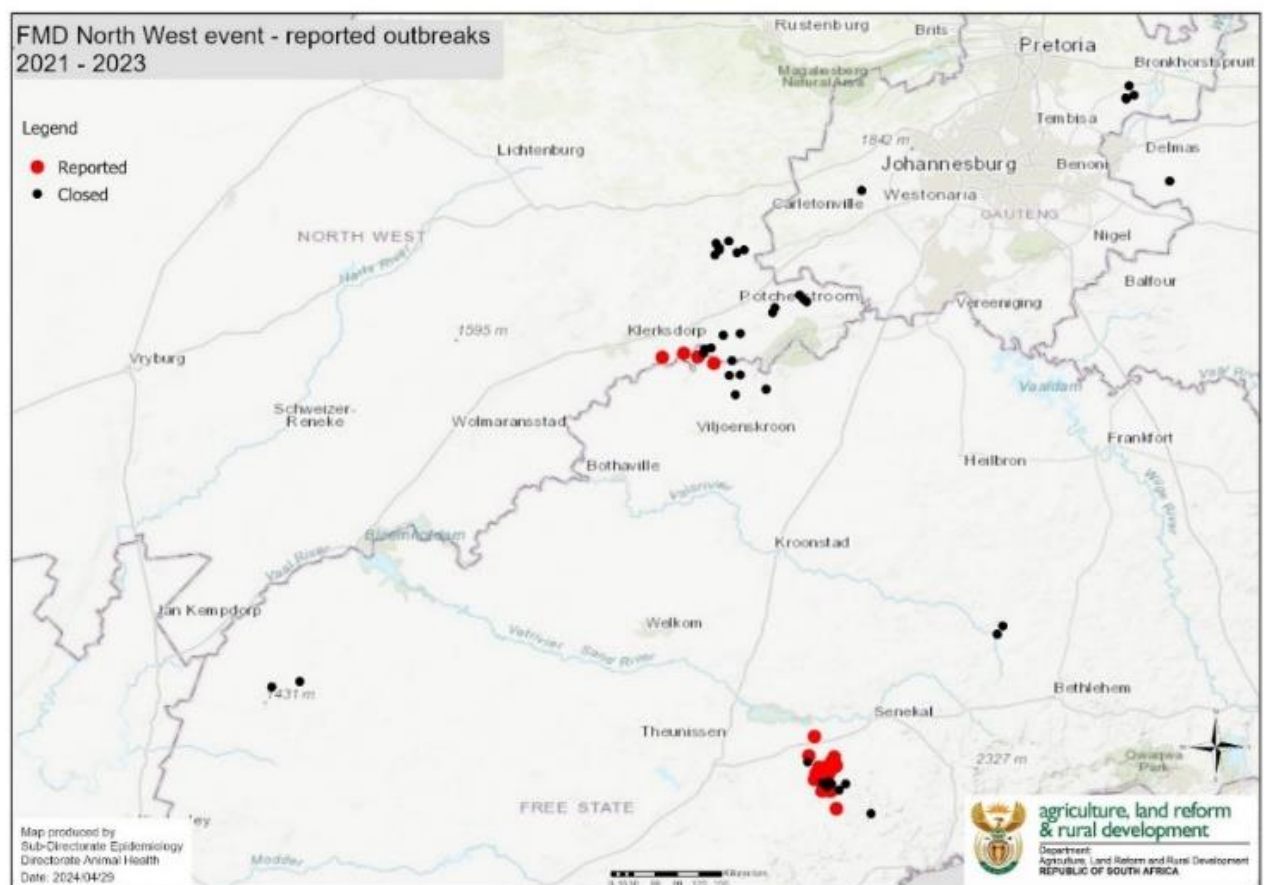
3.2.3 2022 Multiple-Province SAT3 FMD event

In the Free State Province, there are still 18 open outbreaks with the WOA from the 2022 multiple-province SAT3 FMD event, which are being resolved through testing of animals 12 months after vaccination. There have been no clinical or serological signs of virus circulation on these farms since September 2022. These farms, comprising commercial breeding herds and stud farms, remain under quarantine.

Once a period of 12 months after clinical end point had passed, each farm was sampled to confirm the absence of circulating virus. The sampling strategy includes sampling of adults as well as calves, and testing using the SPCE and NSP tests. The third round of tests are now in process.

Eighteen (18) locations from the 2022 multiple-province SAT3 FMD event have been resolved and closed with the WOAAH. In the initial period shortly after clinical end point was reached on the affected farms, fourteen (14) farms and feedlots were depopulated through controlled slaughter and the outbreaks resolved and closed with the WOAAH. Quarantine was lifted on two (2) farms following testing to prove the absence of circulating virus after 12 months.

Map 4: Open and closed outbreaks in Free State Province



3.3 Eastern Cape Province

3.3.1 SAT3 outbreak event in Humansdorp

Clinical signs of Foot and Mouth Disease (FMD) were detected on 30 April 2024 on a farm in Humansdorp in the Eastern Cape Province. Samples were submitted to the laboratory at Onderstepoort Veterinary Research and tested positive for FMD SAT3 on serology and PCR. The virus responsible for the outbreak is similar to the one that caused the 2021 Multiple Province outbreak event referred to earlier in this report. All farms in a 10km radius from the index farm were subjected to clinical and serological surveillance as deemed necessary.

Cattle on 32 farms have tested positive for the disease. Cattle on these positive farms have been vaccinated to decrease the viral load and to control the severity of the clinical signs seen in especially dairy cattle. Positive farms were placed under quarantine with strict movement control. Despite efforts to implement biosecurity measures on the farms, the disease continued to spread in the area and to adjacent properties. Requests were received to pre-emptively vaccinate dairy cattle on farms that have not been confirmed as being FMD positive but were perceived to be at high risk of infection. Permission was given to pre-emptively vaccinate cattle on 37 farms.

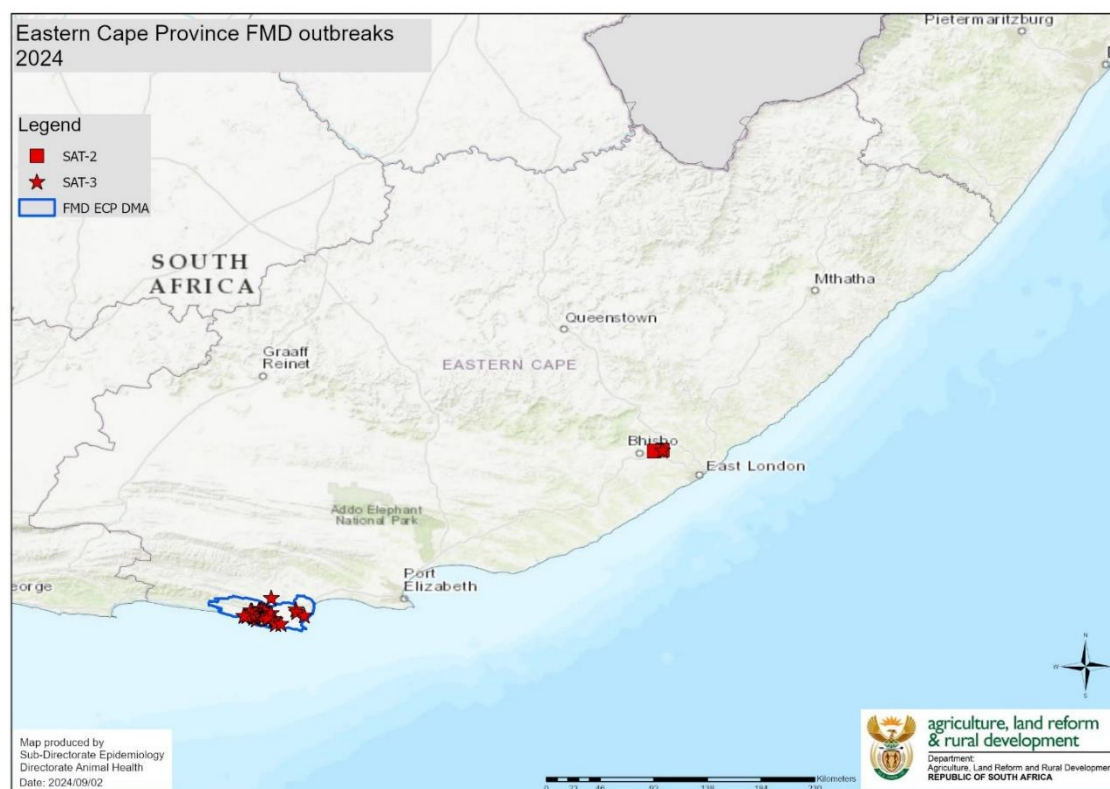
In a further effort to prevent spreading of the disease out of the affected area, the Department of Agriculture declared a Disease Management Area (DMA), which includes parts of the Kouga and Kou-kamma Municipalities. The DMA will make it possible to control movements of animals out of, into and within the affected area. The main aim of the DMA is to prevent outward spread of the outbreaks, to areas not previously affected. In addition, the DMA aims to decrease further spread of the disease within the affected area, as this will decrease the viral load and infection pressure of the area. No cloven-hoofed animals, animal products derived from cloven-hoofed animals or genetic material of cloven-hoofed animals may be moved from, to, or within the DMA except under authority of a state veterinary permit and in compliance with the conditions of such permit.

3.3.2 SAT2 outbreak event in East London

A serologically positive location was identified in the East London area of the Eastern Cape Province. Surveillance of the surrounding farms have identified a second positive location, but further testing on this farm and adjacent farms have not yielded any positive results. The virus on the index farm was identified as a SAT2, similar to the SAT2 virus that caused the

2021 KZN SAT2 event. In parallel, a SAT 3 virus was also identified in this location, which is the same as virus that caused the outbreaks in Humansdorp, described above.

Map 5: Outbreak in the Eastern Cape Province, May 2024



4. Control Measures implemented in recent FMD outbreaks

4.1 Movement control

4.1.1 Quarantine of affected farms and feedlots:

All affected farms and feedlots are placed under quarantine, with strict movement control, census of animals on the farm and individual identification where possible. These locations are well fenced and movement of animals from these farms can be effectively prevented.

4.1.2 Declaration of Disease Management Areas:

Where the outbreaks occurred in communal grazing land in KZN Province and Limpopo Province, the Minister of Agriculture, Land Reform and Rural Development declared Disease Management Areas (DMA) in the Government Gazette to cover the wider epidemiologically high-risk areas.

With the DMAs, cattle, sheep and goats were, initially between May and September 2022, not allowed to be moved into, out of and through the area, as well as from one property to another for any reason, except for direct slaughter at a registered abattoir. Such movements required veterinary health certification and a movement permit. Cattle, sheep and goats were allowed to be slaughtered for own consumption or for cultural or religious purposes, but only in the same epidemiological area where they were kept prior to slaughter. Visible Veterinary Patrols and roving and stationary road blocks were directed to cover high risk areas according to information on possible movement of animals.

Both the KZN and Limpopo DMAs were made smaller in October 2022, based on risk assessment and surveillance of the areas involved. The movement of cattle, sheep and goats in the DMAs remains under state veterinary permit control but is allowed if deemed low risk and under specific risk mitigation conditions. As noted above, a DMA was declared in the Eastern Cape on 26 July 2024 to prevent outward spread of the outbreaks and to decrease the viral load and infection pressure of the area.

4.1.3 Movement control in unaffected locations:

Since October 2022, all livestock owners must provide a declaration of health and origin and must obtain the necessary Stock Theft documents for all cattle, sheep and goats to be moved from their property of origin onto other properties. Recipients of such animals must give written agreement to isolate new livestock for 28 days before introducing them into the main herds of the destination farm. This requirement was again emphasized in the Government Gazette Notice of 26 July 2024.

The control measures for movement of cloven-hoofed animals and products out of the FMD protection zones have not changed. All cattle presented at auctions are inspected before being admitted to the auction pens. If any animal presents with clinical signs, the auction is suspended while investigations are conducted, including laboratory confirmation ruling out FMD.

4.2 Vaccination

Approximately 634 000 animals have been vaccinated to control the 2021-2022 FMD outbreaks. Cattle in communal areas were vaccinated on a risk-based approach, to ensure that the areas at highest risk are vaccinated first. Cattle on affected farms and feedlots were also vaccinated to reduce the viral load and lower the risk of spreading of disease while the controlled slaughter processes are ongoing.

A total number of 109 134 cattle and 635 sheep were vaccinated since the start of the outbreaks in the Eastern Cape in May 2024. Vaccination is continuing and has been extended properties deemed to be at high risk in the Humansdorp outbreak event, to curtail further outward spread of the disease. Routine vaccination in the protection zone is also continuing. The vaccine being used is procured from the Botswana Vaccine Institute and encompasses all three SAT types. Only government officials are allowed to vaccinate animals as per the outbreak control plans.

4.3 Controlled slaughter

Affected feedlots and some commercial farms are depopulated through controlled slaughter at designated abattoirs. The risk materials are processed or disposed of and only known safe products are released into the local market. No meat from affected animals may enter the export market. The infected properties remain under quarantine until 28 days after depopulation and disinfection. The outbreaks on the properties are officially closed once the disinfection process has been concluded. Around 200 000 animals have been sent for controlled slaughter to depopulate farms during the 2021-2022 outbreak events.

4.4 Resolution of outbreaks

Outbreaks on individual premises are resolved and closed with the WOAHP in one of the following manners:

4.4.1 Depopulation

Depopulation can be achieved either through controlled slaughter, or by removing animals with prior permission of the Director Animal Health to another approved property, such as another property also under quarantine for FMD. Once the affected premises is no longer populated by any FMD susceptible livestock, cleaning and disinfection for the purpose of lifting quarantine can commence.

If the premises can be effectively cleaned and disinfected, then application for lifting of quarantine can be made 28 days after cleaning and disinfection. In the case of extensive kraals/camps which cannot be effectively disinfected, such kraals/camps will be regarded as disinfected if there have been no FMD susceptible species in the kraal/camp for at least 42 days.

4.4.2 Post-12 months testing

Premises like breeding farms and diptank areas, that are not depopulated following an outbreak of FMD, are subjected to rigorous laboratory testing of the remaining cloven-hoofed livestock to confirm cessation of virus circulation more than 12 months after the outbreak. Adult animals present during the outbreak are likely to test serologically positive due to infection and/or vaccination and the sensitivity of agent identification testing is not considered sufficient. Thus, serological surveillance is conducted more than 12 months after an outbreak, with sampling of young animals that were born after presumed cessation of virus circulation and/or vaccination and that, at the time of sampling, are already more than 6 months old to avoid detection of maternal antibodies. If the serological test results duly confirm the absence of FMD virus circulation, quarantine is lifted, but the adult sero-positive animals remain subject to life-long traceability requirements based on individual animal identification.

5. Confirmation of diagnosis

Confirmation of disease is done using a combination of the Solid Phase Competition ELISA (SPCE), Non-Structural Protein (NSP) ELISA, and Polymerase Chain Reaction (PCR). All diagnostic tests are performed at the ARC Onderstepoort Veterinary Research Transboundary Animal Diseases laboratory (OVR-TAD).

6. Epidemiological investigation

The FMD outbreaks that were detected in the country since 2021 have been caused by SAT 1, 2 and 3 viruses. The origin of all outbreaks could not be traced, but the viruses identified seem to be originating from the Kruger National Park. The clinical presentation of the disease in different locations varies, from the classical clinical picture in some locations, to absence of clinical signs in others. Surveillance is therefore based on both clinical inspections, including mouthings, as well as serology and agent identification.

A SAT 3 virus originated in early 2022 in Limpopo Province, causing an event in that province and then spread to North West Province, and from there to Free State, Gauteng and Mpumalanga Provinces as the 2022 multi-province SAT3 FMD event. The source of introduction of this virus into the previously FMD free zone of Limpopo Province could not be determined, as the virus is not closely linked to any viruses recently identified in the infected or protection zones of South Africa. The animals that caused the outbreak in North West Province moved from an area in Limpopo Province that was not under restriction at the time of the movement. This same virus has been identified in the outbreak event in Humansdorp in the Eastern Cape Province, which started in May 2024, as well as the outbreak event in the East London area of the Eastern Cape Province.

In KwaZulu Natal Province, epidemiological investigations to date have not revealed a source for the 2021 SAT2 FMD event. However, the virus responsible for the event is closely related to a SAT 2 virus responsible for an outbreak that occurred in the Protection Zone in northern Limpopo Province in 2019. It is therefore most likely that illegal movement of animals from the Protection Zone in Limpopo to KZN Province, may have been the cause of the outbreak in KZN. This same virus has been identified in the outbreak event in East London in the Eastern Cape Province, which started in May 2024. The virus responsible for the outbreak in the FMD Protection zone in Mpumalanga in January 2024 was confirmed as SAT-1. The origin of this virus has not yet been determined but considering the proximity of the area to the Kruger National Park, this would be the most likely source.

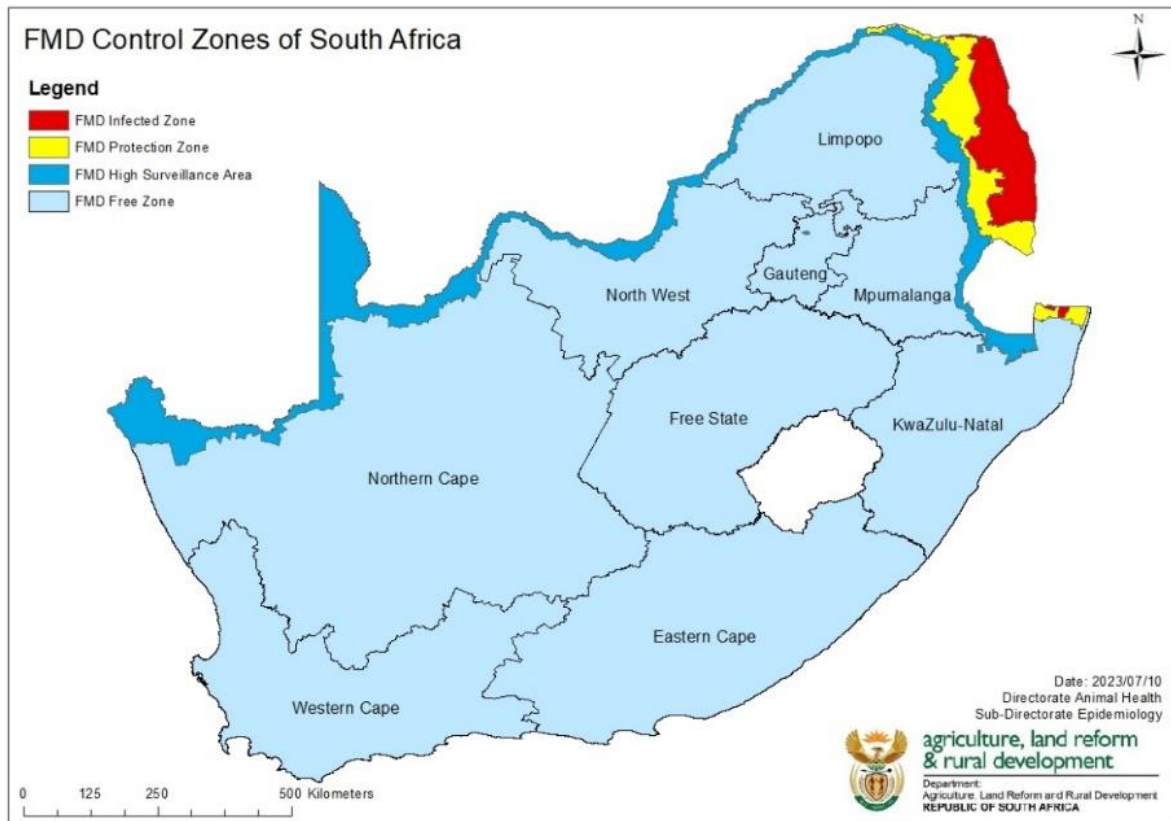
In the February 2024 outbreak in the Free State, cattle exhibited mouth lesions consistent with FMD during a health declaration inspection by a private veterinarian. Samples were collected and the results were positive on serology for both specific and non-specific proteins of FMDV, as well as VNT. However, no virus has been detected on PCR and the SAT type could not be established.

7. FMD Control Zones in South Africa

Although the FMD free zone without vaccination status was lost in 2019, the control measures for FMD remain in place as stipulated in the Veterinary Procedural Notice for the Control of FMD in South Africa. The map hereunder illustrates the FMD control zones that remain in place and references in this report to free zone, protection zone and infected zone must be

regarded in this light. For the purposes of trade, this means that export is permanently prohibited from the FMD infected zone and the FMD protection zone.

Map 6: FMD Control Zones



M. Mlaja.
Director Animal Health