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## Report of the 26th Meeting of the WOAH Sub-Commission for Foot and Mouth Disease in South-East Asia, China and Mongolia (16 to 18 March 2022)



World Organisation for Animal Health (WOAH)  
Sub-Regional Representation for South-East Asia

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## EXECUTIVE SUMMARY

The 26<sup>th</sup> SEACFMD Sub-Commission Meeting was held virtually from 16 to 18 March 2022 from 14.00 to 17.00 (Bangkok time). The 3-day meeting was attended by 130 participants from SEACFMD Member Countries, non SEACFMD Countries in the Asia Pacific region, and the Food and Agriculture Organization of the United Nations (FAO), the Association for Southeast Asian Nations (ASEAN) Secretariat, World Organisation for Animal Health (WOAH, founded as OIE) and its Reference Laboratories, Donors, Academic Institutions, and Vaccine Manufacturers.

A Pre-Sub-Commission meeting held on **16 March 2022** started with a brief welcome and introduction to the 26<sup>th</sup> SEACFMD Sub-Commission meeting by Dr Ronello Abila, WOAHS Sub-Regional Representative for South-East Asia. The SEACFMD Members provided updates on the FMD situation by the endemic countries and maintenance of FMD free status by the FMD free countries. The SEACFMD Members also reported the progress of SEACFMD Campaign activities. A technical presentation focused on 'Key principles of official recognition of FMD-free status, endorsement of FMD control programme and their maintenance' was made by the Status Department. The plenary discussion was held using Mentimeter to identify the relevant indicators to show that Members are in compliance with WOAHS standards in the prevention and control of FMD; levels of compliance with the standards; challenges for not being able to comply with the standards, and solutions for overcoming these challenges.

The Sub-Commission meeting on **17 March 2022** started with the election of the President, Vice Presidents, and Steering Committee members amongst the Sub-Commission members in a Zoom closed session. The official opening session commenced with a recorded message from Dr Monique Eloit, WOAHS Director General, followed by the announcement of the results of the SEACFMD Sub-Commission Officers election. Presentations on the global and regional FMD situation, progress of the SEACFMD campaign; and endorsement of the SEACFMD Roadmap M&E framework and Implementation Plan ensued. SRR-SEA also introduced the SEACFMD dashboard, created as a communications page on SharePoint, containing all relevant materials on SEACFMD including a SEACFMD resource toolbox and FMD situation interactive dashboard. The progress of the ongoing evaluation of the SEACFMD Campaign from 1997 to 2020 was presented to update the Members as well as to seek their support during the field evaluation. The plenary session was held using Mentimeter to determine whether FMD is a priority programme for the members amongst Transboundary Animal Diseases (TADs) including the feedback on ranking for FMD in terms of priority for control; and how Members would continue to ensure strong political commitment and resources for FMD control.

The Post Sub-Commission meeting was held on **18 March 2022** to interact and discuss with the non SEACFMD countries, Partners, Research Institutions and other stakeholders to strengthen collaboration and to enhance control of FMD and other Transboundary animal diseases (TADs) in the region. There were technical presentations from the FMD Reference Laboratories and Academic Institutions on the new development, research or field studies related to FMD. The participants from the non-SEACFMD countries also updated the meeting on the FMD situation and maintenance of FMD free status by the FMD endemic countries and FMD free countries, respectively. The participants were divided into three groups during the breakout session with (i) Partners focused their discussion on enhancing effective FMD control in the region; (ii) Non SEACFMD countries discussing on strengthening collaboration between SEACFMD Members and non SEACFMD Members; and (iii) SEACFMD Members discussing on non FMD issues and synergizing FMD and other TADs control.

The introduction of SEACFMD dashboard and SEACFMD toolbox by the SRRSEA was appreciated and drew lots of attention from the Members and participants. The participants also appreciated the substantial progress of the SEACFMD campaign despite the ongoing COVID pandemic. The meeting also offered an avenue for members to discuss on the current challenges of SEACFMD Campaign and to seek guidance to enhance the implementation of SEACFMD campaign. With the endorsement of M&E framework and Implementation Plan for SEACFMD Roadmap 2021-2025 and the ongoing evaluation of the SEACFMD Campaign from its inception in 1997 to 2020, it is expected to further enhance the SEACFMD Campaign and FMD control in the region.

## RECOMMENDATIONS

The Sub-Commission for foot and mouth disease in South-East Asia, China and Mongolia held its 26<sup>th</sup> Meeting from 16 to 18 March 2022. The Sub-Commission meeting was held virtually considering ongoing COVID-19 pandemic. The meeting was attended by the SEACFMD Sub-Commission Members, National Coordinators, EpiNet/ LabNet Focal persons from the SEACFMD Members, participants from the World Organisation for Animal Health (HQ, RRAP and SRRSEA) and partners including FAO, donors, Research Institutions, Universities and Vaccine Manufacturers.

### Considering

- the endorsement of the SEACFMD Roadmap 2021-2025 by the 25<sup>th</sup> SEACFMD Sub-Commission Meeting in December 2020;
- the endorsement of SEACFMD Roadmap Implementation Plan and monitoring and evaluation (M&E) framework at the 26<sup>th</sup> SEACFMD Sub-Commission Meeting;
- the availability of Global tools (Global FMD control strategy and The Progressive Control Pathway for FMD) and relevant provisions of WOAHA standards (henceforth, the “Standards”) for FMD prevention and control;
- the outcomes and recommendations of the past SEACFMD Governance meetings;
- the existing FMD status of the SEACFMD member countries including their FMD PCP stage and FMD situation at the global and regional level;
- the importance of regional coordination for the effective control of FMD;
- the challenges faced in the region due to emerging infectious diseases such as African swine fever and Lumpy skin disease.

### The Sub-Commission:

#### Coordination and Programme Management:

1. CONGRATULATES following Members for being elected to various SEACFMD Sub-Commission Positions at its 26<sup>th</sup> Meeting:
  - Malaysia as the new President of the SEACFMD Sub-Commission;
  - Mongolia and Thailand as the new Vice Presidents;
  - Myanmar and Philippines as the member of the SEACFMD Steering Committee
2. THANK Vietnam (President), China (Vice President), Philippines (Vice President), Myanmar and Thailand (as additional members of the Steering Committee) for their leadership since 24<sup>th</sup> Sub-Commission meeting;
3. NOTES the progress of the SEACFMD campaign in the prevention and control of FMD since the 25<sup>th</sup> Sub-Commission Meeting;
4. ENDORSES the recommendations from the 24<sup>th</sup> Meeting of the National Coordinators in July 2021 and joint EpiNet / LabNet meeting in February 2021;

5. ENDORSES the SEACFMD Roadmap Implementation Plan and monitoring and evaluation (M&E) framework; and AGREE to further work on the baseline and targets for the indicators to facilitate measuring of the SEACFMD Roadmap 2021-2025 progress;
6. ENCOURAGE members to support the ongoing evaluation of SEACFMD campaign from 1997 to 2020;
7. ENCOURAGE members to use SEACFMD campaign model for the coordination of emerging infectious diseases such as ASF and LSD; and to SYNERGIZE FMD and other TADs control;
8. COMMEND the active participation of non SEACFMD neighbouring countries in the Meeting, and continue to further COLLABORATE between SEACFMD and non SEACFMD countries in Asia Pacific region to enhance FMD control in the region;
9. COMMEND the active participation of the partners (World Organisation for Animal Health Collaborating Centres and Reference Laboratories, FAO, donors, Academia, and Vaccine Manufacturers) in the meeting, and continue to further strengthen its collaboration to enhance effective control of FMD in the region.

#### Technical

10. AGREE to continue to conduct capacity building for human and technical resources in Members such as outbreak investigation and management, advance epidemiology and data analysis, use on PCR for routine diagnosis, etc;
11. AGREE to work on procedures to validate and declare freedom from Asia 1 serotype from the SEACFMD region;
12. NOTES the satisfactory progress in digitizing the communication materials and producing a SEACFMD dashboard; and this should be PURSUED to facilitate easy access of these resources by the Members and stakeholders;
13. ENCOURAGE to improve FMD reporting with the new WAHIS platform and in line with future development of WAHIS regional core which is linked with the renovation of ASEAN Animal Health Information System (ARAHIS);
14. URGES Members to strengthen epidemiological investigation and management of FMD outbreaks with collection of samples and laboratory diagnosis including virus characterization and ensure closure of outbreak;
15. ENCOURAGE Reference Laboratories in Member States (with support from WOAHA and FAO Reference Laboratories) to select representative FMDV reference antigens that can be used in studies to evaluate and compare the performance of FMD vaccines employed in the region;
16. ENCOURAGE Members to maintain FMD free status and Endorsed official Control Program with timely submission of Annual Reconfirmation dossier in line with the Standards;
17. ENCOURAGE Members to strengthen preparedness to FMD incursion by the FMD free countries and emergence of new FMD virus Strains by FMD endemic countries; including emergency demand and supply of vaccines;
18. ENCOURAGE Members and Partners to use modelling for identifying priority areas for vaccination; and CONDUCT anthropological studies on perceptions and behaviour of farmers on vaccination to enhance FMD vaccination.



### Acknowledgements

19. THANKS to SEACFMD Members including Sub-Commission Members, National Coordinators, EpiNet and LabNet Focal Persons for their active participation in the meeting;
20. THANKS to non SEACFMD Members, Partners and Observers for their active participation in the meeting;
21. THANKS to the SRRSEA for the successful organization of the 26<sup>th</sup> Sub-Commission meeting.

## ELECTION OF SUB-COMMISSION OFFICERS

To enhance ownership of the SEACFMD Campaign at regional and national levels, the governance of the SEACFMD Sub-Commission was revised such that only World Organisation for Animal Health Delegates can vote on the Sub-Commission's policies and decisions and be elected to key positions of the Sub-Commission.

Accordingly, the revised Terms of Reference for the Sub-Commission were endorsed on 4 September 2019. The role of the Sub-Commission for foot and mouth disease in South-East Asia, China and Mongolia are to:

- Provide strategic direction to the SEACFMD Campaign and Sub Regional Representation, Bangkok, in support of prevention, control and eradication of foot and mouth disease in the region.
- Encourage programme ownership by member countries, and foster a spirit of cooperation and commitment by member countries
- Coordinate activities and provide advice and assistance whenever possible

In line with the approved TOR for the SEACFMD Sub-Commission, the President and two Vice-Presidents are elected, by Delegates, among Delegates of Member Countries for a period of two years. Two additional Delegates of Member Countries are elected as members of the Steering Committee for a period of two years.

Before the Sub-Commission meeting, the election of Sub-Commission Officers for 2022 was held in a zoom closed session on 17 March 2022 from 1.30 to 2.30 PM. Dr Abila, Sub-Regional Representative for South-East Asia, welcomed SEACFMD Sub-Commission members to the election of Sub-Commission Officers. He also thanked the outgoing President (Vietnam), Vice Presidents (China and Philippines) and additional members of the Steering Committee (Thailand and Myanmar) for their leadership since 24<sup>th</sup> Sub-Commission meeting. Dr Abila also asked the members to propose nominations for the various SEACFMD Sub-Commission Positions. After receiving the nominations, following members were elected to various SEACFMD Sub-Commission Positions at its 26<sup>th</sup> Meeting:

- Malaysia as the new President of the SEACFMD Sub-Commission;
- Mongolia and Thailand as the new Vice Presidents;
- Myanmar and Philippines as the member of the SEACFMD Steering Committee.

The newly elected President (Malaysia) chaired the Sub-Commission Meeting on 17 March 2022 and graced the closing session on 18 March 2022 with motivational closing remarks. The two Vice Presidents (Mongolia and Thailand) chaired a session each during the Post-Sub-Commission meeting on 18 March 2022.

# MEETING REPORT

## Introduction

### Background

The South-East Asia and China Foot and Mouth Disease, China and Mongolia (SEACFMD) Campaign is a regionally coordinated programme to combat foot and mouth disease (FMD) in South-East Asia, China and Mongolia. Initiated in 1997, it now enters its 6th phase of implementation under the guidance of the SEACFMD Roadmap 2021–2025. The SEACFMD Governance is linked to the existence of a Sub-Commission of the SEACFMD Campaign, an elected SEACFMD Steering Committee, nominated National Coordinators and an epidemiology (EpiNet) and a laboratory network (LabNet) Focal Persons. The Sub-Commission provides the policy guidance and strategic direction to the SEACFMD campaign and the Sub Regional Representation, Bangkok, to support prevention, control and eradication of FMD in the region.

The 26<sup>th</sup> SEACFMD Sub-Commission Meeting was held virtually (Zoom) on **17 March 2022** to update the Sub-Commission and Steering Committee Members on the global and regional FMD situation, and progress of the SEACFMD campaign; and to endorse the SEACFMD Roadmap M&E framework and Implementation Plan. During the 26<sup>th</sup> Sub-Commission meeting, the President, two Vice Presidents and two Steering Committee members among the Sub-Commission members were elected.

A Pre-Sub-Commission meeting was held on **16 March 2022** to seek updates from members on the FMD situation and maintenance of FMD free status by the FMD infected and FMD free countries, respectively. The Post Sub-Commission was held on **18 March 2022** to interact and discuss with the non SEACFMD neighbouring countries, Partners, Research Institutions and other stakeholders to strengthen collaboration and to enhance control of FMD and other Transboundary animal diseases (TADs) in the region.

### Objectives

The 26<sup>th</sup> Meeting of the SEACFMD Sub-Commission will have the following objectives:

1. To update the members on the progress of SEACFMD campaign.
2. To update the members on the regional and global FMD situation in the wake of COVID-19 pandemic.
3. To endorse the M&E framework for the SEACFMD Roadmap 2021 – 2025.
4. To endorse the SEACFMD Roadmap 2021 – 2025 Implementation Plan.
5. To elect President and two Vice Presidents of the Sub-Commission; and two additional Steering Committee members.
6. To discuss on any issues that affects implementation of SEACFMD campaign and other Transboundary Animal Diseases (TADs)
7. To discuss with the non SEACFMD neighbouring countries, Partners and other stakeholders to strengthen control of FMD and other TADs in the region.

In total, 150 participants attended the meeting including participants from SEACFMD Member countries, East Asia, South Asia and Pacific region, WOAHA Collaborating Centres and FMD Reference Laboratories, Research and Academic Institutions, Vaccine Manufactures and Private Sectors.

## SEACFMD PRE-SUB-COMMISSION MEETING REPORT (16 March 2022)

### Opening session

Dr Ronello Abila, Sub-Regional Representative for South-East Asia welcomed all the participants from Members (SEACFMD and non SEACFMD) and partners. Dr Abila informed the participants that the objectives of the pre-sub commission meeting was to share updates amongst members on the FMD situation and maintenance of FMD free status by the FMD infected and FMD free countries, respectively and to facilitate the discussions on key issues affecting implementation of SEACFMD campaign.

### Update from SEACDFMD Members

The National Coordinators of the SEACFMD Members made a brief presentation based on the template provided by SRR SEA. The FMD infected countries provided an update on the FMD epidemiological situation in 2021 including the key FMD prevention and control strategies implemented by them. FMD free countries provided updates on prevention activities focused on maintaining FMD free status, including activities on preparedness and contingency planning. SEACFMD Members also enlisted the main challenges faced during the implementation of FMD prevention and control activities and some key recommendations to address these challenges.

#### **FMD infected countries:**

##### Cambodia

Dr Sorn San, Deputy Director General of General Directorate of Animal Health and Production (GDAH) had delivered country presentation. A total of 36 FMD outbreaks were reported in 8 provinces in 2021, involving mainly Serotype O'. In his presentation he informed that GDAH developed 10 years strategies planning framework for livestock development; and National action plan for FMD control. Some of the ongoing FMD prevention activities implemented by GDAH are active and passive surveillance including monthly animal disease reporting system, hotline, and social media (Facebook). Some of the challenges encountered in FMD prevention and control are Illegal animal movement, laboratory capacity, disease reporting system, high number of backyard farms that have low bio-security, limited FMD vaccine coverage and inadequate resources. To address these challenges, GDAH plans to enforce existing legislation on disease control and prevention, strengthen lab capacity in disease diagnostic and animal disease surveillance systems and improve stakeholder collaboration in FMD control and prevention. Additionally, the work is in progress to increase FMD vaccination coverage, to enhance bio-security practice at farm level and to encourage farmers to make farm registration and apply for GDAH certification. ([Presentation available here](#)).

##### China

The presentation by Dr Jijun HE, Lanzhou Veterinary Research Institute (LVRI) focused on the FMD virus types circulating in China. He informed the participants that multiple strains of Serotype O (O/Ind-2001,

O/Mya-98, O/CATHAY) are circulating in China out of which the sub lineage of O/Ind-2001-e is reportedly dominant in cattle. No clinical outbreaks of Mya-98 reported in 2021 however this strain is still circulating in Pigs. Serotype A/Sea-97 strain detected in 2021 during the active surveillance on the southwest border of the country. Serotype A is not detected since 2019. The Number of clinical cases reported in 2021 is lower compared with previous years.

Some of the key FMD prevention and control activities implemented by LVRI are FMD surveillance including monitoring of FMD free zones, vaccination and post vaccination monitoring, vaccine matching and animal challenge test, and trainings (one international, two national and 14 local level trainings and Proficiency testing on FMDV typing – QRT-PCR with 35 laboratories). Some of the key recommendations to enhance FMD prevention and control in China are conducting epidemiological studies and molecular diagnosis to enhance detection of complex FMDV strain, implementing booster vaccination particularly in backyard farms to improve the herd immunity, synergize with other TAD control and strengthen local veterinary support by means of policy intervention, training, and budgetary support ([Presentation available here](#)).

## Laos

Mr Kethsana Inthavong, Technical Officer of Department of Livestock and Fisheries (DLF) informed the meeting that no FMD outbreaks were reported in 2021. The FMD prevention activities includes passive surveillance, implementation of strategic vaccination campaign in FMD control zone in Sing District, Luangnamtha Province. Additionally, he also reported that the training programme to strengthen FMD diagnostic capacity with focus on antibody and antigen detection using RT-PCR in Laos. The distribution of FMD awareness materials such as poster and handbook are also being pursued ([Presentation available here](#)).

## Malaysia

Dr Jamaliahbinti Senawi, Head of Animal Disease and Zoonoses Control Section presented FMD situation in Malaysia. In Peninsular Malaysia, 26 outbreaks reported affecting 157 animals in 2021 with maximum number of outbreaks and cases in Cattle (23 outbreaks affecting 151 cattle). Of the total reported outbreaks, 50% were due to Serotype O, 23 % were untyped and remaining 27% are not sampled. The factors associated with these outbreaks are due to no or partial FMD vaccinations, and animal movement. The Department of Veterinary Services (DVS) has updated that the National Strategic Plan for FMD 2018 –2023 were revised in-line with SEACFMD & National FMD roadmap for Malaysia 2021 -2025. They also reviewed and revised SOP (Standard Operating Procedure) for FMD prevention and control activities for the National FMD roadmap for Malaysia 2021 -2025. Additionally, DVS also confirmed the ongoing development of Bio-safety level (BSL 3) for FMD (2021 -2025).

DVS highlighted the FMD prevention and control measures including revision of legislation, integration of e-Vet-Permit, strengthen border control cooperation with the State Government at the borders and related agencies, and vaccination strategy. The participants were also informed about the development of FMD free zones with vaccination at Langkawi Island, Kedah districts in Johor including Johor Bahru, Kulai, and Pontian). Cost efficient synergies with other Transboundary Animal Diseases (TAD's) were pursued such as surveillance and testing for multiple diseases using the same sample. ([Presentation available here](#))

## Mongolia

Dr Bodisaikhan Khisgee, Senior Specialist of the General Authority of Veterinary Services (GAVS) described epidemiological features of FMD in Mongolia. In 2021, four major waves of FMD occurred in Mongolia

affecting 170 soums in 20 Provinces since March 2021. A total of 147.3 thousand livestock showed obvious symptoms. The World Reference Laboratory (WRL) for FMD confirmed that cases were caused by a virus containing the O-serotype ind-2001e lineage. This indicates that a new gene has been introduced in Mongolia. This widespread of FMD outbreak in Mongolia is due to uncontrolled movement of livestock due to the nomadic pastoralism, lack of vaccinations, and severe weather associated with climate change.

The GAVS had identified a need to change the previous strategy of dividing Mongolia's territory into three zones. The sero-surveillance is found useful to identify herd-level infections while sequential immunization of non-infected susceptible animals has been carried out in 2021. The biosecurity and movement control are currently being implemented. He also informed the meeting about the joint project to build the capacity of private veterinary services and to build technical capacities for FMD laboratory diagnosis (including construction of new BSL 3 laboratory) and vaccine production ([Presentation available here](#)).

## Myanmar

Dr Min Thien Maw, Director of Livestock Breeding and Veterinary Department (LBVD) has shared country updates during his presentation. There were four outbreaks reported during 2021 out of which three outbreaks were due to 'serotype O' and one due to 'serotype A'. The key FMD prevention and control strategies implemented in Myanmar are rapid detection and response, establishing and expanding zones with reduced FMD incidence, and protecting and maintaining areas which are FMD free in Shan and Sagaing. He had updated about the sero-surveillance in 10 townships and FMD vaccination of 341,361 animals.

The presentation highlighted the bilateral agreement (2020) signed between Myanmar and China on "Protocol for quarantine and health requirements for slaughter of bovine that are to be exported from Myanmar to PR China". The movement of animals were monitored and controlled using an identification number such as ear tag and microchipping. The presentation also informed that FMD prevention and control group is established over social media platform and public awareness has been carried out through distribution of communication material. The reluctance of farmer to adopt animal identification has been recognized as one of the challenges which is expected to be improved via linking with insurance scheme. Among various strategies, the focus will remain in development of FMD control and free zone with vaccination to facilitate trade in 2022. ([Presentation available here](#)).

## Thailand

Dr Sith Premasathira, Senior Professional Veterinarian of Department of Livestock Development (DLD) has informed about the epidemiological situation in Thailand. In total 47 outbreaks reported in 18 provinces. The serotype detected were 29% of 'serotype O', 25% of 'Serotype A', and 27% of outbreaks were non-typed, while 14 % outbreaks the results were awaited. DLD highlighted that vaccination campaign in 2021 was changed to mass vaccination in which vaccine was distributed to cover 80% of animal population in each province. In dairy cattle, buffalo, sheep, and goat, almost 100% vaccination coverage was achieved. In beef cattle, about 97% of target population have been vaccinated. This vaccination campaign was conducted 2-3 times a year depending on the animal species targeted for vaccination.

The DLD informed the meeting about drafting of new strategy which aims to set clear targets to certain areas, to drive exports. The goal of this new strategy is to develop system and process to establish animal production zones/compartments which is safe from FMD, thereby enhance export opportunities.

The presentation highlighted the key strategies to strengthen FMD control efforts including increasing the number of standard farms and developing them into FMD-free farms; facilitating Public Private Partnership on establishment of FMD-free zone/compartment especially in pig farms and conducting studies on value chain or network analysis for each susceptible animal ([Presentation available here](#)).

## Vietnam

Dr Phan Quang Minh, Head of Epidemiology Division of Department of Animal Health (DAH) illustrated FMD situation and control measures in Vietnam. In total 89 outbreaks were reported which has affected 3407 animals, mainly cattle and other livestock species including Buffaloes, Pigs and Goats. FMDV 'serotype O' of ME-SA/Ind-2001-e strain has been detected of the samples (16 isolate), and 1 isolate in 2018 (for inter-laboratory comparison) from the FMDV outbreak reported from 2020 to Jan 2021.

The vaccine matching study demonstrated the strong antigenic relationship between field isolates and vaccine strains (O-3039, O1manisa, O/Tur/5/09; Ocampos, O135). The post vaccination monitoring has indicated that the high antibody response tested by VNT, ELISA in laboratory. The vaccine(s) and FMD field viruses are homogenous and the vaccine(s) with 6PD50 can provide good protection.

DAH also highlighted key activities of FMD control including implementation of the National program for FMD prevention and control for the period 2021-2025", development of FMD free zone & farms and, stamping out policy, especially for pigs. Additionally, DAH described the solution to overcome the challenges towards small-scale farms, free grazing practice, vaccines supply and cost of vaccines ([Presentation available here](#)).

## FMD free countries

### Brunei

Brunei has neither submitted nor been able to deliver the country presentation.

### Indonesia

Dr. Nuryani Zainuddin, Director of Animal Health from Directorate General of Livestock and Animal Health (DGLAHS) presented the FMD prevention activities in Indonesia to maintain its free status and its preparedness to FMD incursion. In 2021, the activities were focused on improving the sensitivity of General Surveillance and targeted Surveillance. Other activities include risk assessment for FMD incursion, strengthening laboratory capacities for FMD detection and communication activities focused on FMD preparedness.

FMD prevention and preparedness activities planned in 2022 are finalization of new Guidelines for General Surveillance and targeted Surveillance, training of Districts Vets on new Guidelines, and integrating the new guidelines with capacity building program for Vet (FETPV). Similarly, the risk assessment and communication activities for the field officer and farmers will be continued.

Amongst the key challenges described during the presentation was the pandemic restrictions affecting the smooth implementation of serological surveillance though DGLHAS indicated the strategy to overcome this challenge by continuing working with the local governments and regional disease investigation laboratory to optimize their support in the surveillance activities and improving general surveillance. Additionally, incursion of ASF led to diversion of resources to control the swine disease,

however lesson learned from ASF (risk pathways and value chains) would be utilized to update the preparedness and contingency plan for FMD ([Presentation available here](#)).

## Philippines

FMD National Coordinator, Dr Arlene Asteria V. Vytiaco from Department of Agriculture - Bureau of Animal Industry (DA-BAI) presented the FMD prevention and preparedness activities in the Philippines in 2021. This include rolling-out of FMD Risk-Based surveillance to 15 regions from 30 Sept - 21 Oct 2021; and FMD Serological Surveillance activities particularly testing of 3,865 serum samples tested for NSP ELISA. Furthermore, Animal Health Congress (Dec 2021), and awareness campaign on keeping the Philippines FMD free were also highlighted.

The participants were updated with the BAI's strategy for Risk Based Surveillance, the policy document on RBS would be to support its implementation in the country. The key activities planned under preparedness and contingency planning including mobilisation of resources for 100,000 doses of FMD vaccine buffer stock, review, and revision of the country's FMD EPP Manual, harmonising FMD activities with other animal disease control.

The presentation covered the solutions to conduct study on socio-economic impact of FMD to advocate the importance and benefits of FMD prevention; collaborate with other animal health programs to optimise the resources and conduct thorough risk assessment to prevent/mitigate the risk of importation of live FMD-susceptible animals, their meat and meat products, and genetic materials ([Presentation available here](#)).

## Singapore

Dr Christine Lee, Veterinarian from Veterinary Forensics & Pathology, Centre for Animal & Veterinary Sciences, Professional & Scientific Services delivered presentation to describe FMD prevention activities in Singapore. Dr Lee updated about the routine surveillance on susceptible animals (clinical and serological in both domestic and wild populations) and enhanced measures on import controls and biosecurity measures. The source accreditation system for meat products, aligned with WOAHA guidelines under compartmentalization arrangements for sources of live pigs was also highlighted during the discussion. Furthermore, meeting participants were updated on ASF 'Ex Sus' Table-Top Exercise through similar risk pathways of FMD, was conducted on 5 July 2021, in conjunction with the Singapore Food Agency.

Some of the activities planned in 2022 includes follow-up simulation exercises with other government agencies and industry stakeholders; review of national legislation related to control of FMD and other animal diseases; review of contingency plans and SOPs (Standard Operating Procedure) (Standard Operating Procedure) for FMD and other TADs; enhance import control measures for animal and animal products; Improve inter-agency collaboration and cooperation; and capacity building activities such as Singapore Field Epidemiology Training Programme ([Presentation available here](#)).

## Technical/ Panel Discussion

### Explore the feasibility of establishing an animal price monitoring system

Dr Robert Sanson from Assure Quality introduced the feasibility study of establishing animal price monitoring system. The presentation offered context on how live animal and meat prices strongly influence trade in livestock within and between countries. The animal movements can lead to spread of



FMD and other diseases. The animal price monitoring feasibility study will assess possibility to monitor animal and meat prices across the South-East Asia and China region, would be able to predict livestock movements. The output of the study could lead to inform decision makers in development of targeted strategies to reduce the likelihood of spread of FMD through targeted surveillance and control measures including border restrictions and market closures.

Dr Sanson informed the participants that as part of this study, the review of existing APMS in SEACFMD and other countries. The member countries were informed that a brief survey questionnaire will be rolled out to SEACFMD Member Countries, around identification of sources of animal and / or meat prices within each country. The SEACFMD Members are requested to cooperate and complete the questionnaire which will be sent out for the completion via email.

### Key principles of Official recognition of FMD-free status, endorsement of FMD control programme and their maintenance

Dr Min Kyung Park, Head of the Status Department, World Organisation for Animal Health delivered comprehensive presentation focused on key principles of official recognition of FMD free status, endorsement of FMD control programme and their maintenance. The presentation aimed to support veterinary services in the preparation of dossier and essential steps to be undertaken to demonstrate the evidence of the activities implemented as per the WOAH Terrestrial Code by the member country. The relevant articles under this [Chapter 8.8](#) (Infection with Foot and Mouth Disease Virus) were explained while significance of horizontal chapters was also covered in her presentation.

She emphasised on the importance and steps to demonstrate evidence broadly under five key technical areas: (i) early warning/ detection system (ii) FMD surveillance (iii) Control of movement of animals and animal products (iv) Vaccination coverage and population immunity (v) Control programme: work plan, timeline, and key performance indicators. Importance of developing and submitting the progressive workplan for next 5 years with timelines, and SMART KPI, the description of the funding, annual budget and proof of progress on activities was also emphasised in her presentation.

Dr Park provided valuable information on Do's and Don'ts during the preparation and submission of the dossiers. The presentation concluded with the reminder and tips including importance of engagement with all relevant stakeholders, and to put oneself in Expert shoes, thus it is important to be clear and concise in the description, and provide documented evidence, and clear cross references.

### Panel discussion on the key challenges focused on surveillance, diagnosis, animal movement and vaccination

The interactive session was conducted using Mentimeter. The output of the mentimer discussion is provided in [Annex 5](#). The participants (one response per country) were requested to provide three indicators to suggest their compliance with the Standards for FMD surveillance, diagnosis, animal movement and vaccination. The feedback stipulates range of indicators and popular responses include demonstrating evidence, surveillance, vaccination coverage, early detection, prompt investigation, animal identification, rapid detection and animal movement control.

Members were invited to self-assess their level of compliance with the Standards based on the indicators provided by them. The results suggested that level of compliance by eight respondents is above 80%, nine respondents in the range of 50 to 80% and two respondents in the range of 30-50 %.

Members also listed their challenges to comply with the Standards. Some of the key challenges include limited resources (human, financial and technical capacity), competing priority and funds with other diseases, Governance structure and technical capabilities. Political support, transparency, high number of animal population, awareness on benefits of FMD control were also highlighted as some of the sticking points in the implementation of Organisation codes in practice (Refer [Annex 3](#) for more details).

## Closing Session

Dr Abila delivered the concluding remarks by thanking all the speakers, Experts, SEACFMD National Coordinators, and all the participants for their active participation. The SEACFMD Members were informed about the election of SECAFMD Sub-Commission Officers to be held next day on 17 March 2022. The National coordinators were requested to remind respective country delegates to participate in the election or to seek authorisation to participate as a nominee of the country delegate for those who were not able to attend. Finally, participants were also informed that the meeting presentation would be uploaded on the website for further reading and references.

## SEACFMD SUB-COMMISSION MEETING REPORT (17 March 2022)

### Welcome and Opening

After the closed election session of the SEACFMD Sub-Commission Officers, the meeting was opened to all the participants. The official opening session began with a recorded [opening message](#) from Dr Monique Eloit, Director General of WOAHA. Dr Eliot thanked the SEACFMD Members, partners, and academic institutions for their commitment and successful implementation of the SEACFMD campaign activities in the region. She congratulated SEACFMD Members on the Progression along the FMD PCP stages by several members and on the maintenance of the free status for some others; as well as no report of Asia 1 from SEACFMD region since 2017 and step by step rolling out of the SEACFMD Roadmap 2021-2025. She stressed that the outcomes of the ongoing evaluation of the SEACFMD campaign from 1997 to 2020 will be extremely valuable to move forward and enhance the implementation of the sixth phase of the campaign and beyond and this regional evaluation is useful at global level too, as it is complementary to the evaluation of the global FMD control strategy. The Director General also encourages the Members to use SEACFMD campaign model for the coordination of other emerging infectious diseases such as ASF and LSD (Lumpy Skin Disease); in a spirit of synergy between FMD and other TADs control for an optimal and efficient utilisation of resources. Finally, Dr Eloit conveyed WOAHA's commitment to provide technical support to SEACFMD Campaign and members as per the priority needs and gaps and wished fruitful deliberations during the 26<sup>th</sup> SEACFMD Sub-Commission Meeting.

Dr Ronello Abila formally announced the outcome of the election of the executive officers of the SEACFMD Sub-Commission and congratulated the newly elected President (Malaysia), two Vice Presidents (Mongolia and Thailand), and two elected members of the Steering Committee Members (Myanmar and Philippines). The newly elected Delegates from Malaysia, Mongolia, Thailand, Myanmar and Philippines delivered brief remarks during the opening session, where they stressed on their commitment to work together to achieve the objectives of the SEACFMD Roadmap 2021 to 2025 and to contribute to progress in FMD control in the Region.

### Presentation on the updates, progress and SEACFMD Roadmap framework

#### **Chair: Malaysia, SEACFMD Sub-Commission President**

Following the opening session, Dr. Jamaliah Senewa chaired the Sub-Commission meeting on behalf of Dr Dato Dr Norlizan Bin Mohd Noor in capacity of SEACFMD Sub-Commission President.

#### **An update on the recent global FMD situation: risks of FMD from a global perspective and the ongoing research activities at WRLFMD - Dr Donald King**

Dr Donald King from the Reference Laboratory for FMD presented an overview of the Global FMD situation, including current risks relating to South-East Asian countries, changing patterns, updates on activities carried out by the Global Network of WOAHA/FAO Reference, and new initiatives which aim to better control and coordinate FMD globally. He emphasized that a new Global Coordination Committee (GCC) on FMD was established under WOAHA and FAO with regional representatives from SEACFMD, ASEAN and WRLFMD. The committee aims to bring FMD initiatives together to improve understanding and enhance coordination and information sharing in the broad domain.

In terms of FMD epidemiology, surveillance activities in 2020 were reduced significantly because of the direct impact of ongoing COVID19. The most dominant serotype was detected as Serotype O globally and in the Southeast Asian region. He presented regional hubs of FMD circulating viruses, emphasizing emerging sub-lineages from South Asian countries such as India, Bangladesh, and Nepal. FMD emerging sub-lineages move long distances into new areas and cause outbreaks that can change the regional risks of FMD and impact selection of vaccines. Ind2001 remains the most dominant lineage in the region; however, a new pathway of this topotype was observed from Kazakhstan and Mongolia as well as in Western Europe ([Presentation is available here](#)).

### Update on the regional FMD situation in the wake of COVID-19 pandemic - Dr Bolortuya Purevsuren

Dr Bolortuya Purevsuren, Project Officer, SRRSEA, presented the SEACFMD dashboard which illustrated the FMD situation in Member countries from 2019 to 2021. The data was generated from the ARAHIS, WAHIS, and country reports. She showed the FMD outbreaks in eight endemic countries and the circulating virus serotypes. The findings showed that fewer outbreaks were reported in 2021, which was affected by the COVID19 pandemic. The main epidemiological changes observed in 2021 were that FMD occurred in Mongolia after two years of its absence, detection of Serotype A in Myanmar and Thailand, and no report of FMD in Lao PDR. In the remaining endemic countries, no significant changes were observed in the last year. She concluded that although considerable decline in FMD occurred in 2021, non-sampling and non-typing of FMDV remain the main challenges in the region. She reminded Member countries that data discrepancies among animal health information systems and country reports might need to be validated ([Presentation available here](#)).

### Progress of SEACFMD Campaign – Dr Ronello Abila and Dr Karma Rinzin

Dr Ronello Abila and Dr Karma Rinzin from Sub-Regional Representation for South-East Asia made a joint presentation on the progress of SEACFMD in 2021. In their presentation, they highlighted progression of SEACFMD Members to higher PCP stage and maintenance of their free status, successful rolling out of the SEACFMD Roadmap 2021-2025 and development M&E Framework for SEACFMD 2021-2025. Other achievements during the year are successful organization of capacity building activities such as virtual training on outbreak investigation and response, epidemiological study design, training on advance Geographical Information System, Value chain analysis etc. They reported that number of studies were completed and published in the peer reviewed scientific journals in collaboration with partners in the region. They concluded with the presentation on the progress of implementing the Sub-Commission and other Governance meeting recommendations ([Presentation available here](#)).

### Introduction to SEACFMD digital resources – Dr Kinley Choden and Dr Ashish Sutar

Dr Kinley Choden presented a new SEACFMD dashboard on SharePoint to provide all the information and resources related to SEACFMD from a single platform. She explained the landing page to access these digital resources with contents and steps to navigate the dashboard and other sections such as news, upcoming events, and documents with links to other relevant websites. SRR SEA will share the link with member countries by email.

Dr Ashish Sutar introduced the SEACFMD toolbox which is part of main SEACFMD dashboard. This toolbox aims to provide knowledge-based support and access to the resource library and would provide regular networking and sharing experiences. All the technical resources and tools produced in collaboration with national veterinary services and partners are collated for different target groups. In

his presentation he demonstrated how to access the SEACFMD resources and tools for each for different target groups (Presentation is available here).

### M&E Framework and Implementation Plan for SEACFMD Roadmap 2021 – 2025 – Dr Karma Rinzin

Dr Karma Rinzin presented the M&E Framework for SEACFMD Roadmap 2021-2025 and Regional Roadmap Implementation Plan. He presented the M&E indicators for the SEACFMD Roadmap 2021-2025 Goal, Objective, Outcomes and Outputs. The different steps involved in obtaining the baselines and targets for each of the indicators were explained. The key stakeholders involved in carrying out the M&E for the SEACFMD Roadmap was identified and shared. He concluded his presentation by seeking the endorsement of the Roadmap Implementation plan and M&E framework, which was unanimously endorsed by the SEACFMD Sub-Commission Members ([Presentation available here](#)).

### Progress of the Evaluation of the SEACFMD Campaign from 1997 to 2020 - Dr Peter Windsor and Dr Harish Tiwari

Dr Peter Windsor and Dr Harish Tiwari from Sydney University presented the progress of ongoing SEACFMD Campaign evaluation from 1997 to 2020. Dr Peter Windsor made a brief introduction of the different phases of SEACFMD Campaign since 1997. He emphasized substantial progress with an enhancement of the capacity of veterinary services, increasing rural livelihoods from strengthened farm-based economic and safe trading, which were a vast influence on the national and regional stakeholders' ability to progress towards control of FMD in the region.

He explained the SEACFMD Campaign evaluation methodology, including a desktop study review of all reports and roadmaps, a survey of different stakeholders including SEACFMD Members (Sub-Commission Members, National Coordinators, LabNet and EpiNet Focal Persons, private sectors) and Partners and other people who were involved in SEACFMD campaign.

Dr Harish Tiwari shared the highlights of the results of exercising and reviewing SEACFMD reports that referred to the various levels of progress in member countries and pointed out that the 5th phase of the SEACFMD Campaign from 2016-2020 roadmap was focused on a more precise direction, with clearly defined goals and aligned with other TADs. He summarized this phase and supported science-based interventions, capacity building of the veterinary services with powerful advocacy among the stakeholders and revising legislation. He finalized his presentation with an introduction of the survey aims to collect data to evaluate SEACFMD Campaign ([Presentation available here](#)).

### Plenary discussion on “Sustainable FMD Control” – Dr Ronello Abila

The plenary session was moderated by Dr Ronello Abila which focused on emerging priorities and sustainable FMD control in the region; and on the Governance of FMD control. The outputs of the mentimeter discussion are provided in [Annex 6](#). The participants from the SEACFMD Members were asked to provide three indicators to demonstrate that FMD is priority program in their country and to rank FMD in terms of top five priority diseases for disease control. Some of the most popular indicators proposed by the members are having a National Plan, budget allocation and legislation for FMD Prevention and Control. FMD is considered as most important disease for control among the five priority diseases by both endemic and free countries. In order to ensure strong political commitment and

resources for FMD control, the participants recommended high-level advocacy on socio-economic impact of FMD and benefits of FMD Control among other recommendations.

The SEACFMD members were also asked to provide indicators to show that they have a vibrant FMD control in their country. The feedback indicates range of indicators and popular responses are implementation of SEACFMD activities by Members such as vaccination, surveillance, outbreak response etc and fund allocation by the Government authorities.

Participants were then invited to self-assess their level of compliance with the Standards based on the indicators provided by them for FMD control. The results suggested that level of compliance by ten respondents is above 80%, seven respondents in the range of 50 to 80% and two respondents in the range of 30-50 %. The key challenges highlighted by the participants are constraint in resources (human, financial and technical capacity), movement control and other economic development priorities. Poor knowledge and understanding of WOA codes was also raised as challenge by some members. Some suggestions to overcome these challenges are advocacy on the impact and benefit of FMD control to ensure political commitment, revision of the relevant sections of legislations, capacity building programmes and promote public private partnerships among the different players of the livestock value chains.

### Closing of the Sub-Commission Meeting

Dr Ronello Abila thanked Dr Jamaliah Senawi for the excellent chairing of the Sub-Commission meeting. He briefly summarized the draft recommendations prepared by SEACFMD Secretariat. He informed the participants that the recommendations will be distributed to all the participants and invited their comments before the final presentation on 18 March 2022.

Dr Jamaliah Senawi gave the closing remarks in capacity of SEACFMD Sub-Commission President. She congratulated the SEACFMD Secretariat for the superb organization of Sub-Commission meeting and thanked all the presenters for their excellent presentations. She acknowledged all the participants from SEACFMD and non SEACFMD countries and other partners for their active participation and contribution during the meeting.

## POST SEACFMD SUB-COMMISSION MEETING REPORT (18 March 2022)

### Welcome and Opening

Dr Ronello Abila opened the Post Sub-Commission meeting with a warm welcome to all participants. He summarized the success of the last two days of meetings, including reports from members, progress and activities of the SEACFMD campaign, as well as the successful election of new Sub-commission officials on the second day. He also commended the newly elected President for chairing Sub-Commission Meeting sessions where the SEACFMD Roadmap Implementation Framework and the M&E Framework were presented. He reminded the Members and Partners of the ongoing campaign evaluation from 1997 to 2020 and encouraged active participation and support in the process.

He announced that Post Sub-Commission Meeting will be chaired by the two newly elected Vice Presidents, with the President giving the closing comments. He added that the third day will be focused on updates from Partners and experts, as well as SEACFMD neighboring countries in the region. He went on to say that he is looking forward to a successful meeting.

### Updates from the Partners

This session was chaired by Dr. Batchuluun Damdinjav, Director General of General Authority for Veterinary Service of Mongolia and Vice President of the SEACFMD Sub-Commission. This session focused on new development in FMD Control.

#### Foot and mouth disease and One Health: application of tools developed for animal health to a global pandemic - Dr Wilna Vosloo.

Dr Wilna Vooslo from Australian Center of Disease Preparedness (ACDP) presented on FMD in a OH (One Health) Concept with a focus on the application of tools developed for animal health to a global pandemic. She summarized a pilot study conducted on new approaches to vaccinate pigs by comparing various vaccination routes with emphasis on systems immunology.

Various projects on SARS-COV-2 vaccination effectiveness tests on ferrets were carried out throughout the pandemic. These efforts on systems immunology provided improved delivery systems and immunostimulants, improved formulations, identification of pathways responsible for vaccine response variability, and identification of biomarkers of undesirable responses. This is a powerful tool that will continue to be improved for application in FMD.

She also presented on a study that compared surveillance approaches, for restoring FMD-free status, using modelling to prepare for outbreaks. Alternative approaches based on non-invasive sampling procedures and qRT-PCR assays could potentially reduce post-epidemic surveillance time and cost while increasing sensitivity and specificity, according to the findings. It is necessary to test the applicability of this modelling in endemic areas ([Presentation available here](#)).

#### Thoughts on control and eradication of FMD – Professor Xiangtao Liu and Dr Wen Dang

Dr Wen Dang of the Langzhou Veterinary Research Institute (LVRI) in the People's Republic of China offered suggestions for FMD control and elimination. The first proposal focused on enhancing

collaboration in basic research areas such as epidemiological patterns and evolution, molecular basis for phenotypic variation, asymptomatic/persistent infection and possible carrier transmission, adaptive immune response, and molecular mechanisms for immune evasion and FMD in pigs. The second proposal focused on the development of novel vaccines, such as the marker vaccine (3A/3B deleted), which simplifies vaccine production by removing the need to remove NSPs from vaccine antigens, lowers production costs, and allows for easy differentiation of vaccinated from infected animals. The 3A or 3B Mab based blocking ELISA, developed by LVRI, is a companion serological test for the Marker vaccine. The third proposal focused on rapid diagnostic and quarantine technologies, such as STRIP, monitoring FMDV in healthy animals (especially before long-distance movement) and developing novel ELISA for detecting low-level NSP antigen in traditional vaccines, as well as standardizing detection methods in SEACFMD member countries. The final proposal pushed for SEACFMD to recognize FMD-free zones (with or without vaccination) and a regional promotion campaign for joint animal disease prevention and control which will enhance synergy in the control of FMD and other TADs such as ASF and LSD ([Presentation available here](#)).

### Progress and update on FMD diagnosis and research works at Pakchong FMD Laboratory – Dr Kingkarn Boonsuya Seeyo

Dr Kingkarn Boonsuya Seeyo of the FMD Laboratory in Pakchong, Thailand, gave a synopsis of the Laboratory's primary tasks for 2021, focusing on four primary areas: diagnoses, quality assurance, and laboratory improvement. Antigen and antibody detection, strain characterisation, and reagent production were among the diagnostics activities. The meeting was also informed of RRL being accredited by ISO/IEC 17025:2017 and proficiency testing provider for national labs. They also took part in the FMD Proficiency Testing program provided by WRL (World Reference Laboratory) and give national labs refresher trainings. Laboratory improvements included capacity building, research, and collaborations, as well as physical renovations. Future plans were also discussed, with an emphasis on collaborations with other prominent laboratories on various initiatives and research programs ([Presentation available here](#)).

### Application of training conducted by Massey University to build capacity of member countries to control FMD in the region' - Dr Subharat Art

Dr Subharat Art, lecturer from Massey University in New Zealand, spoke on the different trainings and technical assistance provided as part of the Government of New Zealand (MFAT)-funded project on Strengthening FMD Control in South-East Asia (2015-2022). Training of Trainers on Outbreak Investigation and Response Management, training on advanced GIS (Geographic Information System), Epidemiological Study Design, and Infectious disease modelling were provided in the region. Applications of the trainings and other updates were also presented during the meeting ([Presentation available here](#)).

### Updates from non SEACFMD countries

This session was chaired by Dr Wacharapon Chotiyaputta, Director, Division of international Livestock Cooperation, Department of Livestock Development and Vice President of SEACFMD Sub-Commission. In this session there were two country presentations from each of the sub-regions in Asia and Pacific, namely South Asia, East Asia and Pacific region.



## Bangladesh, South Asia

FMD situation and its prevention and control were presented by Dr Monjur Mohammad Shahjada, Director General, Department of Livestock Services. In 2021, total FMD reported cases were 1,72,182 out of 54,016,074 domestic animals (Cattle, Buffalo, Sheep, Goat and Pig) across the country with a prevalence of 0.32%. Outbreak investigations were conducted and managed locally due to the pandemic. Monthly distribution and spatial distribution of cases were presented with the highest reported number of cases in Satkhira district. FMDV serotype O, A and Asia1 were identified with serotype O being dominant around the country. Epidemiological changes observed, during the year, was that the FMD cases were predominant in winter and pre-monsoon i.e., in January, February and March whereas the previous 4 year of passive surveillance data showed that the cases were higher in post-monsoon season (September to November). Some challenges faced in controlling FMD are high density of animal population and widespread movement of animals within the country, illegal cross-border animal movement and illegal trade, insufficient national vaccine production to ensure the vaccine coverage to all susceptible animals, not enough information affecting the vaccination strategies and lack of awareness among stakeholders. Bangladesh has drafted a risk based FMD control strategy for the year 2021-2025 with an aim to reduce prevalence of FMD, increase livestock production and international livestock trade, and establish four to five FMD free compartments by 2025 ([Presentation available here](#)).

## India, South Asia

Dr Praveen Malik, Animal Husbandry Commissioner, Department of Animal Husbandry and Dairying, Government of India presented India's FMD situation in 2021. There has been a reduction in number of cases over the years with Serotypes O being prevalent in 19 states. Serotype Asia 1 has been reported from 2 states in 2021 and Serotype A being reported from 9 states. A national animal disease control programme to control foot & mouth disease (FMD) in livestock with the overall aim to control FMD by 2025 and its eradication by 2030 has been implemented with four themes concentrating on implementation and monitoring, vaccine production and supply chain strengthening, identification and recording of animals, and finally farmer awareness and engagement. Challenges such as manufacturing capacity of FMD vaccines, limitation of manpower, diverse geographies and difficult terrains and smallholder livestock farmers were presented along with 1corresponding solutions such as technical support to manufacturers from national and global institutions working on FMD vaccines, public-private partnership to improve doorstep animal husbandry services (Mobile veterinary units), smart IT solutions for efficient supply chain of vaccines, collaboration with grassroots organizations and Consistent community awareness, engagement and outreach activities ([Presentation available here](#)).

## Japan, East Asia

Kitagawa Ami, Animal Quarantine Inspection Officer, Ministry of Agriculture, Forestry and Fisheries informed that Japan has been free from FMD without vaccination since 2011 and still has a stockpile of FMD vaccine for emergency vaccination. Key FMD prevention strategies are focused on border inspection and quarantine operations for live animals and animal products and enhanced border inspection for passengers/travelers. An early warning system and contingency plans are in place as well ([Presentation available here](#)).

## Korea, East Asia

Sang-Ho Cha, Head of FMD WOAHLaboratory, Animal and Plant Quarantine Agency informed that there were no cases of FMD in 2021 in the Republic of Korea. Prevention strategies included border control, biosecurity and vaccination and serological surveillance while control strategies were focused on movement control, disinfection and stamping out. Emphasis was also placed on diagnosis of FMD ([Presentation available here](#)).

## Timor-Leste, Pacific region

Presentation was made from Dr Joanita Jong, National Director of Veterinary, Ministry of Agriculture and Fisheries on the maintenance of FMD free status and preparedness to FMD incursion. Key prevention strategy comprised of regular surveillance, capacity building and public awareness. FMD preparedness and contingency planning will be done in future. Challenges faced are lack of legal framework, resources, and political support ([Presentation available here](#)).

## Breakout session

Participants were divided into four groups in separate breakout rooms according to their affiliation as following. Each group were assigned with specific topic to deliberate in the breakout session. The discussion was moderated by staff from SRR-SEA, RRAP and Headquarters, WOAHL. The outputs of the group work is provided in [Annex 7](#).

### **Group 1: Partners (Research Institutions, Reference Laboratories, Vaccine Manufacturers etc)**

This Group was moderated by Dr Ronello Abila. The focus of this session was on how to improve effective FMD control in the region. Technical challenges such as the FMD virus, immunization, and animal mobility were paramount. The presence of various FMDV lineages and need to validate the absence of Asia-1 in the region was discussed.

The use of modelling to decide vaccination tactics, studies on farmer behaviour in terms of vaccination, responding to emergency demand and supply of vaccines, and regulatory measures to allow for new vaccine strains were all discussed during the session.

### **Group 2A: Non SEACFMD countries – South Asia**

The non SEACMD members were asked to discuss on how to strengthen collaboration between SEACFMD members and neighbouring countries. The group discussion for South Asia Group was moderated by Dr Bolortuya Purevsuren and Dr Alexandre Fediaevsky. The South Asia Group discussed about the issues faced in controlling FMD in individual countries, with a focus on animal movement across borders, animal traceability, vaccine production capacity, vaccine quality testing, and public awareness. Technical capacity enhancement in epidemiology and vaccination studies were cited as support expected. The use of FMD as a paradigm and sharing capacity to facilitate control of other TADs were recommended as ways to synergize control of other TADs.

Enhancing collaboration between SEACFMD Members South Asian countries through sharing of best practices, experiences, and success stories were highlighted.

## Group 2B: Non SEACFMD countries – East Asia and Pacific

The participants from East Asia and Pacific region also deliberated on how to strengthen collaboration between SEACFMD members and neighbouring countries. This group was moderated by Dr Caitlin Holley and Dr Kinley Choden. Engagement with SEACFMD countries through information exchange related to FMD risk (particularly on the strains of FMDV present) for incursion into a free country to plan vaccine procurement and emergency vaccines were discussed. The group also recommended modelling for understanding different FMD scenarios, and socio-economic repercussions. Support for endemic countries in capacity development within their countries through programs and research was also mentioned.

Staff turnover in the Veterinary Authority was a concern, as was the lack of outbreaks for several years, both of which would affect outbreak control experience. While quarantine and border inspections have been emphasized to prevent illegal entry of possible FMD products, direct engagement with FMD-affected countries to support PCP progress and exchange information to improve technical capacity and assist with preparedness activities (such as the selection of an emergency vaccine) is seen as critical.

## Group 3: SEACFMD Members

The topic assigned to the SEACFMD Members are synergizing FMD and other TADs control; and non FMD issues. This Group was moderated by Dr Karma Rinzin and Dr Ashish Sutar using a Miro dashboard. During the deliberations, the participants from SEACFMD countries enlisted the non FMD issues which was dominated by emergence of other TADs such as African swine fever, Lumpy skin disease, Brucellosis, Bovine and Tuberculosis. The COVID19 pandemic was also indicated as another major issue affecting FMD control in the region. Other issues raised are poor workforce development and other competing priorities.

Members also acknowledged the existing synergies such as multisectoral collaboration, action plan for disease control, public awareness & communication, laboratory capacity building, surveillance, outbreak investigation, biosecurity, joint capacity building programmes for the field staff, value chain studies etc.

Some of the potential synergies identified for FMD and other TADs control are animal identification system linked to vaccination; Collaboration between lab, simultaneous vaccination of cattle with FMD and LSD, disease preparedness activities, value chain analysis and legislations.

In terms of SEACFMD foresight, it was indicated that the focus should be on vaccine development, a regional vaccine bank (including for other TADs), and improved laboratory diagnosis in terms of vaccine quality control and analysis.

## Closing and Way Forward

Draft recommendations of the Sub-Commission meeting were presented to participants for their consideration. The SEACFMD Roadmap implementation plan and M&E Framework were endorsed. Members were encouraged to support the ongoing evaluation of SEACFMD campaign and to synergize FMD and other TADs control. It was also decided that the draft recommendations will be sent to SEACFMD Members and partners for consideration and comments for a period of two weeks after which the recommendations will be considered as adopted.

Dr. Jamaliah Senawi from DVS, Malaysia delivered the [closing remarks](#) on behalf of the President of the SEACFMD Sub-Commission. She expressed her appreciation for the success of the 26th Sub-Commission meeting and thanked the SEACFMD members, partners, and all participants for their active involvement

and contributions to the meeting. She went on to say that the Sub-Commission meeting of the SEACFMD campaign is an important platform for discussion and providing guidance to enhance the implementation of SEACFMD campaign. The meeting's recommendations reflect Member countries' commitment and support to implement the SEACFMD Roadmap (2021-2025), which focuses on the important strategic direction for FMD control and eradication.

She concluded by congratulating SRR SEA on the effective organization of the sub-commission meeting. She further said that the success of the meeting was also the result of the commitment of the member countries, partners and all other attendees and she declared the meeting closed.

## ANNEXES

### Annex 1: Meeting Programme

#### Pre-Meeting of the 26<sup>th</sup> OIE Sub-Commission for Foot and Mouth Disease in South-East Asia, China and Mongolia

*16 March 2022, 14:00 - 17:00 (Bangkok time)*

#### Meeting Programme

Time	Topics	Speakers/ Responsibility
	<b>Opening Session</b>	
14:00 – 14:10	Opening session - Welcome and introduction	Ronello Abila
	<b>Update from SEACFMD Members</b>	
14.10 – 15.30	FMD infected countries - Cambodia - China - Laos - Malaysia - Mongolia - Myanmar - Thailand - Vietnam  FMD free countries - Brunei - Indonesia - Philippines - Singapore  Q&A session	SEACFMD National Coordinators
<b>15.30 – 15.40</b>	<b>Tea Break</b>	
	<b>Technical/ Panel Discussion</b>	
15:40 – 15:50	Animal Price Monitoring Study	AsureQuality, NZ
15:50 – 16:10	Key principles of Official recognition of FMD-free status, endorsement of FMD control programme and their maintenance	Status Department
16.10 – 16.50	Panel discussion on the key challenges focused on: - Surveillance and diagnosis - Governance of FMD control - Animal movement	OIE SRR SEA
	<b>Closing and next step</b>	
16:50 – 17:00	Closing of Pre-Meeting of the SEACFMD Sub-Commission	Ronello Abila

## 26th Meeting of the OIE Sub-Commission for Foot and Mouth Disease in South-East Asia, China and Mongolia

*17 March 2022, 14:00 - 17:00 (Bangkok time)*

### Meeting Programme

Time	Topics	Speakers/ Responsibility
14:00 – 14:30	Election of the SEACFMD Sub-Commission President, two Vice Presidents and two Steering Committee Members (Closed session)	OIE SRR SEA and Sub-Commission Members
14:30 – 14:45	Opening session - Message from the OIE DG - Message from the President of SEACFMD Sub-Commission	Director General, OIE President of the Sub-Commission
14:45 – 14:50	Announcement of the result of the election of the President, Vice President and Steering Committee Members	OIE SRR SEA
<b>Chair: President of the SEACFMD Sub-Commission</b>		
14:50 – 15:10	Update on Global Foot and Mouth Disease situation (FMD), risks and new developments	Donald King, WRLFMD, Pirbright, UK
15:10 – 15:20	Update on the regional FMD situation in the wake of COVID-19 pandemic	Bolortuya Purevsuren
15:20 - 15:30	Q&A	
15:30 – 15:40	Progress of the SEACFMD Campaign	Ronello Abila & Karma Rinzin
15:40 – 15:50	Introduction to SEACFMD digital resources	Kinley Choden & Ashish Sutar
15:50 – 16:00	Presentation of the draft M&E Framework and Implementation Plan SEACFMD Roadmap 2021 – 2025 Endorsement of M&E framework and Implementation Plan of the Roadmap	Karma Rinzin  Sub-Commission Members
16:00 – 16:30	Discussion on sustainable FMD control - Emerging priorities - Political commitment and sustainable funding/ resources	Ronello Abila
16:30 – 16:45	Evaluation of the SEACFMD campaign from 1997 to 2020	Peter Windsor
16:45 – 17:00	Closing of the Sub-Commission Meeting Conclusions and Recommendations of the 26th Sub-Commission Meeting Closing Remarks	Ronello Abila President of Sub-Commission

## Post-Meeting of the 26th OIE Sub-Commission for Foot and Mouth Disease in South-East Asia, China and Mongolia

*18 March 2022, 14:00 - 17:00 (Bangkok time)*

### Meeting Programme

Time	Topics	Speakers/ Responsibility
	<b>Introduction Session</b>	
14:00 – 14:10	Introduction of session - Welcome and introduction	Ronello Abila
	<b>Update from the Partners Chair: Vice President (Mongolia)</b>	
14.10 – 15.10	New developments in FMD Control - Research Institutions - Universities	Partners
	<b>Updates from non SEACFMD countries Chair: Vice President (Thailand)</b>	
15:10 – 15: 50	SAARC - Bangladesh & India East Asia – Japan & Korea Pacific – Papua New Guinea & Timor-Leste	Non SEACFMD countries
<b>15:50 – 16:00</b>	<b>Tea Break</b>	
	<b>Plenary/ Breakout session</b>	
16:00 – 16:45	Partners – Enhancing effective control of FMD in the region  Non SEACFMD countries – South Asia (Strengthening collaboration between SEACFMD members and neighbouring countries)  Non SEACFMD countries – East Asia and Pacific (Strengthening collaboration between SEACFMD members and neighbouring countries)  SEACFMD countries - Synergizing FMD and other TADs control; and non FMD issues	OIE SRR SEA
	<b>Closing and Way forward</b>	
16:45 – 17:00	Closing of the meeting	Ronello Abila President of Sub-Commission

## Annex 2: List of participants

Sl. No.	Country/Region Name	First Name	Last Name	Organization	Job Title
	Australia	Jennifer	Davis	DAWE (Department of Agriculture, Water and the Environment)	
1	Australia	Dan	Edson	Department of Agriculture, Water and the Environment	
2	Australia	Peter	Windsor	The University of Sydney	Professor Emeritus
3	Australia	John	Weaver	WCI	Director
4	Australia	Griff	Dalgleish	MSD Animal Health	Director of Technical Affairs (Asia Pacific & Africa Region)
5	Australia	Malcolm	Anderson	Sole trader	Biosecurity Veterinarian
6	Australia	Wilna	Vosloo	CSIRO (Commonwealth Scientific and Industrial Research Organisation)	Group Leader
7	Australia	Petrus	Jansen van Vuren	CSIRO	Research Scientist
8	Australia	Sacha	Seneque	Ceva Animal Health	Veterinary Public Health General Manager Global, Ceva
9	Australia	Nagendrakumar	Balasubramanian	Australian Animal Health Laboratory, CSIRO Health and Biosecurity	Senior Research Scientist
10	Bhutan	Pelden	Wangchuk	NCAH, DoL, MoAF (MINISTRY OF AGRICULTURE AND FISHERIES)	Sr. Veterinary Officer
11	Cambodia	Sorn	San	General Directorate of Animal Health and Production (GDAHP)	Deputy Director General of GDAHP
12	Cambodia	Dina	KOEUT	NAHPRI	Staff of Epidemiology
13	Cambodia	TAN	PHANNARA	General Directorate of Animal Health and Production	Director General
14	Cambodia	Chhim	Vutha	National Animal Health and Production Research Institute	Head of Epidemiology office
15	Cambodia	Ren	Theary	National Animal Health and Production Research Institute	Deputy Director



16	China	Juver	Membrebe	Biogenesis Bago	Asia Technical Service and Regulatory Affairs Manager
17	China	Quangang Xu		CAHEC (China Animal Health and Epidemiology Center)	
18	China	Baoxu	Huang	CAHEC	
19	China	Wang Youming		CAHEC	
20	China	Dang Wen		Lanzhou Veterinary Research Institute (LVRI), CAAS (Chinese Academy of Agricultural Sciences)	PhD
21	China	Jijun He		Lanzhou Veterinary Research Institute (LVRI), CAAS	Associate Professor
22	China	Jianhong	Guo	Lanzhou Veterinary Research Institute (LVRI), CAAS	Professor
23	China	Fahd	Qarih	BB	Technical leder
24	China	Wen	Jiang	CAHEC	
25	France	Paolo	Tizzani	OIE - World Organisation for Animal Health	Veterinary epidemiologist
26	France	Charmaine	Chng	OIE	Scientific Coordinator
27	France	Laure	Weber-Vintzel	OIE	Observatory Programme Manager
28	France	ALEXANDRE	FEDIAEVSKY	OIE	
29	France	Paula	CACERES	OIE	Head of World Animal Health Information and Analysis Department
30	France	Cédric	DEZIER	Boehringer Ingelheim	
31	France	Neo	Mapitse	OIE	Regional Activities Department
32	France	Pascal	Hudelet	Boehringer Ingelheim	Head, Technical Services, The VPH Center
33	France	Min-Kyung	PARK	OIE	Head of Status Department
34	France	André	Furco	OIE SRR SEA - Bangkok	
35	France	Yohane	Soko	OIE	M&E Officer

36	Hong Kong SAR	Dirk	Pfeiffer	City University of Hong Kong and Royal Veterinary College, London	Professor of One Health and Professor of Veterinary Epidemiology
37	Hong Kong SAR	Jeremy	HO	AFCD	Veterinary Officer / Animal Health 1
38	India	Atul	Chaturvedi	Department of Animal Husbandry and Dairying, Government of India	Secretary, Govt. of India
39	India	Praveen	Malik	Department of Animal Husbandry and Dairying	Animal Husbandry Commissioner
40	India	ANIRBAN	GUHA	Department of Animal Husbandry and Dairying, GoI	Assistant Commissioner, NADCP for FMD and Brucellosis
41	Indonesia	Nuryani	Zainuddin	DGLAHS Indonesia	Director of animal health
42	Indonesia	Muhammad	Hidayat	Ministry of Agriculture	Senior Vet Officer
43	Japan	Kazuki	MORIOKA	NARO National institute of animal health, Japan	
44	Japan	Yuka	Moribe	MAFF	Veterinary Officer
45	Japan	Ami	Kitagawa	Ministry of Agriculture, Forestry and Fisheries	Animal Quarantine Officer
46	Japan	Masatsugu	Okita	MAFF	
47	Japan	Kiyokazu	Murai	MAFF	
48	Japan	Jing	Wang	OIE RRAP	
49	Japan	Katsuhiko	Fukai	National Institute of Animal Health	Leader, Exotic Disease Research Group
50	Japan	Rie	Kawaguchi	National Institute of Animal Health, NARO	Researcher
51	Japan	Caitlin	Holley	OIE	
52	Japan	YUTO	MATSUI	Miyazaki university	assitant professor
53	Japan	Hirofumi	Kugita	OIE RRAP	Regional Representative
54	Korea	Sang-Ho	Cha	Animal and Plant Quarantine Agency	
55	Korea	Soyoon	Ryoo	APQA	
56	Korea	Jaemyung	Kim	Animal and Plant Quarantine Agency	Division Head

57	Korea	daraelim		APQA	
58	Korea	Hyeonjeong	Kang	Animal and Plant Quarantine Agency	
	Lao PDR	Kethsana		Ministry of Agriculture and Forestry, Department of Livestock and Fisheries	Technical Staff
59					
60	Malaysia	Jamaliah	Senawi	DVS	
61	Malaysia	ZURIN AZLIN	MD JININ	DVS	
62	Mongolia	Chris	Bartels	FAO Mongolia	chief technical advisor
	Mongolia	Batchuluun	Damdinjav	General Authority for Veterinary Service, Mongolia	
63					
64	Mongolia	Bodisaikhan	Khishgee	GAVS	Officer
65	Mongolia	Bulgan	Boldbaatar	General Authority for Veterinary Services	
	Myanmar	Aung Htun		Livestock Breeding and Veterinary Department	Veterinarian
66					
	Myanmar	Ye Tun Win		Livestock Breeding and Veterinary Department	Director General
67					
68	Myanmar	MIN THEIN	MAW	LBVD	Director
	Myanmar	Win	Myint	Livestock Breeding and Veterinary Department	Deputy Director
69					
70	Netherlands	Chanty	Toenders	MSD Animal Health	tender's manager
71	New Zealand	Art	Subharat	Massey University	Senior lecturer
	New Zealand	Andy	McFadden	MPI	Veterinary Epidemiologist Pacific Partnership
72					
73	New Zealand	Robert	Sanson	AsureQuality Limited	Epidemiologist
74	New Zealand	Zhidong	Yu	Ministry for Primary Industries	Senior Adviser
	Papua New Guinea	Ilagi	Puana	NAQIA (National Agriculture Quarantine and Inspection Authority)	CVO
75					
76	Philippines	DAPHNE	JORCA	Bureau of Animal Industry	Veterinarian III
	Philippines	Arlene Asteria	Vytiaco	Department of Agriculture - Bureau of Animal Industry	Veterinarian IV
77					
78	Philippines	Anthony	Bucad	BUREAU OF ANIMAL INDUSTRY	VETERINARIAN III

79	Philippines	Rachel	Azul	Bureau of Animal Industry	Veterinarian IV
	Philippines	Rainelda	dela Peña	Bureau of Animal Industry - Department of Agriculture	Veterinarian V - Chief of Veterinary Laboratory Division
80					
81	Philippines	REILDRIN	MORALES	BUREAU OF ANIMAL INDUSTRY	OIC DIRECTOR
82	Singapore	H.P.	LIM	NATIONAL PARKS BOARD (NPARKS)	VETERINARIAN
83	Singapore	Christine	Lee	NParks	Veterinarian
84	Sri Lanka	Dr. Hemali	Kothalawala	Dept. of Animal Production & Health	Director General
85	Thailand	Purevsuren	Bolortuya	OIE	Project Officer
86	Thailand	Onsiri	Benjavejbhaisan	OIE	Finance Officer
87	Thailand	Ronello	Abila	OIE SE Asia	Sub-Regional Representative
88	Thailand	Nitjaree	Wongluck	Department of Livestock Development	Foreign Relations Officer
89	Thailand	Chaiwat	Yothakol	Department of Livestock Development	Deputy Director-General
	Thailand	Sith	Premashthira	DLD	Senior Professional Veterinarian
90					
	Thailand	Karma	Rinzin	OIE SRRSEA	Regional Animal Health Coordinator
91					
92	Thailand	Tamonwan	Loylawan	DLD	Veterinarian
93	Thailand	Kinley	Choden	OIE	Animal Health Officer
94	Thailand	Nonthapat	Poonsirajaroenkul	Department of Livestock Development	Veterinarian
95	Thailand	Rotchana	Prakotcheo	Department of Livestock Development	Veterinary officer
96	Thailand	Tapanut	Songkasupa	National Institute of Animal Health	Veterinarian
97	Thailand	Ashish	Sutar	OIE	OIE Project Officer
98	Thailand	Therajade	Klangnurak	OIE SRR SEA	
99	Thailand	Udon	Romphruke	RRLFMD	Acting Head
100	Thailand	Pacharee	Thongkamkoon	Department of Livestock Development	veterinarian
101	Thailand	MASAHIKO	ANZAI	JICA	
	Thailand	Jeeranant	Chottikamporn	Regional Reference Laboratory for Foot and Mouth Disease in Southeast Asia	Veterinary officer
102					

103	Thailand	Nopporn	Klum-em	Department of Livestock Development	Chief of International Affairs Group, Division of International Livestock Cooperation
104	Thailand	Wacharapon	Chotiyaputta	Department of Livestock Development	Director of International Livestock Cooperation Division
105	Thailand	Chaiwat	Yothakol	Department of Livestock Development	Deputy Director General of DLD
106	Thailand	Chinnadit	Ngamwongronnachai	DLD	Veterinarian
107	Thailand	Paolo	.	.	
108	Timor-Leste	Joanita Bendita	Da Costa Jong	Ministry of Agriculture and Fisheries	National Director/OIE Permanent Delegate
109	United Kingdom	Trevor	Drew	Australian Centre for Disease Preparedness	Director
110	United Kingdom	Donald	King	The Pirbright Institute	Head of WRLFMD
111	United Kingdom	Lorenz	Nake	OIE	Resource Mobilisation and Grant Manager
112	United Kingdom	Peter	Windsor	University of Sydney	
113	United States	Harish	Tiwari	Production Animal Welfare & Health Services	
114	United States	Kingkarn Boonsuya	Seeyo	RRLFMD	
115	United States	Norzufikal	binti Zulkifly	Department of Veterinary Services Malaysia	Veterinarian
116	Vietnam	Thi Xuan	HOANG	Boehringer-Ingelheim	Consultant
117	Vietnam	Tho	Nguyen	National Centre for Veterinary Diagnosis	Head of Virology
118	Vietnam	Long	Nguyen	VIETNAM DEPARTMENT OF ANIMAL HEALTH	Deputy Director General
119	Vietnam	Minh	Phan	Department of Animal Health	Head of Epidemiology Division
120	Vietnam	Trần Quốc	Phong	Department of Animal Health	Epidemiology
121	Vietnam	Ba Luu Van		RAHO 1	Vice Director

122	Vietnam	Hoa	Pham	DAH	Chẩn đoán viên bệnh động vật
123	Vietnam	Tuan	Tran	Raho3-Dah-Vietnam	
	Vietnam	tien	nguyentrung	Trung tâm Kiểm nghiệm thuốc thú y Trung ườn 1 - Cục Thú y	Phó Giám đốc
124					
125	Vietnam	Phuong	Nguyen Thanh	Regional Animal Health Office No.6	Manager Laboratory
	Vietnam	Xuan	Tran Thanh	Departement Animal Health - Region Animal Health Office 5	Epimiology Departement
126					
127	Vietnam	VAN QUYỀN		Cuc Thú Y-Chi cục thú y vùng V	Trưởng phòng Dịch tễ
128	Vietnam	Hung	Vu	DAH	Vice Director
	Vietnam	Nguyen	Tuan Hung	VETVACO National Veterinary Joint Stock Company	General Manager
129					
130	Vietnam	Cao	Nhut Truong	Raho7	
131	Vietnam	Dung	Nguyen Kim	Chi cục thú y vùng 6 - Cục Thú y	Phòng Dịch tễ
132	Vietnam	Truong	Diep Quoc	Regional Animal Health Office No.7	
133	Vietnam	Vinh	Luong văn	RAHO6	Kiểm dịch
134	Vietnam	Anh Đài	Nguyễn	chi cục thú y vùng 5	nhân viên
135	Vietnam	Xuân Anh	Nguyễn Thị	Raho5	Nhân viên
136	Vietnam	Tung	Nguyen	DAH	
137	Vietnam	Hung	Vo	RAHO6	Vet
138	Vietnam	Lan Anh	Cao thi	Chi cục thú y vùng 3	Chẩn đoán viên bệnh động vật
139	Vietnam	Đặng thị	Hoài Quyên	Chi cục thú y vùng 3	Chẩn đoán viên bệnh động vật
140	Vietnam	tran	hanh xuan	NAVETCO	Researcher

## Annex 3: Opening Message from Dr Monique Eloit, Director General, World Organisation for Animal Health

### **26th Meeting of the OIE Sub-Commission for Foot and Mouth Disease in South-East Asia, China and Mongolia (16 to 18 March 2022)**

Mr. President,

Dear SEACFMD Members, dear representatives of Reference Laboratories, dear partners, dear participants,

I am sorry not to be available for attending the 26<sup>th</sup> meeting of the OIE Sub-Commission for foot and mouth disease in South East Asia, China and Mongolia; the famous SEACFMD Sub-Commission!

I am unfortunately not available because – at the same time you are listen to my remarks – I am attending the Executive Committee of the Tripartite with Dr Tedros WHO DG and Mr. Qu FAO DG. At a time when the One Health approach is being promoted, our discussion on a Joint Plan of Action is critical because we are at the starting point of the negotiations of an international Treaty on Pandemics. The role played by the Veterinary Services must be well recognized as they are often at the frontline for the detection and the prevention of many adverse events.

Today, you are meeting to share information on your respective situation on FMD, as well as to analyze the key challenges affecting the implementation of the SEACFMD campaign, so that research institutions and experts help us to identify ideas and instrumental actions to further strengthen FMD prevention and control in the region. Because, unfortunately, FMD is still a major concern for many livestock holders and trade partners.

However, I would like to take advantage of my remarks for thanking you as SEACFMD Members, development partners, representatives of academic institutions, without forgetting my OIE colleagues, all of you who are committed to the campaign progress.

Thanks to you, several achievements deserve to be highlighted despite the additional constraints due to the COVID pandemic

- The Progression along the FMD PCP stages by several members or the maintenance of the free status for some others;
- No report of Asia 1 from SEACFMD region since 2017
- The Step by step rolling out of the SEACFMD Roadmap 2021-2025 and the monitoring of its implementation thanks to the M&E framework.
- The Capacity building programmes which are so valuable for important issues such as outbreak response, transborder value chain studies, etc....
- While numerous studies and surveys have been coordinated by the OIE Bangkok office with our research partners to addresses the critical knowledge gaps to enhance FMD prevention and control in your countries.

Talking about past actions, their successes or constraints, is necessary to better design tomorrow's actions. What will thus be the future directions for the SEACFMD campaign.

My duty is of course not to anticipate your discussions and decisions but I am convinced that the outcomes of the ongoing evaluation of the SEACFMD campaign from 1997 to 2020 will be extremely valuable to move forward and enhance the implementation of the sixth phase of the campaign and beyond. This regional evaluation is useful at global level too, as it is complementary to the evaluation of the global FMD control strategy.

To fuel your discussions, I would however like to share with you some thoughts.

- I do think that the SEACFMD campaign model could be used for the coordination of other emerging infectious diseases such as ASF and LSD; in a spirit of synergy between FMD and other TADs control for an optimal and efficient utilisation of resources

I also would like to urge Members to strengthen your FMD control programs through early detection and response to FMD outbreaks, effective surveillance, vaccination campaigns and animal movement control, and align it with relevant OIE standards and guidelines.

Dear Members- you are the owners of the SEACFMD campaign. Be sure that the OIE remains committed to provide technical support to countries as per the priority needs and gaps, and to encourage the collaborative work to control FMD at regional level.

I wish you fruitful discussions and hope to have an opportunity for meeting you again, face-to-face, in a near future.

Thank you for your attention.



Annex 4: Closing Message - Dr Jamaliah Senawi, Department of Veterinary Services, Malaysia (on behalf of SEACFMD Sub-Commission President)

**26<sup>th</sup> Meeting of the OIE Sub-Commission for Foot and Mouth Disease in South-East Asia, China and Mongolia**

16-18 March 2022, 14:00-17:00 H (Bangkok time)

I am glad to be with you here today to officiate the closing ceremony of the 26th Meeting of the OIE Sub-Commission for Foot and Mouth Disease in South-East Asia, China and Mongolia. This meeting is a positive note to begin Malaysia's duty as the appointed President of SEACMD Sub-Commission for Foot and Mouth Disease. It is nice to see all presenters, experts, FMD National Coordinators and partners together here online to share information and updates on the SEACFMD programs and plan the country's way forward in FMD control and eradication from this region. FMD is one of the most concerning Transboundary Animal diseases that pose a threat to Ruminants and Swine Industries within this region and throughout the world. As all of us know, the efforts in FMD control and eradication from this region has been long since 1997 and ongoing.

The objectives of this meeting reflect the importance of all member countries and partners working together to control and eradicate FMD. The member country presentations show how challenges must be handled with practical strategies and methods to be realistically implemented to achieve the objectives. Therefore, I believe that this OIE Sub-Commission for Foot and Mouth Disease in South-East Asia, China and Mongolia is an excellent campaign in providing an essential platform for discussions and developing strategies to combat FMD.

The recommendations of this meeting are important statements of understanding and agreement of actions plans following the SEACFMD Roadmap 2021 – 2025, focusing on the critical technical elements in FMD control and eradication. Focusing on:

- Capacity building for human and technical resources in member countries
- Validate and declare freedom from Asia 1 serotype from the SEACFMD region
- Facilitate easy access to these resources by the members and stakeholders
- Improve FMD reporting in the new WAHIS platform.
- Strengthen epidemiological investigation and management of FMD outbreaks to maintain FMD free status of the Endorsed official Control Program.

Ladies and Gentlemen,

- Congratulations to OIE SRRSEA for the successful organization of the 26th Sub-Commission meeting and all member countries for this fruitful meeting since its establishment.
- The success of the meeting is also the result of the commitment of our member country, partners and all attendees.

- For the speakers, presenters, participants and observers, I hope this FMD sub-commission meeting has left a memorable impression to you.

On that note, I now declare 26th Meeting of the OIE Sub-Commission for Foot and Mouth Disease in South-East Asia, China and Mongolia is now closed.

Stay safe & Thank You.

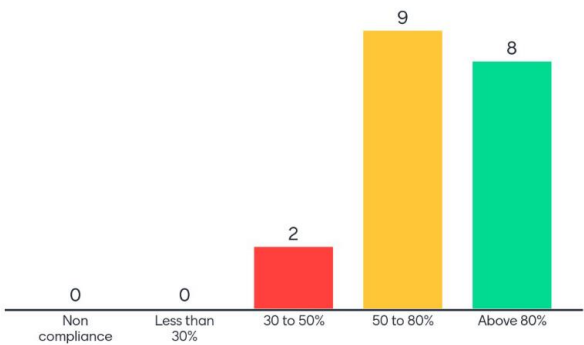
Annex 5: Outputs of the plenary session during the Pre-Sub-Commission Meeting on 16 March 2022

Panel discussion on the key challenges focused on FMD surveillance, diagnosis, movement control and vaccination.

1. Please provide 3 indicators to show compliance with OIE standards for FMD surveillance, diagnosis, animal movement and vaccination.



2. Based on the indicators in the first question and as per your assessment up to what level is your country complying with the OIE standards?



### 3. What are the challenges for not being able to comply with the code?

resources	Manpower	Technical capacity
Governance structure	Transparency	huge animal population
resources (financial & human)	resources	NSP freedom of vaccine
Competing budget wth other diseases	Insufficient fund for disease control activities	lack of movement control
transparency	Resource	The low workforce in the field
Technical capacity is lacking.	Resoucrs (Financial and human)	politic decision & support
The benefits are unclear to stakeholders	Technical	Technical capacity

### 4. What are your suggestions to overcome these challenges?

cooperation

## Annex 6: Outputs of the plenary session during the Sub-Commission Meeting on 17 March 2022

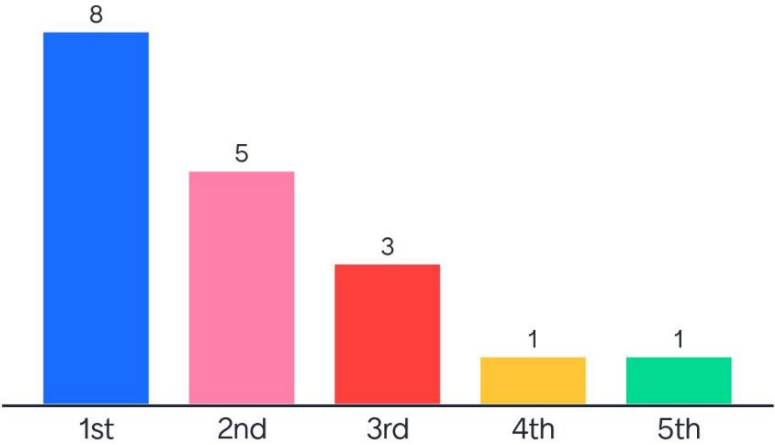
### Panel discussion on emerging priorities and sustainable FMD Control in the region.

#### What are the indicators to demonstrate FMD is priority program in your country?

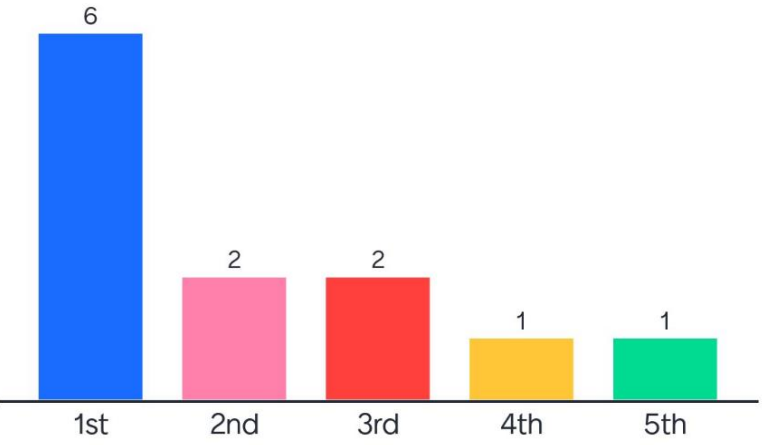
Mentimeter



For endemic countries, in terms of top five priority diseases what is the rank of FMD for disease control?



For FMD free countries, in terms of top five priority diseases what is the rank of FMD for disease prevention?



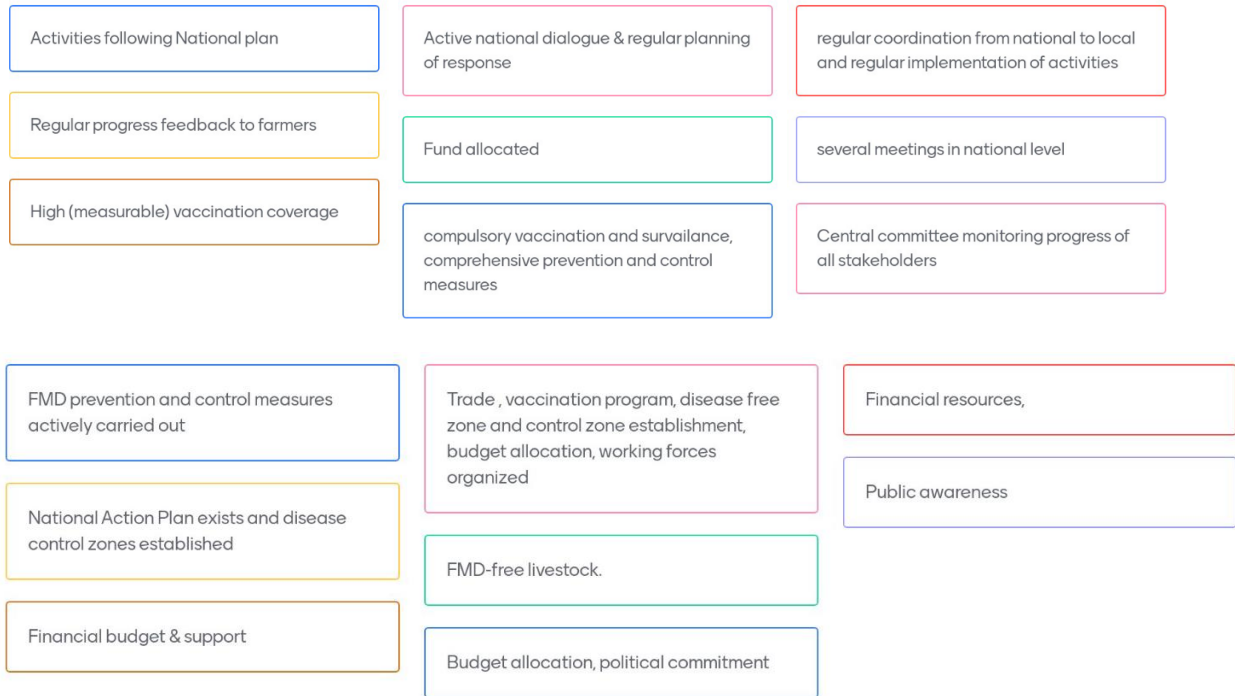
# How would you ensure strong political commitment and resources for FMD control?



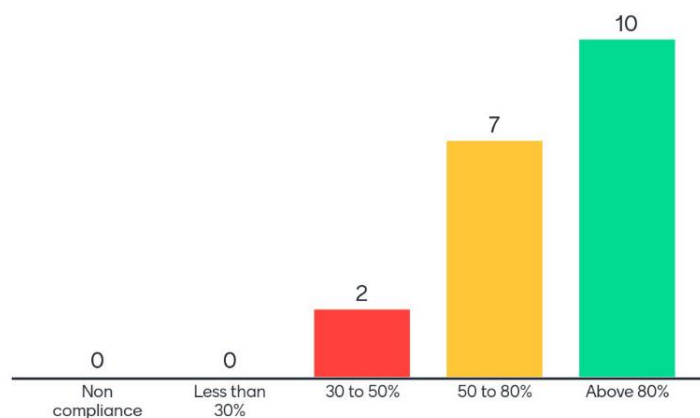
## Discussion on Governance of FMD Control

### 1. What are the indicators to indicate that you have a vibrant FMD control in your country?

Mentimeter



### 2. Based on your assessment up to what level is your country complying with the OIE standards and your country FMD plan?





### 3. What are the challenges for not being able to comply with the code?

resources	Movement control	Funding
funding	Resources allocated	work force
UNDERSTANIND OF CODE, TECHNICAL IMPLEMENTATION, DO NOT KNOW HOW TO MAKE COMPLIANCE WITH OIE STD	related to economic development	Budget and Human resources
Funding and resources	illegal transportation	Movement control
Movement	Manpower, financial budget, multisectoral collaboration	Fund allocation
Funding and technical		

### 4. What are your suggestions to overcome these challenges

Advocacy, PPP	Revising related reulations/policies	Cost benefit study
Build up capabilities within the service	political advocacy, PPP	Political commitment, law enforcement
PPP	strengthening partnership with livestock association	vaccin
Share COVID lessons		

## Annex 6: Outputs of the plenary session during the Sub-Commission Meeting on 17 March 2022

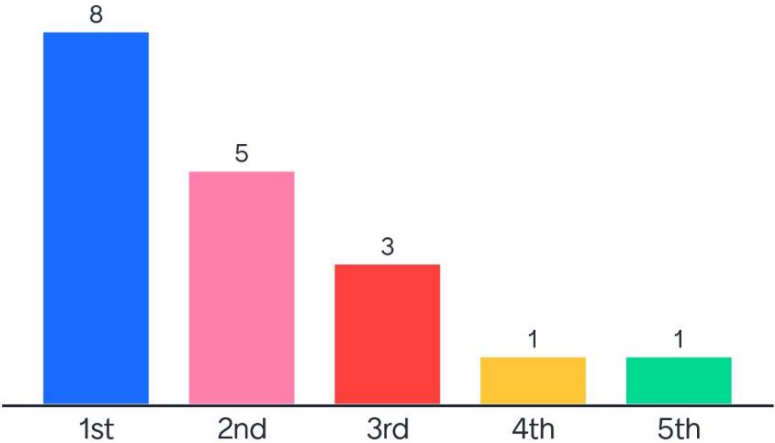
### Panel discussion on emerging priorities and sustainable FMD Control in the region.

#### What are the indicators to demonstrate FMD is priority program in your country?

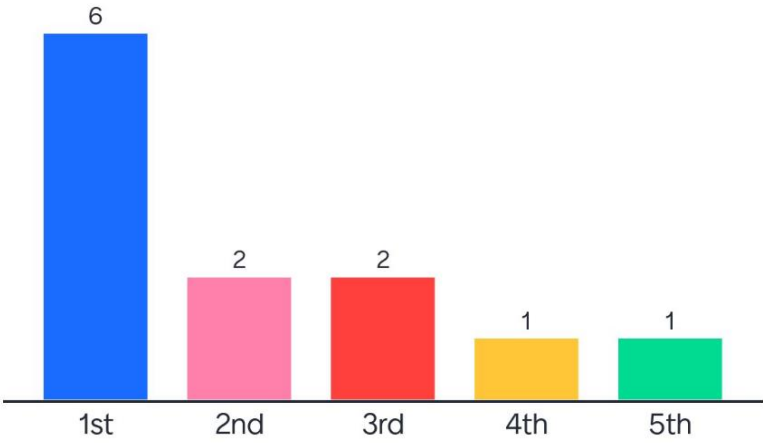
Mentimeter



For endemic countries, in terms of top five priority diseases what is the rank of FMD for disease control?



For FMD free countries, in terms of top five priority diseases what is the rank of FMD for disease prevention?



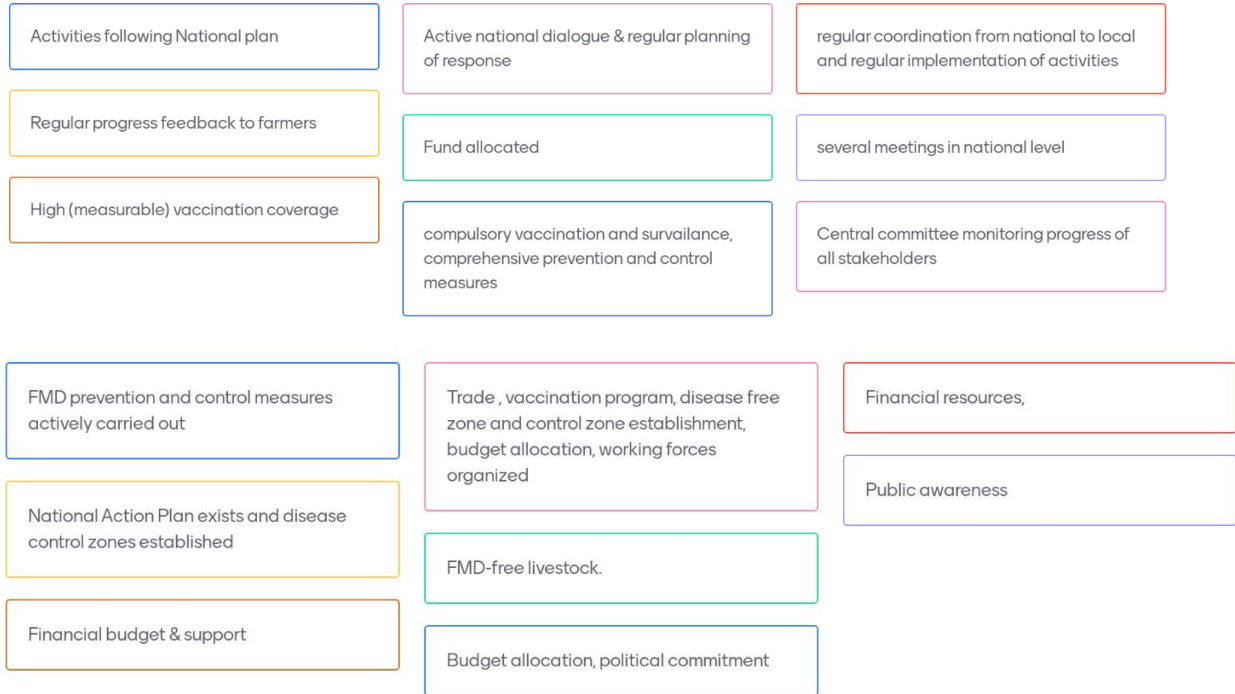
# How would you ensure strong political commitment and resources for FMD control?



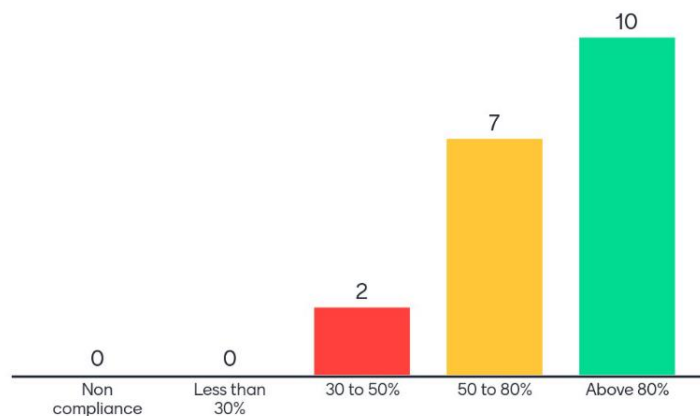
## Discussion on Governance of FMD Control

### 1. What are the indicators to indicate that you have a vibrant FMD control in your country?

Mentimeter



### 2. Based on your assessment up to what level is your country complying with the OIE standards and your country FMD plan?



### 3. What are the challenges for not being able to comply with the code?

resources	Movement control	Funding
funding	Resources allocated	work force
UNDERSTANIND OF CODE, TECHNICAL IMPLEMENTATION, DO NOT KNOW HOW TO MAKE COMPLIANCE WITH OIE STD	related to economic development	Budget and Human resources
Funding and resources	illegal transportation	Movement control
Movement	Manpower, financial budget, multisectoral collaboration	Fund allocation
Funding and technical		

### 4. What are your suggestions to overcome these challenges

Advocacy, PPP	Revising related reulations/policies	Cost benefit study
Build up capabilities within the service	political advocacy, PPP	Political commitment, law enforcement
PPP	strengthening partnership with livestock association	vaccin
Share COVID lessons		

## Annex 7: Outputs of the breakout session during the Post Sub-Commission Meeting on 18 March 2022

### **Group 1: SEACFMD Partners – Enhancing effective control of FMD in the region**

FMD viruses (absence of Asia-1; resurgence of A; dominance of O/India 2000/e

- Prevalence studies of various lineages
- Asia 1 – study to confirm its absence

FMD Vaccination

- Modelling where best to use the vaccines
- Anthropological studies on behavior of farmers on vaccination
- Response to emergency demand/supply of vaccines
- Regulatory measures to allow for new strains

Animal movement

### **Group 2A: South Asia – Enhancing FMD control and strengthening collaboration between SEACFMD members and neighbouring countries**

*What are the challenges to controlling FMD in your country?*

- Animal movement cross-border national and international
- Share border with Northeast India
- Identification and traceability in large animals, particularly tracing outbreaks
- Samples confirmation/matching test?? (Recently Bhutan)
- Vaccine production capacity
- Public awareness vaccination/ other activities
- Regular quality testing of Vaccines

*What are your expectations on assistance, guidance and support from the GF TADs FMD WG (Working Groups)?*

- Technical capacity building- support epidemiology
- Disease modelling strategies, developing a strong database
- Heterologous vaccine protection study /provide scientifically evidence

*How can we synergise FMD control activities with other priority TADs?*

- FMD can take as an example/ as a model of the controlling other TADs
- Capacity of FMD can utilize to support TADs control and One health initiative

*How can we collaborate with SEACFMD Member countries?*

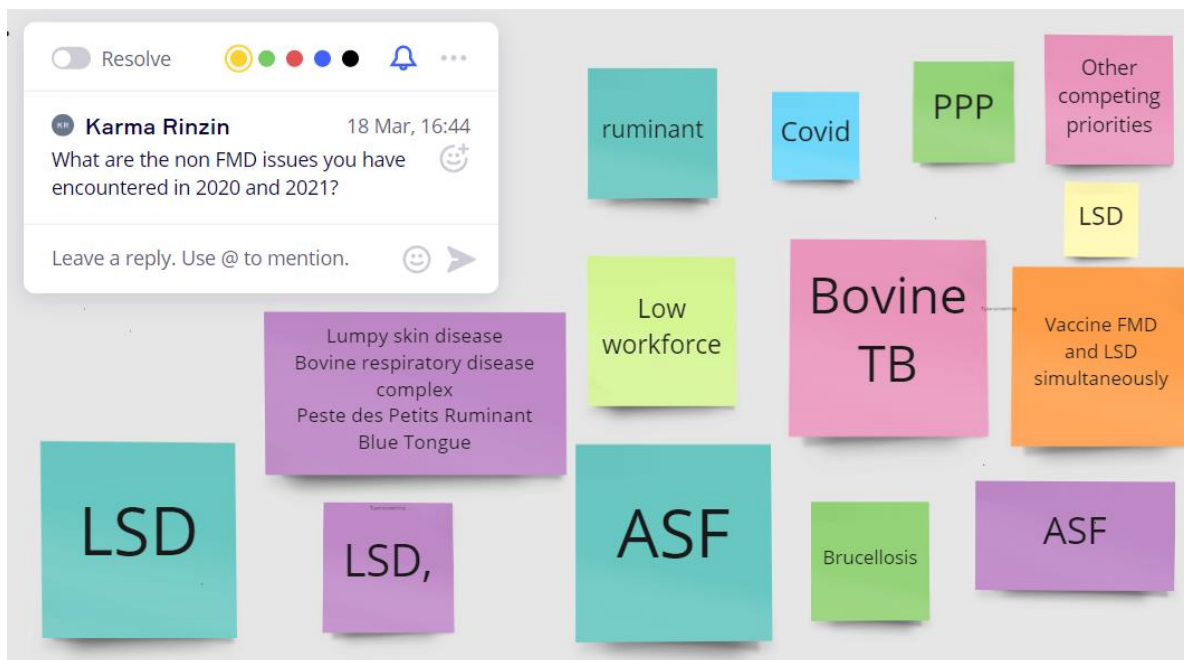
- Under GF-TADs – share experience, support their good work, exchange successes and best practices; Promote Public Private Partnership (PPP)

### Group 2B: East Asia and Pacific region – Enhancing FMD control and strengthening collaboration between SEACFMD members and neighbouring countries

- Risk information for incursion into a free country and to plan vaccine procurement and emergency vaccines, modelling for scenarios, socio-economic implications.
- Support to endemic countries.
- Capacity development within the countries.
- Turnover of staff in veterinary authorities and no outbreaks for several years.
- Quarantine inspections to prevent entry of possible FMD products. Sharing situation from other countries who are having outbreaks.
- Direct engagement with countries with FMD to support the PCP progress and exchange information to improve technical capacity and help with preparedness activities.
- Help with selection of emergency vaccine.

### Group 3: SEACFMD Countries – Non FMD issues and synergizing FMD and other TADs control

#### Non FMD Issues





## Existing Synergies (FMD and other TADs)

**Resolve** [Status icons]

**Karma Rinzin** Today, 01:44  
 Enlist the synergies of FMD with other TAD's based on your experience or observation in the field?

Leave a reply. Use @ to mention.

Diff. Diagnosis, Collaboration plan; Vaccination, Vaccine selection, Strain Characterization, KM for the farmer; How to notice and rapid notice to Department..

- Multisectoral collaboration
- Action plan for Disease control
- Public awareness & communication

Sample collection

value chain analysis

Awareness

Joint training on epidemiology

early reporting

laboratory capacity building, surveillance, outbreak investigation, biosecurity

Disease free zones

Legislation

## Potential Synergies (FMD and other TADs)

**Resolve** [Status icons]

**Karma Rinzin** 18 Mar, 01:47  
 What are the potential synergies that you foresee in control of FMD and other TAD's?

Leave a reply. Use @ to mention.

Diff. Diagnosis and Collaboration between lab,

animal identification linked to vaccination

Laboratory diagnosis

Vaccine

Preparedness activities

value chain analysis

**Foresight on SEACFMD**

The image shows a screenshot of a Slack message interface. At the top, there is a 'Resolve' toggle switch and a row of colored status indicators (yellow, green, red, blue, black). A bell icon and a three-dot menu are also visible. The message is from Karma Rinzin, dated 18 Mar, 10:32. The text of the message asks for foresight on SEACFMD in the next 5 to 10 years, focusing on sustainability, impact, and relevance. Below the message is a reply prompt: 'Leave a reply. Use @ to mention.' with a smiley face icon and a send arrow. Below the message area are three sticky notes. Two are yellow and contain the text 'Emergency vaccine' and 'Vaccine development'. The third is purple and contains the text 'Enhance Lab diagnosis ( Analysis, Vaccination Quality) can be support SEACFMD in the future'.

## Annex 8: Country Report

### Cambodia

#### 1. FMD Situation in 2021

- From January to December 2021, a total of 36 FMD outbreaks were reported from 8 provinces (Battambang, Kampong Speu, Preyveng, Siemreap, Phnom Penh, Kampongchnang, Banteaymeanchey and mondolkiri) – Figure 2 and Figure 3.
- Of the 8,127 susceptible cattle population, 1025 cattle showed FMD clinical signs with total of 24 deaths in young cattle (Table 1).
- Majority of FMD outbreaks occurred in Battambang, Kampongspeu and Preyveng provinces where there were high population of cattle (Table 1).
- Although sporadic FMD outbreaks were reported throughout the year, the maximum number were reported in January 2022 (19 out of 36) - Figure 1.

**Table1: Prevalence and Fatality Rate of FMD by village level**

Provincial name	N of susceptible cattle	N of sick cattle	N of dead cattle	Prevalence	Fatality rate
Battambang	1697	179	3	10.55%	1.68%
Kampong Speu	1986	214	1	10.78%	0.47%
Prey Veng	2512	269	5	10.71%	1.86%
Siemreap	512	51	2	9.96%	3.92%
Phnom Penh	113	20	0	17.70%	0.00%
Kampong Chnang	884	196	11	22.17%	5.61%
Banteay Meanchey	73	16	2	21.92%	12.50%
Mondolkiri	350	80	0	22.86%	0.00%
<b>Total</b>	<b>8127</b>	<b>1025</b>	<b>24</b>	<b>12.61%</b>	<b>2.34%</b>

#### Highlight major epidemiological changes if any, and significant concerns.

- There is drastic reduction of FMD outbreaks in 2022 compared with 2021 with many outbreaks reported from September to December 2022.
- The maximum number of FMD outbreaks in January in 2022 is a spill over or continuation of FMD outbreaks from 2021.

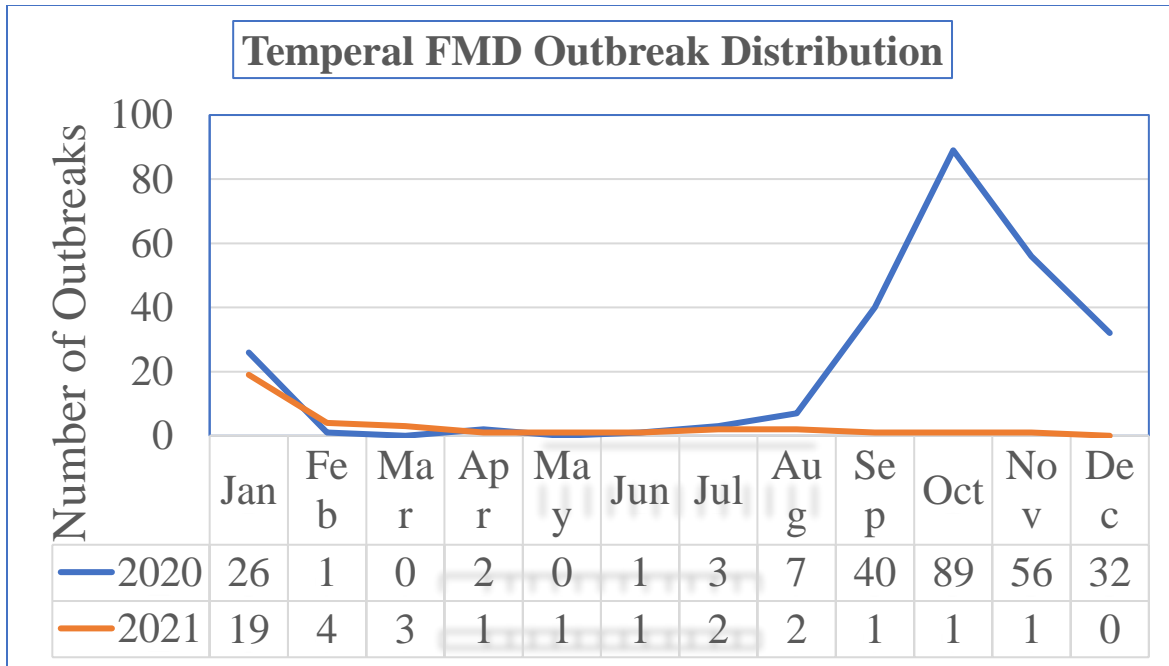


Figure 1: Monthly distribution of FMD outbreaks in 2020 and 2021

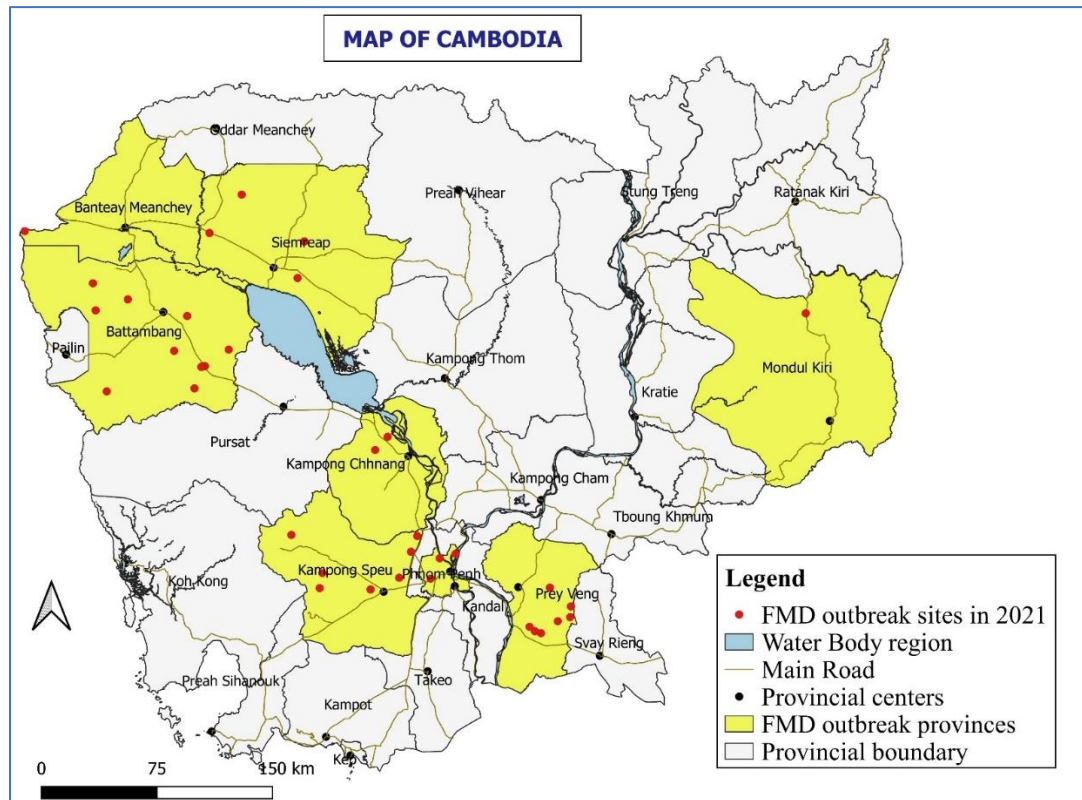


Figure 2: Spatial distribution of FMD outbreaks in Cambodia in 2021

## 2. FMD Prevention and control activities

### ***FMD Reporting System***

- General Directorate of Animal Health and Production (GDAHP) use the existing reporting channel to report all animal diseases.
- The villagers/animal owners report to village animal health workers which then report to district veterinary officers, then to provincial veterinary officer and then from provincial veterinary officer to General Directorate of Animal Health and Production.
- Further, Hotline and other social media channels were also included in disease reporting system.

### ***Outbreak Management***

- District/provincial veterinarians work closely with village animal health workers and local authority to:
  - o Isolate and treat sick animals;
  - o Conduct detail epidemiological investigation of FMD outbreaks;
  - o Sample collection from sick animals to identify and investigate FMD virus serotypes involved in the outbreak;
  - o Conduct ring vaccination. GDAHP provides vaccines to the Provincial offices of Animal Health and Production upon request from them;
- Biosecurity and movement control
  - o Control movement of animal and animal products from infected villages;
  - o Strictly control animal movements along the border and within the country (Check point);
  - o Implement biosecurity measures at the village level, farms, slaughterhouse and along the national road.
  - o Create public awareness on FMD and its control in the infected villages.



FMD sample collection





FMD vaccination campaign in Cambodia



Vehicle disinfection (hygiene practice) in FMD outbreak village

### ***Funding and Resources***

- Resources and Funding
  - o GDAH Project (Government fund)
- Government budget allocation for FMD Control and Prevention
  - o Government allocated very limited fund for animal disease control in 2021 because of Covid-19 pandemic outbreak.

### **3.Challenges in FMD control**

- Illegal animal movement
- Limited Lab capacity and disease reporting system
- High number of backyard farms that have low biosecurity
- Limited FMD vaccine coverage
- Limited budget support from government for FMD control and prevention
- Limited research capacity, human resource and support from stakeholders.

### **4. Way Forward – Future activities**

- Enforce existing legislation on disease control and prevention
- Strengthen lab capacity in disease diagnostic and animal disease surveillance system
- Improve stakeholder collaboration in FMD control and prevention
- Increase FMD vaccine coverage and bio-security practice at farm level
- Encourage farmers to do farm registration and apply for GDAH certification (Prakas 549).

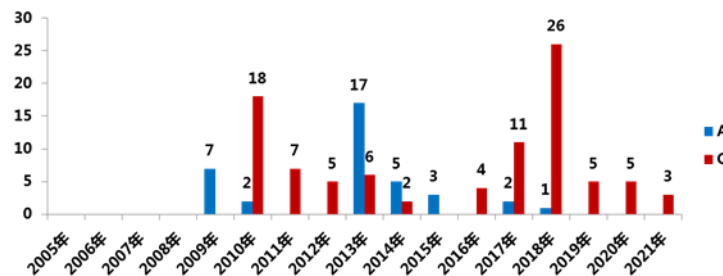
## China

### 1. FMD Situation in 2021

A total of 3 FMD outbreaks were reported in China in 2021, and they are all caused by Serotype O (Table 1). Currently, FMDV serotype O is mainly circulating in China with partly type A FMD. There is no Asia 1 serotype detected in China since 2010, thus the compulsory immunization of animals with Asia 1 was topped since July 2018.

According to the epidemiological findings from China National FMD Reference Laboratory, the existing circulating strains are complex. There are 4 FMDVs lineages found in China: O/Mya-98, O/Ind-2001 and O/CATHAY, and also A/Sea-97, which are highly identical with the viruses circulating in other countries, especially from SEA.

The results of the vaccine matching tests show that the vaccine used in China have a high protective efficacy against the field strains.



Temporal distribution of FMD outbreaks in China from 2005 to 2021



Spatial distribution of FMD outbreaks in China, 2020-2021



- **Table 1: details of FMD outbreaks in China in 2021**

Report Date	Type	Species	Susceptible	Cases	Deaths	Destroy	Location	Province	Strain
29/01	O	Cattle	52	37	0	52	Hami, Xinjiang	XINJIANG	Ind-2001
22/03	O	Pig	33	4	0	33	Huizhou	GUANGDONG	CATHAY
31/10	O	Cattle	41	40	0	41	Zeku, Qinghai	QINGHAI	Ind-2001

**Highlight major epidemiological changes if any, and significant concerns.**

- FMDV type A case has not been reported since 2019 in China, but one A/Sea-97 strain (obtained from OPF in one healthy cattle) was detected in 2021 during the active surveillance in the South-west border.
- Currently, the number of clinical cases is decreasing in China.
- The strain O/Ind-2001 is still main circulating virus strain, especially in cattle.
- The epidemiological studies shown that the multiple strains (O/Ind-2001, O/Mya-98, O/CATHAY and A/Sea-97) are prevalent, while the vaccine matching tests show that the vaccine used in China exert good protection against the most field strains.

**2. FMD Prevention and control activities**

- Current China is in PCP-FMD stage 4.
- In December 2025, reach stage 3 to 4.

***Surveillance, early detection and response***

As usual, the veterinary laboratories at the provincial and national level in China, as well as the OIE Reference Laboratory for FMD carry out rapid detection and diagnosis of FMD. According to the national surveillance and epidemiological survey on animal disease (2021-2025) published by MARA (Ministry of Agriculture and Rural Affairs), China, the Departments of Animal Disease Control and Prevention, the provincial and national level veterinary laboratories will carry out the nationwide FMD virological and serological surveillance. From January to September 2021, a total of 2,105,730 sera samples were collected and tested, and the qualification rate of vaccination is 88.4%; total 413,729 tissue samples, including OPF, lymph nodes tested with RT-PCR for FMDV RNA detection, and 29 of them tested positive.

The FMDRL also participates in the national surveillance. In 2021, the main surveillance are sampling and testing in pig slaughterhouses from 12 provinces, FMD surveillance in north-east of China, FMD surveillance in north-west of China, FMD surveillance around border areas in south-west of China and routine monitoring in FMD free zone with vaccination.

### ***Vaccination***

In 2021, the FMD vaccination policy followed in China includes: all Pigs vaccinated with type O; cattle, sheep/goats, camels and deer vaccinated with type bivalent vaccine with O and A serotype. Nine FMD Vaccine Manufacturers in China, produces type O monovalent (conventional and synthetic peptide) vaccine; Type A monovalent vaccine; Type O and A bivalent vaccine, and synthetic peptide vaccines. The average qualification rate of vaccination is 88.4% in 2021(Table 2).

**Table 2: details of FMD outbreaks in China in 2021, Jan-Sep**

Animal	Collecting serum	Up to standard	Qualification rate
Pig	926807	815878	88.03%
Cattle	552242	499220	90.40%
Sheep/Goat	626681	546373	87.19%
total	2105730	1861471	88.40%

### ***Animal movement***

In order to improve the animal disease prevention and control system and based on a systematic review of the pilot work experience of regional prevention and control of ASF and other major animal diseases in Central and Southern Region since 2019, the plan on regional prevention and control of ASF and other major animal diseases nationwide was initiated from May 1, 2021. A long-term regional prevention and control mechanism will be established to reduce the risk of spread of animal diseases across regions with animal movement in the future.

### ***National FMD Prevention and control Plan***

From 1<sup>st</sup> May 2021, with the enforcement of Animal Disease Control and Prevention Law of the People's Republic of China, the FMD Control and Prevention technical specification is undergoing revision. The National FMD Prevention and control Plan is also in research and draft.

### ***Any other initiatives***

In 2021, an international training on TADs was organised by Lanzhou Veterinary Research Institute (LVRI), CAAS, and two nationwide training on FMD control and prevention, and 14 local trainings by provincial laboratories.

The major animal diseases PTS-2021 including FMD organized by MARA, China, 35 laboratories invited using FMDV typing QRT-PCR.

### **3. Challenges in FMD control and recommended solution to address these challenges**

- Complex FMDV epidemic strains ← epidemiological studies and differential diagnosis
- Long-distance transport of animals ← prevention and control by regions
- Immune “short board” (especially in backyard) ← booster immunization
- Risk of introduction of foreign FMDV strains ← a collaborative response for control
- Pork prices falling-prevention and control costs may be reduced ← strengthen publicity
- Local veterinary teams are poor ← training; policy and financial support
- The impact of COVID-19 ← work together: one world, one health

### **Way Forward – Future activities**

The main activities in 2022 are:

- real time diagnosis and analysis on FMDV;
- continue with compulsory vaccination with FMD type O and/or A for all cattle, sheep, camels and deer; and type O FMD for all pigs, or type A FMD based on the risk assessment results, with pushing the policy of “vaccinate first, pay later”;
- reinforce FMD surveillance and nationwide post-vaccination monitoring (PVM);
- carry out prevention and control of FMD by 5 regions in China; and
- Synergize FMD control with other major animal diseases (ASF, LSD etc).

## Malaysia

### FMD Situation in 2021

A total of 26 FMD outbreaks were reported in Peninsular Malaysia out of which maximum were in cattle.

FMD outbreaks were reported throughout the year with maximum number in the month of January, March, May and December (Figure 1).

Nine outbreaks were typed as Serotype O (34.6%), while remaining outbreaks were not typed (Figure 2).

Six out of 16 provinces (13 states & 3 federation) reported FMD outbreaks (Figure 3).

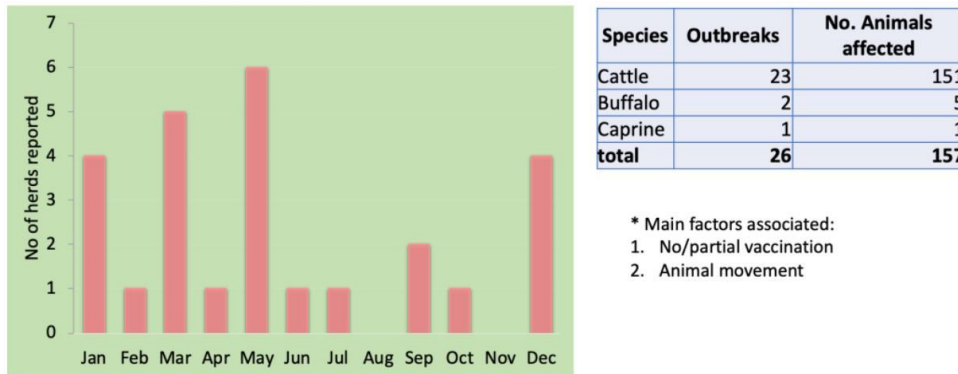


Figure 1: Monthwise distribution of FMD outbreak in Malaysia in 2021

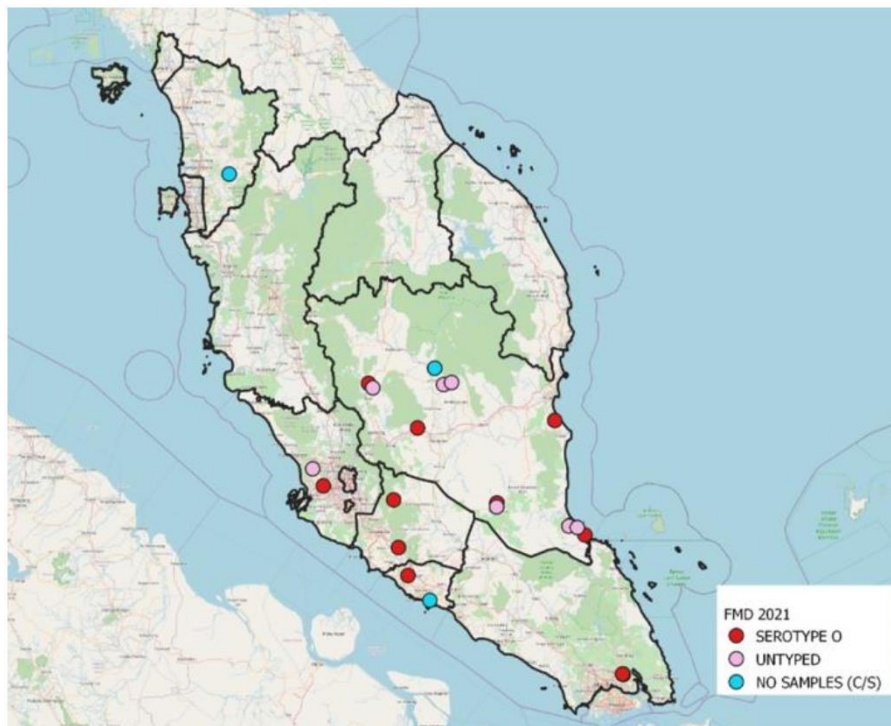
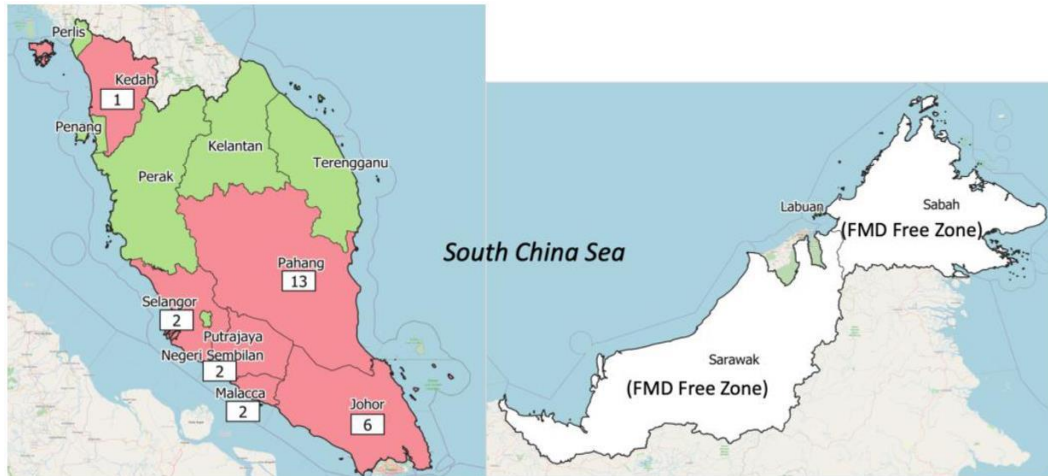


Figure 2: Geo locations of FMD outbreaks



**Figure 3: Map showing the affected provinces (in red colour)**

#### **FMD Prevention and control activities**

- Current PCP-FMD stage = Stage 3
- Target in December 2025: Stage 4.

#### ***Surveillance, early detection and response***

Activities to rapidly detect, report and diagnose FMD - following Malaysia Veterinary Protocol for FMD 2011. revised 2020.

- Disease reporting is compulsory in Malaysia (Animal Act 1953, revised 2013).
- Disease investigation is performed within 24 hours of an outbreak report. A report using EpiS01 form is submitted to Animal Disease Information Centre (ADIC) on the same day.
- During the investigation, sampling is conducted following Guideline for FMD sampling. Real-time PCR is performed immediately upon sample arrival at the National FMD Laboratory and result is reported to ADIC within 48 hours.

#### ***Percentage of reported outbreaks with full investigation including virus characterization in 2021 (Total number of outbreaks reported vs total samples collected/ virus typed for the reported outbreaks).***

- No of reported outbreaks - 26
- No of outbreaks investigated - 26
- No of outbreaks sampled - 19
- No of samples tested for detection of FMDV using real-time PCR - 19
- No of FMDV characterized -13 (50%)

#### ***What are the main responses implemented to rapidly control FMD outbreaks?***

- Following Malaysia Veterinary Protocol for FMD (revised in 2020) and other related SOPs & Guidelines.

- Disease investigation following SOP for Disease Outbreak Investigation
- Sampling following Guideline for FMD sampling
- Supportive treatment on the animal with clinical signs of FMD
- Disinfection procedures are carried out at affected premise following the Disinfection guideline.
- A movement control order is issued to the affected premise (Sec 18; while waiting for lab result & Sec 19; upon confirmation by laboratory result).
- FMD vaccination teams are deployed to conduct vaccination on all surrounding premises of susceptible animals within a 5 km radius.

***Any activities conducted to improve preparedness***

- Preparedness bank: PPE, disinfectant, vaccine, supportive medicine.
- Simulation exercise using SOP for Animal Disease Crisis Management, the existing protocol of specific disease, SOPs and guidelines.
- The epidemiologist at ADIC conducted data (epidemiological and Post Vaccination Monitoring) analysis to evaluate FMD Control measures for revision of Malaysia Veterinary Protocol for FMD.
- Ongoing Evaluation on Emergency preparedness and Response (EPR) by World Organisation for Animal Health
- Revision of legislation Sec 2, 3, 36. (Animal Act 1953; Revised 2013)

***Any capacity building activities (Eg. training, workshop etc)***

- Workshops, webinars and Practical training on FMD sampling, vaccination and tagging.
- Simulation exercise
- Participated in Disease Investigation workshop (OIE program)
- Participated in GIS training (OIE program)
- On-going training on Disease Modelling workshop (OIE program)
- Participated in MPI: Applied Epidemiology Professional Development Training Program (New Zealand Government)

***Vaccination***

- Types and doses of vaccines produced/ imported in 2021:
  - o Imported: Aftovaxpur (Ruminant): 450,000 doses; Aftopor (Pigs): 805,200 doses
- Number of animals vaccinated and vaccination coverage (%) in targeted species (cattle/ buffaloes/ Pigs/ small ruminants in 2021/ Number of animals vaccinated and vaccination coverage (%) in the targeted areas.
  - o 65% of targeted population based on strategic vaccination

***Animal movement***

- Revision of legislation Sec: 79 & 86 (Animal Act 1953; revision 2013).
- Integration of eVet-Permit (system to monitor animal movement and premise registration), MADIC (System to managing animal disease control and surveillance data).

- Strengthen border control cooperation with the State Government at the borders and related agencies (MAQIS, PGA & PDRM)
- Number of animals moved through official channels in 2021 (import and export).
  - o Importation only: 837,29 ruminants in total.
- Communication and awareness
- Webinar 3: On livestock disease FMD & LSD.
- Awareness Campaign: 39 (No of farmers: 2757 Ruminant and pig farmers)
- Dissemination of video infographics and pamphlets to farmers, traders & importers
- Billboard, banner & bunting at strategic location –

### ***Governance and legislations***

Revision of legislation Sec: 2, 3, 36, 79 & 86 (Animal Act 1953; revision 2013).

### ***National FMD Prevention and control Plan***

- National FMD Strategic Plan for Malaysia 2018 – 2023 revised 2021 - 2025
- How SEACFMD Road Map (2021-2025), and Global FMD Control Strategy (2014) used to update the plan?
  - o The reviewed and revised FMD Strategic Plan for Malaysia was made in line with SEACFMD roadmap.
- Is your FMD Plan endorsed by the respective Ministries with a budget allocation.
  - o Yes, with a reduction in budget.

### **Challenges in FMD control and recommended solution to address these challenges**

- Governance structure (Federal & State Governments)
  - o Harmonising & enforcing legislation to control and prevent diseases
  - o Integration of information systems related to disease control
- Insufficient fund for disease control activities
  - o Continue to acquire support from more states government and industry players
- Insufficient vaccination coverage and pricy vaccine
  - o Seeking for more affordable vaccine
- The low workforce in the field
  - o Public Private Partnership
- Husbandry system with insufficient biosecurity measures, i.e., free-roaming animals
  - o Continue public awareness
  - o Continue incentive for farmers with livestock free herds
  - o Continue engagement with stakeholders, importers & traders

## Way Forward

Future activities - List key activities that will be implemented in 2022

Continue implementation of National FMD roadmap for Malaysia 2021 -2025

- Aim: Improved surveillance, movement control, vaccination and preparedness/response to FMD
  - Surveillance: Active, Passive, Post Vaccination Monitoring, Improve laboratory methods & Sample quality by practical training and workshops.
  - Animal movements & Border control: Revise legislation (Sec 2, 3, 36, 79 & 86), Integration of eVet-Permit, MADIC (Malaysia Animal Disease Information Centre), Strengthen border control cooperation with the State Government at the borders and related agencies (MAQIS, PGA & PDRM)
  - Vaccination strategy: Continue development of FMD free herds and zones
  - Preparedness and response: P&R Evaluation, Simulation, Practical training & workshop.
- Aim: Improved ownership and enabling environment at the national level
  - Malaysian Veterinary Services (VS) capacities assessed and recommendations from Performance of Veterinary Services (PVS) Evaluations implemented.
    - Restructuring and re-organisation of DVS
  - Continue cost-efficient synergies with other livestock activities implemented
    - Continue sampling of multiple diseases at once entering the premises is ongoing.
    - Continue and enhance public awareness campaigns combining multiple animal diseases in successive programs.
    - Continue and enhance surveillance by testing multiple animal diseases using the same sample.
    - Continue consideration of disease control measures as required elements in selecting farmers for incentives.
  - Active involvement in SEACFMD activities.

What support you expect from OIE and other partners

- To coordinate availability of high quality and affordable FMD vaccine for the region

How can your country contribute to strengthen SEACFMD campaign at the regional level.

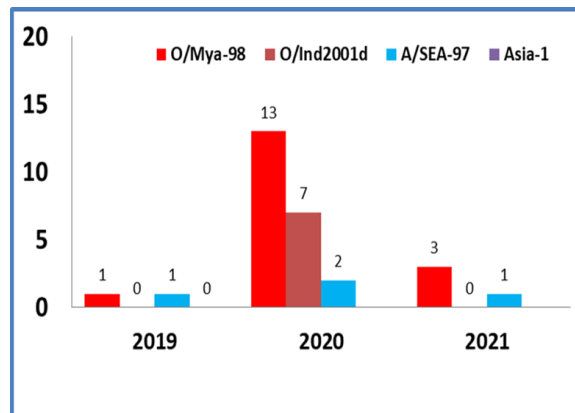
- Malaysia actively participates in all SEACFMD campaign



## Myanmar

### • FMD Situation in 2021

- There were 4 outbreaks from January 2021 to Dec 2021, of which there are 3 O-type and 1 A-type.



### • FMD Prevention and control activities

- Current PCP-FMD stage of Myanmar is Stage- 2.
- Target in December 2025 (PCP-FMD stage) is stage -3.

### Key Strategies

- 1) Addressing FMD at source,
- 2) Establishing and expanding zones with reduced FMD incidence, and
- 3) Protecting and maintaining areas which are FMD free

### Technical activities

- Identification of and immediate response to foci of FMD infection, (b) elimination of the source of FMD, (c) prevention of spread of FMD, and (d) protection of susceptible hosts

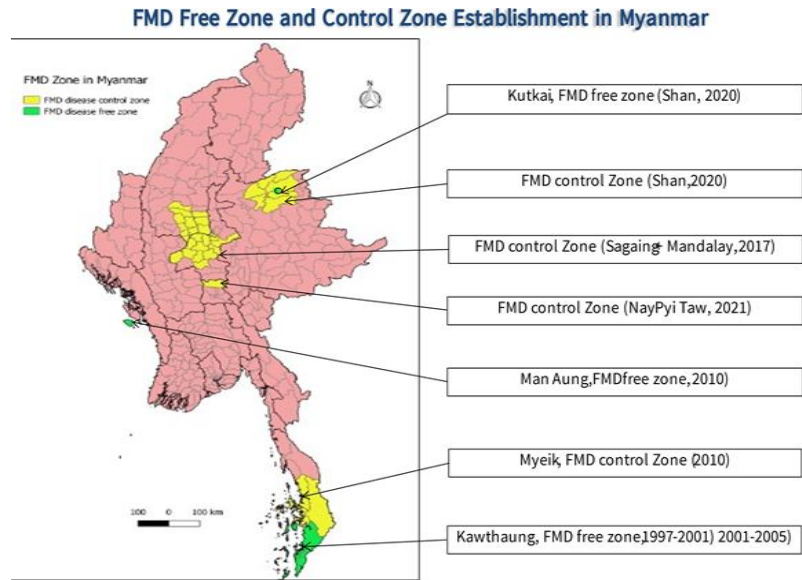
### Communication and advocacy activities

- increased cooperation in FMD prevention and control, (b) improved capacity of the veterinary services in behavior change communication and advocacy, (c) creating awareness and securing the support of veterinary services, donors, NGOs (non governmental organisations) and other development partners

### Coordination mechanism

- National and Sub-National levels, as well as (b) regional and international levels

- Monitoring and evaluation



Map showing location of FMD surveillance activities in 2021

### **Surveillance, early detection and response**

- Serosurveillance was conducted as follows;

Sr.	State/Region	township	Species	Sample type	No. surveillance	No. of sample	NSP antibody
1	6	10	cattle, buffalo	Serum	10	1413	Sample and positive ratio is 30.0%

### **Vaccination**

- Continued 8th round Dry Zone FMD vaccination project using government budget
- 345,361 animals were FMD vaccinated in 2021 achieving (80%) coverage

Types and doses of vaccines produced/ imported in 2021

<b>Country: Myanmar</b>		<b>Year: 2021</b>		
Source	Number of <u>Doses</u>	Types (Killed/ Attenuated)	Types (Indicate subtype combination for bi & trivalent vaccines)	Manufacturer and Country
Gov't Produce	138,000	inactivated	O, Monovalent	Livestock Breeding and Veterinary Department
Private sector (commercial farms, traders)	110,000	inactivated	O, monovalent for pig	India Immunosorbent Ltd,
Private sector (commercial farms, traders)	65,895	inactivated	Trivalent (A, A, Asia-1)	India Immunological Co., Ltd. India
Private sector (commercial farms, traders)	65,250	inactivated	O, monovalent	India Immunological Co., Ltd. India
Total	241,145			

### **Main responses implemented to rapidly control FMD outbreak**

- quarantine of the suspect premises,
- sample submission to the laboratory
- (3) outbreak area officially defined to strictly control animal movement (Zoning)
- animal check point set up

- ring vaccination
- outbreak investigation
- cleaning and disinfection
- Communication Awareness and education
- Surveillance

**Animal movement**

- Order for important commodity and movement control of cattle and buffalo was issue as no. 30/2020 issue in March 2020.
- Directive no. 5/2020 was issued for control of domestic movement of cattle and buffalo.
- Animal movement was controlled by animal Identification.

**Number of imported animals in 2021 is as follows;**

Sr	Type of animals	Number	Country
1	Pig	46693	Thailand
2	Plg	2469	Canada
<b>Total</b>		<b>49162</b>	

**There were no official export animals from Myanmar to another countries.**

- We have signed on letter of agreement between Myanmar and China for “Protocol for quarantine health requirements for slaughter bovine to be exported from the Union of Myanmar to PR China” on 18-1-2020.

**Communication and awareness**

- Using Viber application, FMD prevention and control group was set up including central, state/region, district, township and Participatory Rural Appraisals.

**We conducted awareness activities in person as follows:**

Sr.		Township	No. activities	Participants	Pamphlets
	15	92	1844	35544	35544



**Governance and legislations**

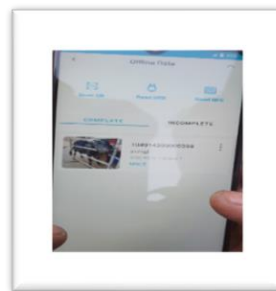
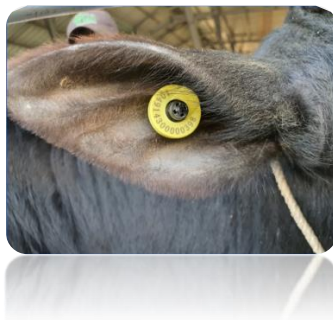
- Animal Health and Livestock Development Law as issued as 13/2020.

**National FMD Prevention and control Plan**

- Myanmar is going to implementing Zooning approach in FMD control particularly in trade-based areas as Phase I.
- National FMD control plan (other than RBSP) was aligned with SEACFMD 2021 road map and in line with Global control Strategy.
- FMD Plan endorsed by minister for Ministry of Agriculture, Livestock and Irrigation with a budget allocation is under submission.

**Any other initiatives**

- Animal Identification system is being upgraded using microchip for export animal to strengthen traceability.
- Establishment of intergraded livestock zone including disease free zone.



**Challenges in FMD control and recommended solution to address these challenges**

Challenges	Solution
Challenges in the midst of COVID pandemic	-

Typing of circulation FMD virus	Virus typing at reference laboratory
Sustainable funding	PPP (private participation), Advocate to union minister
shortage in human resources	Recruit with participation of private vet and all sectors
Routine vaccination	Recruit with Community Animal Health Worker
Termination of OIE- FMD New Zealand Project	
Availably of vaccine to achieve targeted coverage	
Reporting and surveillance-poor due to covid-19	IT mechanism and online virtual system
Reluctance of Farmer to use animal Identification	Participatory Rural Appraisals will be conducted Insurance system linked with animal Identification system will be conducted.

#### 4. Way Forward – Future activities

##### Progressive Zoning and Safer Trade

- Establishing Disease Free Zooning, Control Zone with vaccination practice in trade-based areas.
- Mutual recognition of DFZ, AQS with GACC (PR China)

##### Communication

- Using IT application (e.g Viber application),
- RRT (Rapid Response Teams) was set up including central, state/region, district, township, reporting

##### Vaccine

- 1 million doses vaccine plant will be encouraged to be completed.
- Vaccine procurement, FMD virus typing, molecular technology support from OIE

##### Surveillance

- Active and passive surveillance, Post Vaccination Monitoring, outbreak investigation

##### Traceability

- Movement control upgrading microchip ear tagging for safer trade

## **Laboratory**

- Capacity building, technical support from OIE or any donor collaboration

## Philippines

The Philippines maintains its status of being an FMD-free country without vaccination. Prevention activities are in place and the highlights of which are as follow:

- For our FMD serological surveillance, a total of 3,865 serum samples were tested using NSP ELISA (Table 1). One sample each from two provinces in Luzon and 1 province in Visayas tested positive but upon second collection of samples, all yielded NEGATIVE results.
- We had a virtual FMD National Coordinators Meeting on 27-28 July 2021. Top of the agenda was the launching of the FMD Mobile application which has been developed in our effort to simplify and encourage the monthly submission of FMD Negative Monitoring Reports (NMRs).
- This was followed by a series of meetings from 30 September to 21 October 2021 to roll out the proposed FMD Risk-based Surveillance to 15 regions. The meeting was conducted per region, and it was participated by coordinators from the DA (Department of Agriculture) Regional Field Offices (RFOs) and Local Government Units (LGUs) and by personnel from the Bureau of Animal Industry (BAI) Regional Veterinary Quarantine Offices (VQOs).
- On 15 December 2021, we held the Animal Health Congress via virtual platform to inform all veterinarians and coordinators from LGUs, DARFOs and BAI of the current animal disease status and to assess and recommend activities in the implementation of animal health programs.
- Our animal movement management is in place both for local and international transport of live animals, genetic materials, and their meat, meat products and by-products.

For importation, issuances had been in place to protect the Philippine borders against transboundary diseases including FMD. DA Memorandum Circular No. 12 series of 2017 (Annex 2) and DA AO No. 9 series of 2010 (Annex 3) stipulate the procedures for importation of live animals and set the regulations for the importation of agricultural products and issuance of Sanitary and Phytosanitary (SPS) Import clearance, respectively.

- To maintain awareness on FMD, we have informative banners on keeping the Philippines FMD-free. We also have an FMD Emergency Preparedness Plan Manual which serves as guidelines for program implementers and frontliners alike in managing disease situation should FMD incursion occur.

### **Our main challenges in the implementation of our FMD Preparedness and Prevention program include the following**

- Suspension of FMD surveillance activities in many provinces in 2021 due to COVID 19 cases. Moreover, due to our ASF outbreaks, surveillance activities have been side-lined by efforts towards ASF control. There is also the problem on mobility and lack of personnel. To address these challenges, we have collaborated with other animal health programs such as CBPP (contagious bovine pleuropneumonia), ASF and CAE.
- Since the country has not have any FMD outbreak since April 2003, FMD is not a top priority for fund allocation. A study on the socio-economic impact would change the perspective of the political leaders about FMD.
- The increasing volume of importation of live FMD-susceptible animals, their meat and meat products, and genetic materials poses a risk for FMD incursion into the country. There must be a regular risk assessment on future incursion of exotic FMD viruses



- Our key activities for this year include the shifting to risk-based surveillance (RBS). We called for a series of meetings on 16-17 of February to present the RBS results. In the pipeline is the draft policy on the implementation of RBS and the target is to issue it by the end of the month.
- Table 2 shows the overall level of risk per province and independent city in the country. In Luzon, there are 16 provinces with low and 15 with medium levels of risk. In Visayas, there are 4 with low and 10 with medium risk level. And in Mindanao, there are 15 with low and 9 with medium risk level. In total, there are 35 provinces with low and 34 with medium.
- All provinces with medium risk level shall continue with the submission of samples for FMD NSP Elisa testing. There are more than 10 provinces which failed to accomplish and submit the FMD survey questionnaire, and they shall also continue to collect samples for FMD serosurveillance.
- Other activities will be the request for fund for 100,000 doses of FMD vaccine buffer stock on the second quarter; review and revision of the country's FMD EPP Manual from July 2022 to June 2023; retooling of the field implementers of the FMD program by the third quarter; and conduct of FMD National Coordinators' Meeting by June and Animal Health Congress by November.
- Harmonization of the FMD activities with other animal disease control programs has started in 2021 and this shall be a continuing activity. We will also be fixing the problems of the mobile application for submission of FMD NMRs by the LGU Vets by the second quarter at the latest.

**Table 1. January to December 2021 Serological Surveillance**

REGION	PROVINCE	# OF SAMPLES	
CAR	BENGUET	272	
	ABRA	33	
	IFUGAO	10	
	KALINGA	45	
	MT. PROVINCE	37	
I	ILOCOS SUR	8	
	LA UNION	109	
II	CAGAYAN	43	
	NUEVA VIZCAYA	65	
	APAYAO	50	
	QUIRINO	8	
	ISABELA	33	
III	AURORA	26	
	BATAAN	30	
	BULACAN	31	
	NUEVA ECIJA	3	
IV-A	CAVITE	110	
	LAGUNA	102	
	BATANGAS	53	
	RIZAL	75	
	QUEZON	72	
IV-B	PALAWAN	191	*1 SAMPLE IS POSITIVE
	ORIENTAL MINDORO	128	
V	CAMARINES NORTE	54	
	CAMARINES SUR	160	
	MASBATE	195	*1 SAMPLE IS POSITIVE
	ALBAY	60	
	SORSOGON	60	
VI	NEGROS OCCIDENTAL	141	
	GUIMARAS	67	*1 SAMPLE IS POSITIVE
	ILOILO	51	
	ANTIQUE	93	
VII	CEBU	445	
X	BUKIDNON	146	
	LANAO DEL NORTE	160	
	CAMIGUIN	316	
	MISAMIS ORIENTAL	107	
	MISAMIS OCCIDENTAL	85	
XII	SULTAN KUDARAT	15	
	SOUTH COTABATO	37	
	SARANGGANI	23	
XIII	AGUSAN DEL SUR	10	
	AGUSAN DEL NORTE	15	
	SURIGAO DEL SUR	65	
	SURIGAO DEL NORTE	15	
BARMM	MAGUINDANAO	11	
Total:		3865	*3 POSITIVE SAMPLES

**Table 2. OVERALL LEVEL OF RISK PER PROVINCE/CITY**

ISLAND	REGION	LOW RISK LEVEL	MEDIUM RISK LEVEL	
<b>LUZON</b>	CAR	2	3	
	I	3		
	II	3	1	
	III	2	3	
	IV-A	1	2	
	IV-B	2	3	
	V	3	3	
	<b>Total</b>		<b>16</b>	<b>15</b>
	<b>VISAYAS</b>	VI		6
VII		1	3	
VIII		3	1	
<b>Total</b>		<b>4</b>	<b>10</b>	
<b>MINDANAO</b>	BARMM	2	2	
	IX	2	1	
	X	4	1	
	XI		3	
	XII	4	1	
	XIII	3	1	
	<b>Total</b>		<b>15</b>	<b>9</b>
<b>Grand Total</b>		<b>35</b>	<b>34</b>	

## Singapore

### **Background:**

Singapore is recognised by WOAHA as an FMD free country where vaccination is not practiced. There has been no outbreak and evidence of FMD in Singapore since 1935. No vaccination against FMD has been carried out and no vaccinated animal has been imported into Singapore in the last 12 months (with the exception of two vaccinated giraffes imported from a zoological collection – for more details see Para 4 under Import controls).

Singapore has a very small ruminant population. There are 116 heads of cattle (all age groups) and 774 heads of goats (all age groups) across 3 farms in Singapore, as of October 2021. These ruminant farms are all dairy farms licensed by the Singapore Food Agency (SFA). Ruminants are also present in a zoological centre in Singapore. The zoological centre is officially designated as quarantine premises and is under the supervision of licensed veterinarians.

### **Prevention activities to maintain FMD free status:**

#### **Compulsory reporting of FMD cases**

All ruminant farms in Singapore are under direct monitoring and surveillance by SFA. FMD is gazetted as a notifiable disease under the Animals and Birds Act (CAP 7). Under the Act, any person in custody of animals who suspects FMD is obliged to report the case to the National Parks Board (NParks). Any person who fails to report FMD can be subject to prosecution and liable to a fine and imprisonment upon conviction.

#### **FMD surveillance**

The surveillance for FMD is via recognition of characteristic clinical signs in a species likely to exhibit clear clinical signs. The main target population for the surveillance is the animals at the ruminant farms in Singapore. All the ruminant farms are regularly inspected by SFA officers for disease surveillance purposes on a monthly basis. Any suspect cases will be investigated with samples collected and sent for confirmatory testing at the Centre of Animal and Veterinary Sciences (CAVS) under NParks. In addition, serological samples are also collected annually for testing.

Blood samples were collected from the farms for laboratory testing from 2013 to October 2021. Sera were tested for antibodies to FMD NSP by cELISA. All samples were tested with negative results. All ruminant farms were regularly surveyed for clinical disease during routine inspection by SFA officers. From 2008 to 2021, no suspect FMD cases were detected during clinical surveillance.

NParks has a surveillance programme in place to detect FMD in local wild boars. Wild boars (found dead or euthanized as part of population control) are tested for exposure to the FMD virus. To date, exposure to FMD virus has not been detected in wild boars in Singapore. Unusual mortality or disease observed in any wild animals would be investigated.

Blood samples of wild boar were collected for laboratory testing in 2021. Sera were tested for antibodies to FMD NSP by cELISA and tested negative.

## **Import controls**

The importation of animals and animal products is governed by the Animals and Birds Act (CAP 7). Under this Act, importers are required to obtain a licence prior to commencement of import. An import permit is also required for each consignment of animals or animal products (including animal feeding stuffs) being imported. Penalties including fines and imprisonment can be imposed in cases of importation without a permit.

NParks and SFA (Science for Africa) regulate the import of animals and animal products for non-food and food-producing animals respectively. NParks and SFA will only issue an import permit if the animals or animal products meet import requirements and have the required health and disease freedom certifications. NParks and SFA do not allow the import and transshipment of meat and animals from sources that are not FMD free or if they do not meet the risk mitigation measures, such as heat treatment. Animal products must be certified to not contain any infectious or contagious agent, including FMD virus.

The import of zoological animals is regulated by AVS through an assessment of foreign establishments housing zoological collections, before allowing the import of such animals from these establishments into Singapore. With regards to FMD, NParks requires the exporting zoological establishment to be accredited by NParks, and also free from FMD before the import of animals into Singapore is allowed. In addition, animals are subject to conditions such as pre-export isolation and no contact with other animals during travel to mitigate any risk of exposure to FMD.

Singapore currently has two giraffes vaccinated against FMD that were imported from an accredited source in India that is free from FMD. The giraffes were imported as part of a zoological collection with the primary purpose of exhibiting wildlife species and reside within the identified boundary of the zoological collection, separated from any susceptible domestic populations and wildlife. Prior to import, the giraffes were vaccinated with an inactivated vaccine against FMDV serotypes O, A and Asia-1 with no risk of reversion to virulence of the vaccine strains and had undergone a 30-day pre-export isolation. Upon arrival, the giraffes were subject to a 3-month post arrival quarantine period and have also met additional import requirements upon arrival into Singapore such as a negative PCR test and negative NSP ELISA to rule out active viraemia or infection.

## **Control measures at entry points**

Singapore is an island State. It is geographically segregated from Malaysia by the Straits of Johor. Routes of entry into Singapore are restricted to the seaport, airport and two road links to Malaysia. Live animals and animal product consignments entering Singapore are subject to control by the Immigration and Checkpoints Authority (ICA) and NParks at the point of entry into Singapore. ICA operates these entry ports round the clock. NParks and ICA officers will check and verify that the accompanying import documents such as import permits and veterinary health certificates are in order before releasing the consignment into Singapore's territory.

In addition, NParks inspects all live animal imports at the border checkpoints. NParks further undertakes random checks over and above ICA's control at the entry points. NParks has in place standard operating procedures with ICA to deal with illegal import of commodities under the purview of NParks. The procedures involve detention of suspect consignments and notification of NParks and SFA officers to investigate cases in detention.

## **Sources of meat and meat products**

SFA has an accreditation system for meat and meat products imports, whereby only countries and establishments, which have been pre-accredited by SFA, may export meat and meat products to Singapore. The accreditation process includes approving the country first, based on assessment of animal health and veterinary public health systems, followed by accreditation of the establishment based on documentary evaluation and on-site inspections. One of the elements considered for accreditation is the country's FMD status. For pork, imports are allowed only from establishments in FMD-free countries or zones (with and without vaccination). For beef, only establishments in FMD-free countries or zones (with and without vaccination) are able to export bone-in meat and offal products to Singapore. Import of boneless beef is allowed from establishments in FMD-infected countries/zones with official control programme. Import of beef and pork products from non-FMD-free countries or zones is possible only if these products have been subjected to procedures to inactivate the FMD virus according to WOAH guidelines.

## **Preparedness and Contingency Planning**

### **Legislation for FMD control**

Under the Animals and Birds Act (CAP 7), NParks is given legislative mandate to put in place regulatory measures for the early detection, prevention and control of FMD in Singapore. The Act provides powers to carry out investigation, surveillance, vaccination and destruction of animals where necessary in the event of an animal disease outbreak. FMD is gazetted as a notifiable disease under the Animals and Birds Act (CAP 7). Under the Act, any person in custody of animals who suspects FMD is obliged to report the case to NParks. Details of the Animals and Birds Act (CAP 7) are available at NParks' website at [www.nparks.gov.sg/avs/resources/legislation](http://www.nparks.gov.sg/avs/resources/legislation).

### **Laboratory capabilities for FMD**

The FMD test capabilities at CAVS are as follows:

Real-time RT-PCR (pan-FMDV) (for detection & identification)

Real-time RT-PCR (FMDV 'O') (for detection & identification)

NSP cELISA (for serological screening)

Solid-Phase Competitive ELISA, Serotype O (for typing)

Solid-Phase Competitive ELISA, Serotype A (for typing)

Solid-Phase Competitive ELISA, Serotype Asia 1 (for typing)

(g) Antigen Detection ELISA and Serotyping for O, A, C, Asia1, SAT1 and SAT2

## Measures to control FMD outbreaks

NParks has a structured emergency response system in place to deal with animal disease incidents such as FMD outbreaks. This emergency system will employ strategies encompassing the following: placing an immediate isolation order on the suspected premises; initiation of an immediate standstill of movement of vehicles, livestock/ungulates, in-contact material, personnel and dairy and meat products in related farms and premises; field and laboratory investigation and assessment of the situation with confirmation or refutation of the outbreak. The system also involves a command structure that includes the relevant government agencies and industry stakeholders. If FMD is confirmed, stamping out will be carried out for affected livestock (i.e., food animals), with a mix of culling and vaccination activities for zoological animals. Animal species with high conservation value (e.g., elephants) will likely be vaccinated, provided that a suitable vaccine in relation to the prevailing serotype is available. Species of less conservation value may be culled to reduce the risk of disease spread within the zoo premises. Aside from culling and vaccination, ground operations for the FMD contingency plan will largely involve disposal of carcasses and related in-contact material by incineration; and thorough cleaning and decontaminating of the premises and all related equipment and vehicles.

A Table-Top Exercise for a disease related to FMD (through similar risk pathways), African Swine Fever (ASF) (“Ex Sus”) was conducted in July 2021 (see *Figure 1*). The main recommendations arising from the After-Action Review include refining operational plans and SOPs, conducting follow-up simulation exercises with industry stakeholders and improving inter-agency collaboration.



*Figure 1: ASF TTX Ex Sus, 5 July 2021*

### **Challenges in FMD control and recommended solution to address these challenges**

Outbreaks of emerging diseases (including ASF) and disruption to global supply chains (arising from pandemics, etc.), are a potential risk to Singapore's food security and animal health. NParks, together with SFA, will continue to explore establishing more bilateral zoning and compartmentalization arrangements for beef and meat products which continually meet OIE standards for safe trade and enhance food security.

As Singapore is free from FMD, there is a constant need to ensure that contingency plans are fit-for-purpose and outbreak investigation teams are trained on the clinical signs, epidemiology and outbreak investigation protocols associated with FMD. Field operational plans will need to be reviewed to ensure they are fit-for-purpose. NParks will conduct follow-up simulation exercises with industry stakeholders and improve inter-agency collaboration to enhance disease preparedness. Regular capability building activities (e.g., training workshops and programmes) will be conducted for staff.

### **Way Forward – Future activities**

NParks plans to conduct the following activities in 2022:

Review contingency plans and processes on animal diseases (including TADs related to FMD)

Conduct follow-up simulation exercises with other government agencies and industry stakeholders

Review of national legislation related to the control of FMD and other animal diseases

Singapore seeks WOA's support on reviewing our animal health and veterinary legislation to combat animal diseases and zoonoses, as well as emergency preparedness and peacetime vaccination policies (e.g., in the event FMD outbreaks occur in zoological collections).

Singapore is committed to participating actively and supporting SRRSEA's initiatives and activities that are implemented as per the M&E framework for the SEACFMD Roadmap 2021-2025.



## Thailand

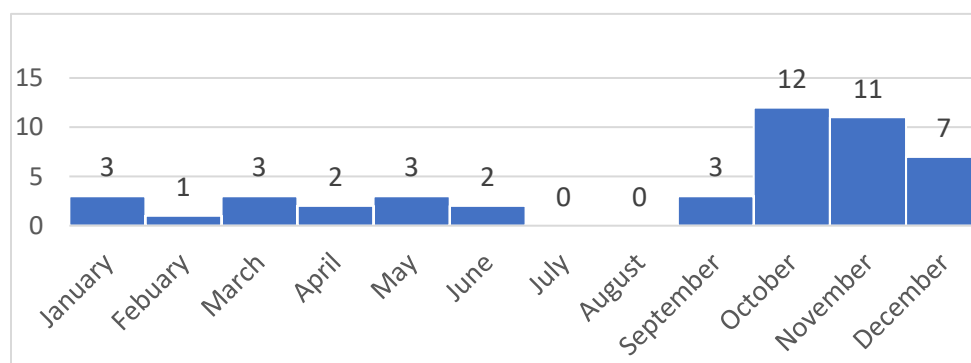
### FMD Situation in 2021

A total of FMD 47 outbreaks were reported in Thailand in 2021. Every month, except July and August, the FMD was detected clinically and reported to Department of Livestock Development (DLD) via the E-Smart Surveillance, an electronic web-based reporting system of DLD (Figure 1). Samples were collected in 98% of the reported outbreaks (46/47) for the laboratory confirmation out of which 14 were O Serotype, 12 were A Serotype, 13 not typed and results for the seven samples are pending.

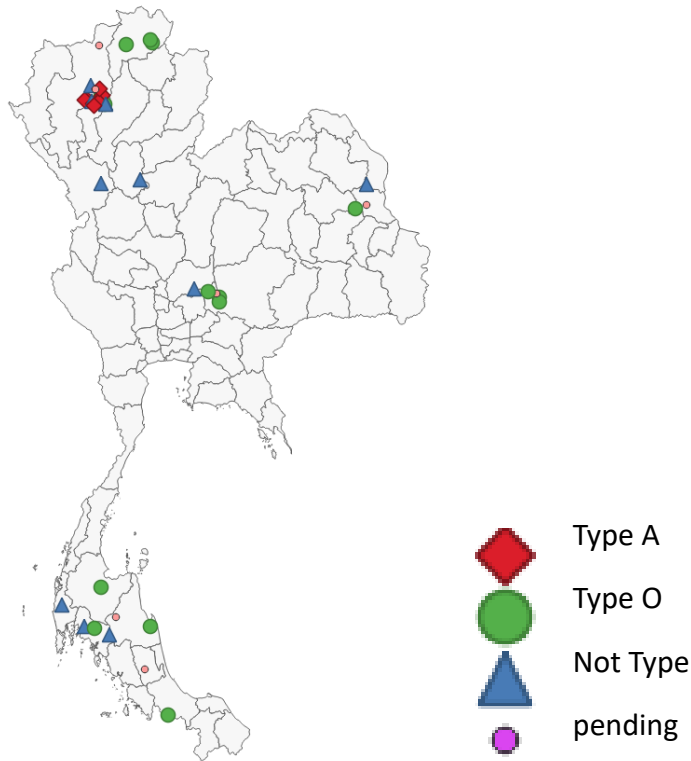
Numbers of animal affected by FMD in Thailand in 2021 is 2,052 heads which included dairy cattle, beef cattle and buffaloes (Table 1). There is no report of FMD in pigs, goats, and sheep. The geographical distribution of FMD outbreak by serotypes are illustrated (Figure 2).

**Table 1: Animal affected by FMD in 2021.**

Type of animal	Number of outbreaks	Susceptible	Number of sick	Number of deaths
Dairy cattle	17	10,495	393	6
Beef cattle	29	2405	1,658	6
Buffalo	1	24	1	0
Total	47	12,924	2,052	12



**Figure 1: Temporal distribution of FMD outbreak in Thailand in 2021.**



**Figure 2: The geographical distribution of FMD outbreak by serotypes in 2021 in Thailand.**

#### **FMD Prevention and control activities**

##### **Current PCP-FMD stage and target in December 2025 (PCP-FMD stage)**

Thailand is currently in PCP Stage 3 and aims to be in stage 4 of the PCP-FMD stage by end of 2025. Eastern region of Thailand continues to implement animal and animal carcasses control regulations adapted from the WOA Code. Additionally, DLD is drafting a new strategy, setting clear targets to certain areas, to drive exports.

##### **- Surveillance, early detection and response**

- **Activities to rapidly detect, report, and diagnose FMD:** Clinical detection and reporting of FMD is mainly done by Provincial and District Livestock Offices and their networks. All samples must be submitted to confirm the serotypes at laboratory. Majority of them were diagnosed for their genetic and immunogenic properties.
- **Virus Characterisation.** Total number of outbreaks reported vs total samples collected/ virus typed for the reported outbreaks is presented in Figure 3. Virus characterization for 55.3% (26/47) of the reported outbreaks were done in 2021. Regarding the serotype O, the toptype is ME-SA and the genotype is Ind-2001e. Regarding the serotype A, the toptype is ASIA and the genotype is SEA-97.

- Total outbreak : 47 outbreaks in 18 provinces
- serotype
  - Type O : 14 outbreaks
  - Type A : 12 outbreaks
  - Not type : 13 outbreaks
  - Not sample: 1 outbreak
  - **Pending : 7 outbreaks**

**Figure 3: Serotypes of FMD in Thailand by outbreak in 2021.**

- **Main responses implemented to rapidly control FMD outbreaks**
  - Ban on movement of livestock and livestock products with issue of an Executive Order.
  - Announcement of epidemic area by law in 5 kilometres for 30 days
  - Outbreak investigation (including active case finding, trace back and trace forward)
  - Treatment of sick animals
  - Ring vaccination
  - Public awareness program
- **Vaccination**
  - **Types and doses of vaccines produced/ imported in 2021:** In ruminants, 12,311,748 doses of aqueous trivalent and bivalent vaccine were used. In pigs, 21.7 doses of FMD vaccine (produced by DLD) were used. There are also FMD vaccines from private companies to sell to the farmers.
- **National FMD Prevention and control Plan**
  - DLD is drafting a new strategy by setting clear targets to certain areas, to drive exports. Two strategic goals are to 1) Develop system and process to establish animal production zones/compartments which is safe from FMD and 2) Increase export opportunities. The activities include gap analysis, zone/compartment evaluation (using MCDA (Multi Criteria Decision Analysis) technique, etc.), cost effectiveness, consultation with WOA and drafting of strategic plan.

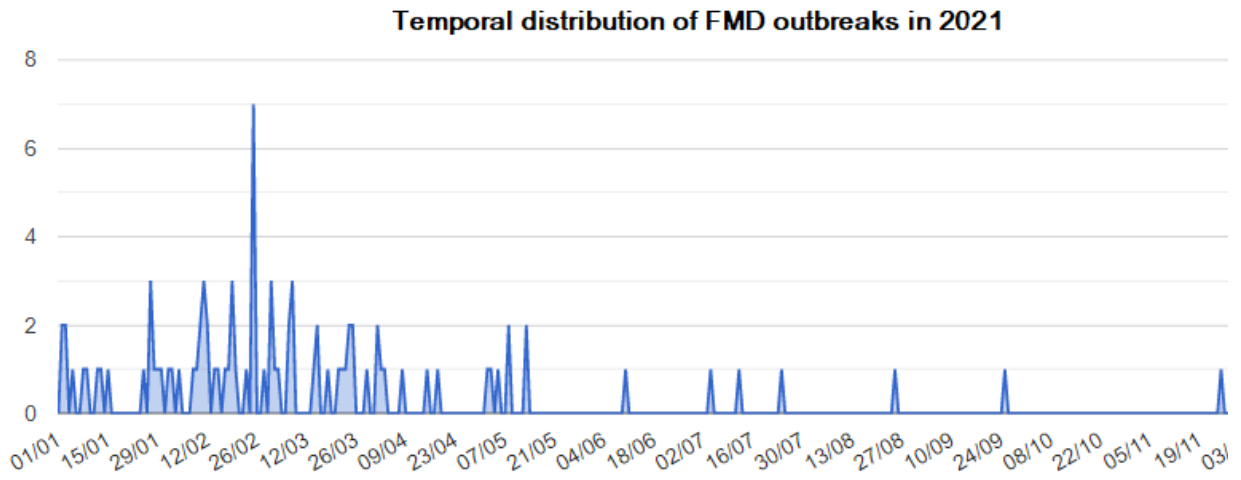
## Vietnam

### FMD Situation in 2021

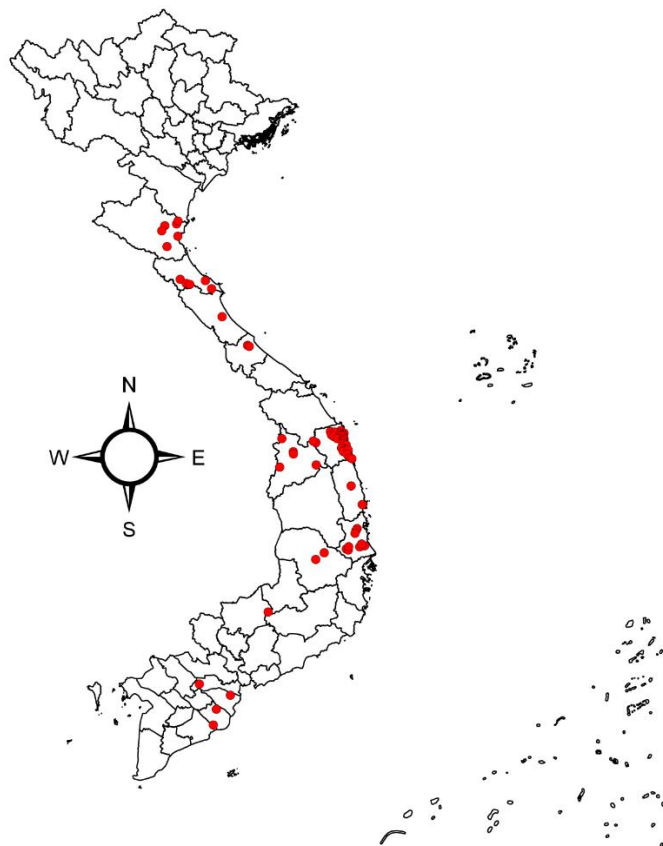
In 2021, there were 89 FMD outbreaks reported in 18 provinces. All outbreaks were serotype O. The total number of infected animal were 3,407 heads. Details of the affected animals are in the Table 1. The temporal and spatial pattern of FMD outbreaks in Vietnam in 2021 is presented in Figures 1 & Figure 2, respectively.

**Table 1: A summary of FMD cases in different livestock species in 2021**

Provinces	No. outbreaks	Total	Cattle	Buffaloes	Swine	Goats
Bắc Kạn	6	106	1	5	1	1
Bến Tre	1	3	1			
Bình Định	2	25	1		1	
Bình Phước	1	13	1			
Đắk Lắk	2	47	1		1	
Hà Tĩnh	5	393	4	2	1	
Kon Tum	6	329	6			
Lạng Sơn	3	50		2	1	
Nghệ An	6	87	5	3	1	
Phú Yên	9	463	9			
Quảng Bình	1	63	1			
Quảng Ngãi	32	1,397	32	4	5	
Quảng Ninh	2	86	2	2		
Quảng Trị	2	70	2		1	
Sơn La	5	178	5			
Thái Nguyên	3	51	1	3	1	
Tiền Giang	1	35			1	
Trà Vinh	2	11	2			
<b>Total</b>	<b>89</b>	<b>3,407</b>	<b>74</b>	<b>21</b>	<b>14</b>	<b>1</b>



**Figure 1. Temporal distribution of FMD outbreaks in 2001**



**Figure 2. Spatial distribution of serotype O FMD outbreaks in 2001**

## **FMD Prevention and control activities**

Current PCP-FMD stage: PCP-FMD stage 3

Target in December 2025: PCP-FMD stage 4

### **- Surveillance, early detection and response**

- Analysis of 55 FMD virus samples sent to OIE Reference Laboratories indicated that FMD viruses in Vietnam belong to 3 topotype (strains) of type O: O/ME-SA/PanAsia; O/SEA/Mya-98 and O/ME-SA/Ind2001e. In which, strain O/Ind2001e accounted for the majority (no strains O/Ind2001d and O/Cathay have appeared since 2018).
- The Veterinary law and the Circular No. 07/2016/TT-BNNPTNT dated 31 May 2016 of MARD (Ministry of Agriculture and Rural Development) regulates FMD surveillance which consists of clinical surveillance, virological surveillance and serological surveillance (post-vaccination monitoring). FMD is classified as one of the diseases that may cause serious damage to the economic – social and a dangerous infectious pathogen in animals. The competent authorities are responsible for conducting FMD surveillance and control programme for FMD with active participation of animal owners to detect, prevent, and control the disease.
- FMD prevention and control plans composes of procedures in preparation in normal state and outbreak response state. The plans include human resource arrangement, data preparedness and report, materials and equipment preparedness, disease surveillance, outbreak investigation, animal treatment and quarantine, carcass disposal, and animal destruction, immunization, animal movement control, disinfection, coordination with other sectors, public relation, testing of the contingency plan, and budget planning
- When FMD outbreaks occur, emergency vaccination is conducted for healthy animals in the infected villages and hamlets; at the same time conducting ring vaccination from outside to inside for susceptible animals at villages, hamlets without outbreaks in the same commune and the communes bordering with infected commune. Mobilizing local forces to support for vaccination; people directly involved in vaccination must be animal health workers or having been trained on vaccination. The local animal health management agencies guide, manage, implement and monitor vaccination.

### **- Vaccination**

- In 2021, enterprises produce, import and supply 45 million doses of FMD vaccine; it is expected to continue manufacturing and importing 12 million doses in the first quarter of 2022.
- Post vaccination monitoring from 762 sera samples of cattle & buffaloes, 655 samples with protective antibody titers of > 1/32 (accounting for 87%).
- The vaccine antigens currently in use are homologous to the field strains of FMDV type O in recent years.

### **- Animal movement**

- Importation of live animals or products of animal origins is regulated by Veterinary law, Decree 35/2016/ND-CP of Prime Minister, and Circular No. 25/2016/TT-BNNPTNT of MARD. A summary of live animal imports in 2020-2021 is shown in Table 2.

**Table 2. A summary of live animal imports specifying the country of origin, species/product type, and quantity for 2020-2021**

Species	Country/ Region/Territory	2020 (head)	2021 (head)	Grand Total
<b>Buffalo</b>	AUSTRALIA	460		460
	LAOS		639	639
	THAILAND	39,643	47,563	87,206
	<b>Total</b>	<b>40,103</b>	<b>48,202</b>	<b>88,305</b>
<b>Cattle</b>	AMERICAN SAMOA		36	36
	AUSTRALIA	350,894	168,706	519,600
	LAOS		1,214	1,214
	THAILAND	209,641	114,771	324,412
	U.S.A	1,401	3,743	5,144
	<b>Total</b>	<b>561,936</b>	<b>288,470</b>	<b>850,406</b>
<b>Pig</b>	CANADA	4,416	3,945	8,361
	DENMARK	1,833	995	2,828
	DENMARK		130	130
	FRANCE	210	416	626
	MALAYSIA	2		2
	TAIWAN	225	130	355
	THAILAND	561,906	466,257	1,028,163
	U.S.A	1,958		1,958
	<b>Total</b>	<b>570,550</b>	<b>471,873</b>	<b>1,042,423</b>
<b>Sheep and Goat</b>	AUSTRALIA	115	20	135
	NETHERLANDS	13		13
	<b>Total</b>	<b>128</b>		<b>148</b>
<b>Grand Total</b>		<b>1,172,717</b>	<b>808,565</b>	<b>1,981,282</b>

- **Communication and awareness**
  - 95,000 leaflets and 8,000 handbooks on FMD prevention and control were distributed to all 63 Provinces
- **Governance and legislations**
  - Vietnam is revising the circular No. 14/2016/TT-BNNPTNT on animal disease free zones and establishments related to FMD and other TADs prevention and control.
- **National FMD Prevention and control Plan**
  - Implemented the "National program for FMD prevention and control for the period 2021-2025" approved by the Prime Minister (Decision No. 1632/QĐ-TTg dated October 22, 2020)
  - Based on the results of FMD viral surveillance of provinces, on annual basis, DAH shall issue recommendations on the selection of FMD vaccines, for which, priority will be placed on high antigen payload vaccines (> 6PD50, as recommended by OIE and in line with experiences of Vietnam as well as of other countries during the past several years). FMD vaccine producers, suppliers to collaborate with veterinary authorities to annually

conduct vaccine matching studies between the vaccine antigens and the field circulating viruses, to generate scientific evidence for DAH to consider when providing recommendations on vaccine selection

- Ministry of Finance (MOF) takes lead and in collaboration with Ministry of Planning and Investment (MPI), MARD, to allocate funds for regular expenditures for disease prevention and control activities in accordance with regulations; report to the Prime Minister on the sources of funds eligible to allocate for FMD prevention and control.
  - In 2021, the central budget allocated USD 65,000 to DAH for conducting activities under the national plan including post vaccination monitoring and communication materials. Local government also allocated the budget to conduct activities at localities including procurement of FMD vaccines to vaccinate for the targeted populations, to cover the economic losses in cases of abortion happening in pregnant animals or animals died due to shock after the vaccination; FMD vaccines to put in the province reserve bank; to cover labour costs for vaccination and vaccination arrangements; to cover costs for carcass disposal, expenditures of personnel involving in disease prevention and control or outbreak containment activities; costs to purchase materials, tools and equipment needed for the Program implementation; to cover the costs for conducting training courses, review and closing meetings, communication and public awareness raising activities; establishment of disease free farms and zones.
  - In 2022, the central budget has allocated USD 65,000 to DAH for conducting activities under the national plan.

#### **Challenges in FMD control and recommended solution to address these challenges**

- High percentage of small-scale farms/free grazing practice
- Control of animal movement between provinces and across border
- Awareness of livestock owners and local authorities

#### **Way Forward – Future activities**

- Key activities that will be implemented in 2022
  - Implement the “National program for FMD prevention and control for the period 2021-2025”
  - Establish FMD free zones & farms
  - Prevention of new FMDV introduction
  - Early detection and rapid outbreak response
  - Animal movement control
  - Stamping out policy, especially for pigs
  - Compensation
  - Cleaning and disinfection
  - Vaccination
  - Communication
- Improve management and control of animal diseases and zoonoses in the context of COVID-19