

Report of the 27th Meeting of the WOAHS Sub-Commission for Foot and mouth disease in South-East Asia and China

3 – 6 September 2024, Bangkok, Thailand



SEACFMD Campaign Secretariat
WOAH Sub-Regional Representation for South-East Asia
C/O DLD, 69/1 Phaya Thai Road
Bangkok 10400, Thailand
Tel: (662) 653 4864
Email: srr.seasia@woah.org



World Organisation
for Animal Health



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EXECUTIVE SUMMARY

The 27th SEACFMD Sub-Commission Meeting was held at the Salil Hotel, Bangkok, Thailand, from 3 to 6 September 2024. It was attended by representatives of SEACFMD Sub-Commission Members, National Coordinators from SEACFMD Members (Brunei, Cambodia, China, Indonesia, Laos, Malaysia, Mongolia, Myanmar, Philippines, Singapore, Thailand, and Vietnam), Non-SEACFMD Members, WOA staff (HQ, RRAP, and SRRSEA), and partners, including donors, WOA Reference Laboratories, Collaborating Centres, research institutions, universities, vaccine manufacturers, and livestock industries.

The Pre-Sub-Commission Meeting on 3rd September 2024 reviewed the progress of the SEACFMD Roadmap 2021–2025 using Monitoring and Evaluation (M&E) indicators. Members assessed their FMD control programs through the Foot-and-Mouth Disease Progressive Control Pathway (FMD-PCP) Self-Assessment Tool. WOA SRRSEA and SEACFMD Members delivered a series of presentations, followed by group discussions among Members to address key challenges, gaps, and priority actions to enhance national FMD control programs.

The day concluded with a SEACFMD Steering Committee Meeting to finalize preparations for the Sub-Commission Meeting, including the election of the SEACFMD President, Vice Presidents, and two additional Steering Committee Members.

Day 1 of the 27th SEACFMD Sub-Commission Meeting, held on 4th September 2024, began with an opening session, followed by three focused sessions. These sessions reviewed the global and regional FMD situation, evaluated the SEACFMD campaign, and assessed progress against the SEACFMD Roadmap milestones.

The official opening of the 27th SEACFMD Sub-Commission started with remarks by Dr. Akma Ngah Hamid, SEACFMD President and Delegate of Malaysia, Dr. Monserrat Arroyo, WOA DDG, and Deputy Director General of Thailand's Department of Livestock Development. The ceremony concluded with a traditional Thai welcome dance.

- **Session 1:** Reviewed the global and regional FMD situation, trends, and risks, along with progress against the SEACFMD Roadmap milestones.
- **Session 2:** Presented evaluations of the SEACFMD Campaign (1997–2020) and the Global FMD Control Strategy, highlighting critical gaps and recommendations for future efforts.
- **Session 3:** Included updates from key partners, such as FAO-RAP, and research institutions like the Lanzhou Veterinary Research Institute (China), Pak Chong FMD Laboratory (Thailand), and the Australian Centre for Disease Preparedness.

Day 2 of the Sub-Commission Meeting on 5th September 2024, featured three sessions (Sessions 4–6) focused on exploring opportunities to enhance FMD control in the SEACFMD region. These

sessions also included foresight exercises aimed at envisioning FMD control in the region by 2050.

- **Session 4:** Focused on strengthening FMD control through risk-based strategies, safer trade practices, and sustainability of FMD and other TADs control. Case studies and plenary discussions were held to identify challenges and propose solutions.
- **Session 5:** Conducted foresight exercises envisioning SEACFMD's goals for 2030, 2040, and 2050.
- **Session 6:** Group exercise focused on enhancing partnerships to ensure sustainable FMD and TAD control.

The final day of the Sub-Commission Meeting on 6th September 2024 focused on exploring cost-efficient synergies for controlling FMD and other TADs, discussing priority actions for the SEACFMD Roadmap 2024–2025, and outlining the modalities for developing the SEACFMD Roadmap 2026–2030.

- **Session 7:** Explored cost-effective synergies for controlling FMD and other TADs, including presentations on ASEAN TAD strategies (ASF, PPR, and LSD) and discussions on SEACFMD campaign priorities for 2024–2025. Plans for the development of SEACFMD Roadmap 2026–2030 were also introduced and discussed.
- **Session 8:** Concluded with the adoption of meeting recommendations. Delegates from Malaysia, the Philippines, Thailand, and Australia delivered tribute messages to Dr. Ronello Abila for his significant contributions to the SEACFMD Campaign and regional animal health, including work on One Health and AMR initiatives.

The meeting concluded with closing statements from Dr. Watcharaporn Chotiyaputra (Veterinary Expert, Department of Livestock Development) on behalf of the host country, and Dr. Ronello Abila, representing WOAHA.

The 27th SEACFMD Sub-Commission Meeting demonstrated continued commitment to advancing FMD and TADs control in the region, fostering collaboration among Members and Partners, ensuring the successful implementation of the SEACFMD Roadmap and achieving the goals of the SEACFMD campaign.

ACKNOWLEDGEMENTS

The WOAHA extends its heartfelt gratitude to all participants—both in-person and virtual—from SEACFMD and Non-SEACFMD Members, as well as our Partners, for their active engagement in the 27th Meeting of the WOAHA Sub-Commission for Foot and Mouth Disease in South-East Asia, China, and Mongolia (SEACFMD), held from 2 – 6 September 2024 in Bangkok, Thailand.

This meeting was made possible through the dedicated efforts of SEACFMD Members, including Delegates and National Coordinators, who contributed extensively to the preparatory work by completing surveys for the Monitoring and Evaluation (M&E) framework, preparing country reports, and developing informative posters.

We are deeply grateful to our Partners and Experts for their insightful presentations and valuable contributions to moderating the interactive sessions, ensuring the meeting's success and productive outcomes.

The organization of this meeting and the preparation of the subsequent report were coordinated by Karma Rinzin, Ashish Sutar, Bolortuya Purevsuren, Onsiri Benjavejbhaisan and Yubowon Thanaboot, under the close supervision of Ronello Abila.

This meeting was made possible through the generous fund support of the Government of the People's Republic of China, Government of Australia and Government of Japan.

RECOMMENDATIONS

The World Organisation for Animal Health (WOAH) Sub-Commission for Foot and Mouth Disease (FMD) in South-East Asia, China and Mongolia (SEACFMD) held its 27th Meeting from 3 to 6 September 2024 in Bangkok, Thailand. The meeting was attended by the SEACFMD Sub-Commission Members and National Coordinators, participants from WOAH and partners including donors, WOAH Reference laboratories and Collaborating Centres, Research Institutions, Universities and the private sector including Vaccine manufacturers and Livestock industries.

Considering

- the progress made in the implementation of the SEACFMD Roadmap 2021-2025 including assessment of progress based on agreed monitoring and evaluation (M&E) indicators;
- the availability of global tools (Global FMD Control Strategy and The Progressive Control Pathway for FMD [PCP-FMD]) and relevant provisions of WOAH standards for FMD prevention and control;
- the existing FMD status of the SEACFMD member countries including their FMD-PCP stage and assessment of the respective stage of national FMD control using the FMD Progressive Control Pathway (PCP) Self-Assessment Tool;
- the findings of the evaluation of the SEACFMD campaign from 1997 to 2020 and the evaluation of the Global FMD Control Strategy;
- the dynamic spread of different FMD virus serotypes within the region and the potential for the introduction of new viral lineages;
- the incursions of emerging transboundary animal diseases (African swine fever (ASF), Lumpy skin disease (LSD) and Peste des petits ruminants (PPR)) in the region;
- the endorsement of the Regional Global Framework for Transboundary Animal Diseases (GF-TADs) Strategy 2021 -2027 for Asia and the Pacific;
- the importance of regional coordination for the effective control of FMD and other transboundary animal diseases (TADs);
- the outcomes and recommendations of the past SEACFMD Governance meetings;
- the series of deliberations held during the 27th SEACFMD Sub-Commission meeting.

The Sub-Commission:

Coordination and Programme Management:

1. CONGRATULATES following members for being elected to various SEACFMD Sub-Commission Positions at its 27th Meeting:
 - Thailand as the new President of the SEACFMD Sub-Commission
 - Singapore and Malaysia as the Vice Presidents
 - Brunei and Indonesia as additional members of the SEACFMD Steering Committee

2. THANKS Malaysia (outgoing President), Mongolia and Thailand (outgoing Vice Presidents), Myanmar and The Philippines (outgoing additional member of the Steering Committee) for their leadership since the 26th Virtual Sub-Commission meeting in March 2022;
3. NOTES the progress of the SEACFMD campaign in the prevention and control of FMD since the 26th Sub-Commission Meeting;
4. ENDORSES the proposed activities and priority actions recommended by the 27th SEACFMD Sub-Commission meeting;
5. NOTES and ENDORSES the recommendations from the 25th Meeting of the National Coordinators in October 2022; Virtual Private Sector Consultative Committee Meeting in March 2023; 26th National Coordinators Meeting held in August 2023; SEACFMD LabNet meeting in October 2023 and Upper Mekong Working Group Meeting in April 2024;
6. NOTES the findings and ENDORSES the recommendations of the Evaluation of the SEACFMD campaign from 1997 to 2020;
7. COMMENDS the active participation of non-SEACFMD Members in the Meeting, and continued collaboration between SEACFMD and non-SEACFMD Members in the Asia Pacific region to enhance FMD control;
8. COMMENDS the active participation of the partners and private sector in the meeting, and continued collaboration to enhance effective control of FMD in the region through Public-Private Partnerships (PPPs);
9. AGREES to start development of SEACFMD Roadmap 2026 – 2030;
10. ENDORSES the modalities to develop SEACFMD Roadmap 2026 – 2030 and the composition of the Core Group with technical persons designated by Steering Committee Members and WOAHA.

Technical

11. NOTES the existing PCP-FMD Stage and FMD status of SEACFMD Members; and ENCOURAGES Members to work towards progressing to the next PCP stages or to maintain FMD free status;
 - Cambodia and Indonesia to develop FMD Risk-based Strategic Plan to progress to PCP stage 2;
 - Lao PDR and Myanmar to develop an Official Control Programme to progress to PCP stage 3;
 - Malaysia, Vietnam, China and Mongolia to submit dossier for WOAHA endorsed Official Control Programme (to progress to PCP stage 4);
 - Brunei, The Philippines and Singapore; and Sabah and Sarawak States in Malaysia to maintain their FMD free status (without vaccination); and Thailand to maintain its Endorsed Official Control Program with timely submission of Annual Reconfirmation in line with WOAHA standards;

12. AGREED to improve the investigation and reporting of FMD outbreaks, to monitor the situation using relevant tools and to conduct comprehensive epidemiological investigation of reported FMD outbreaks including submission of samples to Reference Laboratories to identify the circulating FMDV serotypes;
13. NOTES the spread of FMD through animal movement, including the trans-regional spread of emerging FMD virus strains; and RECOMMENDS WOAHA SRRSEA to carry out animal movement study in the Greater Mekong region; which may be expanded to include other parts of the region. This will inform risk assessment, surveillance and regulatory activities;
14. ENCOURAGES Members continue to closely liaise with other border control agencies such as Customs, Police, Trade etc who are involved in regulating the entry of animals and livestock products into the country;
15. NOTES the importance of using quality FMD vaccines with matching vaccine strain and circulating FMD Virus strain; and PROMOTE regional mechanism to streamline regulatory approval and procurement of quality vaccines;
16. AGREED to revise the emergency preparedness plan and protocols based on risks and WOAHA standards; and to CONDUCT cross-border simulation exercise in the island of Borneo:
17. AGREED to involve other specialized disciplines such as Anthropologists and Sociologists to advice on stakeholder engagement and to develop communication materials for the targeted stakeholders;
18. AGREED to strengthen the laboratory capacity of SEACFMD Members including the capability to detect circulating FMD virus strains and exotic strains, harmonise protocols, and procedures for referring samples to WOAHA Reference Laboratories;
19. AGREED to enhance the veterinary workforce enabling environment and competencies in key areas critical to operational success for effective disease control through workshops and trainings (both in-person and virtual) focused on surveillance, safe trade, risk analysis, outbreak investigation and response, etc.
20. AGREED to strengthen existing networks such as Upper Mekong Working Group and initiate other sub-regional collaboration such as Brunei, Indonesia, Malaysia and the Philippines (BIMP) collaboration and REACTIVATE Malaysia, Thailand and Myanmar (MTM) collaboration initiative to closely liaise and monitor the cross-border movement of animal and livestock products including control of illegal movement of these commodities; and timely sharing of information related to TADs occurrence among the Members;
21. AGREED to revise the SEACFMD Communication Strategy to make it fit for purpose for the Members and to promote participation of relevant stakeholders to support FMD control including through advocacy of policymakers; in addition, WOAHA to SUPPORT Members to develop National Communication Plan/Strategy for FMD and other TADs control;

22. AGREED that SEACFMD Secretariat and Partners will support National Veterinary Services to develop advocacy programmes to obtain funding support from their respective Government by informing the policymakers on the socio-economic benefit of FMD control for the endemic countries as well as the economic benefit of maintenance of freedom and impact of losing freedom;
23. AGREED to strengthen coordination and partnership with the private sector in the veterinary domain in line with WOAHP Guidelines on Public-Private Partnership to ensure sustainable FMD and other TADs control.
24. AGREED to identify and develop synergies between FMD control and other TADs or other livestock production/health activities;

Acknowledgements

25. THANK the Government of Thailand for its successful hosting of the 27th Meeting of the WOAHP Sub-Commission for FMD in South-East Asia, China and Mongolia;
26. THANK the Governments of Australia, China, and Japan for their continuous financial support to the SEACFMD campaign including the 27th SEACFMD Sub-Commission Meeting;
27. THANK all participants from SEACFMD Members, non-SEACFMD Members and Partners for their active participation in the meeting.
28. THANK Dr Ronello Abila for his valuable contribution to the SEACFMD campaign, his leadership to enhance the prevention and control of TADs, One Health, and for strengthening the animal health programme in South-East Asia.

ELECTION OF SUB-COMMISSION OFFICERS

In line with the approved Terms of Reference (TOR) for the SEACFMD Sub-Commission, the President and two Vice Presidents are elected by Delegates from among Delegates of Member Countries for a term of two years. Additionally, two other Delegates from Member Countries are elected to serve as members of the Steering Committee for the same duration.

The election of Sub-Commission Officers took place during the Closed Meeting of the Sub-Commission Members on 3rd September 2024, from 5:00 PM to 6:00 PM. Dr. Ronello Abila, WOAHA Sub-Regional Representative for South-East Asia, opened the session by welcoming the SEACFMD Sub-Commission Members and initiating the election process for the new Sub-Commission Officers. He expressed gratitude to the outgoing officers—President (Malaysia), Vice Presidents (Mongolia and Thailand), and Steering Committee Members (Myanmar and the Philippines)—for their commendable leadership since the 26th Sub-Commission Meeting in March 2022.

Dr. Abila invited members to propose nominations for the various SEACFMD Sub-Commission positions. Following the nominations, the following Members were elected to various SEACFMD Sub-Commission Positions at its 27th Meeting:

- Thailand as the new President of the SEACFMD Sub-Commission;
- Malaysia and Singapore as the new Vice Presidents;
- Brunei and Indonesia as the additional members of the SEACFMD Steering Committee.

Following the election, the outgoing President, **Dr. Akma Ngah Hamid**, WOAHA Delegate of Malaysia, congratulated the newly elected officers and expressed her gratitude to all SEACFMD Members, WOAHA, and Partners for their unwavering support during her tenure.

The newly elected SEACFMD President, **Dr. Somchuan Ratanamungklanon**, WOAHA Delegate of Thailand, conveyed his gratitude to the outgoing officers for their exceptional leadership and contributions to the campaign. He pledged to uphold the momentum of progress and called for continued cooperation and support from SEACFMD Members, WOAHA, and Partners to achieve the shared goals of the SEACFMD campaign.

Introduction

The World Organisation for Animal Health (WOAH, founded as OIE) remains committed to controlling foot-and-mouth disease (FMD) and mitigating its adverse effects on economies and livelihoods across South-East Asia, China, and Mongolia through the South-East Asia and China Foot-and-Mouth Disease (SEACFMD) Campaign. Since its initiation in 1997, the SEACFMD Campaign has evolved into a globally recognized model for the regional control of transboundary animal diseases. Currently in its sixth phase under the 2021–2025 SEACFMD Roadmap, the campaign facilitates coordinated FMD control activities among member countries, offers technical advice, develops cohesive regional strategies, and secures political and resource support for FMD-related initiatives.

The SEACFMD Sub-Commission, the highest decision-making body in the campaign's governance structure, provides overall guidance, policy development, and progress monitoring. During the COVID-19 pandemic, the 25th and 26th Sub-Commission Meetings were held virtually, during which the 2021–2025 SEACFMD Roadmap and its monitoring and evaluation (M&E) framework were endorsed. The 27th SEACFMD Sub-Commission Meeting is significant event as this is the first in-person meeting since the 24th Sub-Commission Meeting in Ho Chi Minh City, Vietnam, in 2018.

The 27th Meeting of the WOAH Sub-Commission for Foot and Mouth Disease in South-East Asia, China, and Mongolia took place in Bangkok, Thailand from 4 – 6 September 2024. Preceding the Sub-Commission meeting one day Meeting of SEACFMD National Coordinators(Pre Sub-Commission Meeting) was held on 3rd September 2024.

In preparation for the 27th Sub-Commission Meeting, a series of virtual meetings of the SEACFMD Steering Committees were held in January, May, and September 2024, along with a virtual preparatory meeting for the SEACFMD National Coordinators in July 2024. SEACFMD Members prepared various documents, including country reports, presentations, and posters, while also evaluating the progress of the SEACFMD Roadmap 2021–2025 using M&E indicators and assessing their national FMD control programs through the FMD Progressive Control Pathway Self-Assessment Tool.

The event brought together SEACFMD Sub-Commission Members, National Coordinators from SEACFMD member countries (Brunei, Cambodia, China, Indonesia, Laos, Malaysia, Mongolia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam), Non-SEACFMD Members, WOAH staff (HQ, RRAP, and SRRSEA), and a diverse array of partners, including donors, WOAH Reference Laboratories, Collaborating Centres, research institutions, universities, vaccine manufacturers, and livestock industry representatives ([Annex 2 – List of participants](#)).

This meeting provided an opportunity to review progress against the key milestones of the SEACFMD Roadmap, formulate recommendations to advance activities toward achieving the objectives of the SEACFMD Roadmap 2021–2025, and outline directions for future SEACFMD campaigns. It also served as a platform for Members to share experiences in controlling FMD, discuss key challenges, and identify solutions to address gaps effectively ([Annex 1 – Meeting Programme](#)).

The objective of the 27th Meeting of the WOAHS SEACFMD Sub-Commission are to:

1. Provide update on the current global and regional FMD situation and discuss the key challenges in the region.
2. Facilitate the exchange experiences and lessons learned from implementing the SEACFMD Roadmap.
3. Identify practical solutions to address significant gaps in the regional FMD control identified in recent evaluations.
4. Discuss and define the future directions of the SEACFMD campaign.
5. Elect the new President and Vice-Presidents for the SEACFMD Sub Commission amongst the WOAHS Delegates.

The 27th SEACFMD Sub-Commission Meeting offered a critical opportunity to strengthen regional collaboration, align strategies, and enhance collective efforts to control FMD. It will also reaffirm the commitment of member countries to achieving the objectives of the SEACFMD Roadmap and ensuring sustainable improvements in animal health across the region.

Pre Sub-Commission Meeting – 3 September 2024

The Pre-Sub-Commission meeting on 3rd September 2024 reviewed the progress of implementing the SEACFMD Roadmap 2021–2025 based on Monitoring and evaluation (M&E) framework and assessed national FMD control programs using the FMD Progressive Control Pathway (PCP) Self-Assessment Tool (SAT). Group discussions focused on strengthening FMD prevention and control, addressing key challenges affecting national programs, and identifying recommendations to improve FMD control efforts.

Session 1: Review progress of the national and regional FMD control programme and SEACFMD Campaign

The SEACFMD Roadmap 2021 -2025 strategically aligns activities with objectives, outcomes, and outputs, emphasizing measurable progress toward FMD prevention and control in South-East Asia, China and Mongolia by 2025. All 12 SEACFMD Members participated in a survey to report their progress in implementing the SEACFMD Roadmap 2021–2025, using 2021 M&E indicators baseline data to assess achievements against the 2025 targets. Dr. Karma Rinzin presented a comprehensive [summary of the region’s progress toward SEACFMD Roadmap](#) objectives, outcomes and Outputs.

To further support FMD-endemic countries, the FMD Progressive Control Pathway (PCP) Self-Assessment Tool (SAT) was utilized to identify gaps, prioritize activities, and develop strategic summaries for planning and funding discussions. Nine FMD-endemic SEACFMD members assessed their national FMD control programme using this tool. Dr. Bolortuya Purevsuren presented a [consolidated overview of these findings](#).

Each SEACFMD member also delivered a presentation detailing their progress in implementing the roadmap M&E indicators and summarizing their FMD control status, using insights from the FMD-PCP SAT. The country presentations by each of the SEACFMD members can be accessed below:

- [Cambodia](#)
- [China](#)
- [Indonesia](#)
- [Laos](#)
- [Malaysia](#)
- [Mongolia](#)
- [Myanmar](#)
- [Thailand](#)
- [Vietnam](#)
- [Brunei](#)
- [Philippines](#)

Session 2: Group work - Enhancing implementation of National FMD Control Plan

Participants were divided into three groups based on the similarity of their FMD situations and the FMD-PCP stages. They discussed the progress of their respective country's FM PCP stages, the implementation of the Risk-Based Strategic Plan (RBSP), the Official Control Programme (OCP), and the maintenance of FMD-free status, as well as pressing challenges in FMD control. Additionally, they identified priority actions that can be feasibly implemented in the coming two years and addressed country-specific progress in the PCP.

Key challenges identified were:

- Ensuring access to quality vaccines remains a challenge, particularly in countries with low demand. Engaging the private sector is essential to enhance affordability and ensure long-term sustainability
- Managing animal movement remains difficult due to illegal transportation and the complexities of enforcing legislation. t.
- Farmers and stakeholders often lack awareness of FMD risks, leading to delayed outbreak reporting and slower response times.
- Limited resources and competing disease priorities hinder comprehensive FMD control efforts.
- Challenges including coordination of cross-country efforts for vaccine stockpiling, meeting regulatory requirements for vaccine testing, and insufficient budgeting for preparedness exercises, all of which hinder effective outbreak response.

Priority actions were recommended as follows:

- Implement a vaccination program using quality vaccines to reduce FMD incidence and conduct active surveillance to monitor disease spread and vaccination effectiveness.
- Develop Risk-Based Strategic Plan (RBSP) for PCP stage 1 country and Official Control Plans (OCP) for those countries in PCP stage 2 and 3 to progress their FMD-PCP stages.
- Improve disease control through zoning and evaluate existing zones established for trade purposes, alongside conducting joint risk assessments between bordering countries.
- Engage with the private sector and regional partners by organising meetings to outline roles in FMD control, and initiate partnerships with international organisations for collaborative projects.
- Design tailored training programs for veterinarians and lab personnel, advocate for funding through informative materials targeting decision-makers and raising awareness on biosecurity through campaigns and media engagement.

Country Reports and Posters

The SEACFMD Members were invited to prepare country reports detailing the FMD situation and key prevention and control measures implemented in their respective nations. Reports from endemic countries focused on the FMD situation in 2023, including the circulating FMD virus types. These countries also outlined their key prevention and control strategies, covering areas such as surveillance, early detection and response, vaccination programs, legislation, animal movement control, communication and awareness initiatives, as well as governance and coordination mechanisms. Additionally, they identified major challenges in controlling FMD, proposed solutions to address these issues, and highlighted priority actions to enhance FMD control efforts.

Similarly, FMD-free Member countries prepared reports on their FMD preparedness and response activities. These reports emphasized key prevention activities, including risk assessment, surveillance, border control, quarantine and regulatory measures, animal movement management, and zoning. They also detailed their FMD preparedness strategies, including contingency planning and testing these plans through simulation exercises.

The SEACFMD Members reports are presented in [Annex 3](#) with highlights summarized in respective country posters.

Non-SEACFMD Members, based on their FMD status, also prepared country posters. These provided an overview of the FMD situation and key prevention and control measures for endemic countries; and FMD preparedness and response activities for FMD-free countries.

The country report and posters from the SEACFMD Members, along with posters from Non SEACFMD Members, can be accessed below:

SEACFMD Members

[Brunei Report](#)

[Cambodia Report](#)

[China Report](#)

[Indonesia Report](#)

[Lao PDR Report](#)

[Malaysia Report](#)

[Mongolia Report](#)

[Myanmar Report](#)

[Philippines Report](#)

[Singapore Report](#)

[Thailand Report](#)

[Vietnam Report](#)

[Brunei Poster](#)

[Cambodia Poster](#)

[China Poster](#)

[Indonesia Poster](#)

[Lao PDR Poster](#)

[Malaysia Poster](#)

[Mongolia Poster](#)

[Myanmar Poster](#)

[Philippines Poster](#)

[Singapore Poster](#)

[Thailand Poster](#)

[Vietnam Poster](#)

Non SEACFMD Members

[Australia Poster](#)

[Chinese Taipei Poster](#)

[Korea Poster](#)

[Nepal Poster](#)

[India Poster](#)

Partners

[Pak Chong Poster](#)

Day 1 Sub-Commission Meeting – 4 September 2024

Opening ceremony

The opening ceremony of the 27th SEACFMD Sub-Commission Meeting started with remarks from SEACFMD President, Dr Akma Ngah Hamid, Delegate of Malaysia to WOAHA followed by remarks by Dr Monserrat Arroyo, WOAHA DDG and Deputy Director General of Department of Livestock Development on behalf of Delegate of Thailand to WOAHA. This was followed by Thai welcome dance performance.

Session 1: FMD Situation and Risks

Progress of the SEACFMD campaign

Dr Karma Rinzin presented the [Progress of the implementation of SEACFMD Campaign 2021 – 2025](#) for each of the Outcomes. The highlights of the achievement are summarized below:

- The achievement under Outcome 1 includes Regional animal price monitoring study; assessment of emergency preparedness and response capacities in Malaysia and the Philippines, FMD risk assessment study in Jowar and Langkawi, Malaysia; animal price monitoring pilot study in Thailand; regional workshop on safe trade in December 2023; and study to identify status of Asia 1 in SEA and assess the detection probability of FMDV Asia 1 in SEACFMD region with Massey University.
- The achievement under Outcome 2 are alignment of National FMD control plan with the SEACFMD roadmap 2021-2025 and formalizing M&E framework for the SEACFMD Roadmap 2021 – 2025 at the regional as well as at the national level; conducted review of legislation in South-East Asia; review and revision of national legislation by some Members. The digitalization of FMD communication materials and translation of digitized materials into local languages by some of the SEACFMD Members. Additionally, work is underway on a policy brief focusing on access to quality FMD vaccines and supporting development of FMD Risk-based Strategic Plan for Cambodia
- The highlights of achievement under Outcome 3 are organizing SEACFMD Governance meetings (Sub-Commission, National Coordinators, EpiNet, LabNet, Private Sector Consultative Committee and Upper Mekong Work group Meetings). The SEACFMD Secretariat (WOAHA SRRSEA) and SEACFMD Members attended the various meetings including the Global FMD Coordination Committee Meeting, Global FMD Working Group and GF-TADs meetings. There is ongoing partnership with Partners such as FAO, EuFMD, Research Institutions including Academia and WOAHA Collaborating Centre's and FMD Reference Laboratories.

- Dr Karma also reported the status of the implementation of the recommendations of various SEACFMD Governance meetings and priority activities from 2024 and 2025.

The Global FMD situation and risks

Dr. Anna Ludi, from the World Reference Laboratory for FMD (WRLFMD), delivered a presentation on the global FMD situation and the core activities of the FAO/WOAH FMD laboratory network. The focus was on exchanging FMD data, improving testing methods, harmonising protocols, assessing vaccine performance, and reviewing the FMD risks posed by regions affected by long-distance spread across the FMDV pools. She emphasised the emergence of the new O lineage (O/ME-SA/SA-2018) detected in Pool 2 (India, Bangladesh, and Sri Lanka) over the last years, which is becoming increasingly dominant, now representing an estimated 40% of serotype O cases. However, the vaccine matching results for this emerging lineage in the South Asia Region are like those of O/ME-SA/Ind-2001, with O-Manisa, O-3039, O/TUR/5/2009, and O Campos showing potential protection.

Dr. Ludi discussed the development of lineage-specific PCR protocols for SAT2 outbreaks and introduced the Pragmatist tool, which assists endemic countries in assessing vaccine needs based on risk levels. She also highlighted recent FMD developments, including multiple introductions of SAT2 (SAT2/XIV), a new SAT1 incursion in the Middle East, and detection of a new Asia1 lineage in Pakistan. Dr. Ludi emphasized the importance of monitoring these emerging strains and noted the need for preparedness in regions for new risks.

Dr. Ludi also shared tools for real-time data sharing and dashboards developed by WRLFMD, which include a database of FMDV genomes, an interactive dashboard to generate genotyping reports, and a dashboard that assists vaccine bank managers in prioritizing candidate strains for inclusion in an antigen bank.

The Regional FMD situation and risks

Dr. Bolortuya Purevsuren, Project Officer at WOAHSRRSEA, presented an [analysis of FMD outbreak trends from 2019 to 2023](#), emphasising a significant decrease in Cambodia, Mongolia, and Thailand, while Lao PDR and Myanmar have not reported any FMD outbreaks for the past two to three consecutive years. The cluster analysis revealed major outbreaks in Cambodia, Malaysia, Thailand in 2023. The overview showcased a decline in cases following a peak in 2022 but also pointed out that many outbreaks remain untyped, indicating gaps in surveillance and investigation. The speaker highlighted the seasonal patterns of FMD outbreaks, noting that most cases occur at the beginning of the year, with a similar trend observed from the end of the previous year into January and February 2023.

Dr. Bolortuya also provided insights into the historical co-existence of FMD Serotype O and A in the region, describing the dominance of certain strains over the past decade. She highlighted that

Serotype O/ME-SA/Ind-2001e remains predominant in the SEACFMD region, while the indigenous lineage O/SEA/Mya-98 likely died out since 2019. Serotype A has been consistently reported in Thailand, with a peak cluster in 2019, and was reported again in Malaysia in 2023. The O/ME-SA/Pan-Asia strain was detected in seven countries between 2015 and 2020; however, a recent detection occurred in Malaysia in 2023. Serotype Asia 1 has not been detected in the region since 2017, with the last recorded case in Myanmar. She concluded the importance of timely reporting and sending samples to reference laboratories to better understand FMD epidemiology and risks in the region.

Plenary discussion on Regional FMD situation and risks

The discussion emphasised the need for studies on vaccine efficacy and post-vaccination monitoring to assess the benefits of vaccination campaigns and cross-protection among different lineages. The assessment requires laboratory capacity; however, it can be supported through online consultations for developing protocols and sending samples to reference laboratories.

The feasibility of mRNA vaccine platforms for FMD was questioned; however, the issue lies not in the technology for vaccine development but in accessibility, availability, and cost, as well as the challenges posed by registration processes in individual countries. Consequently, challenges in vaccine registration were discussed, particularly concerning the roles of veterinary services in regulatory processes.

There was also a discussion about the potential to understand animal movement in relation to FMDV serotype or lineage incursion and the spread of outbreaks. However, we still lack detailed data on animal movement, and there has not been strong evidence linking a new incursion to these movements. It was also highlighted that the previous animal movement study included both official and unofficial data, aiming to capture a comprehensive picture through a participatory approach. This approach involves tracing animal movements from markets and identifying their origins, which allows for a better understanding of animal movement patterns.

The conversation continued regarding the decrease in FMD outbreaks and whether this truly reflects the situation in the field. Participants acknowledged the importance of accurate reporting and recognized the potential for underreporting due to resource constraints. Representatives from various countries shared their experiences with FMD reporting, as well as prevention and control interventions. For instance, a representative from Lao PDR noted that there had been no official outbreaks in three years, while others highlighted the effectiveness of vaccination and movement control regulations in Myanmar and Cambodia. The need for enhanced surveillance and data-driven policymaking was emphasised to address future outbreaks, alongside a comprehensive approach that includes biosecurity, vaccination and animal movement management.

Session 2: Evaluation of the Global and Regional FMD Control initiatives – Lessons Learned

Findings of the SEACFMD campaign evaluation from 1997 to 2020

Dr Ronello Abila presented the key findings of the [Evaluation of SEACFMD Campaign from 1997 – 2020 and review of the Global FMD Control Strategy](#). Apart from continuing with the key elements in FMD prevention and control during the 6th phase, an in-depth evaluation of the SEACFMD Campaign since its establishment in 1997 and up until 2020 had been conducted. Dr Ronello Abila presented the key highlights of the Evaluation of the SEACFMD campaign from 1997 to 2020, covering the key lessons learnt and identified including the recommendations to address these gaps and challenges.

There was general agreement that the structural expansion of SEAFMD through SEACFMD to involve more countries beyond the Greater Mekong Subregion (GMS) was appropriate considering the increasing interconnectedness of FMD virus pools. Further, there is a consensus that the SEACFMD campaign has been extremely successful in orchestrating solid relationships between technical staff, facilitating fruitful coordination, collaboration and communication amongst member countries. However, successes in nurturing political and financial commitments for sustainability of the interventions were considered insufficient.

Among the several gaps and recommendations, the following are the critical gaps and key recommendations providing guidance for the future SEACFMD Campaign.

i. **Inadequate Political Commitment and Resourcing**

Many countries lack the political will and funding necessary for implementing the SEACFMD campaign, leading to resource shortages for vaccination, surveillance, and prevention measures. Advocacy efforts are needed to secure policymakers' support and ensure sustained resources, even in FMD-free countries.

ii. **Limited Surveillance Capacity**

A lack of effective surveillance systems and laboratory diagnosis hampers early detection and response to FMD outbreaks. Investment is required to enhance these capacities and improve understanding of the disease's epidemiology to enable timely and effective responses.

iii. **Challenges in Vaccine Access and Vaccination Programs**

Shortages of quality vaccines, serotype mismatches, and logistical issues hinder effective vaccination efforts. Countries must ensure access to quality vaccines, address logistical challenges, and strengthen infrastructure for vaccine delivery and administration.

iv. **Weak Regional Biosecurity**

Uncontrolled animal movement increases the risk of FMD and emerging transboundary animal diseases (TADs). Strengthened legislation, enforcement of biosecurity measures, risk assessments, awareness campaigns, and regional collaboration are essential to address cross-border movement risks and improve quarantine systems.

v. **Inadequate Emergency Preparedness and Response**

Countries lack coordination and clear command structures for responding to emergencies like FMD and other TADs. Improved contingency planning, capacity building, simulation exercises, and a whole-of-system approach are necessary to ensure rapid and effective responses.

vi. **Limited Private Sector Participation**

Despite successful Public-Private Partnerships (PPP) in some areas, private sector involvement remains insufficient. Strengthened dialogue and collaboration with stakeholders, guided by tools such as WOA's PPP guidelines, can enhance resilience and sustainable FMD control.

By addressing these challenges through increased political commitment, enhanced surveillance and vaccination systems, stronger biosecurity measures, better emergency preparedness, and greater private sector engagement, the SEACFMD campaign can achieve its goal of controlling and eradicating FMD in the region.

Report from the Pre-sub-Commission Meeting (Country presentations and assessment reports)

Dr Sith Premashthira, SEACFMD National Coordinator of Thailand presented the [Report of the Pre Sub-Commission Meeting](#) organized on 3rd September 2024. This meeting was attended by the SEACFMD National Coordinators, Non SEACFMD Members, Partners and Sectors. The meeting reviewed the progress of the implementation of SEACFMD Roadmap 2021-2025 based on the M&E indicators and assessed National FMD Control Programme based FMD-PCP Self Assessment Tool (SAT). Besides the meeting identified key issues and challenges that require guidance from the SEACFMD Sub-Commission Members.

The **M&E framework** for the SEACFMD Roadmap 2021–2025 includes indicators for goals, outcomes, and outputs to track progress in implementing roadmap activities. Data on progress for each indicator were collected and compared against the baseline values established during the 25th SEACFMD National Coordinators Meeting in October 2022 in Bai, Indonesia. The key findings of the assessment based on M&E indicators are available [here](#).

The **FMD-PCP Self-Assessment Tool** is designed to help countries prioritize activities, understand the FMDV situation, and enhance FMD control. The tool generates detailed outputs and visuals to support communication with relevant decision-makers. Member countries assessed their national FMD control programs using this tool, with highlights of the findings presented during the meeting and available [here](#).

The highlights of the key challenges that were discussed are: Progression of SEACFMD PCP stages and maintenance of WOAHA free status and official control programme; sensitivity of passive surveillance; Low rate of FMD virus typing; access to quality FMD vaccines; and Ownership and sustainability of FMD control by the SEACFMD Members.

Some of the positive trends observed are: Increasing number of bilateral agreements for safer trade; Synergies of FMD control with other TADs; Resilient legislations; and Members interest in WOAHA Tools such as PVS evaluations.

The presentations made during the Pre Sub-Commission Meeting including the country presentations are available [here](#).

WOAHA standards on FMD and official recognition of FMD status of Members

Dr. Min-Kyung Park provided an [overview of WOAHA's official recognition process for animal health status, focusing on FMD](#). She highlighted updates to FMD standards, including changes in vaccination and recovery protocols, and explained the evaluation process, which involves preliminary screening and expert assessment. Final recommendations are communicated to member applicants, with application deadlines typically set for August and September. Over 50% of members now hold official disease status, underscoring its significance. Dr. Park also emphasized the role of SEACFMD meetings in fostering coordination and the exchange of actions among members.

Plenary discussion on the key challenges and recommendations to guide future FMD control

The discussion highlighted key challenges and strategies in FMD management, emphasizing biosecurity measures, practical legislation, and risk-based approaches for identifying infection sources. The importance of training extension workers for biosecurity and disease control was noted, alongside the use of temperature trackers and digital tools to improve cold chain management and vaccination monitoring.

The discussion were held on the challenges in maintaining FMD PCP stages and free status to which Members reported:

- **Philippines:** Facing challenges with positive ELISA results, requiring evidence to confirm these results are false positives.
- **Brunei:** Preparedness is critical due to risks of LSD and FMD from neighboring countries.
- **Malaysia:** Surveillance is a major challenge in large states like Sabah and Sarawak. Both serosurveillance and clinical surveillance are needed to prove virus absence, alongside improved training for lab personnel.

Dr. Park emphasized building a strong surveillance system with a robust detection system rather than relying solely on sample numbers.

Positive developments include improved bilateral trade agreements, integration with other TADs, and the use of WOAAH tools for disease management.

Session 3: Updates from the Partners

FAO Regional Office for Asia and pacific

The presentation by Dr Paolo Motta, Animal Health and Production Specialists from FAO Regional Office for Asia and the Pacific provided updates on initiatives to strengthen FMD control in South-East Asia and Mongolia. It emphasized coordination with national authorities and regional partners to harmonize efforts, capacity building, and workforce development to bolster prevention and response capabilities. The FAO's support includes technical assistance, resource mobilization, and platforms for multi-stakeholder collaboration. Notable programs include virtual learning platforms for FMD training and specialized technical support at the national level, such as Indonesia's advanced surveillance systems and FMD control; and Mongolia's risk-based control strategy for FMD including targeted vaccination for cattle and yaks. The presentation highlighted the impact of these initiatives, including reduced virus loads and improved preparedness, with efforts aligned under FAO's broader transboundary animal disease strategies.

Lanzhou Veterinary Research Institute

Dr. He Jijun from Lanzhou Veterinary Research Institute (WOAH FMD Reference Laboratory) [outlined advancements in FMD diagnostic technology](#), including WOAHA-recommended methods, improved diagnostic kits, and procedures ensuring quality assurance at Lanzhou Veterinary Research Institute. Recent innovations include competitive ELISA for antibody detection, lateral flow immunoassays (LFIA) for on-site testing, and chemiluminescence immunoassays (CLIA) for early detection. New methods for SAT2 strain diagnostics and multi-

pathogen co-detection (e.g., FMDV + PPRV) were also introduced, emphasizing rapid, specific, and sensitive diagnostic capabilities to support FMD prevention and control.

Pak Chong FMD Laboratory

Dr. Kingkarn Boonsuya Seeyo from Pak Chong FMD Laboratory provided an [update on activities related to FMD diagnosis](#), emphasizing the importance of collaboration and continuous improvement in diagnostic techniques. She discussed the challenges involved in detecting FMD and the efforts being made to enhance training and resource management.

The speaker also highlighted the renovation of laboratory facilities, and the establishment of a new training center aimed at strengthening diagnostic capabilities. The focus is on ensuring the laboratory meets international standards and is well-equipped to respond to emerging diseases.

The presentation concluded with a discussion on the implementation of quality assurance systems and the importance of collaboration with international organizations to enhance diagnostic practices. Dr. Seeyo reaffirmed the commitment to ongoing training and development to ensure effective disease management in the future.

Australian Centre for Disease Preparedness

Dr Wilna Vosloo presented the [highlights of the advancement in FMD diagnostic technology](#) at the Australian Centre for Disease Preparedness. This include the in-depth validation work conducted on sheep sera, stressing the importance of differentiating between vaccinated and infected animals. While most international validation efforts have focused on cattle sera, there has been a gap in data regarding sheep sera, which is particularly crucial for Australia in the event of a Foot-and-Mouth Disease (FMD) outbreak.

Dr Vosloo then discussed the validation pathway for diagnostic assays, noting that while manufacturers provide initial test parameters, accurate assessment of diagnostic sensitivity and specificity often requires a large number of samples. The team had access to nearly 1,000 samples from outbreaks and experimentally infected animals, enabling a thorough validation process.

The results showed that both diagnostic kits demonstrated similar sensitivity and specificity. Antibody detection occurred approximately seven days post-infection in unvaccinated sheep, and about eleven days post-vaccination in vaccinated sheep. Both kits showed perfect agreement, ensuring reliable proof of freedom in outbreak scenarios.

Day 2 Sub-Commission Meeting – 5 September 2024

Session 4 A: Strengthening FMD control by adopting risk-based strategies

The purpose of this session is to discuss key issues for surveillance, including need to improve the performance of WAHIS/ARAHIS reporting systems, the importance of subtype identification for better understanding the ideal epidemiological situation, and the risk of exotic strain incursions into the region. It also emphasized the need to enhance regional capacity for epidemic intelligence to strengthen early warning and detection systems, ensuring preparedness for new and re-emerging strains of disease. The session started with an introductory presentation by Dr Bolortuya Purevsuren, WOAHSRRSEA followed by presentation of two case reports and a plenary discussion. studies

Challenges in Surveillance and Reporting in the SEACFMD Region

Dr. Bolortuya Purevsuren presented the [Challenges in surveillance and reporting in SEACFMD region](#). She emphasised on the critical role of surveillance and reporting, emphasising the necessity of efficient sample submission and subtyping. She presented data highlighting the reporting requirements for countries and ongoing efforts to integrate WAHIS to improve data collection and reporting processes. The discussion included a historical overview of reporting levels, as reflected by epidemiological units, and WAHIS reporting performance over the last few years. Dr. Bolortuya also shared epidemiological data from various countries, illustrating discrepancies in reporting and raising the need for enhanced communication and data sharing. The session concluded with an exploration of current initiatives aimed at strengthening surveillance and reporting capabilities across the region.

Absence of Asia 1 reports in SEACFMD

Dr. Masako Wada, Research officer at Massey University, presented ongoing [study assessing the absence of FMDV Asia 1 serotype in the SEACFMD region](#) and its correlation with disease freedom and potential surveillance gaps. She provided background on the Asia 1 serotype, which was last detected in Southeast Asia in 2015 and 2017 but remains prevalent in other regions. The research aimed to evaluate the probability of freedom from Asia 1 in SEACFMD countries by analyzing data from reference laboratory networks and expert input from WOAHS-identified FMD experts.

The study revealed varying levels of surveillance sensitivity across countries. While China and Mongolia demonstrated nearly 100% sensitivity for FMD detection, other countries showed lower sensitivity levels.

The probability of freedom from Asia 1, assuming no reports for one year, was estimated at 56% in the SEACFMD region, based on a design prevalence of 10% at the village level and 20% at the animal level. This probability increased with a longer absence of reports—up to 80% after seven years, provided the risk of reintroduction was minimal. However, the study acknowledged that some key parameters in the model may lack accuracy, highlighting the importance of expert input for refining the results. It concluded that passive surveillance alone results in a 56% probability of freedom after one year of absence, rising to 80% after seven years, depending on the risk of reintroduction.

FMD vaccination and access to quality FMD vaccines

Dr. Karma Rinzin from WOAHSRRSEA made a brief presentation on [FMD vaccination and access to quality](#) FMD vaccines. This includes highlights of the analysis of 2021 and 2023 annual vaccination reports received from the SEACFMD Members and the outcome of discussions with relevant Partners and stakeholders to explore feasibility to set up an FMD vaccine/antigen bank. Vaccination coverage for cattle ranged from 2% to 90%, with even lower rates for other species. Vaccination coverage was linked to a country's stage in the FMD Progressive Control Pathway (PCP), with more advanced countries achieving higher coverage.

Dr. Karma also highlighted challenges in maintaining an FMD vaccine bank, such as short shelf life and low uptake, and emphasized the importance of quality assurance in vaccine procurement. A WOAHS practical guideline for national vaccine procurement and the European Commission's pre-qualification scheme were introduced to help countries acquire quality-assured vaccines. The recommendations stressed prioritizing quality when purchasing vaccines, with bilateral supply agreements suggested for countries at higher PCP stages. Dr. Karma concluded that while these recommendations provide a general framework, countries may need tailored solutions for accessing quality vaccines.

Plenary discussion to identify key technical challenges and recommendations to address these issues

During the discussion, the question was raised regarding WAHIS data, specifically noting that the six-month data recall appeared insufficient for early warning purposes, as not all necessary details were included in the template. It was suggested that a monthly data recall might be more appropriate, and an inquiry was made regarding the feasibility of automatically generating seasonal patterns. In response, it was clarified that immediate notifications are issued for any new incursions or significant epidemiological changes, and countries are required to submit follow-up reports in such cases. It was further explained that ARAHIS strongly encourages detailed reporting from countries. However, modifying the six-month data is infeasible due to existing WOAHS standards, as all member countries have agreed to these standards.

There was a suggestion to extend the study of FMDV Asia 1 by incorporating more parameters into the existing model, such as the introduction risk of exotic strains circulating in neighbouring regions. However, due to the different lineages of FMDV, it was suggested that the model should remain focused solely on FMDV Asia 1, which has been historically reported in the region.

Meanwhile, a participant proposed incorporating network analysis based on animal movement to gain a more comprehensive understanding of the situation, particularly considering potential under-reporting from passive surveillance. The importance of engaging experts to understand the risk analysis and monitoring of FMDV SAT2, which poses a threat to the region, was also emphasized. Since a similar approach was used for PPR, it could be applied to FMD to assess the probability of potential risks, which can be addressed in 2025.

Participants emphasised strategies for improving the timely sharing of information and enhancing epidemic intelligence activities, particularly focusing on active surveillance and sample submission to Reference Laboratories. This includes simplifying the sample submission process and enhancing the accessibility of information sharing; countries with sequencing capabilities should be encouraged to share their data. Utilising Epidemic Intelligence from Open Sources (EIOS) was suggested to facilitate efficient information sharing; however, raising awareness among farmers is crucial, as FMD is often perceived as a normal occurrence, leading to a reluctance to report cases to local authorities.

Session 4 B: Enhancing FMD control for safer trade

The purpose of this session is to discuss application of FMD control tools to enhance safe trade, and recommendations to address the existing challenges. In order to set the context, DR Ashish Sutar, WOAHSRRSEA made an introductory presentations providing insights on safe trade followed by presentation on the animal movement study by Dr Veerasak Punyapornwithaya. The interactive Mentimeter session and plenary discussion was held to share Members experiences on how animal identification, traceability, disease control zones and regionalisation are being applied to facilitate cross-border trade in the context of FMD.

FMD control and trade environment in the region, Dr Ashish Sutar, WOAHSRRSEA

Dr Ashish Sutar, Capacity Building Coordinator of WOAHSRRSEA delivered a presentation on [FMD control and trade environment in the region](#). Dr Sutar described the key drivers and economics of trade in SEA. According to WOAHSRRSEA survey in 2016, half of the member states (63) who responded to the questionnaire survey indicated that they had had problems with their trade due to neighbouring or trading partners having transboundary diseases.

He pointed out that Illegal animal movement remains a significant challenge in the region, requiring a comprehensive approach that includes engaging traders. International regulations and WOAAH standards play a key role in supporting safe global trade. High-quality veterinary services and strong governance are essential for building transparency, trust, and confidence among trading partners.

Joint Statement on harmonising Procedures for Livestock Movement among Cambodia, China, Laos, Malaysia, Myanmar, Thailand and Vietnam (2016) and recent bilateral agreements for examples; China and Lao PDR, agreement (2021) on Quarantine and Hygiene Requirements for cattle imported from Laos for Slaughter by China, construction of zone and quarantine area at Kutkai ,Shan state of Myanmar under agreement between China and Myanmar. Vietnam signed a Memorandum of Understanding (MoU) with the General Administration of Customs of China focusing on animal disease prevention and control was signed with the People's Government of the Zhuang Autonomous Region in Guangxi, China. (Dec 2023). Similarly, development of 'Disease Control Zone' near the Prey Veng province in Cambodia will help both Cambodia - Vietnam to facilitate cross border trade of livestock.

Dr Sutar highlighted that International regulatory framework and WOAAH standards contribute effectively to the global standard landscape to facilitate safe international trade. Moreover, strengthening veterinary service capacities in safe trade is critical, alongside collaboration between veterinary authorities, national agencies (e.g., Customs, Trade Ministries), and private sector stakeholders (e.g., industry associations, import/export sectors) to ensure safe trade practices. Furthermore, zoning, compartmentalization, and regionalization are the tools available in managing disease risks and supporting safe trade.

Animal price monitoring pilot study in Thailand

Dr. Veerasak Punyapornwithaya from Chiang Mai University made a presented the [Pilot study on animal price monitoring in Thailand](#). He provided an update on the data collection process for various livestock diseases, including Foot-and-Mouth Disease (FMD) and others. They discussed the importance of movement data, which is gathered through the Division of Veterinary Inspection and Quarantine. Dr Veerasak also presented an analysis of cattle prices over time, highlighting a downward trend that began in October 2020.

The speaker conducted a seasonal analysis of cattle prices, noting fluctuations but a lack of clear seasonal patterns. They emphasized the significant decline in cattle prices and the impact of disease outbreaks on market dynamics. The analysis also included a comparison of animal movement data and outbreak numbers, revealing correlations between price changes and the occurrence of disease outbreaks.

Plenary discussion for identify key challenges for safer trade and recommendations to address it

The interactive mentimeter session was conducted to identify key challenges and recommendation to improve safe trade.

The meeting participants suggested that policies, regulations, animal prices, demand and supply of animal and animal products, festivals and economic benefits are key drivers of animal movement in South- East Asia. The challenges include policies that are not suitable for real world application, limited enforcement of policies, and weak border control. Furthermore, understanding trader behavior is crucial not only for traders themselves but also for investors, regulators, and market analysts who seek to predict market trends and identify potential risks.

Animal identification, traceability, realistic policies, enforcement of the regulation, promotion of safe trade, FMD vaccinations, public awareness and education are highlighted as the most important policy related issues to improve animal movement control. Furthermore, using zoning approach, collaboration with private sector, promoting bilateral agreements, enhancing FMD vaccination awareness, improve access to quality vaccines, conducting risk assessment, cost benefit analysis were suggested as some of key actions.

Session 4 C: Enhancing ownership and sustainability of FMD and other TADs control

The purpose of Session 4C is to identify key policy issues and gaps (political commitment, policy framework, legislation and resource mobilization) affecting control of FMD and other TADs and recommendations to address these issues. The session began with an introductory session by Dr Karma Rinzin followed by two case reports and a plenary discussion.

Enhancing ownership and sustainability for FMD and other TADs control

Dr Karma Rinzin made a brief introductory presentation on [Enhancing ownership and sustainability for FMD and other TADs control](#). He reiterated Outcome 2 of the SEACFMD Roadmap 2021 – 2025 which is Improved ownership and enabling environment at national level and its six Outputs under this Outcome. He also refreshed the participants with some of the critical gaps identified during the evaluation of SEACFMD campaign from 1997 to 2020 which is related to ownership and sustainability of SEACFMD campaign such as: Inadequate political commitment, Insufficient private sector engagement and Inadequate preparedness ti respond to FMD incursion and emerging TADs.

Review of Legislation in South-East Asia

Dr Ronello Abila presented the [Review of legislations related to one health and animal health in South-East Asia](#). A review of legislation across ten ASEAN Member States and Timor Leste examined 246 laws to identify gaps in compliance with international standards and support legal reforms for intersectoral coordination. While many countries have animal disease surveillance systems, gaps persist in emergency preparedness, laboratory biosafety, and clear definition of veterinary authorities' roles. The review emphasized the need to include animal disease outbreaks in disaster definitions and improve coordination in disaster response.

Recommendations focused on strengthening national disaster preparedness, enhancing veterinary authorities' roles in emergency response and early warning systems, and ensuring legislation includes clear enforcement mechanisms and aligns with international standards. Countries were urged to review and update their laws to address these gaps.

Progress update on Public Private Partnerships in Veterinary Domain

Dr Ashish Sutar provided [progress updates on the Public Private Partnership \(PPP\)](#) focusing on the Private Sector Consultative Committee (PSCC) meeting (2023) recommendations. Dr Sutar updated the sub-commission on the key actions suggested by both the public and private sector to improve FMD control and partnerships. PPPs in Veterinary domain at the global and SEACFMD region were shared. The participants were reminded about the WOAHP handbook on PPP and PPP database as well as, e-learning course and PVS targeted support for PPP.

Plenary discussion for enhancing ownership and sustainability for FMD and other TADs control

Dr. Karma Rinzin opened the plenary discussion by inviting participants to share success stories in mobilizing resources for FMD control, identify challenges and gaps in existing policies and legislation, improve political commitment and financial support for sustainable FMD control, and enhance public-private partnerships (PPP) and private sector engagement.

An Indonesian Delegate shared insights on the 2022 FMD outbreak, highlighting the critical support from the central government and the effective involvement of the COVID-19 task force in managing the response. This collaboration during the pandemic proved instrumental in mobilizing resources for FMD control. The Delegate from India shared their approach to securing funds from the central government and mobilizing them to state governments and field operations for FMD control.

The Philippines Delegate discussed challenges arising from the disconnect between central government policies, issued as administrative orders, and local government compliance, which is limited to Republic Acts and executive orders derived from these. This misalignment complicates the country's response to animal disease outbreaks.

A Delegate from Myanmar shared their efforts in establishing disease-free zones through vaccination, controlling animal movement, and conducting surveillance in collaboration with the private sector. They highlighted how political commitment and funding for maintaining disease-free zones and progressive zoning approaches were secured due to trade incentives with PR China.

Cambodia's Delegate noted the existence of compensation policies for animal owners during epidemics but reported a lack of funds for implementation. They expressed gratitude for resource partner support in areas like livestock development and One Health programs focused on AMR, zoonoses, and food safety but lamented the lack of priority given to FMD control by these partners.

Mr. Cedric from Boehringer Ingelheim stressed that effective FMD control requires more than just vaccination. He emphasized the importance of complementary measures, including animal movement restrictions, biosecurity, sanitation, quarantine, and stamping out. He urged member countries to explore PPPs to address these pillars and facilitate the registration of high-quality vaccines. He called for strong public-private partnerships to ensure effective FMD control using robust vaccines and integrated strategies.

Session 5: Foresight -Future of SEACFMD campaign

Dr. Ronello Abila made an [introductory presentation](#) and shared his experience with foresight, recalling a workshop organized by Australia 15 years ago. He explained that foresight is now an integral practice at the headquarters and emphasized the importance of looking to the future—specifically to the year 2050—to envision the state of SEACFMD. He provided the historical context of the SEACFMD campaign, which began in 1997, and highlighted the need to consider various factors affecting the region as they look toward 2050. It was highlighted that food security protecting the livelihoods of producers, especially in relation to meat consumption in the region is critical elements of FMD control. Dr. Abila pointed out the projected increase in population and purchasing power in China by 2050, which will drive higher demand for food and meat consumption. He noted that food quality will become increasingly important, as consumers will demand higher-quality products by 2050. Economic development in the region was also addressed, with a focus on infrastructure improvements—such as roads and railways—that will facilitate movement and, potentially, increase the risk of disease spread. The impact of technological advancements in diagnostics and vaccines was discussed, particularly regarding how these developments will shape FMD control by 2050. The session outlined the strategic foresight process, which involves exploring potential future scenarios and developing strategies to navigate them. He introduced the methodology of back casting, which begins by envisioning a desired future outcome and then working backward to identify the necessary steps to achieve

that goal. The importance of defining a clear vision for FMD control by 2050 was emphasized, along with the need to identify key milestones and the actions required to reach them.

The participants were divided into four groups, each assigned a specific topic to brainstorm. Each group discussed and developed ideas on their respective topics. A summary of the group work outputs is provided [here](#), with the key highlights from each group's contributions outlined below:

Economic, agriculture and livestock development

The group emphasized the importance of legislation to combat illegal trade and the need for improved data collection to prioritize FMD control at the government level. Looking ahead to 2030, they envisioned a new roadmap for SEACFMD, focusing on improved animal movement and greater cooperation with traders. By 2040, the group predicted a shift toward more intensive and consolidated farming systems, driven by increasing beef demand and the need for enhanced biosecurity and traceability. This trend is expected to marginalize smallholder farms, as larger-scale, standardized farms become more dominant.

In terms of FMD control, the move toward intensive farming systems could improve production efficiency and biosecurity, but it will also require changes in outbreak reporting, encouraging farmers to report cases promptly without fear of negative consequences. The discussion also highlighted the need for workforce development, particularly for public veterinarians, to ensure compliance and monitoring in intensive farming settings.

Technologically, the group discussed the potential for SEACFMD to broaden its focus to include other diseases, which could improve the synergy of reporting and enhance FMD control. Standardizing diagnostic methods, including strain typing, was identified as a priority. By 2030, the group aims to reach consensus on which diseases to prioritize, and by 2040, they envision disease mapping to further improve disease management and control strategies.

The participants were divided into four groups and each group working on

Technological advancement

The group discussed key technologies for improving FMD detection by 2025, including real-time PCR and better sample transport. They emphasized the need for rapid diagnostic tests to identify serotypes by 2030 and improved training on current technologies and data collection methods. While existing vaccines are effective, cost remains a barrier, highlighting the need for innovations to reduce vaccine costs.

The integration of AI and data analytics was proposed to target vaccination efforts based on risk assessments, while tracking animal movements was seen as crucial for effective vaccine

deployment. New technologies for communication, including real-time data for modeling and simulation, were also discussed to improve biosafety and biosecurity.

By 2040, the group aims to establish robust FMD control infrastructure, including regional labs and technologies for assessing vaccine quality. The 2050 vision includes a pan-serotype vaccine, smartphone-based immunity testing, and a universal diagnostic platform for multiple diseases.

Technical capacity and knowledge

The group outlined their vision for 2050, aiming to eradicate FMD, despite acknowledging the challenge of such an ambitious goal. They stressed the importance of political will, noting differing priorities between importing and exporting nations. Public-private partnerships were highlighted as crucial for involving the private sector in disease control.

They identified key actions for 2025, including training and capacity-building on biosecurity, standardized laboratory practices, and the involvement of educators and social scientists. Research priorities included studying wildlife's role in FMD and improving understanding of movement pathways and value chains.

The group emphasized ongoing capacity building, staff retention, and mentorship, as well as virtual reality for remote training. They also discussed the challenges of maintaining vaccine cold chains, proposing drone delivery for remote areas. Finally, they highlighted the need for regulatory frameworks to keep up with technological innovations, including devices for on-site disease diagnosis and data reporting by farmers.

Policy and funding support

The final group focused on policy and funding, emphasizing the need for ongoing surveillance and FMD control after eradication. They stressed the importance of progressing through PCP stages, establishing an FMD vaccine bank, harmonizing animal movement controls, and strengthening laboratory capacity.

Key actions for 2025 included incentivizing disease reporting through compensation models, building trust between veterinary services and farmers, and creating national FMD control plans. Public-private partnerships were highlighted for securing funding and political support, along with strengthening legislative frameworks.

The group also called for enhanced human resources development, engaging private veterinarians in disease control, and improving communication and collaboration between veterinary services and private practitioners to ensure effective biosecurity.

Session 6: Enhancing partnership to ensure sustainable FMD and other TADs control

Dr. Ashish Sutar facilitated a group activity aimed at enhancing partnerships for sustainable FMD and other TADs control. Participants were divided into two groups for focused discussions.

Group 1, consisting of SEACFMD Members and moderated by Dr. Abila and Karma, identified key challenges impacting the SEACFMD campaign and proposed practical solutions to address these issues.

Group 2, comprising participants from non-SEACFMD Members and Partners, was moderated by Dr. Montserrat Arroyo and Dr. Bolortuya Purevsuren. The group focused on identifying ways in which non-SEACFMD Members and partners can contribute to supporting sustainable FMD and other TADs control efforts for SEACFMD Members.

SEACFMD Members

The Output of the Group 1 discussion is summarized below:

Regional and sub-regional approaches: Use existing platforms such GF-TADs, ASEAN, Upper Mekong region, Greater Mekong, Lower Mekong (Southern Laos and Vietnam), Brunei, Indonesia, Malaysia and Philippines, initiative for enhancing FMD TAD control.

Vaccine Quality and Registration: Expedite vaccine registration, assess and upgrade regional vaccine production capacity.

Emergency Preparedness: Revise plans and protocols aligned with WOH standards; and Build capacity for detecting exotic strains with harmonized protocols and SOPs.

Public-Private Partnerships (PPP): Develop PPP policies to improve stakeholder engagement and behavior change and Involve experts like anthropologists and sociologists for guidance.

Outbreak Investigation & Diagnostics: Facilitate FMD sample referral to WOH Reference Labs; and Improve outbreak investigations with lab diagnostics, including FMDV serotyping.

Awareness & Communication: Enhance grassroots campaigns for farmers on FMD control and vaccination; Support members in developing communication strategies and revise SEACFMD Communication strategy.

Local Engagement & Policy Advocacy: Engage local authorities, especially in countries with independent governance; and Develop policy briefs highlighting economic benefits and funding needs.

Biosecurity & Movement control: Promote farm biosecurity measures with compensation linked to biosecurity compliance; Improve animal husbandry practices and incentivize FMD outbreak reporting.

FMD-PCP Stage Progression: Prepare and submit OCP dossiers for Malaysia and Vietnam following WOAH standards; and develop FMD Risk-based Strategic Plan for Cambodia and Indonesia.

Non SEACFMD Members and Partners

The Output of the Group 1 discussion which focused on enhancing partnership between the SEACFMD Members, and Non-SEACFMD and Partners is summarized below:

Training and Capacity Building: Facilitate knowledge sharing where endemic countries can train free countries; Utilize support from Eu-FMD to enhance training initiatives; Focus training efforts on veterinarians, veterinary paraprofessionals (VPP), and traders; and Develop long-term educational content in schools, beyond short-term awareness campaigns.

Public-Private Partnerships (PPP): Collaborate with industry associations to raise farmer awareness through public projects; Develop programs for children to increase awareness of diseases like FMD and Rabies; Establish a committee that includes both public and private organizations to guide initiatives; and Create agreements between public agencies and private veterinarian associations for joint activities.

Engagement with Traders: Understand trader motivations to implement relevant measures and reduce illegal activities; and Develop dialogues with traders and explore incentives to encourage compliance.

Research and Innovation: Promote research pilots in low-income countries and incentivize publications; Foster exchanges between national and international reference laboratories; and Remain open to testing emerging technologies and avoid biases towards specific products.

Knowledge Sharing and Collaboration: Encourage each country to present a case study to share experiences and best practices; and Involve farmers and farmer associations in SEACFMD initiatives to share their insights.

Session 7: Enhancing cost efficient synergies in FMD and other TADs control

Updates ASEAN TADs Prevention and Control Strategies

Dr. Karma Rinzin presented three [ASEAN transboundary animal diseases \(TADs\) Strategies](#) recently developed with WOA's support. The sub-regional strategy emphasizes regional cooperation, promoting ownership among ASEAN economic community and ASEAN Member States, and enhancing member states' capabilities through best practices and stakeholder engagement. Key strategies include:

- **ASF Prevention and Control Strategy:** Targets regional control through improved coordination, training, and sustainable partnerships, with measurable success indicators like reduced outbreaks and implementation of zoning.
- **ASEAN PPR Preparedness Strategy:** Aims for eradication of PPR by 2030, focusing on maintaining PPR-free status and strengthening regional capabilities for early detection and response.
- **ASEAN LSD Prevention and Control Strategy:** Seeks disease elimination by 2030 through vaccination, capacity-building, and enhanced national ownership.

The strategies were aligned with global frameworks including GF-TADs Strategies and disease specific global strategies and regional strategic frameworks, focusing on regional preparedness and response, and eradication (for PPR); prevention and control (for ASF); and elimination (LSD). Key benefits include harmonized policies and approaches, improved reporting and surveillance; enhanced multi-sectoral partnerships; improved resource allocation, and advocacy for technical and financial support. Next steps include rolling out strategies, finalizing implementation plans, and setting up of M&E baseline targets for each of the strategies.

Plenary discussion on enhancing cost efficient synergies

The discussion centered on surveillance, border control, vaccination, and testing strategies for LSD and PPR in South-East Asia. Dr. Wilna emphasized the need for integrated surveillance to avoid duplication, with Dr. Karma confirming ongoing active surveillance in Thailand for both LSD and PPR, stressing cost-efficient synergies in sample collection and testing.

The feasibility of testing a single sample for multiple diseases was addressed, with confirmation from Thailand and Malaysia sharing their practice of dividing serum samples for LSD and FMD testing.

Myanmar's annual PPR surveillance was discussed, emphasizing efforts to prove disease freedom and the importance of using serum samples for multiple disease tests. Proficiency testing (PT) for LSD for six laboratories in South-East Asia was highlighted, with a request to include other AMS in future PT programs.

Concerns were raised about LSD vaccine quality, contamination, and its effectiveness. The discussion concluded with a call for a regional approach to vaccine selection and quality assurance, ensuring vaccines are effective against circulating LSD strains in the region.

Session 8: Priority actions and recommendations

SEACFMD priority actions for 2024 – 2025

The following [priority actions](#) were identified for implementation in the during 2024 – 2025.

- Reinforce disease reporting and outbreak investigation including typing of FMD Virus
- Strengthen laboratory capacity of SEACFMD Members through harmonising of test protocols and training of laboratory staffs
- Access to quality FMD vaccines by Establishing a mechanism to streamline procurement of quality vaccines
- Support advocacy to policy makers to seek support for FMD control through provision of policy brief with best-cost analysis (economic impact of FMD outbreak and benefit of preventing FMD outbreaks)
- Conduct animal movement study in Greater Mekong Region to improve understanding of animal movement in the region
- Facilitate legal movement of animals across the border and conduct cross border simulation exercise by involving all the stakeholders involved in regulating movement of animal and livestock products
- Members to work towards progressing to next PCP stages
 - Cambodia and Indonesia to develop FMD Risk-based Strategic Plan to progress to PCP stage 2;
 - Lao PDR and Myanmar to develop Official Control Programme to progress to PCP stage 3;
 - Malaysia, Vietnam and China to submit dossier for WOAHA endorsed Official Control Programme (to progress to PCP stage 4);

Development of SEACFMD Roadmap 2026 – 2030

Dr. Karma Rinzin presented the [modalities for the development of SEACFMD roadmap 2026 – 2030](#). The modalities for developing the SEACFMD Roadmap 2026–2030, including the establishment of a Core Group, were approved the Sub-Commission Members.

The Core Group will be formed with Members from five SEACFMD Steering Committee representatives, WOA (SRR-SEA, RRAP, and HQ); WOA FMD experts; and the ASEAN lead country for FMD. This group will be responsible for initiating and developing the SEACFMD Roadmap 2026–2030, including its outline, content, theory of change (TOC), and monitoring and evaluation (M&E) framework in consultation with SEACFMD National Coordinators and Steering Committee Members.

The roadmap will be developed using a participatory approach, engaging relevant SEACFMD Governing Bodies (National Coordinators, Steering Committee and Sub-Commission), partners, and entities at various stages of the process.

The finalised Roadmap will be presented for endorsement at a Special Meeting of the SEACFMD Sub-Commission, to be held on the sidelines of the 34th Conference of the WOA Regional Commission for Asia and the Pacific in Indonesia in November 2025.

Session 9: Conclusions and Closing ceremony

Draft Meeting Recommendations

Dr Karma Rinzin presented the [draft recommendations](#) of the 27th SEACFMD Sub-Commission Meeting for Sub-Commission Members and Participants considerations. Twenty four recommendations were eventually proposed and endorsed in a plenary session.

Felicitations message to Dr Abila – Australia, Malaysia, The Philippines, Thailand and WOA DDD

Before the closing ceremony, Dr. Abila's leadership and contributions to the SEACFMD and animal health program in the region were widely acknowledged by the SEACFMD Members and Partners.

Dr Sam Hamilton on behalf of Australia conveyed congratulations to Dr. Abila for his 20 years of service in animal disease control, recognizing the importance of his contributions to the region and expressing best wishes for his future endeavors after retirement. His efforts in controlling zoonotic and transboundary animal diseases were acknowledged, with personal anecdotes highlighting his approachable nature and willingness to help, reflecting the deep respect and friendship he has earned over the years.

Dr. Akma Ngah Hamid, Delegate of Malaysia and outgoing President of SEACFMD, acknowledged Dr. Abila's leadership and contributions to the SEACFMD campaign. On behalf of SEACFMD members, she expressed gratitude for his dedication and service, highlighting his instrumental role in transboundary animal disease control and strengthening veterinary services in the region.

Other Members who conveyed their felicitations to Dr. Abila include Dr. Arlene from the Philippines and Dr. Wacharapon from Thailand. Both expressed their appreciation for his friendship and unwavering support of the SEACFMD campaign, as well as his efforts in strengthening the capacity of National Veterinary Services. They wished him success and fulfillment in his retirement.

On behalf of WOA, Dr. Montserrat Arroyo and the staff from Bangkok, Tokyo, and WOA HQ expressed deep gratitude to Ronel for his over 20 years of outstanding contributions to the organization and the SEACFMD initiative. Ronel played a crucial role in transforming the Bangkok office into one of WOA's recognized regional representations and built strong professional and personal relationships cross the region. Ronel's departure is seen as a significant loss, leaving behind a great legacy.

Overall, his dedicated efforts in animal health and disease control were highly respected and deeply valued throughout the region.

Following the Felicitations Messages by several SEACFMD Members and Partners, Dr Ronello Abila expressed surprise and gratitude for the recognition he received, reflecting on Australia's long-standing support for SEACFMD, starting in 1997. He recalled Australia's initial funding for the regional coordination unit in Bangkok and acknowledged key contributors. Dr. Ronel thanked Australia, China, and other donors, such as the EU and New Zealand, for their continued support and emphasized the importance of regional collaboration. Reflecting on his journey with SEACFMD, he appreciated the support from various countries and partners and highlighted the contributions of all coordinators. Dr. Ronello shared that he would remain in a full-time position until December before transitioning to consultancy work, ensuring a smooth handover in Bangkok. He also expressed gratitude to his team for their hard work and dedication, noting their success despite past challenges.

Closing remarks by WOA and Host Country

Dr Ronello Abila, Sub-Regional Representative for South-East Asia, expressed his gratitude to the participants from SEACFMD Members (Sub-Commission Members and National Coordinators), participants from non-SEACFMD members, partners, and private sector representatives for their active participation and ongoing support on the SEACFMD campaign. He acknowledged the progress achieved through their collaboration and called for continued support in the coming

years. Dr. Abila noted that the next 15 months would be critical for implementing the agreed-upon priority actions and recommendations, emphasizing the importance of working together until the current phase of the campaign concludes.

Dr. Wacharapon, An Expert of Department of Livestock Development speaking on behalf of the Delegate of Thailand and current President of the SEACFMD campaign, thanked WOAHP for organizing this significant event in Thailand. He expressed appreciation to all participants for their contributions during the Sub-Commission Meeting and for their active engagement and wished everyone a safe journey home.

Annexures

Annex 1 – Meeting Programme

3 September 2024 – Pre-Sub-Commission Meeting		
Time	Topics	Responsibility
08:30 – 09:00	Registration	
09:00 – 09:20	Opening session and scene setting	Ronello Abila, WOAHSRRSEA Karma Rinzin WOAHSRRSEA
09:20 – 10:00	Progress of SEACFMD Roadmap 2021 – 2025 Introduction to FMD-PCP Self Assessment Tool	Karma Rinzin, WOAHSRRSEA Bolortuya Purevsuren, WOAHSRRSEA
10:00 – 10:30	Coffee Break	
<p>Session 1: Review progress of National FMD control programme and SEACFMD Campaign</p> <p>Purpose: To review the progress of the implementation of National FMD Control Programme</p> <p>Chair: Dr Ronello Abila, WOAHS Sub-Regional Representative for South-East Asia</p>		
10:30 – 12:30	<p>National Coordinator Reports</p> <ul style="list-style-type: none"> Report self assessment of National FMD control based on the M&E indicators for SEACFMD Roadmap 2021 – 2025 and FMD-PCP Self Assessment Tool <p><i>10 minutes presentation and 5 minutes discussion per country</i></p>	SEACFMD National Coordinators from 12 SEACFMD Members
12:30 – 13:30	Lunch Break	
13:30 – 14:00	Poster flash talk by Non SEACFMD Members	Bangladesh, India, Nepal, South Korea, Chinese Taipei
<p>Session 2: Group work – Enhancing the implementation of National FMD Control Plan</p> <p>Purpose: To discuss the challenges faced by Members and solution to address it.</p>		
14:00 – 15:30	<p>Introduction to the Group work</p> <p>Group work to have in-depth discussion on the key challenge, gaps and priority actions and country interviews</p> <ul style="list-style-type: none"> Group 1: Cambodia, Indonesia, Lao PDR and Myanmar 	<p>Lead Facilitator: Bolortuya Purevsuren</p> <p>Facilitators</p> <p>Group 1: Karma and Kingkarn</p>

	<ul style="list-style-type: none"> - Group 2: China, Malaysia, Mongolia, Thailand, Vietnam - Group 3: Brunei, Philippines and Singapore Plenary session	Group 2: Bolortuya & Anna Ludi Group 3: Ashish & Wilna National Coordinators
15:30 – 16:00	Coffee Break	
16:00 – 17:00	Sub-Commission Steering Committee Meeting	Steering Committee Members
18:30	Reception dinner hosted by Thailand	

Day 1 Sub-Commission Meeting: 4 September 2024		
Time	Topics	Responsibility
Opening ceremony and scene setting		
08:00 – 08:30	SEACFMD Sub-Commission Meeting Registration	Onsiri Benjavejbhaisan Yubonwan Thanaboot
08:30 – 09:15	Opening Ceremony <ul style="list-style-type: none"> - Remarks by SEACFMD President - Remarks by WOAHH DDG - Remarks by the Host Country - Thai cultural dance performance 	MC: Dr Supalak Prabsriphum Dr Akma Binti Ngah, Malaysia Dr Montserrat Arroyo, WOAHH Dr Somchuan Ratanamungklanon, DG, DLD, Thailand
09:15 – 09:30	Introduction and meeting objective	Karma Rinzin, WOAHH SRRSEA
09:30 – 10:00	Group Photo and Coffee Break	
Session 1: FMD Situation and Risks Purpose: Review the global and regional FMD situation, trends, risks and progress of the SEACFMD campaign since 25th SEACFMD Sub-Commission Meeting Chair: Malaysia (Dr Akma Binti Ngah)		
10:00 – 10:30	Progress of the SEACFMD Campaign	Karma Rinzin, WOAHH SRRSEA
10:30 – 11:00	The Global FMD Situation and Risks	Anna Ludi, WRL, Pirbright

11:00 – 11:30	The Regional FMD Situation and Risks	Bolortuya Purevsuren, WOAHSRRSEA
11:30 – 12:30	Plenary discussion on Regional FMD Situation and Risks	Moderated by Chair and Ronello Abila
12:30 – 14:00	Lunch and Poster Tour	
Session 2: Evaluation of the Global and Regional FMD Control initiatives – Lessons learned Purpose: Discuss the critical gaps and key recommendations to guide future FMD control Chair: The Philippines (Dr Arlene Vytiaco)		
14:00 – 14:20	Findings of the SEACFMD campaign evaluation from 1997 to 2020	Ronello Abila, WOAHSRRSEA
14:20 – 14:40	Report from the Pre-sub-Commission Meeting including monitoring of progress of the SEACFMD Roadmap 2021 -2025 based on agreed indicators and FMD-PCP SAT	Sith Premashtira, DLD, Thailand
14:40 – 15:00	WOAH standards on FMD and official recognition of FMD status of Members	Min-Kyung Park, WOAHS Standard Department
15:00 – 15:30	Plenary discussion on the key challenges and recommendations to guide future FMD control	Moderated by Chair and Karma Rinzin
15:30 – 16:00	Coffee Break	
Session 3: Updates from the Partners Purpose: To discuss Partners roles and contribution in enhancing FMD control Chair: Mongolia (Dr Ulannkhuu)		
16:00 –17:00	Presentations from Key Partners: <ul style="list-style-type: none"> - FAO - Lanzhou - Pak Chong - ACDP Q&A Session	Paolo Motta, FAORAP He Jijun, LVRI, PR China Kingkarn, Pak Chong FMD Lab Wilna Vosloo, ACDP
17:00 - 18:00	Closed meeting of the Sub-Commission Members	
18:30	Reception dinner hosted by WOAHS	

Day 2 Sub-Commission Meeting: 5 September 2024		
Time	Topics	Responsibility
Session 4 A: Strengthening FMD control by adopting risk-based strategies Purpose: To discuss key technical component and challenges to boost FMD control Chair: Thailand (Dr Watchrapon Chotiyaputta)		
09:00 – 09:30	Present case report on key technical challenges that needs to be addressed such as risk of incursion of exotic strain, surveillance and reporting and access to quality vaccines.	Bolortuya Purevsuren Masaka Wada, Massey University, NZ Karma Rinzin, WOAHSRRSEA
09:30 – 10:00	Plenary discussion to identify key technical challenges and recommendations to address these issues	Moderator: Bolortuya Purevsuren Participants
Session 4 B: Enhancing FMD control for safer trade Purpose: To discuss application of FMD control tools to enhance safe trade Chair: Vietnam (Dr Phan Quang Minh)		
10:00 – 10:30	Present a case report on key challenges associated with trade and animal movement including animal identification traceability, zoning, compartmentalisation and regionalisation.	Ashish Sutar, WOAHSRRSEA Veerasak Punyapornwithaya, Chiang Mai University
10:30 – 11:00	Coffee Break	
11:00 – 11:30	Plenary discussion on enhanced FMD control for safer trade	Moderator: Asish Sutar Participants
Session 4 C: Enhancing ownership and sustainability of FMD and other TADs control Purpose: To discuss the policy framework and challenges to improve FMD control Chair: Lao PDR (Dr Souphavanh Keovilay)		
11.30 – 12:00	Present case report on the policy related issues including the political commitment, policy framework, resource mobilisation, public-	Karma Rinzin, WOAHSRRSEA Ronello Abila, WOAHSRRSEA Ashish Sutar, WOAHSRRSEA

	private partnerships and emergency preparedness	
12:00 – 12.30	Plenary discussion to identify key policy issues and recommendations to address these issues	Moderator: Karma Rinzin
12:30 – 14:00	Lunch and Poster Tour	
Session 5: Foresight - Future of SEACFMD Campaign Purpose: To brainstorm what SEACFMD campaign wants to achieve in coming years Chair: Singapore (Dr Siow Foong Chang)		
14:00 – 14:45	How do you foresee SEACFMD campaign in next 25 years (in 2050)	Lead Facilitator: Ronello Abila Other Facilitators: Karma, Ashish and Bolortuya
14:45 – 15.30	Plenary session	Moderator: Ronello Abila Output of Group work
15:30 – 16:00	Coffee Break	
Session 6: Enhancing Partnerships to ensure sustainable FMD and other TADs control Purpose: To discuss and explore options to enhance partnerships among Members and Partners to ensure sustainable FMD and other TADs control		
16:00 – 17:00	Group work Group 1 – SEACFMD Members Group 2 – Partners and Non-SEACFMD Members	Lead Facilitator: Ashish Sutar Facilitator for Group 1: Ronello Abila and Karma Rinzin Group 2 Facilitator: Montserrat Arroyo and Bolortuya
17:00 – 17.30	Plenary discussion to enhance Partnerships to ensure sustainable FMD and other TADs control	Moderator: Ashish Sutar
17.30	End of Day 2	

Day 3 Sub-Commission Meeting: 6 September 2024		
Time	Topics	Responsibility
Session 7: Enhancing cost efficient synergies in FMD and other TADs control Purpose: To discuss the good practices and measures to enhance FMD and other TADs control including cost efficient synergies Chair: Brunei (Dr Diana Dennis)		
09:00 – 09:45	Updates on other important priority TADs strategies and key activities	Karma Rinzin, WOAHSRRSEA
09:45 – 10:30	Plenary Discussion - SEACFMD Campaign Priorities and Action Plan for 2024 – 2025 - Future of SEACFMD campaign - Development of SEACFMD Roadmap 2026 - 2030	Facilitators: Ronello Abila and Karma Rinzin
10:30 – 11:00	Coffee Break	
Session 8: Conclusions and Closing		
11:00 – 11:40	Conclusions and Recommendations of the Meeting	Karma Rinzin, WOAHSRRSEA
11:40 – 12:30	Closing session - Remarks from WOAHSRRSEA - Remarks Thailand	
12:30 – 13:30	Meeting ends and Lunch	

Annex 2 – List of participants

BRUNEI DARUSSALAM

Diana DENNIS

Head of Livestock Industry and Veterinary Services

Division of Livestock Industry and Veterinary Services

Department of Agriculture and Agrifood
Ministry of Primary Resources and Tourism
Brunei Darussalam

Awangku Zharief Ahzha AL MOUSHAFFA

Veterinary Officer

Animal Health and Disease Control Unit
Division of Livestock Industry and Veterinary Services

Ministry of Primary Resources and Tourism
Brunei Darussalam

CAMBODIA

BUN Chan

Deputy Director, National Animal Health and Production Research Institute

General Directorate of Animal Health and Production
Phnom Penh, Cambodia

HO Bunyeth

Deputy Director, National Animal Health and Production Research Institute

General Directorate of Animal Health and Production
Phnom Penh, Cambodia

INDONESIA

Dhony Kartika NUGROHO

Veterinary Officer

Ministry of Agriculture
Jakarta, Indonesia

Ferra HENDRAWATI

Veterinary in Quality Development
National Center for Veterinary Biologic
Surabaya, Indonesia

LAO PDR

Souphavanh KEOVILAY

Deputy Director General

Department of Livestock and Fisheries
Ministry of Agriculture and Forestry
Vientiane, Lao PDR

Laphinh PHITHACTHEP

Deputy Director

Division of Veterinary Services
Department of Livestock and Fisheries
Vientiane, Lao PDR

MALAYSIA

Akma NGAH HAMID

Director General

Department of Veterinary Services Malaysia
Putrajaya, Malaysia

Jamaliah SENAWI

FMD National Coordinator

Department of Veterinary Services Malaysia
Malaysia

MONGOLIA

Ulaankhuu ANKHANBAATAR

Head of Virology Laboratory

State Central Veterinary Laboratory
Ulaanbaatar, Mongolia

Luvsanjantsan CHILKHAASUREN

National Coordinator for SEACFMD

General Authority for Veterinary Services
Ulaanbaatar, Mongolia

MYANMAR

Min Thein Maw

Deputy Director General

Livestock Breeding and Veterinary Department
Nay Pyi Taw, Myanmar

Syaw WYNN

Deputy Director

Livestock Breeding and Veterinary Department
Nay Pyi Taw, Myanmar

PHILIPPINES

Arlene Asteria VYTIACO

Director III

Bureau of Animal Industry
Quezon City, Philippines

SINGAPORE

Siow Foong CHANG

Director-General

NParks
Singapore

Li Shen Shawn CHIA

Deputy Director

Animal and Veterinary Service (AVS)
Singapore

THAILAND

Somchuan RATANAMUNGKLANON

Director General

Department of Livestock Development
Bangkok, Thailand

Sith PREMASHHIRA

Veterinarian - Senior Professional Level

Department of Livestock Development
Bangkok, Thailand

VIETNAM

PHAN QUANG Minh

Deputy Director General

Department of Animal Health
Hanoi, Vietnam

PHAM Thanh Long

Veterinary Officer

Department of Animal Health
Hanoi, Vietnam

AUSTRALIA

Samual HAMILTON

Deputy Australian Chief Veterinary Officer

Department of Agriculture, Fisheries and
Forestry
Canberra, Australia

BANGLADESH

Nurullah MD AHSAN

Director

Divisional Livestock Office, Khulna
Department of Livestock Services
Bangladesh

CHINESE TAIPEI

Cheng-Ta TSAI

Section Chief

APHIA
Chinese Taipei

INDIA

Sarita CHAUHAN

Joint Secretary to Government of India

Ministry of Animal Husbandry, Dairying &
Fisheries
New Delhi, India

NEPAL

Krishna Raj PANDEY

Senior Veterinary Officer

FMD and TADs Investigation Laboratory
Kathmandu, Nepal

KOREA

JE Chang Uook

Assistant Veterinary Officer

Ministry of Agriculture, Food and Rural Affairs
Republic of Korea

PARTNERS

Rickie JENNINGS

Regional Counsellor – Agriculture

British Embassy

Bangkok, Thailand

Wilna VOSLOO

Acting Research Director

Australian Centre for Disease Preparedness

CSIRO

Geelong, Australia

HE Jijun

Senior Researcher

WOAH/National Reference Laboratory for FMD

Lanzhou Veterinary Research Institute (LVRI)

Chinese Academy of Agricultural Sciences
(CAAS)

Lanzhou, China

Kingkarn Boonsuya SEEYO

Acting Director of RRLFMD

Regional Reference Laboratory for Foot and Mouth Disease in Southeast Asia (RRLFMD)

Pakchong, Thailand

Anna HODGKINSON

Head of Serology within WRLFMD

The Pirbright Institute

United Kingdom

Veerasak PUNYAPORNWITHAYA

Lecturer (Associate Professor)

Faculty of Veterinary Medicine

Chiang Mai University

Chiang Mai, Thailand

Masako WADA

Research Officer

EpiCentre

Massey University

Palmerston North, New Zealand

PRIVATE SECTOR

Juver MEMBREBE

Asia Technical Manager

Biogenesis Bago

Vietnam

Cédric DEZIER

VPH Technical Director

Boehringer Ingelheim

France

Sinan AKTAN

Business Segment Head

Boehringer Ingelheim

Singapore

Sacha SENEQUE

General Manager, Veterinary Public Health

Ceva Sante Animale

Australia

Chriche du PLESSIS

Transboundary Diseases Manager

MSD Animal Health

Dubai, UAE

OBSERVERS

Thai Ruminant Veterinary Association (TRVA)

Virayos VAJIRABHOGA

Representative

Thai Swine Veterinary Association (TSVA)

Sawang KESDANGSAKONWUT

Assistant Professor

Nitipong HOMWONG

Assistant Professor

Department of Livestock Development,

THAILAND

Anurak TRAKARNRUNGSEE

Head of FMD Vaccine Production

Arisara CHOOCHERN

Veterinary Officer

Chantanee BURANATHAI

Expert

Dhamonwon LUANGTRAKOOL

Veterinarian

Jaturon POLRACH

Director of Bureau of Veterinary Biologics

Jeeranant CHOTTIKAMPORN

Veterinarian

Jiratchaya CHUENCHOB

Practitioner Level Veterinarian

Nalinee HONGCHUMPON

Veterinary Officer

Nantaporn WANDEE

Veterinarian, Senior Professional Level

Naree KETUSING

Veterinarian

Nopphan PONPAI

Veterinarian

Pimlapat THANEERAT

Foreign Affairs Officer

Ruttiroj JIROJWONG

Veterinarian, Professional Level

Supalak PRABSRIPHUM

Veterinarian

Teerada KOWAWISETSUT

Veterinary Officer

Thanawit SIHA-UMPHAI

Veterinarian

Wacharapon CHOTIYAPUTTA

Expert

Warachit WACHARASOONTORN

Veterinary Officer

Waroonsiri CHAROENLARP

Veterinary Official, Professional Level

Watcharapong FAHKRAJANG

Veterinarian

Sutatta BUNBANG

Chadaporn PASEENATE

Supakarn SAITHONG

WOAH

Montserrat ARROYO KURIBRENA

Deputy Director General

WOAH

Paris, France

HIROFUMI Kugita

Regional Representative for Asia and the Pacific
WOAH Regional Representation for Asia and the Pacific
Tokyo, Japan

Maria Glovezita LAGAYAN

Regional TADs Coordinator
WOAH Regional Representation for Asia and the Pacific
Tokyo, Japan

Ronello ABILA

Sub-Regional Representative
WOAH Sub-Regional Representation for South-East Asia
Bangkok, Thailand

Ashish SUTAR

Capacity Building Coordinator
WOAH Sub-Regional Representation for South-East Asia

Bolortuya PUREVSUREN

Project Officer
WOAH Sub-Regional Representation for South-East Asia

Karma RINZIN

Regional Animal Health Coordinator
WOAH Sub-Regional Representation for South-East Asia

Guillaume MALTAVERNE

Regional Communication Officer
WOAH Sub-Regional Representation for South-East Asia

Stéphane RENAUDIN

Senior Advisor
WOAH Sub-Regional Representation for South-East Asia

Onsiri BENJAVEJBHAISAN

Finance Officer
WOAH Sub-Regional Representation for South-East Asia

Yubonwan THANABOOT

Administrative Assistant
WOAH Sub-Regional Representation for South-East Asia

Olive Marie GONZALES

SEAOHUN Fellow

ONLINE PARTICIPANTS

CHINA

XU Quangang

Associate Researcher
China Animal Health and Epidemiology Center (CAHEC)

VIETNAM

NGUYỄN Mận

Head of Pathology, Parasitology and Aquatic Disease Division
Regional Animal Health Office No.6

NGUYEN KIM Dung

Veterinarian, RAHO 6

VO Van Hung

Veterinarian, RAHO 6

CAO Thi Lan Anh

Staff
Regional Animal Health Office No. 3

Lanzhou Veterinary Research Institute (LVRI)

Wei ZHANG

Assistant Professor

Wen DANG

Researcher

WOAH

PARK Min-Kyung

Head of the Status Department

Annex 3 - Country Reports

Brunei

Highlights of FMD Prevention and Preparedness

Brunei Darussalam is free of FMD (WOAH recognized) without vaccination. In ensuring this, the Department of Agriculture and Agrifood (DoAA) via the Livestock Industry and Veterinary Services Division has implemented a monitoring program called 'Maintaining Freedom of Disease Surveillance Program for FMD'. This program consists of a whole nation surveillance of the disease through serological testing and clinical signs observation of ruminant population in Brunei Darussalam.

FMD disease monitoring program is actively collaborated with PPR, whereas for LSD, surveillance is done via observation of clinical signs in the ruminant population. This helps ensure that other important notifiable diseases within the animal population is monitored concurrently. The Statistical Data of Ruminant Population and Establishments in 2023 is presented in Table 1.

Table 1: District wise livestock population and number of livestock establishments in Brunei

Species	No. of Population by Districts				Total Population	No. of Establishment
	Brunei Muara	Tutong	Belait	Temburong		
Buffalo	0	959	14	43	1,016	109
Cattle	52	102	53	107	314	30
Goat	1,051	842	1,537	129	3,559	90
Sheep	299	14	2,328	57	2,698	25
Deer	26	180	0	100	308	5

These cattle establishments are mostly made up of holding yards / feedlots for slaughterhouses rearing mostly imported cattle. Buffaloes are mostly imported, and a small percentage are locally owned and bred by traditional farmers. Goats and sheep are mostly reared intensively in raised stilt housings with the breeding herds being sourced from imports. Deer farming is farmed more for recreational purposes with a small percentage for venison.

The laboratory is ISO/IEC 17025 accredited, with capacity for serology testing using NSP ELISA and RT-PCR for confirmatory diagnostics. The facility is equipped with advanced analyzers required for diagnostic testing, such as PCR and MiniON.

The data for active disease surveillance conducted in 2023 is summarized in Table 2. A total of 603 blood samples were collected, and 673 clinical observations were recorded during visits to 53 farms distributed across the country.

Table 2: FMD active surveillance data in 2023 (blood sample collected and clinical observations).

Brunei Muara	Blood Sample Taken	Clinical Sign
Goat/Sheep	293	480
Large Ruminant	13	123
Deer	3	0
Total	309	603
Tutong	Blood Sample Taken	Clinical Sign
Goat/Sheep	92	0
Large Ruminant	0	42
Deer	0	0
Total	92	42
Temburong	Blood Sample Taken	Clinical Sign
Goat/Sheep	90	0
Large Ruminant	0	28
Deer	0	0
Total	90	28
Belaït	Blood Sample Taken	Clinical Sign
Goat/Sheep	112	0
Large Ruminant	0	0
Deer	0	0
Total	112	0

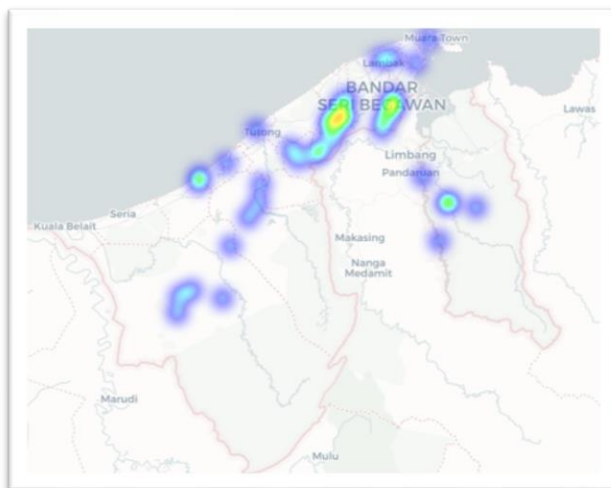


Figure 1: Distribution of FMD sampling throughout Brunei.

Progress of the implementation of SEACFMD Roadmap 2021 – 2025 based on agreed M&E indicators

Allow only importation of live ruminants from WOA recognised countries that are FMD-free without vaccination.

- 7 official entry points into Brunei Darussalam:
- 4 via land (Labu, Ujung Jalan, Kuala Lurah and Sungai Tujoh)
- 1 via airport (Brunei International Airport),
- 2 via seaport (Muara Port and Serasa Ferry Terminal).

On-site quarantine for newly imported live ruminants into Brunei Darussalam, minimum of 3 days before slaughter. Transit of live ruminants from FMD affected areas are denied. Main risks and threat of FMD incursion is via live importation of ruminants into the country through illegal routes (smuggling).

Awareness Programs that includes FMD clinical signs for livestock staff, para vets, farmers, relevant stakeholders and the public are being held at least officially 3 times a year by the Livestock Industry and Veterinary Services Division, DoAA. Next, the incorporation of FMD Infographics in official agricultural social media to reach wider audience to raise awareness for FMD are also being done. The language used in the materials are both in local malay and English.

In Brunei we have an order in Chapter 254, Animal Diseases and Quarantine Act 2021, which covers disease notification requirements for listed notifiable diseases in animals which are mandatory to be reported (inclusive of FMD). Furthermore, this includes zoning, movement control, declaration of infected areas as well as disposal of diseased animal.

Additionally, simulation and preparedness exercises were conducted to maintain and continue multi-agency table-top exercises with relevant agencies for transboundary animal diseases (TADs):

- a. Action Plan 1 – internal country disease preparedness.
- b. Action Plan 2 – transboundary with neighboring regions.

Vaccine procurement and stockpiling mechanisms are integral components of disease preparedness and response strategies. Although ruminants are not currently vaccinated, these measures ensure readiness in case of an incursion.

Foot-and-mouth disease (FMD) prevention, preparedness, and response have been used as a model example of a notifiable disease within the animal health sector to inform other ministries and agencies under the National Taskforce for Zoonotic Diseases. This engagement and information dissemination enable veterinary services to highlight the need for manpower and capacity building, especially for agencies managing border and control posts during disease outbreaks.

This multi-agency collaboration was first initiated in 2022, providing a platform for coordinated efforts among the Ministry of Health, Department of Agriculture and Agrifood, and Ministry of Home Affairs. Additional agencies are involved based on their relevance to specific disease response action plans.

Since 2017, following the rabies outbreak in Sarawak, Brunei Darussalam, Sarawak, Sabah, and Kalimantan (West and East) have established a collaborative platform encompassing both animal health (veterinary services) and human health sectors (Disease Control Focals under the Ministry of Health). The initiative, known as *Kawalan Penyakit Borneo* (Borneo Disease Control), conducts virtual meetings at least once or twice a year—or as needed—to update on the status of critical notifiable diseases such as FMD, lumpy skin disease (LSD), African swine fever (ASF), rabies, and other regional priority diseases.

The most recent meeting, hosted by Brunei, was held virtually in February 2024."

Main challenges and recommended solution

We also experience challenges during the sampling process across entire nation of Brunei which includes:

i) Limited Manpower and Expertise

Solution:

- To undergo continuous self-analysis and evaluation of the current veterinary services (WOAH PVS and the National Bridging Workshop (NBW)).
- Structured training and competency programs for frontliners e.g. Livestock officers' veterinarians, para vets and staff at border control.

ii) Lack of Awareness of FMD

Solution:

- Continue with the disease awareness campaigns, targeted seminars and one-to-one dialogues with farmers during disease surveillance (traditional farmers).

iii) Emergency Response on Animal Disease needs to be updated.

Solution:

- Multi-institutional/agency response (inclusion of relevant institutions would add value).
- Partner countries sharing their experiences during outbreaks (real life experiences).
- Training-of-Trainers particularly in emergency disease response and conducting simulation exercises (multi-agency).

iv) Surge Capacity

Solution:

- The use of SCAT tool in forecasting and planning capacity in labs.

China

FMD Situation in 2023

In 2023, there were 4 FMD outbreaks in China, all caused by O/Ind-2001 strains. Among them, 3 outbreaks occurred in cattle, and were all found in transit; 1 outbreak occurred in pigs, and was found in a slaughterhouse. No type A and Asia I FMD occurred during this period. For more information, please see Table 1. So far, China never had an outbreak caused by type C, SAT 1, SAT 2, and SAT 3.

Table1 Information on FMD outbreaks in China, 2023

No.	Date	Location	Serotype	Virus Strain	Infected Animals
1	2023/03/27	Daxin, Guangxi province	O	Ind-2001	Cattle
2	2023/04/13	Kuche, Xinjiang province	O	Ind-2001	Cattle
3	2023/05/12	Heshuo, Xinjiang province	O	Ind-2001	Cattle
4	2023/12/9	Qijiang, Chongqing	O	Ind-2001	Pig



Figure 1. Spatial distribution of FMD outbreaks in China, 2023

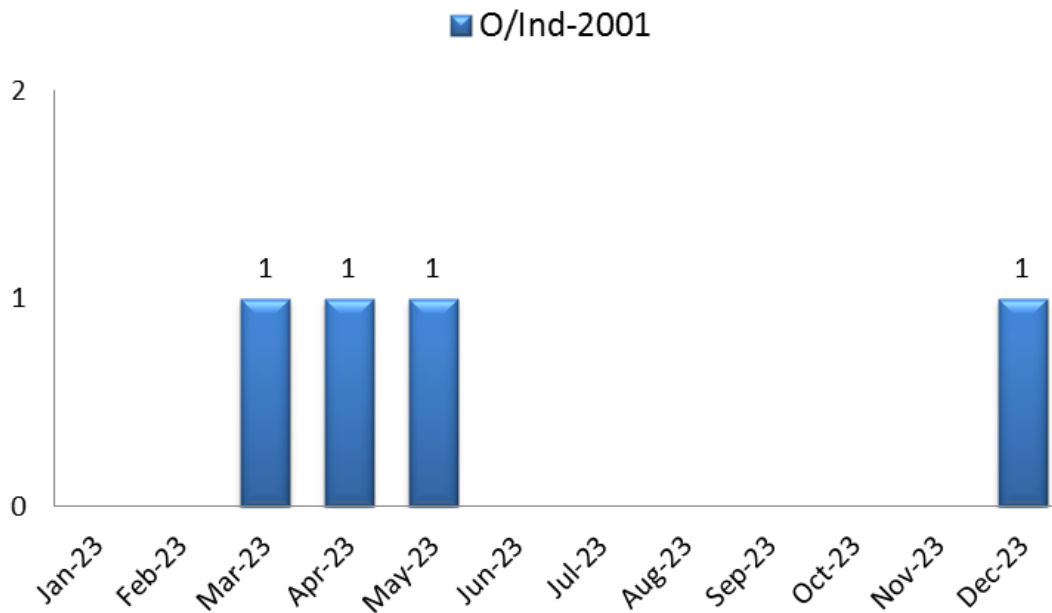


Figure 2. Temporal distribution of FMD outbreaks in China, 2023

FMD Prevention and control activities

Vaccination

○ FMD Vaccination Policies

- Animals across the country have been vaccinated against FMD in accordance with the National Animal Disease Compulsory Vaccination Program for 2022–2025.
- Cattle, sheep, goats, camels, and deer are required to be vaccinated against both type O and type A FMDV. Pigs must be vaccinated against type O FMDV, while vaccination against type A FMDV for pigs is determined by the provincial animal husbandry and veterinary departments based on evaluation results.

○ FMD Vaccination Production

- In 2023, a total of 8 manufacturers of FMD vaccine were authorized. As of October 31, 2023, a total of 2.96 billion milliliters of FMD vaccine had been produced, with 2.91 billion milliliters sold. The inactivated FMD vaccine was primarily purified using the centrifugal ultrafiltration process. The purification index of the commercial vaccine ensures that the total protein content does not exceed 500 µg/mL, and the 146S content is no less than 0.6 µg/mL."

Table2 FMD vaccines procured/ produced in China, Jan-Oct 2023

Source	Number of Doses	Types (Killed/ Attenuated)	Types (Indicate subtype combination for bi & trivalent vaccines)	Manufacturer and Country
Gov't purchase	2.913 billion mL	Killed vaccine & Synthetic peptide vaccine	Both monovalent and bivalent vaccines, whether Killed vaccine and Synthetic peptide vaccine.	<ol style="list-style-type: none"> 1. Zhongpu Biopharmaceutical Co., Ltd. China 2. JINYU Baoling BIO-PHARMACEUTICAL Co., Ltd., China 3. China Agricultural Veterinarian Biology Science and Technology Co., Ltd. China 4. China Animal Husbandry Industry Co.,Ltd. China 5. Inner Mongolia Bigvet Biotech Co., Ltd. China 6. Tecon Biology Co.Ltd, China 7. Shanghai Shen Lian Biomedical Corporation, China
Donor's purchase	-	-	-	-
Private sector (commercial farms, traders)	2.961 billion mL	Killed vaccine & Synthetic peptide vaccine	Both monovalent and bivalent vaccines, whether Killed vaccine and Synthetic peptide vaccine.	<ol style="list-style-type: none"> 1. Zhongpu Biopharmaceutical Co., Ltd. China 2. JINYU Baoling BIO-PHARMACEUTICAL Co., Ltd., China 3. China Agricultural Veterinarian Biology Science and Technology Co., Ltd. China 4. China Animal Husbandry Industry Co.,Ltd. China 5. Inner Mongolia Bigvet Biotech Co., Ltd. China 6. Tecon Biology Co.Ltd, China 7. Shanghai Shen Lian Biomedical Corporation, China

Surveillance, early detection and response

FMD Vaccination Effect Surveillance

○ Overall situation

- From November 2022 to October 2023, a total of 4.250418 million serological samples were collected, of which, 3.837768 million were qualified samples after vaccination, with an individual qualification rate of 90.29%. A total of 144,9437 herds were vaccinated, and 137,7400 were qualified, with a herd qualification rate of 95.03%. Both individual and herd qualification rates exceeded 70% in all 31 provinces (municipalities, autonomous regions) and Xinjiang Corps (Figure 3).

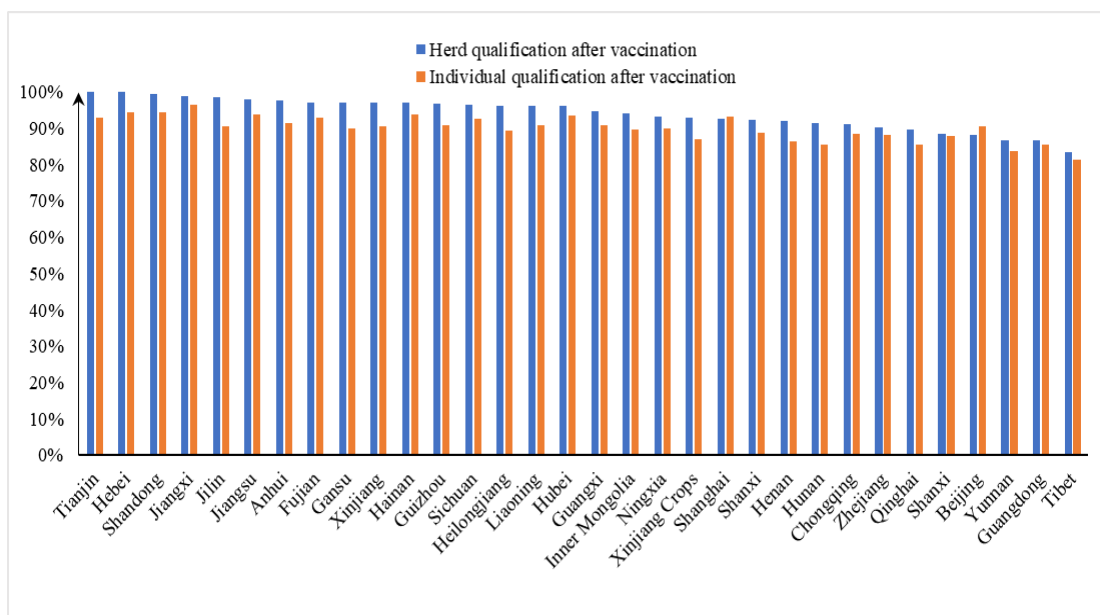


Figure 3. FMD vaccination antibody qualification rate by provinces (2022.11-2023.10)

○ Surveillance of different kinds of susceptible animals

- From November 2022 to October 2023, a total of 1,672,521 pig serological antibody samples were collected, of which 1,516,289 were qualified samples after vaccination, with an individual qualification rate of 90.66%; 1,151,985 cattle serological samples were collected, of which 1,056,812 were qualified, and the individual qualification rate was 91.74%. 1,425,912 sheep serological samples were collected, of which 1,264,667 were qualified, and the individual qualification rate was 88.69%.
- Among the animals immunized with O-type FMD vaccine, the individual qualification rate and population qualification rate of cattle were the highest, the group qualification rate of sheep & goat and pigs were basically the same, and the individual qualification rate of pigs was higher than that of sheep & goat (Figure 4).
- Among the animals immunized with FMD A vaccine, the individual qualification rate of cattle was the highest, followed by pigs and sheep & goat. The herd qualification rate of sheep & goat was the highest, followed by cattle and pigs (Figure 5).

- **Strain matching experiment**

- These vaccine strains, including O/MAY98/BY/2010 (pig and cattle) and Re-O (pig) have a good match with dominant circulating strain O/ME-SA/Ind-2001e, but did not match well with field isolate O/CATHAY. A new candidate strain (Re-O/17002) is well-matched with O/CATHAY.

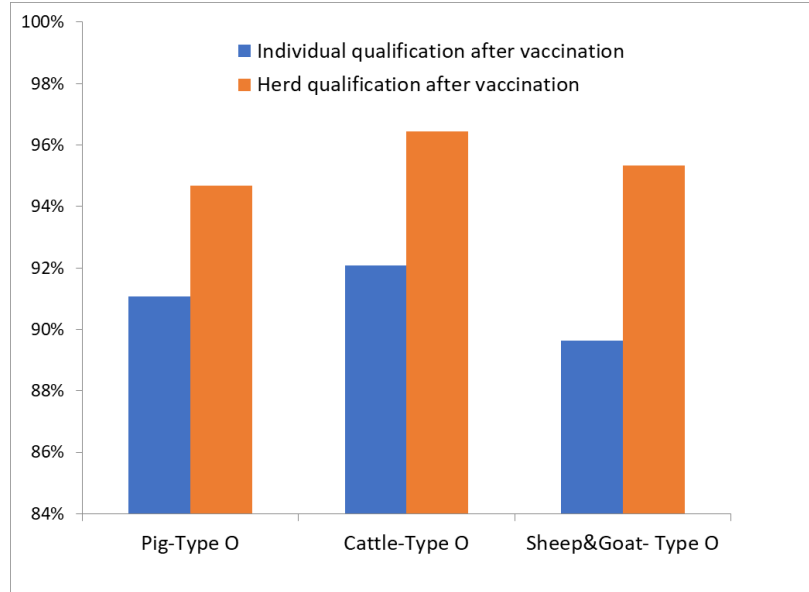


Figure 4. Qualification rate of vaccination antibodies against type O in pigs, cattle and sheep & goat (2022.11-2023.10)

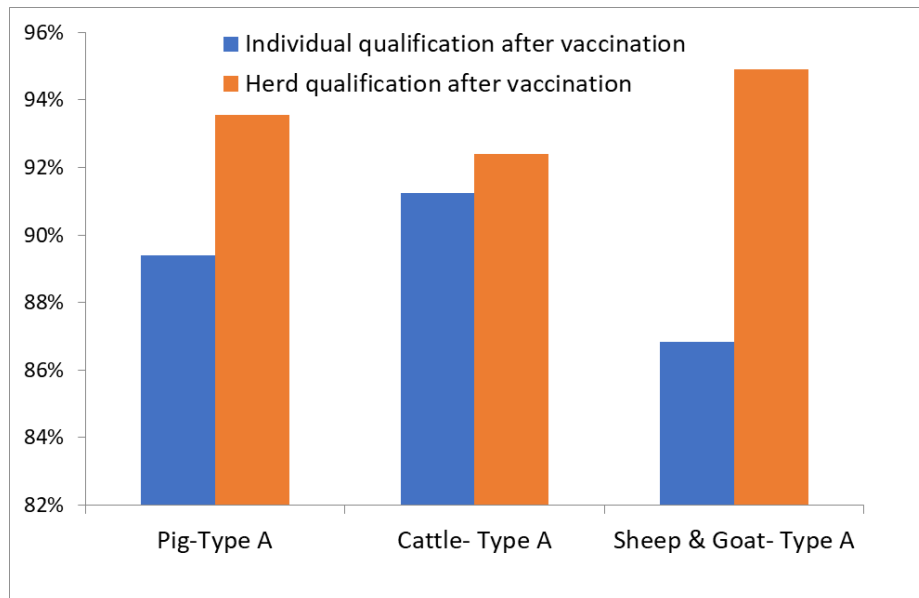


Figure 5. Qualification rate of vaccination antibodies against type A in pigs, cattle and sheep & goat (2022.11-2023.10)

Meetings and workshop

- In 2022 and 2023, veterinary institutions across China organized a series of conferences and training sessions focused on FMD prevention and control. Tables 3 and 4 provide details about some of these events, including their content, dates, locations, and participant

Table 3. Conference/Workshop on the Prevention and Control of FMD, 2022

Date	Institution/Location	Content	Number of Participants
February 21, 2022	China Animal Disease Prevention and Control Center (online)	FMD Trends & Prevention and Control	
February 28, 2022	Nanchang, Jiangxi	Technology for the Prevention and Control of FMD	30
March 3, 2022	Online (Guizhou)	Epidemic and Prevention and Control of FMD	50
March 18, 2022	Beijing	Epidemic and Monitoring Situation of FMD in Sheep in China	80
March 29, 2022	Haikou, Hainan	(1) Construction of FMD-Free Zones with vaccination in China (2) FMD Trends & Vaccination, Prevention and Control Strategy of FMD in China	60
April 18, 2022	Online (Anhui)	Epidemic Dynamics & Prevention and Control Technology of FMD	100
April 28, 2022	Online (Fujian)	FMD Trends & Vaccination Technology of FMD	90
June 15, 2022	Lanzhou	Introduction of FMD Situation	120
August 1, 2022	Online (Henan)	FMD Status & Prevention and Control Strategy of FMD	105
September 13, 2022	Online Training Course on the Prevention and	Genetic Variation of FMD Virus, Harm of FMD and Current Situation of Global Prevention and Control	30

	Control of FMD in Pakistan (online)		
September 21, 2022	Nanning, Guangxi	FMD Status & Prevention and Control Technology of FMD	115
September 29, 2022	Wuhan, Hubei	FMD Status & Prevention and Control Technology of FMD	110
October 21, 2022	China Animal Health and Epidemiology Center (online)	FMD Situation & Prevention and Control Suggestions for FMD	

Table 4. Part of Training Courses, 2023

Date	Location	Topics	Number of Participants
February 28, 2023	Yinchuan	Technical Exchange Conference on Hoof Disease and Infectious Diseases in Ningxia Pasture	60
March 3, 2023	Changchun	Training Course on Animal Disease Prevention and Control Technology in Jilin Province	60
March 6, 2023	Lanzhou	Training Course on Diagnosis, Detection and Comprehensive Prevention and Control Technology for Major Animal Diseases	400
March 9, 2023	Lanzhou	Training Course on Diagnosis, Detection and Comprehensive Prevention and Control Technology for Major Animal Diseases	300
March 17, 2023	Guiyang	Training Course on Prevention and Control Technology for Major Animal Diseases in Guizhou Province	70
March 27, 2023	Changsha	Comprehensive Training Course on Animal Disease Prevention and Control Technology in Hunan Province	80
October 9, 2023	Shanghai	Special Training Course on Animal Disease Prevention in Shanghai	40

Challenges in FMD control and recommended solution to address these challenges

- The coverage of FMD virus is wide, many provinces have the outbreak records, and type O and type A coexist, and type O has 4 popular strains.
- The backyard farms still account for the vast majority, and lack of biosecurity.
- Cross-regional movement of live animals still poses a major threat to the spread of FMD.
- Illegal movement and smuggling result in a high risk of pathogen introduction into China.
- Lack of personnel and capacity of local veterinary institutions.

Way Forward – Future activities

- Continue to carry out epidemiological research, understand the changes of the virus, and develop more effective differential diagnosis methods.
- Continue to encourage the farmers to improve biosecurity, and booster vaccination.
- Continue to implement the regional prevention and control policy, and reduce long-distance animal transport.
- Continue to strengthen international cooperation to deal with new outbreaks timely.
- Continue to strengthen training for local veterinary institutions and support them in terms of policy and funding.

Indonesia

FMD Situation in 2023

Indonesia was declared free from FMD in 1986 and recognized by the World Organisation for Animal Health (WOAH) as FMD-free without vaccination in 1990. However, FMD was reported in Indonesia for the first time since achieving this status on May 4–5, 2022, in the provinces of Aceh and East Java, with notification to WOAH on May 9, 2022. This marked the first detection of FMD in the country since its FMD-free status was established.

The FMD outbreak was officially declared through the Decree of the Minister of Agriculture (No. 500.1/2022) on June 25, 2022. Sampling conducted by the National Center for Veterinary Biologic-Surabaya in East Java revealed the outbreak was caused by serotype O, topotype ME-SA, lineage Ind-2001, sublineage e (O/ME-SA/Ind-2001e).

As of August 2024, 27 out of 38 provinces in Indonesia have been affected by FMD. These provinces include Aceh, Bali, Bangka Belitung, Banten, Bengkulu, DI Yogyakarta, DKI Jakarta, Jambi, West Java, Central Java, East Java, West Kalimantan, South Kalimantan, Central Kalimantan, East Kalimantan, North Kalimantan, Riau Islands, Lampung, West Nusa Tenggara, Riau, West Sulawesi, South Sulawesi, Central Sulawesi, Southeast Sulawesi, West Sumatra, South Sumatra, and North Sumatra.

The provinces with the highest number of FMD cases are East Java (183,796) and West Nusa Tenggara (112,147), both of which have the largest cattle populations in the country. The spatial distribution of FMD cases in Indonesia is shown in Figure 1. The data reflects reported cases submitted through the national animal health system (iSIKHNAS) and confirmed at the provincial level. However, it is important to note that unreported cases may exist.

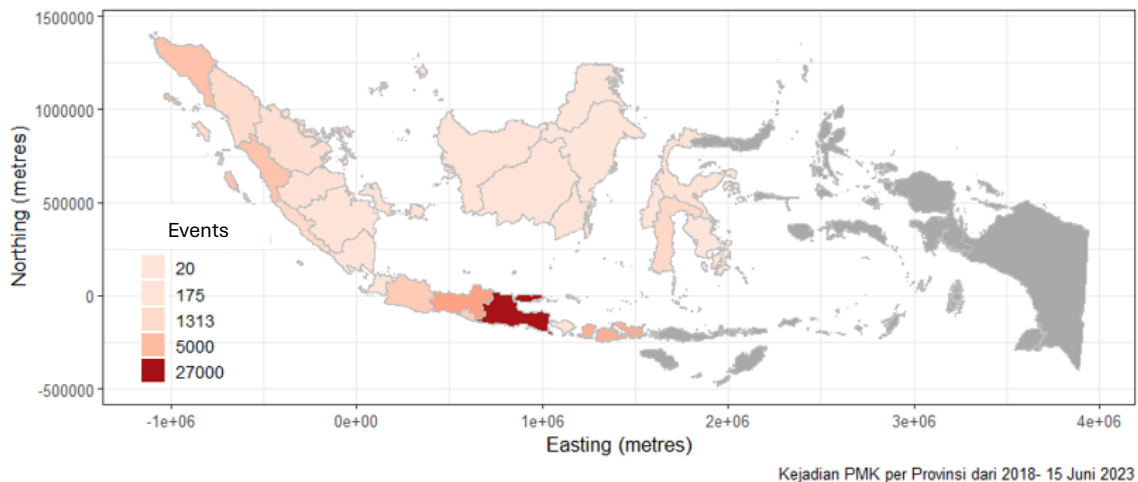


Figure 1. Spatial distribution of FMD in Indonesia

Figure 2 illustrates the number of events and cases of FMD in Indonesia reported each month from 2022 to August 2024, based on data from Indonesia's integrated real-time animal health information system, iSIKHNAS.

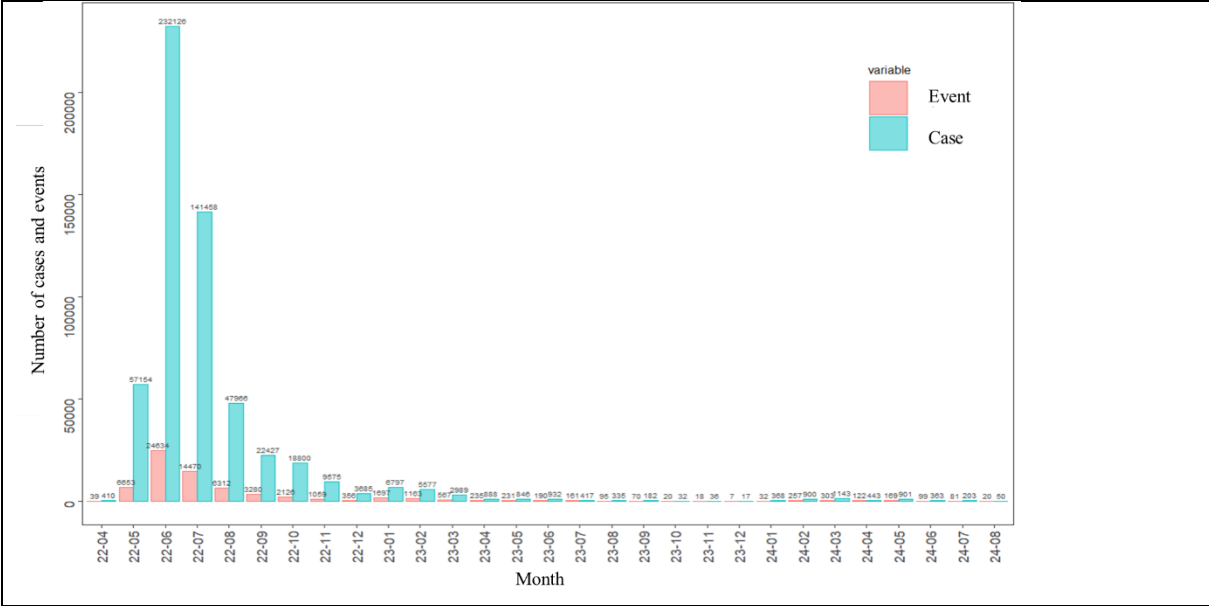


Figure 2. Temporal distribution of FMD by month (April 2022 to August 2024)

FMD was first suspected in April 2022 and confirmed in May 2022 in Aceh and East Java provinces. The peak of FMD cases occurred mid-year in June 2022, with 232,126 incident cases. This spike was primarily due to rapid disease spread in East Java, Aceh, and other provinces.

Following the introduction of the first vaccination campaign (June–November 2022), the number of cases began to decline after June 2022. Overall, FMD case incidences continued to decrease steadily, reaching only 20 events and 50 incident cases by August 2024.

In 2023, the affected species varied. A total of 557,019 animals were infected, with cattle being the most impacted, accounting for 82% of cases (456,733 heads), as detailed in Table 1."

Table 1. Number of animals affected by FMD per animal species in 2023

Animal species	Number of animal
Cattle	456.733
Dairy cattle	68.310
Buffalo	24.422
Goat & Sheep	7.554

FMD Prevention and control activities

Surveillance, early detection and response

The success of FMD prevention heavily relies on early detection activities, particularly before the disease spreads widely. Public awareness programs about FMD and other livestock diseases, along with

enhanced communication between veterinary officers and farmers, play a critical role in the early detection of FMD outbreaks.

Other key factors include the expertise and knowledge of field staff in identifying FMD symptoms, proper sampling and sample handling, laboratory diagnostic capacity, and the effectiveness of the national surveillance system. Reporting by field officers through iSIKHNAS is vital for early detection. Reports submitted via iSIKHNAS are followed up with field investigations and laboratory analyses. This syndromic surveillance approach aids in identifying new cases in both previously uninfected and infected areas.

In 2023, a total of 58,929 events were reported through the iSIKHNAS system. Additionally, the installation of animal identification systems and the establishment of the reporting platform "IDENTIK" (launched between 2022 and 2023) have enabled the recording of animal IDs, farmer IDs, and vaccination statuses.

Laboratory capacity for FMD surveillance and testing has been strengthened by designating the National Center for Veterinary Biologics (Pusvetma) as the national referral laboratory, alongside eight Disease Investigation Centers (DICs) for FMD diagnostics. Veterinary training programs on clinical diagnosis and epidemiology have also been implemented. Additional testing laboratories may be designated by the Minister of Agriculture based on recommendations from the FMD Task Force, with the approval of the Advisory Agency.

Virus characterization efforts were conducted at least six times at the Pirbright Institute during the initial FMD incursion in 2022. Additionally, 78 samples were analyzed in 2023 to investigate in new infected areas.

FMD was first suspected in April 2022 and confirmed in May 2022 in Aceh and East Java provinces. Initial reports on May 4–5, 2022, were followed by outbreak investigations and sample collection. Laboratory confirmation of the East Java and Aceh cases was completed on May 6–7, 2022. Indonesia officially declared the FMD outbreak and notified WOAHA on May 9, 2022. Subsequently, the Ministry of Agriculture established an FMD Task Force.

Movement control and quarantine procedures for livestock and their products were also implemented. Stricter traffic control measures were introduced to prevent the entry of infected animals and products. Efforts to strengthen the capacity of quarantine stations included adding scanners at entry and exit points. In affected provinces, supportive treatments, including vitamins, feed supplements, antibiotics, antipyretics, analgesics, antihistamines, anti-inflammatory medications, and disinfectants, were provided.

Indonesia adopted the "penta-helix" approach for FMD control, involving the establishment of a National Task Force for FMD. This approach emphasizes collaboration among multi-institutional organizations, societies, and international partners, prioritizing resource mobilization and structured organization from the national to the local level. While this framework is currently focused on FMD, it has not yet been fully implemented for other priority animal diseases such as lumpy skin disease (LSD)."

Vaccination

In response to the 2022 FMD outbreak, the Central Government procured FMD vaccines to meet the needs for primary vaccinations (doses 1 and 2) and booster vaccinations (dose 3) for each FMD-susceptible animal in affected provinces. Vaccine allocation was based on the population of FMD-susceptible animals in each province.

Considering the requirements, budget constraints, and the availability of vaccines from producers, several FMD vaccine brands were imported to address the demand (Table 2).

Table 2. Number doses of FMD vaccines per brand type in 2023

Country: Indonesia			Year: 2023	
Source	Number of Doses	Types (Killed/ Attenuated)	Types (Indicate subtype combination for bi & trivalent vaccines)	Manufacturer and Country of production
Gov't purchase	2,999,400	Inactivated, O serotype and A serotype (Strain O3039, O1 Manisa and A22 IRAQ)	Bivalent	Aftopor, Boehringer Ingelheim Animal health-United Kingdom
	2,999,580	Inactivated, A and O serotype (O1 Campos and A24 Cruzeiro)	Bivalent	Aftomune, CEVA Veterinaria-Brazil
	3,721,580	Inactivated, A and O serotype (O1 Campos and A24 Cruzeiro)	Bivalent	Ourovac Aftosa, Ourofino-Brazil
	12,000,000	Inactivated, O Serotype (Strain O/Mya98/XJ/2010 and Strain O/GX/09-7)	Monovalent	Cavac FMD, China Animal Husbandary Industry Co. Ltd (CAHIC)-China
	3,000,000	Inactivated, O Serotype (Strain O/TUR/2009)	Monovalent	Shchelkovo FMD, iocombinat, Rusia
	3,500,000	Inactivated, O serotype (Strain O/Zabaikalsky/2016)	Monovalent	Inactivated Adsorbed, FGBI ARRIAH-Russia
	5,750,000	Inactivated, A and O serotype (O1 Campos and A24 Cruzeiro)	Bivalent	Aftosa, CDV. S.A - Argentina
	4,799,425	Inactivated, O serotype (strain O1 Campos)	Monovalent	Aftogen oleo, Biogenesis Bago-Argentina
	7,399,995	Inactivated, O serotype (Strain IND/O/R2/75)	Monovalent	Futvac, Brilliant Bio Pharma- India

Donor's purchase	10,000	Inactivated, O serotype and A serotype (Strain O3039, O1 Manisa and A22 IRAQ)	Bivalent	Aftopor, Boehringer Ingelheim Animal health-United Kingdom
	4,000,010	Inactivated, O serotype (strain O1 Campos)	Monovalent	Aftogen oleo, Biogenesis Bago-Argentina

To effectively control FMD, Indonesia requires a comprehensive control strategy. One of the primary strategies currently being implemented is the vaccination of FMD-susceptible animals. Additionally, other control measures include treatments, enhanced biosecurity practices, and public awareness campaigns.

At the onset of the outbreak, the vaccination program aimed to protect high-value animals with long lifespans, such as breeding cattle and dairy cows, and to reduce FMDV transmission among frequently trafficked animals. The vaccination program in Indonesia prioritizes cattle and buffalo. Based on risk assessments, other animals such as goats, sheep, breeding pigs, trafficked pigs, and hooved wild animals may also be vaccinated when necessary. Vaccination is carried out in infected areas and on islands that share proximity with infected regions (Table 3).

Mass vaccination against FMD began in mid-June 2022 in affected areas and was implemented gradually based on risk levels. Emergency procurement for the outbreak totaled 50,179,990 doses, planned to cover vaccination needs from 2022 to 2023. Vaccination achievements included 9,297,876 doses administered in 2022, 16,489,092 doses in 2023, and 7,739,950 doses by August 2024. Post-vaccination monitoring has yielded satisfactory results.

Surveillance and post-vaccination monitoring have been conducted by the Laboratory Center for Quality Testing and Certification of Veterinary Drugs, Pusvetma, and Disease Investigation Centers (DICs). ELISA SP tests revealed a national seropositive rate of 80%, with 162,843 of 203,308 samples testing positive. At the district or city level, seropositive rates ranged from 0% to 100%. These results reflect the proportion of vaccinated animals exhibiting an immune response (as measured by ELISA SP serology) but do not indicate herd immunity levels

Table 3. Number of animal population and animals vaccinated by affected province.

Province	Number Animals Vaccinated							
	Cattle		Buffalo		Pig		Sheep/ Goat	
	Population	Vaccinated	Population	Vaccinated	Population	Vaccinated	Population	Vaccinated
Aceh	533,612	221,942	124,161	24,945	2,086	159	776,557	105,606
Bali	380,559	313,239	1,262	231	371,499	224,315	43,230	23,081

Kepulauan Bangka Belitung	17,860	10,389	231	21	5,673	-	4,980	506
Banten	51,643	24,253	53,495	3,656	1,404	191	1,123,977	46,233
Bengkulu	155,749	39,998	40,161	3,448	1,645	-	231,393	49,127
DI. Yogyakarta	305,314	71,637	395	61	8,869	5,447	607,157	91,768
DKI Jakarta	3,116	3,725	33	20	-	-	5,654	1,806
Jambi	161,323	75,791	45,106	8,304	1,687	836	465,834	25,654
Jawa Barat	487,510	212,161	61,296	5,352	2,824	-	9,842,202	181,901
Jawa Tengah	1,887,439	783,968	50,265	5,248	77,811	2,649	6,036,436	704,666
Jawa Timur	5,204,992	2,263,862	18,977	3,335	48,780	29,815	4,992,633	2,541,960
Kalimantan Barat	123,272	53,789	1,878	46	76,348	351	113,871	23,109
Kalimantan Selatan	169,330	41,820	19,853	1,255	4,559	133	65,068	12,617
Kalimantan Tengah	71,658	17,800	11,537	132	98,474	5,078	42,382	7,690
Kalimantan Timur	108,681	49,240	6,490	361	45,839	2,464	59,194	11,847
Kalimantan Utara	21,556	10,351	4,032	188	16,639	2,700	9,584	2,968
Kepulauan Riau	17,775	4,420	10	-	261,407	-	8,171	247
Lampung	917,507	626,172	20,076	1,854	43,651	5,576	1,714,634	454,055
Nusa Tenggara Barat	1,219,798	811,635	102,412	35,568	58,803	10	672,060	106
Riau	210,837	95,037	27,499	3,909	47,176	2,899	271,286	42,988
Sulawesi Barat	114,251	32,320	9,506	1,519	170,091	24,395	200,871	22,794
Sulawesi Selatan	1,415,192	409,576	108,263	17,815	952,067	8,477	839,174	157,051
Sulawesi Tengah	461,563	104,136	2,630	1,962	270,504	5	590,144	13,814
Sulawesi Tenggara	409,976	187,500	2,812	3	117,378	1,679	216,478	984
Sumatera Barat	400,777	106,617	79,711	6,436	44,451	-	246,196	19,492
Sumatera Selatan	305,676	144,237	27,638	9,423	12,086	1,343	452,045	91,664
Sumatera Utara	953,992	451,804	82,962	6,514	211,400	41,158	1,358,816	86,033

Animal movement

Various actions have been undertaken to raise awareness about biosecurity measures, including publishing alert letters and conducting campaigns. Movement control measures, such as transportation restrictions and movement certificate requirements, have also been implemented by each province. These controls can be enforced both at the farm level and on a regional scale, even before a suspected case is confirmed. The main principle of movement control is to minimize the risk of disease spread by restricting the movement of infected animals, their products, and potential vectors, while permitting the movement of animals and products deemed to pose minimal risk.

Movement control has been strengthened through the activation of checkpoints for animal movement. This effort is carried out in collaboration with other sectors, including the military, police, Animal Quarantine, and the Department of Transportation. Indonesia has also established regulations governing animal movement through the Minister of Agriculture. In 2023, the Minister of Agriculture Regulation Number 17 was enacted to outline procedures for monitoring the movement of animals, animal products, and other disease carriers within the Republic of Indonesia.

Regarding live animal importation, Indonesia requires imported ruminant livestock to originate from FMD-free countries, as stipulated in the Ministry of Agriculture Regulation 15/2021. While no agreements were signed in 2022, an agreement for live cattle importation from Brazil, a FMD-free country (by zones), was signed in 2023. This was supported by additional regulations, including Government Regulation 4/2016 and Minister of Agriculture Regulation 32/2023, to ensure compliance.

Biosecurity measures are critical to stop the replication and circulation of the FMD virus in the environment. Training programs for veterinarians and paraveterinarians on good biosecurity practices have been conducted, targeting farms at all scales—large, medium, and small. Simple biosecurity videos for field officers were also developed. Guidance on biosecurity practices has been provided to smallholder farmers, including the introduction of effective and accessible disinfectants. Additionally, the government supplied disinfectants and disinfection equipment, which were distributed to affected areas to support on-farm biosecurity efforts.

Communication and awareness

Communication and awareness activities were designed to engage a wide range of stakeholders, including government authorities, veterinary services, the general public, and both commercial and backyard farmers. These efforts utilized diverse methods such as infographics, presentations, training sessions, capacity-building workshops, educational materials, posters, radio broadcasts, and social media platforms.

Outreach programs and education initiatives targeted breeders, traders, butchers, and industry associations. These efforts focused on raising awareness about FMD, including general knowledge of the disease, vaccination programs, and biosecurity measures to prevent its spread. A key objective was to encourage farmers to report suspected FMD cases to local animal health officers, ensuring early detection and rapid response.

Information, Education, and Communication (IEC) materials about FMD were disseminated via social media platforms like Facebook, Twitter, Instagram, TikTok, and WhatsApp. Topics included disease

recognition and reporting, prevention and control measures, farm biosecurity practices, movement restrictions, non-zoonotic animal health issues, and the economic and social impacts of FMD.

Indonesia also established a national hotline under the Crisis Center to provide accessible data and information about FMD for the public. Additionally, a dedicated FMD information website was launched to centralize resources. The government further supported public education efforts by organizing a series of online training sessions and webinars focused on FMD awareness, prevention, and control.

Public awareness materials:

<https://drive.google.com/drive/folders/1yC5vECH6pWECfiWEYWynLhwLCfwQv9d9?usp=sharing>

News related to FMD by the Ministry of Agriculture is as follows:

<https://ditjenpkh.pertanian.go.id/pages/31-info-terkait-pmk>

Videos related to FMD which are published through YouTube channel:

1. <https://youtu.be/VFP1TxbLOPU?si=N-Ap3ldY3DY1-aP1>
2. <https://youtu.be/76Hqzdr-8qE?si=RIFHJ00TA3AQaiV7>
3. https://youtu.be/3J9NPF515eE?si=gfY_hjiX3DKWHVus
4. <https://youtu.be/ZCsKRBesWkw?si=flAWZDEmcFM9LUt1>
5. <https://youtu.be/dpCNxLDagTM?si=lcBrZhVMRfPj4I4S>
6. <https://youtu.be/fk4Qllu8Bfy?si=YF6WprADeENXFUjr>
7. <https://youtu.be/nyEE78VoKK8?si=JuWVq0sGF5p894F1>
8. <https://youtu.be/hLKFikmOsf0?si=Dj9kNVOuKH6boku6>
9. <https://youtu.be/FTXcwWfLB8o?si=Dk2kXWe4AlhdlcVc>
10. <https://youtu.be/VdV1h7zsp2o?si=iyF1WjKJDDW-Gwxi>
11. https://youtu.be/sZZNr_8fiW8?si=a-HNr1zwr_tXuLSI
12. <https://youtu.be/pDtKzCbcSrK?si=SyXleOx9o6nIbFOw>

Governance and legislations

Several regulations have been introduced to enhance the management of animal diseases. These include revising the framework for establishing Strategic Infectious Animal Diseases, implementing movement control measures, improving laboratory diagnostics for Foot-and-Mouth Disease (FMD), and strengthening surveillance and identification of animal diseases. Additionally, technical guidelines have been developed for FMD surveillance and identification, post-vaccination monitoring, and providing assistance during FMD emergencies. The regulations also include Standard Operating Procedures (SOPs) for reporting and monitoring animal diseases via iSIKHNAS and comprehensive guidelines for FMD control.

- Minister of Agriculture decree first outbreak of FMD in Aceh and East Java Province, Indonesia on May 2022;
- Developed Veterinary Emergency Preparedness Guidelines for FMD in Indonesia (Contingency plan), Biosecurity Guidelines, Vaccination Guidelines;
- Minister of Agriculture decree FMD as one of infectious animal diseases priority in Indonesia;
- Minister of Agriculture decree concerning roadmap of FMD eradication in Indonesia;
- Official letter to infected Provinces concerning FMD prevention and control activities;
- Minister of Agriculture regulation concerning animal movement control;
- Minister of Agriculture regulation concerning Standard Operational Procedures for Vaccination of FMD
- Minister of Agriculture regulation concerning FMD Control and Mitigation Activities in Indonesia
- Circular Letters National FMD Task Force;
- Other Decree, Circular Letters, Instruction from Different Ministries, Army/Police;
- Regulation of the Minister of Agriculture Number 17 Year 2023 on procedures for monitoring the animal movement, animal products, and other animal disease carriers within the territory of the Republic of Indonesia.

Provinces / districts level:

- Animal movement restriction for cattle and their products in infected Provinces;
- Official letter concerning preparedness for FMD in free Provinces.

Regulations related to FMD prevention and control can be accessed via the following link:

<https://ditjenpkih.pertanian.go.id/pages/34-regulasi-dan-pedoman-pmk>

Meetings and workshop

Several meetings or training were organized by the National and Sub-National Government include:

1. Technical training for FMD vaccinators in Bali Province on 15-17 September 2022 was attended by 500 Animal Health Center officers, agricultural extension worker, and veterinary university student.
2. Technical training for Foot and Mouth Disease (FMD) Vaccination and Data Encoder in South Sulawesi Province on 17-18 October 2022 was attended by 500 Animal Health Center officers, agricultural extension worker, Police, and Army.
3. Technical training for Post-FMD Vaccination Control and Surveillance for Health Center officers in Central Java, East Java and DI. Yogyakarta which was attended by 169 Animal Health Center officers on 26-27 September 2022
4. Socialization and Technical training for the implementation “Idul Kurban” ceremony in outbreak situation was carried out in a hybrid meeting on 14 June 2023 attended by approximately 1,000 people from Vet and Paravet personnel as the Monitoring Team also the Mosque Prosperity Council.

5. Training of Trainers (ToT) on FMD vaccination on 04-07 July 2022 was attended by 20 vet and 3 paravet from the Indonesian National Police.
6. On January 28, 2023, Kick off of national Foot and Mouth Disease (FMD) control and management 2023 through vaccination activities, distribution of vaccine assistance, medicines, disinfectants and animal identification carried out simultaneously in 29 Provinces.
7. On September 14, 2023, a Coordination meeting for the control and management of Foot and Mouth Disease (FMD) was held in East Kalimantan Province, attended by all districts throughout the province.
8. On July 27, 2023, a Coordination and reporting meeting for Foot and Mouth Disease (FMD) was held in West Nusa Tenggara Province, attended by all districts throughout the province
9. On December 18, 2023, an Evaluation meeting for the management of Foot and Mouth Disease in the BBVet Denpasar Working Area was held, attended by representatives from the Provinces of Bali, NTB, and NTT.
10. On October 17, 2023, a Coordination and reporting meeting for Foot and Mouth Disease was held in Lampung Province, attended by all districts throughout the province

Other initiatives

a. PVS Follow up evaluation

F At the request of the Government of Indonesia, the World Organisation for Animal Health (WOAH) conducted an evaluation of the country's Veterinary Services using the WOAHPVS (Performance of Veterinary Services) methodology from October 2 to 13, 2023. The evaluation was carried out by a team of three independent WOAHPVS-certified PVS evaluators and two trainee experts. Additionally, a special component was included to assess progress in the surveillance, prevention, and control of rabies, led by a WOAHPVS-accredited expert using the PVS Rabies specific content methodology.

Key activities of the mission included:

- **Meetings:** Consultations were held with the Director General of the Directorate General of Livestock and Animal Health Services (DGLAHS), the Chief Veterinary Officer, and senior staff at the headquarters of the Ministry of Agriculture (MoA). A courtesy visit with the Director General of Livestock and Animal Health Services was also conducted. Further discussions involved officers from various directorates, including animal health, veterinary public health, feed safety, animal quarantine, human resources, and communication. Meetings were also held with representatives from the Indonesian Veterinary Medical Association and two associations for para-veterinarians at the MoA.
- **Site Visits:** The WOAHPVS team visited public and private sector sites and institutions in both urban and rural areas across Indonesia. These visits facilitated discussions with government officials, veterinarians (from both public and private sectors), livestock producers, traders, and other stakeholders on relevant issues.
- **Closing Meeting:** The mission concluded in Jakarta with a final meeting attended by DGLAHS representatives, FAO and WOAHPVS officials, and other stakeholders. During this meeting, the overall findings of the evaluation were presented and discussed.

b. Public Private Partnerships

Collaboration between the government, commercial-scale farmers, and relevant associations is strengthened to enhance awareness and control of Foot-and-Mouth Disease (FMD) in Indonesia. This

partnership aims to synergize efforts with other Transboundary Animal Disease (TAD) control programs through communication and discussions, including activities such as inspections for African Swine Fever (AFS) or Brucellosis-free compartmentalization. Additionally, the Central Government is actively encouraging and facilitating the pharmaceutical industry to register FMD vaccines. This initiative ensures the vaccines can be officially distributed and made available for purchase by the public and the livestock industry, promoting more effective disease prevention and control.

c. Collaboration with partners

FMD outbreak control in Indonesia is managed through a coordinated chain of command under the FMD Disaster Management Task Force. This structure impacts various aspects of response, including coordination, implementation of control measures, logistics distribution, human resource and financial management, as well as centralized monitoring and periodic evaluation. Public communication, press releases, and media updates are centralized to ensure the dissemination of valid information and data. To enhance transparency, a dedicated website was launched in 2022, providing updates on FMD cases, outbreak control progress, and a public reporting call center.

Technical assistance was received from international organizations and neighboring countries. International Organizations such as WOA and FAO provided support for training programs, raising awareness, laboratory diagnostics and supplies, expert missions and lab confirmations (e.g., Pirbright), and materials and equipment for outbreak control including emergency procurement of small quantities of FMD vaccines and PPEs.

Neighboring Countries such as Australia and New Zealand also provided technical and logistic support for Indonesia's FMD control. Through the Australia-Indonesia Health Security Partnership (AIHSP), Australia provided FMD vaccines, training programs, laboratory support, awareness-raising initiatives, and assistance in developing a National FMD Roadmap. New Zealand offered biosecurity support for breeding centers, along with donations of PPE and medicines.

Challenges in FMD control and recommended solution to address these challenges

Animal Movement and Border Control

Controlling animal movement and border security (to prevent illegal entry) faces significant challenges due to limited resources. A risk analysis team is needed on an ad hoc basis, as risk assessments are conducted irregularly and primarily focus on importation risks. Additionally, law enforcement capabilities are limited. Movement control is enforced only at official entry points due to resource constraints. To address these challenges, it is essential to map the risks of animal disease introduction, allowing for more efficient resource allocation.

Another challenge is the lack of effective movement control between administrative areas on the same landmass. Existing checkpoints are not sufficient to control animal movement, leading to gaps in disease management.

Preparedness for emerging diseases

Simulation exercises to prepare for the introduction of new and emerging diseases are conducted irregularly, resulting in limited readiness. Challenges include: inadequate access to vaccines, insufficient

awareness regarding disease introduction risks, limited access to emergency funding, which delays the deployment of rapid response teams to affected areas, and budget constraints, which impact the investigation of potential FMD outbreaks.

FMD vaccination challenges

Vaccination efforts for Foot-and-Mouth Disease (FMD) in Indonesia face multiple hurdles, such as: Insufficient numbers of veterinarians and para-veterinarians to implement vaccination programs, difficulties in accessing and handling animals in remote or expansive farming systems, farmer's resistance to vaccinate their animals due to concerns over potential adverse effects, such as deaths or abortions following vaccination, natural disasters such as flooding and heavy rains disrupt vaccination campaigns, competing priorities with other disease control and livestock affect the availability of resources and funding for FMD vaccination efforts.

Way Forward – Future activities

Activities planned from September 2024 to December 2025

- **Budgeting**
 - Propose an FMD control budget based on the FMD eradication roadmap.
- **Training and Capacity Building**
 - Conduct refresher training for veterinarians on clinical diagnosis, laboratory techniques, and epidemiology.
 - Provide risk mapping training for zoonotic and Transboundary Animal Diseases (TADs) targeting multisector partners.
- **Communication and Public Awareness**
 - Enhance communication and education efforts to raise awareness about recurring FMD outbreaks and the importance of vaccination.
 - Promote biosecurity measures and animal movement control to minimize disease spread.
- **Coordination with Stakeholders**
 - Strengthen collaboration with various stakeholders, including multi-institutional organizations and societies.
 - Improve coordination with quarantine institutions to support FMD control measures.
- **FMD Eradication Roadmap**
 - Implement the Ministry of Agriculture's decree on the roadmap for FMD eradication by 2035.
 - Propose the Official Control Program Recognition to WOAHP.
- **Vaccination**
 - Focus vaccination efforts in targeted areas to control the spread of FMD.
- **Regulatory Revisions**
 - Revise regulations related to disease status, veterinary authority, veterinary diagnostic laboratories, and compartmentalization.

Support from WOA and Other Partners

- Capacity building in communication, public awareness, surveillance, and laboratory diagnosis.
- Assistance with developing the FMD Official Control Program.
- Support for vaccination in extensive farming systems.
- Provision of technical guidance from FMD experts.

Contribution to Strengthen SEACFMD Campaign at the Regional Level

- Reinforce government commitment to control and eradicate FMD.
- Actively participate in regional and global activities related to the SEACFMD campaign.

Lao PDR

Abstract

Livestock plays a critical role in the livelihoods of Laotian households, serving as a primary source of income and food security. FMD is recognized as one of the most serious problems due to its significant socio-economic and trade impacts. In addition, endemic diseases continue to hinder the potential of livestock production and animal health, with some posing risks to human health as zoonotic diseases.

FMD outbreaks often result in high numbers of affected animals, causing deaths, reduced productivity, and severe financial losses for farmers and disrupts livestock trade. In the endemic regions of Lao PDR, FMD imposes a progressive socio-economic burden, threatening the livelihoods and food security of smallholder farmers and the communities that depend on livestock.

To address these challenges, a National Strategy Framework for Progressive FMD Control has been developed with support from the New Zealand-funded FMD Control Project and the World WOA. The Risk-Based Strategic Plan (RBSP) [2019–2023] and the FMD Control Strategy [2018–2025] were prepared by the Department of Livestock and Fisheries (DLF) and endorsed by the Ministry of Agriculture, Lao PDR. This framework aims to shift disease control management to not only meet trade requirements with neighboring countries but also to ensure efficient resource use across the country for a sustained impact on disease control. Additionally, the strategy promotes animal health and productivity in all regions of Lao PDR. The framework aligns with the Agriculture Development Strategy to 2025 (ADS 2025) and the country's vision for 2030. It complements ADS 2025 by introducing livestock sector-specific measures in policy, governance, coordination mechanisms, capacity building, entrepreneurship, cooperation, and investment.

Efforts are also ongoing to implement the Law on Livestock and Veterinary Matters, revised and endorsed by the National Parliament on November 11, 2016. Despite challenges in fully implementing the RBSP, Veterinary Services, with support from public and private sectors, is advancing FMD control activities, including disease monitoring, surveillance, vaccination, biosecurity, and animal movement control. These efforts are particularly evident in the FMD control zone in Luang Namtha Province.

In recent years, Lao PDR has strengthened its cattle trade relationship with China. The first cattle export occurred in 2021, involving 2,013 cattle and buffaloes. However, an outbreak of Lumpy Skin Disease (LSD) in the Vientiane Capital, which later spread to Savannakhet Province, disrupted trade activities.

As the animal health situation in Lao PDR improves, cross-border trade has resumed with approvals from relevant authorities. To prepare for cattle exports and re-exports, the Department of Livestock and Fisheries (DLF), in collaboration with the Louang Namtha Province Agriculture and Forestry Office (LNT PAFO), District Agriculture and Forestry Offices, farmers, traders, and international organizations, has been actively working to enhance preparedness. Initiatives include quarantine and vaccination training, as well as FMD and LSD vaccination campaigns.

In August 2023, DLF and the AGCC delegation from China signed a contract to export 3,000 cattle and buffaloes from Lao PDR to China and the exports commencing by the end of September 2023.

Demonstrating successful FMD control in the Luang Namtha zone, this trade supports the livelihoods and incomes of farmers, traders, and local communities. It is also expected to boost FMD control activities across the province and the rest of the country.

FMD situation

In recent years, FMD outbreaks have affected animal herds in Lao PDR, causing significant economic challenges for farmers due to treatment costs and loss of income. In 2018, an FMD outbreak caused by serotype A occurred in Attapeu Province. Subsequently, outbreaks caused by serotype O were reported in 2019 and 2020 in several provinces, including Xayabouly, Houaphan, Oudomxay, and Luang Prabang. Since then, no clinical outbreaks have been reported in Lao PDR.

FMD prevention and Control Activities

Disease Reporting System

Currently, the primary official disease reporting system in Lao PDR relies on paper-based reporting. Information is often communicated via phone calls and WhatsApp messages from local offices to central authorities. While technical staff utilize WhatsApp to assist with disease reporting, the approach has several limitations.

The Enhancement of Zoonotic Disease Outbreak Detection in Lao PDR and Cambodia (LACATH4) project developed and introduced a pilot system for disease reporting in target areas. However, this system has only been introduced at the Provincial Agriculture and Forestry Offices (PAFO) and District Agriculture and Forestry Offices (DAFO) levels. These offices report outbreaks only after receiving information from farmers or Village Veterinary Workers (VVs).

Currently, the Department of Livestock and Fisheries (DLF) and Chiang Mai University are preparing a Memorandum of Understanding (MOU) to implement disease reporting using the Participatory One Health Disease Detection (PODD) application.

Quarantine and Vaccination Training

Training on quarantine management and vaccination on FMD and LSD organised from 6 – 10 December 2022, where 50 participants attended the training, of which 18 participants were female. There are 7 participants from Division of Veterinary Services (DVS), DLF; 11 participants are from livestock and fisheries section of Louangnamtha province, 12 participants are from Sing district agriculture and forestry office and quarantine station, and 20 from district offices in Louangnamtha, Viengphoukha, Long and Nalae district agriculture and forestry offices (5 per district). Both trainings were facilitated by DLF, PAFO and FAO consultant.

Training on quarantine management and vaccination on FMD and LSD was organized on 13–15 December 2023. The total number of participants are 64, of which 20 are livestock officers (5 per district), 28 participants are farmers and traders, and 31 participants are Village Veterinary Workers (VW).

Vaccination campaign advocacy

Before the vaccination campaign began, DLF and PAFO collaborated to organize vaccination advocacy workshops in various villages as shown in the Table below. These workshops, held in selected villages across each district, aimed to raise awareness about FMD and LSD prevention and control. The goal was to enhance farmers' understanding and encourage their active participation.

The workshops were conducted from **March 20 to May 31, 2023**, as part of preparations for the vaccination campaign.

Districts' name	No. of Villages
Louangnamtha	22 Villages
Sing	48 Villages
Long	25 Villages
Viengphoukha	25 Villages
Nalae	21 Village
Total	141

Through awareness campaigns in each village, participants were informed about animal diseases and their prevention methods. The campaigns emphasized the importance of vaccination, reporting disease outbreaks in their villages, and proper management practices, such as the safe disposal of animal carcasses, cleaning, and disinfection.

Vaccination campaign

DLF collaborated with FAORAP and FAOLA to ensure vaccines were purchased and delivered to PAFO and DAFOs on time as requested. To encourage animal keepers' participation, PAFO organized a planning workshop and instructed DAFOs to assign technical staff to oversee vaccination in each village. PAFO appointed 17 technical staff from the Livestock and Fisheries Section (LFS) to assist DAFOs in the vaccination campaign. Vaccination teams were formed, each consisting of one LFS technical staff and three DAFO staff members. Most DAFOs had three teams, except Sing DAFO, which had four.

Vaccination against animal diseases remains a priority task. According to the target set in the LoA between DLF and FAO, at least 85% of bovines across the province were to be vaccinated against FMD and LSD to ensure herd immunity and safe trade practices.

To achieve this, the 17 appointed technical staff from PAFO worked closely with DAFOs to conduct vaccinations and register animals (ear tagging). The vaccination campaign started in easily accessible lowland villages and gradually expanded to remote mountainous areas. These activities ran from March 20 to June 8, 2023, and detail presented in the table below.

Districts name	Animal statistics			Animals vaccinated			% of
	Cattle	Buffalo	Sub-total	Cattle	Buffalo	Sub-total	Vaccination

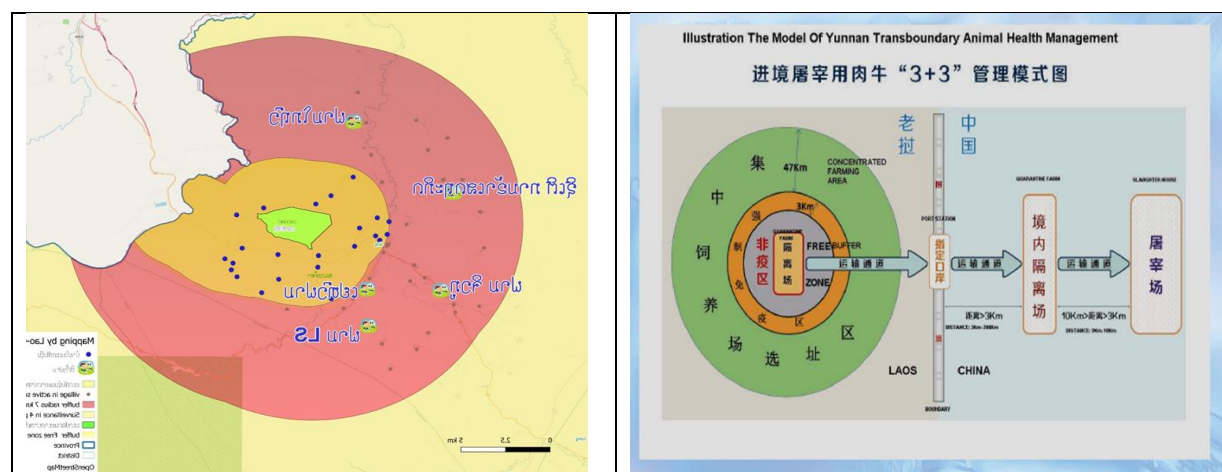
Louangnamtha	7,094	874	7,968	6,458	750	7,208	90.46
Sing	9,777	2,739	12,516	9,489	2,795	12,284	98.15
Long	7,019	1,417	8,436	6,397	1,184	7,581	89.86
Viengphoukha	11,153	2,220	13,373	9,345	1,899	11,244	84.08
Nalae	5,357	4,364	9,721	5,180	4,036	9,216	94.81
Total/Average	40,400	11,614	52,014	36,869	10,664	47,533	91.47

Note: The animals that have been vaccinated against FMD include cattle, buffaloes and goats, while the animals that have been vaccinated against LSD include cattle and buffaloes.



Specific FMD control Zone to promote Cattle Trade between Lao and China

The FMD control zone divided into 3 parts as follow: FMD free zone with animal quarantine inside, Buffer zone and collecting zone.



1) FMD Free Zone:

- Quarantine station inside the free zone

- 30 days quarantine before export
- Routine clinical examination of animals
- 10% blood sample collection for LPB ELISA test
- 30 sentinel animals
- NSP and Probang testing

2) Buffer Zone:

- Covers 22 villages with over 1800 cattle and buffaloes
- FMD Vaccination and post vaccination monitoring practiced
- 10% blood samples every 3 months for NSP test

3) Collection Zone:

- There are collection farms inside this zone
- 45 days quarantine before moving to quarantine zone
- Ear tagging with HS, FMD and LSD vaccination 2 time(day 0 to 4 and after 30 – 35 days)
- Routine clinical examination

Cattle and Buffaloes exportation

After years of preparation, in early 2021, Lao successfully exported 2,013 head of cattle and buffaloes to China following the regulations of the FMD control Zone



Unfortunately, the first case of Lumpy Skin Disease (LSD) occurred in June 2021 caused cattle Exportation stopped. After the Outbreak stopped Lao team worked closely with China side to work out or be

preparedness to re-export cattle. Finally, DLF and AGCC signed agreement to export 3000 heads of cattle and buffaloes by the end of September 2023.



Coordination, training and communication for control strategies

- Organized the Veterinary Workforce Meeting with the technical and financial support from WOA. H.
- Joined WOA. H training on disease notification, including the use of World Animal Health Information System (WAHIS), for national WOA. H focal points for animal disease notification, from 21 – 23 June 2023 in Chiba, Japan.

Challenges

- Free range husbandry system, often facing challenges in disease control and monitoring.
- Farmers are less motivated to vaccinate their animals due to the high cost of vaccine and low level of mortality.
- Insufficient financial resources and equipment for field operations hinder effective disease control efforts.
- Delay or under-reporting: There are issues with timely reporting of disease outbreaks, leading to delays in response actions.
- Inadequate animal and animal products movement control-both in country and across international borders, leading to disease spread.

Future activities

- Continue to conduct vaccination campaign in the FMD control area (LNT), other provinces and hot spot areas.
- Evaluate risk based strategic plan and secure support to implement some of the priority activities outlined in the plan.
- Implement scheduled post vaccination monitoring In FMD control area (LNT),
- Strengthen surveillance efforts in the FMD control area (LNT), at border check points, airports, and farms.
- Explore opportunities for national and international coordination and collaboration in FMD control through public-private partnerships.

- Increase capacity in laboratory to support trade
- Raise public awareness, implement biosecurity measures, and enforce animal movement control to prevent FMD spread.

Malaysia

Foot-and-Mouth Disease in Malaysia in 2023

Malaysia maintained its FMD-free zone without vaccination status in Sabah and Sarawak Province in East Malaysia. However, FMD is endemic in the Peninsular Malaysia.

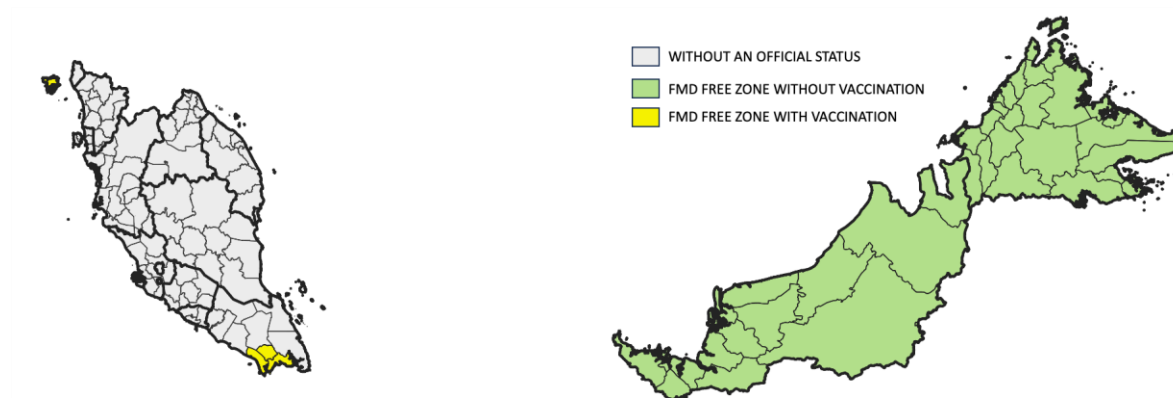


Figure 1: Map of Malaysia with FMD status; indicated by grey in the west is Peninsular Malaysia, which is endemic, and in the east are the states of Sabah and Sarawak, which are the FMD-free zones without vaccination status.

Malaysia's FMD strategic plan 2021 – 2025 included the island of Langkawi, Kedah, as a proposed new FMD-free zone with vaccination. At the same time, Malaysia is also exploring the probability of initiating FMD-free zones with vaccination in the three districts in the southern tip of Peninsular Malaysia, namely the districts of Johor Bharu, Kulai, and Pontian.

Animal disease management and reporting in Malaysia

Under section 31. (1), Malaysia Animal Act 1953 (revised 2016), reporting an animal disease is mandatory. Every owner or person in charge of any animal or bird infected with or reasonably suspected to be infected with disease shall immediately report to a veterinary authority. All animal health-related activities in Malaysia should be reported to the Malaysia Animal Disease Information Centre (MADIC), an online system.

In the event of an animal health emergency, all technical personnel are guided by the contingency plan in the form of the Malaysian Veterinary Protocol (Protokol Veterinar Malaysia - PVM) and specifically for FMD-free zone (Sabah and Sarawak) in the form of Malaysian Veterinary Standard Operating Procedure (Arahan Prosedur Tetap Veterinar Malaysia - APTVM). These documents are accessible online through the DVS website.

(For PVM - URL: <https://www.dvs.gov.my/index.php/pages/view/1397>, For APTVM – URL: <https://www.dvs.gov.my/index.php/pages/view/1408>).

Foot-and-Mouth Disease in Peninsular Malaysia (FMD endemic area) in 2023

Foot-and-mouth disease (FMD) is endemic in Peninsular Malaysia, which shares a land border with neighboring countries to the north. Malaysia's reliance on red meat imports, particularly from these neighboring countries, poses a significant challenge to FMD control, whether through live livestock or chilled and frozen red meat. While there has been a substantial reduction in reported FMD cases in 2023 compared to 2022 (as shown in Table 1), the detection of FMD in imported livestock during the quarantine period has increased (as shown in Table 2). This situation is concerning, particularly because the northern border of Peninsular Malaysia is known to be highly porous.

Table 1: Comparison of FMD-related data for the years 2022 and 2023. The FMD cases were recorded in the FMD endemic area (Peninsular Malaysia).

	2022	2023
No FMD cases recorded	31	8
The cumulative number of animals showed clinical sign	155	83
Number of infected premises	31	8
Cumulative number of population in the infected premises	5,876	620
Number of susceptible premises in a 1km radius	152	32
Cumulative susceptible animal in a 1km radius	82,087	2581

Note: The FMD cases described do not include cases detected at the quarantine facilities.

Table 2: Comparison of FMD cases detected at the quarantine station at the northern border of Peninsular Malaysia for the years 2022 and 2023

	2022	2023
Number of FMD cases recorded	1	2
The cumulative number of animals showed clinical sign	6	38
The cumulative number of population affected	60	987
The number of quarantine stations affected	1	2
The month of FMD cases detected	December	February & October

In 2023, 8 FMD cases were reported and localized within the FMD endemic area, all in unvaccinated beef cattle, and linked to animal movement.

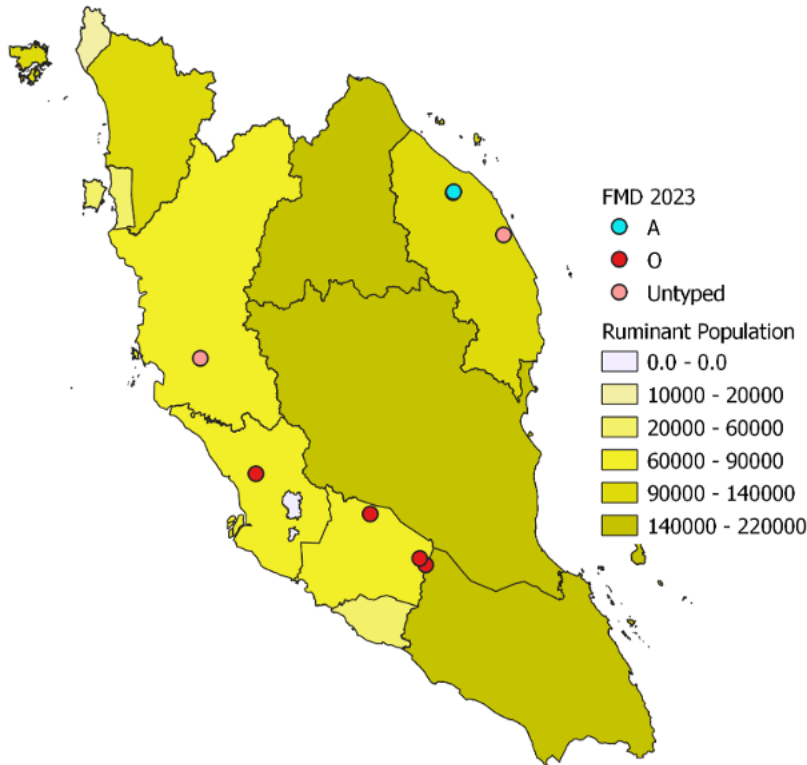


Figure 2: Map of Peninsular Malaysia with the spatial distribution of FMD cases for 2023; the dots illustrate the FMD case locations. Red indicates FMDV O/ ME-SA/ Ind 2001, blue indicates FMDV A/Asia/Sea-97 and pink indicate untyped FMD cases.

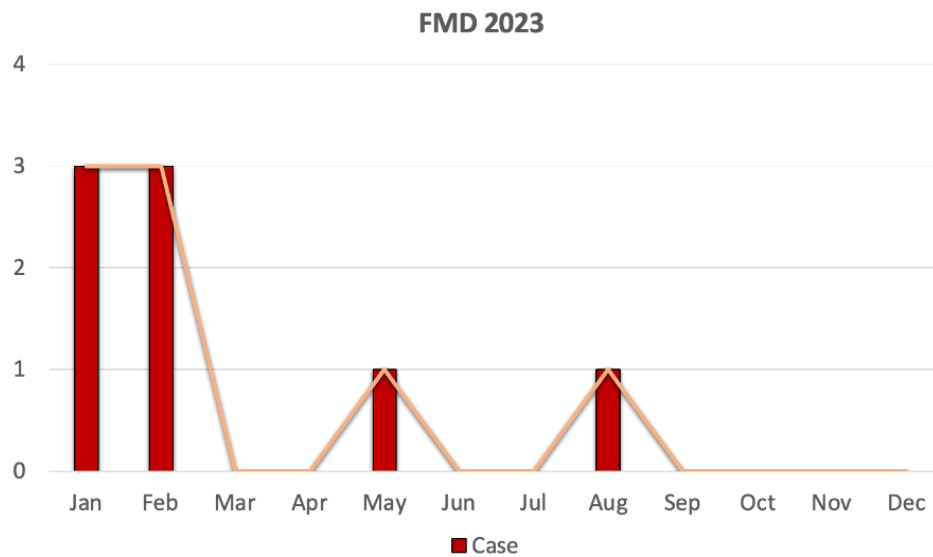


Figure 3: Temporal distribution of FMD cases in 2023; higher number of FMD cases recorded early in the year.

The FMD control measures followed the Malaysian Veterinary Protocol (PVM) for FMD, revised in 2022. Upon detecting an index case of FMD, epidemiological investigation and sampling are conducted, and treatment for secondary infections is provided. A case file is opened, and investigation findings are reported to the Malaysian Animal Disease Information Centre (MADIC). Control measures include managing the diseased animal, vaccinating healthy animals, and disinfecting the infected premises. Clinical surveillance and movement control are implemented. Vaccination is conducted for susceptible animals within a 5 to 10 km radius surrounding the index case.

Foot-and-Mouth Disease Virus Characteristic

Malaysia is using molecular methods for serotyping. All samples with a differential diagnosis of FMD are subjected to confirmatory tests using PCR for clinical samples and NSP ELISA for serum samples. In 2023, 33 samples were collected from all FMD outbreak cases, including those detected at two quarantine facilities. Twenty samples were tested for PCR. Subsequently, only 14 samples (70%) were characterised.

The predominant FMDV serotype in the cases was serotype O, with only one case involving serotype A. The serotype O strains recorded were mainly FMDV ME-SA Ind 2001e, with a single case linked to the Pan Asia 2 strain. The phylogenetic analysis of serotype O sequences using the neighbour-joining method are illustrated in Figure 4.

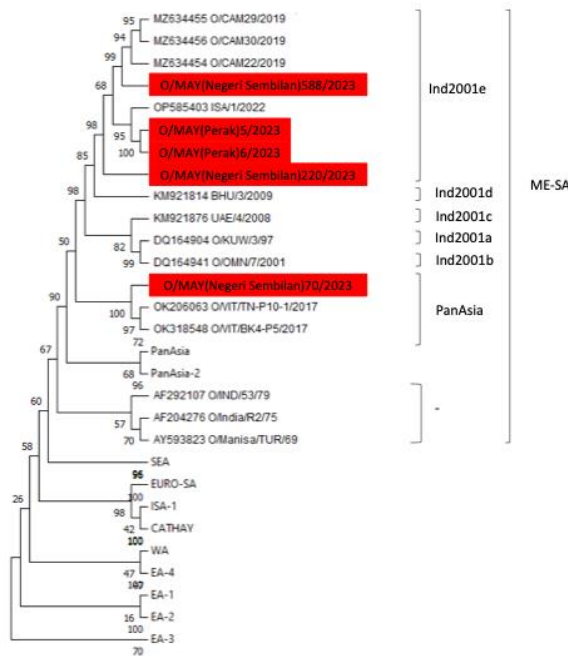


Figure 4: A Phylogenetic tree of FMDV serotype O collected in 2023; the location (state) where FMDV were collected is highlighted in shades of blues, and the three (unmarked) at the bottom are the reference.

FMD Prevention and Control Measures

Vaccination for FMD in Peninsular Malaysia

Malaysia places strong emphasis on using good quality FMD vaccine, allowing only registered vaccines in the country. Currently, only two companies registered their FMD vaccine for use in Malaysia. The available FMD vaccine is a trivalent, containing serotype O (O-3039 and O1 Manisa), serotype A (A/May-97) and Asia 1(Shamir).

However, Malaysia faces significant challenges in controlling and eradicating FMD, particularly within the endemic area of Peninsular Malaysia. These challenges include budget constraints for purchasing sufficient vaccines and a limited workforce to administer them. These limitations have necessitated the practice of strategic vaccination in the region, keeping Malaysia at PCP (Progressive Control Pathway) Level 3. While pig farmers and some ruminant farmers procure their own FMD vaccines, other susceptible animal sectors still rely on the government for FMD control efforts. The detail of FMD vaccines procured and animals vaccinated in Malaysia is presented in Table 3.

Table 3: Number of FMD vaccine doses purchased and animals vaccinated in year 2022 and 2023.

Items	2022	2023
No FMD vaccine doses purchased by the government	300,000	501,000
No FMDV vaccine doses purchased by the private	623,868	222,350
Number of animals vaccinated by the government	269,095	330,792
Number of animals vaccinated by private*	676,514	443,220
Total FMD vaccine doses purchased	923,868	723,350
Total number of animals vaccinated*	945,609	774,012

Note: 1. Number of animals vaccinated by the private entities decreased due to reduction in pig population caused by ASF.

2. The total number of animals vaccinated during the year exceeded the doses purchased for the current year because vaccine stock from the previous year was still available.

Post-vaccination Monitoring for FMD in Peninsular Malaysia

In 2023, the post-vaccination monitoring (PVM) was focused on the proposed FMD-free vaccination areas, specifically Langkawi, Johor Bharu, Pontian and Kulai districts. The objective of the PVM was to determine whether the vaccine used in these zones elicited antibody titres above the required cut-off levels, which is \log_{10} 1.6 for serotype O and \log_{10} 1.4 for serotype A against the field virus strains, with a coefficient of variant (CV) of less than 30% using the Virus Neutralisation Test Method (VNT). Before conducting the VNT, all collected sera were screened with NSP ELISA. Only sera with negative NSP ELISA results were subjected to the VNT using the heterologous viruses. No vaccine-matching tests were conducted in Malaysia due to unavailability of vaccine virus. The 2023 PVM results, presented in Table 4, indicate that the geometric mean (geomean) VN titres for serotype O and A exceeded the required cut-off. Additionally, the geomean titres for serotype O were consistently higher than those for serotype A across all species tested.

Table 4: Post-vaccination monitoring result for serotype O and A from proposed FMD Free Zone with vaccination

Species	No. of samples	Serotype O mean titre	Serotype O CV (%)	Serotype A mean titre	Serotype O CV (%)
Cattle and Buffalo	118	2.09	25.50	1.88	27.45
Goat and sheep	300	2.41	14.75	198	24.78

Active surveillance program

Risk-based active surveillance is conducted in both FMD-free zones and endemic areas, each with specific objectives. In FMD free zones, an active surveillance is conducted to detect the presence disease. In endemic area, the focus is on determining the serological prevalence of FMD. To meet these objectives, the sampling frame and sample calculations are designed accordingly for each zone.

In addition to sero-surveillance, clinical surveillance and intelligence links are also carried out in the FMD-free zones. The DVS Malaysia submits an annual reconfirmation report to maintain the FMD-free status for the zone, following the required guidelines. The FMD surveillance program is specifically designed by DVS headquarters for the DVS branches in Sabah and Sarawak to implement. Clinical and serological surveillance is conducted according to Articles 8.8.40 to 8.8.42 of the WOAHA Terrestrial Animal Health Code. Field personnel carry out clinical surveillance using a standardized FMD questionnaire. The locations of the surveillance are shown in Figure 6. Additionally, Sabah and Sarawak participate in intelligence sharing with animal health officers in Kalimantan (including various regions such as West, South, Central, East, and North Kalimantan, and the Disease Information Centre in Banjar Baru) and Brunei. These communications occur informally through a WhatsApp group, allowing group members to directly exchange information on disease situations and other relevant matters. Malaysia also hosts the Borneo Animal Disease Control Meeting Forum, which involves participants from Kalimantan, Sarawak, Sabah, and Brunei and rotates its organization.

Following recommendations from the expert mission in 2022, Sabah and Sarawak lowered the threshold for field investigations to include FMD in the differential diagnosis for diseases with similar clinical signs or lesions. Risk-based active sero-surveillance in the region also includes a higher number of samples from areas bordering Kalimantan, categorized as "high contact rate" farms, based on clinical and serological data. The surveillance design takes into account the representativeness of the samples collected, including those from non-bordering regions/divisions.

If positive NSP reactors are detected through active sero-surveillance within the FMD-free zone (Sabah and Sarawak), follow-up actions are initiated, as outlined in Figure 7. Probang sampling is performed on

the suspected animals to rule out differential diagnoses. Tissues and probang samples are then sent to the laboratory in FMD transport media, using a cool box, for confirmatory PCR testing.

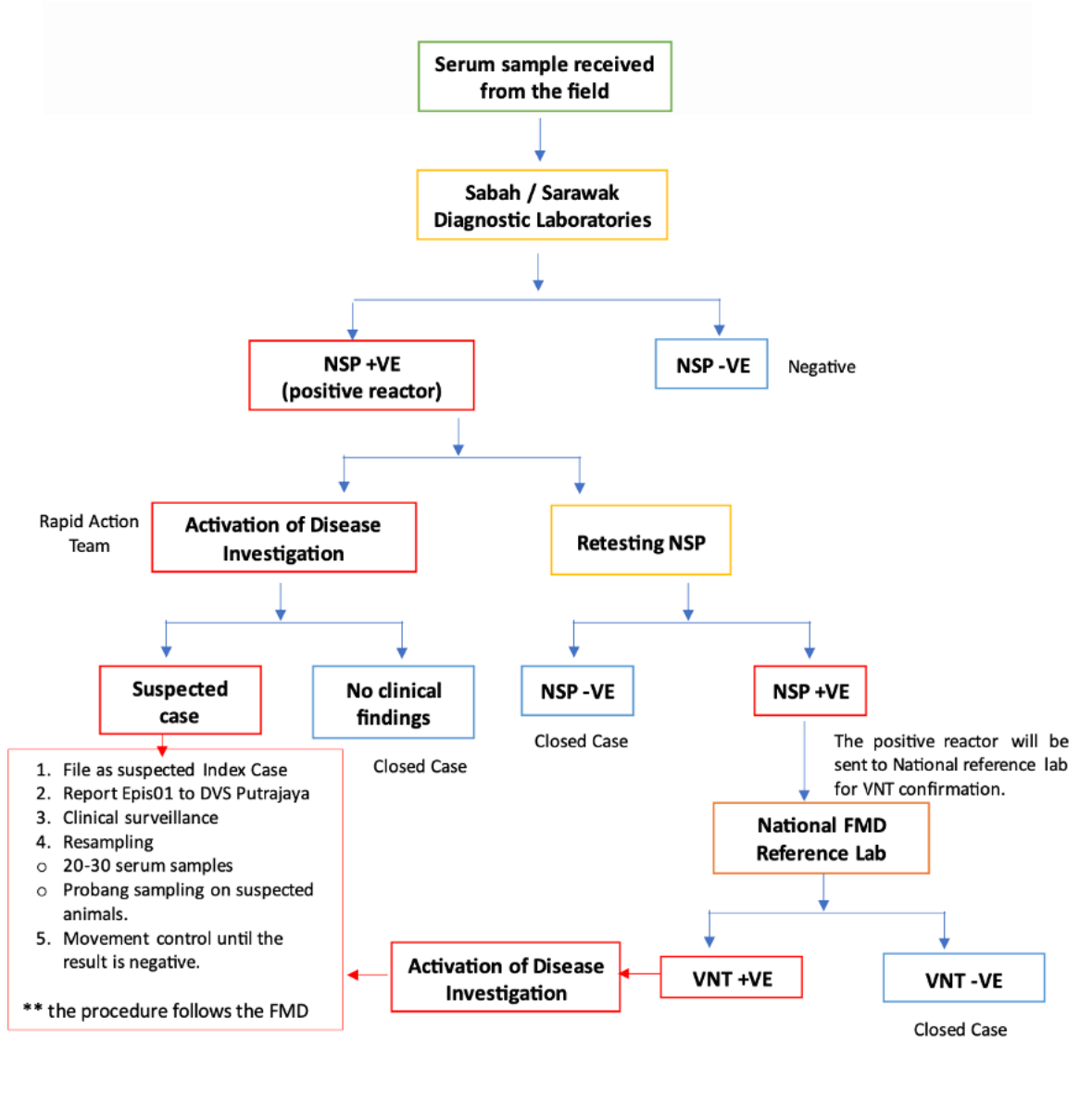


Figure 7: Follow-up actions implemented when positive NSP ELISA reactors are detected in the screening tests.

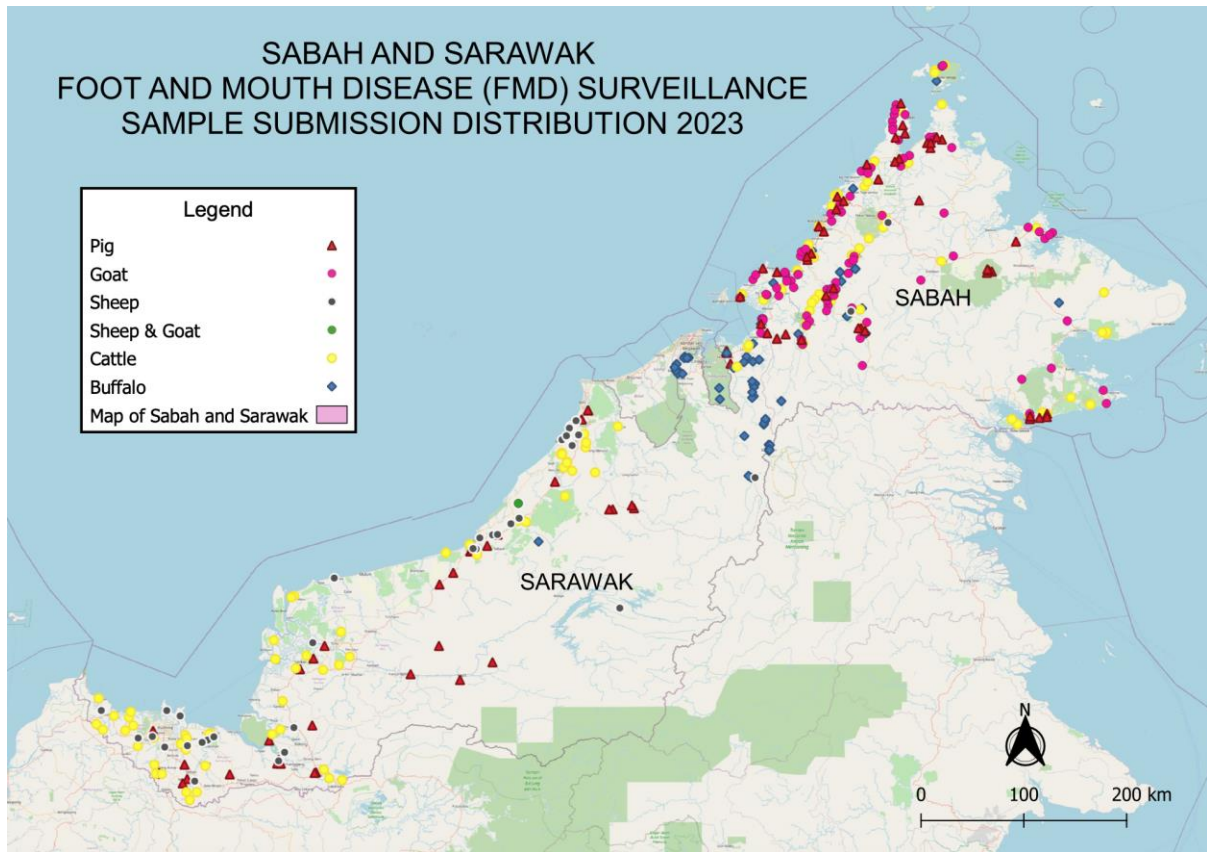


Figure 6: The FMD serological surveillance sampling distribution.

There were no FMD-positive NSP ELISA sample from the FMD-free zone. However, the FMD endemic area, the apparent prevalence were calculated for all the states in Peninsular Malaysia. As expected, the FMD seroprevalence was higher in the northern states compared to the southern states as shown in Figure 6.

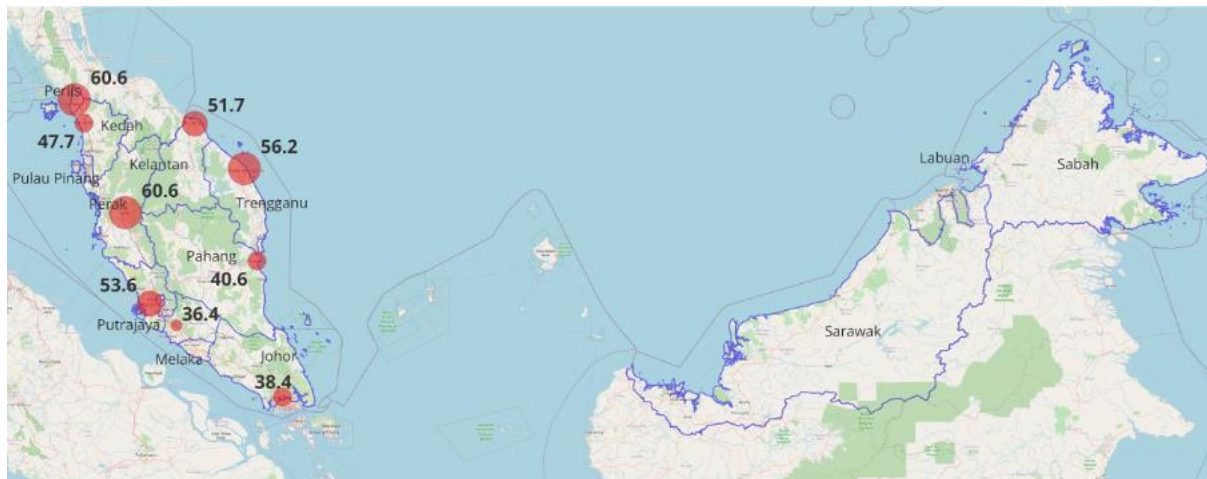


Figure 6: Shows the percentage of apparent seroprevalence of FMD in cattle in Malaysia in 2023.

Technical Competencies

The DVS actively conducts continuous technical training for its field personnel in veterinary services, focusing on animal health, disease investigation, control, and prevention. These training programs include both theoretical and hands-on courses, guided by the available PVM and APTVM. Additionally, field and tabletop simulation exercises are held to ensure that all personnels are prepared and understand their roles and functions in the event of an outbreak.

DVS also maintains ongoing engagement with international organizations such as WOA and FAO for training on Emergency Preparedness and Response (EPR), Transboundary Animal Diseases (TADs), disease control measures, epidemiology, laboratory techniques, and the development of trainers through Training of Trainers (TOT) courses. The National FMD laboratory, as part of regional veterinary diagnostic laboratories, participates in training programs (including hands-on sessions) alongside other national and reference laboratories to improve competencies and enhance diagnostic methods.

Trainings

Field staff undergo continuous training to meet the basic requirements for biosecurity measures, sampling procedure (including probang) and disease investigation. This ensures that field personnel follow standard procedures for suspected FMD cases during field investigations. Continuous training is also emphasised for laboratory personnels to maintain the FMD laboratory capacity and capabilities, ensuring they stay up to date. Additionally, simulation exercises are conducted at least annually in the FMD-free zone to ensure preparedness and effective response to any potential outbreaks.



Field technical training conducted 4X a year.



Laboratory
personnels training
conducted 2X a year.



Simulation exercise
in FMD-free zone



Simulation exercise
in FMD-free zone

Awareness campaign

Awareness campaigns on FMD are conducted regularly through various channels, namely television shows with daily schedules and social media (YouTube, Facebook, Instagram, Twitter). In addition to regular engagement with the Malaysian Livestock Association and farmers, all state DVS conduct seminars and dialogue sessions. For the FMD-free zone, the DVS Sabah and Sarawak have intensified awareness campaigns throughout the states, particularly at the identified high-risk divisions and regions, following the FMD incursion into Southern Borneo Island.

Challenges

The main challenge identified is low vaccination coverage due to insufficient funding for expensive, high-quality vaccines. In addition to the price of vaccines, inadequate workforce is also identified as the main challenge.

Way forward

Malaysia is committed to its FMD control and eradication efforts by strengthening vaccination, surveillance and awareness campaign in the FMD endemic area, particularly in the FMD control zones of Johor, Langkawi and Kedah. In addition, Malaysia encourages private sector participation through the Public-Private Partnership programs. Malaysia will also continue its active involvement in SEAFMD campaign following the programme outlined in the SEAFMD roadmap.

Mongolia

FMD Situation in Mongolia

Mongolia experienced severe FMD outbreaks in 2021 and 2022, as shown in Figure 1. However, following the mass FMD vaccination campaign and other interventions, FMD situation is now under control. No FMD outbreaks were reported or confirmed in year 2023 and 2024.

Number of reported outbreaks (=disease)

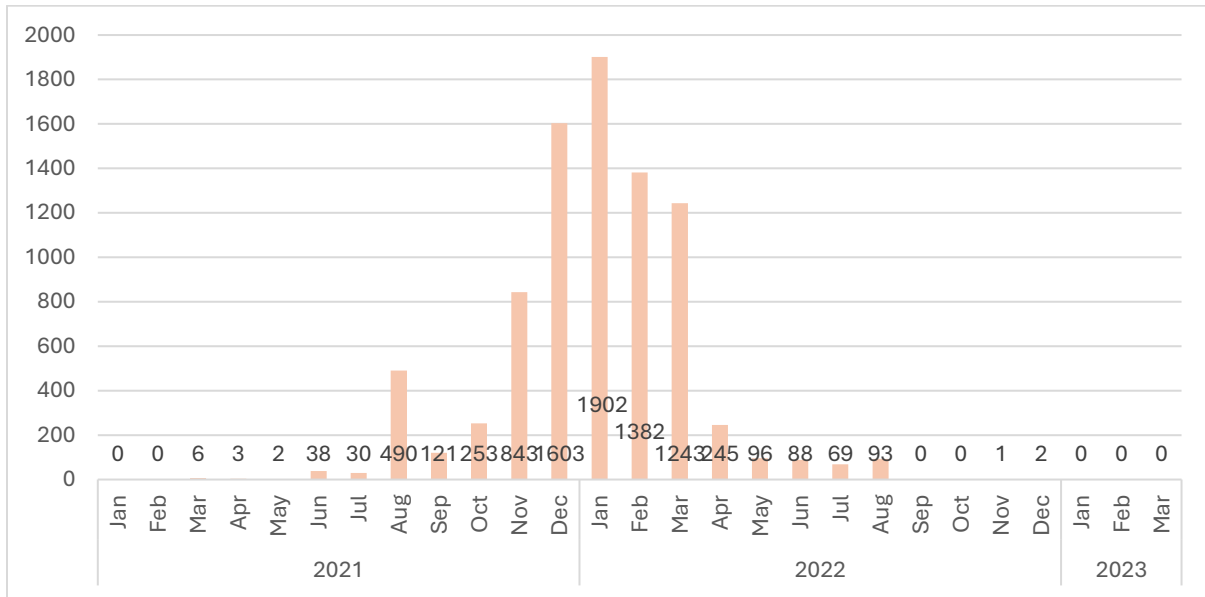


Figure 1. FMD outbreaks reported in 2021 - 2022

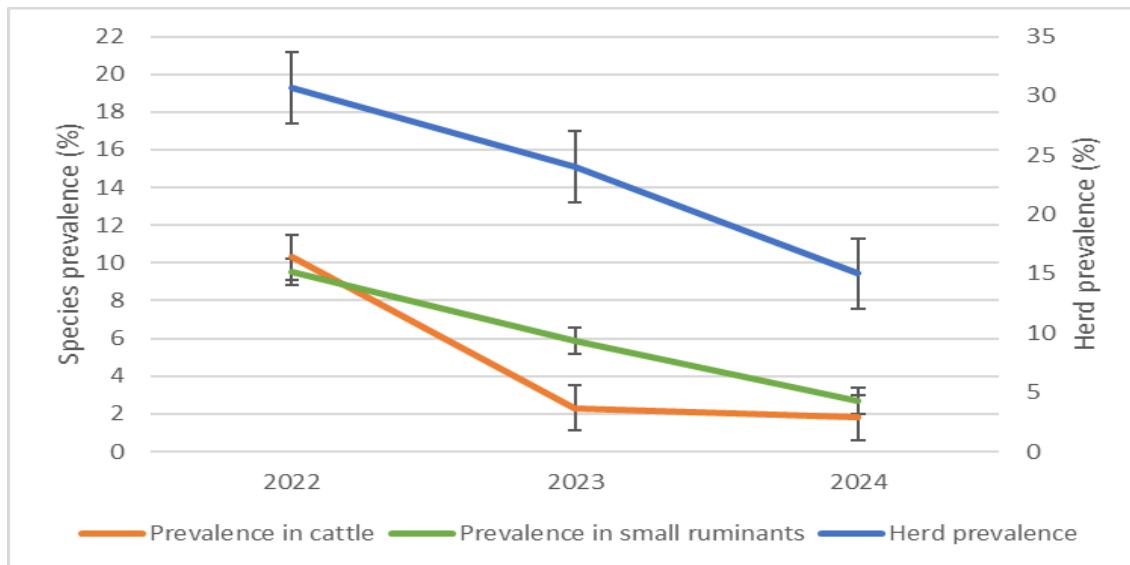


Figure 2. Temporal Statistics of FMD outbreaks from January 2021 to March 2023

Species (orange for cattle, green for small ruminants) using the left Y-axis and herd (blue) (using the right Y-axis) prevalence for FMD in 2022, 2023 and 2024, including 95% confidence intervals

FMD Prevention and control activities

Results of the serological survey in 2023

A total of 9,112 samples were tested across 20 Aimags, 197 Sums, and 576 Hot-ails in Mongolia. In a few Aimags (Darkhan-Uul, Orkhon, and Ulaanbaatar), fewer than 30 Hot-ails were sampled, with some testing fewer than 20. Of the samples, 457 (5.0% [95% CI: 4.6-5.5%]) tested positive for NSP-Ab against FMD, with a significant difference between cattle and yaks (2.3% [95% CI: 1.7-3.0]) compared to small ruminants (5.9% [95% CI: 5.4-6.5%]) testing positive (Chi-square test, P-value < 0.01). The Mantel-Haenszel odds ratio, controlling for sex and age (4-11 months and 12 months or older), showed that large ruminants were less likely to test positive for FMD compared to small ruminants (odds ratio 0.4 [95% CI: 0.3-0.5]).

When aggregating the sero-survey results at Hotail level, 126 out of 577 Hotails had one or more animals testing sero-positive. This corresponds to a national level seroprevalence of 22% [95%CI: 19 – 25%], indicating that approximately one in four to five Hot-ails across Mongolia showed signs of FMD virus infection.

There was significant variability between Aimags, with no NSP-Ab positive Hot-ails found in Bayankhongor, Dundgobi, Orkhon, Selenge, and Umnogobi. In the 126 Hot-ails that had one or more NSP-Ab positive animals, the average number of seropositive animals was 3.6 (median 3), and 4 Hot-ails had 10 or more animals testing seropositive.

Of these 126 Hot-ails, 19 (16%) had both large and small ruminants testing seropositive, 95 (75%) had only small ruminants testing positive, and 12 (9%) had only cattle testing positive. This finding suggests that sampling only cattle as the indicator animal for the herd is not supported by this study.

Hot-ail prevalence varied by region, with 19.3% in the Eastern region, 17.7% in the Central region, and 35.7% in the Western region, with a statistically significantly higher prevalence in the Western region (Chi-square test, P-value < 0.01). The highlights of sero-prevalence findings is shown in Figure 3.

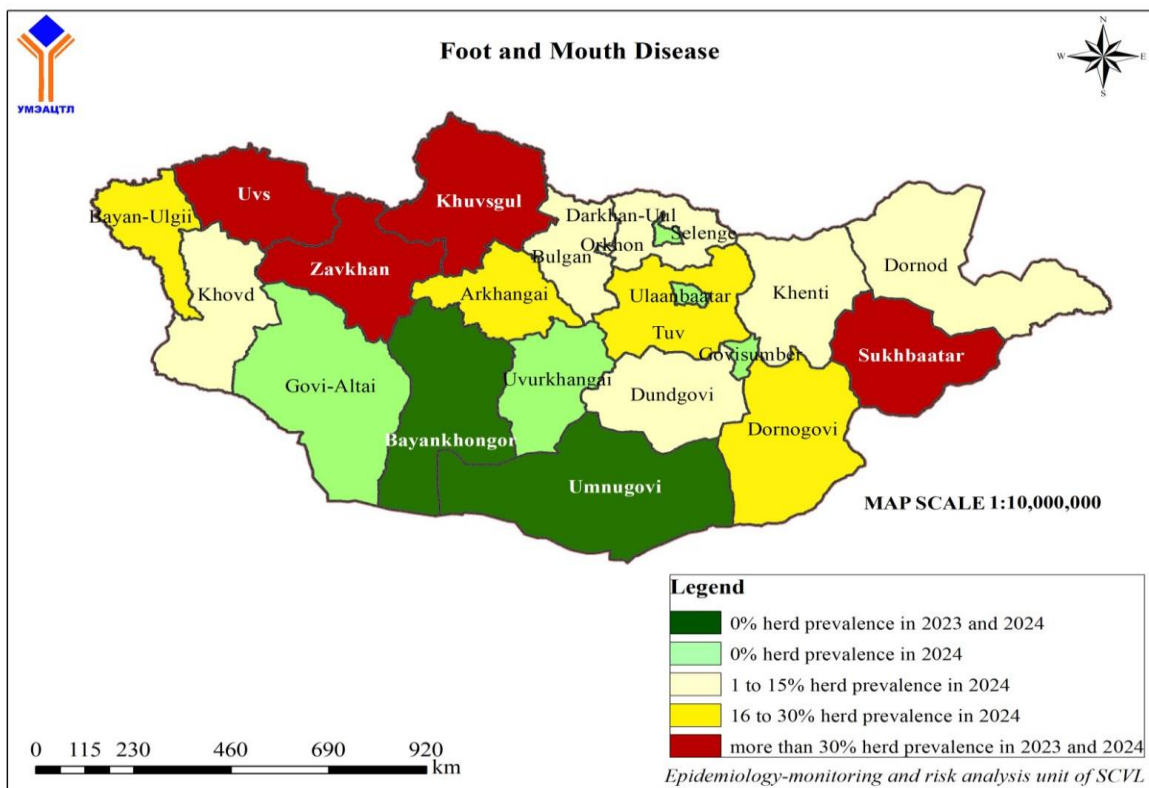


Figure 3: Sero-prevalence of FMD in Mongolia in 2023 and 2024

Vaccination

A total of 12 million doses of G/Asia/Sea-97 and O/ME-SA/ind2011e strain vaccines were purchased from ARRIAH of Russia in 2022. Vaccination was organized in March-April and Sep-Oct 2023. The detail of FMD vaccination conducted is presented in Table 1 and Figure 4.

Table 1: Detail of FMD vaccination carried out in Mongolia.

Spring vaccination								
	Province	Soum	Reindeer	Cattle	Sheep	Goat	Pig	Total
1	22	336	2'210	5'223'381	-	-	37'172	5'383'966
Autum vaccination								
	Province	Soum	Reindeer	Cattle	Sheep	Goat	Pig	Total
2	22	336	3000	6'008'632	-	-	31'470	6'042'686
	22	336	5210	11'348'110	-	-	68'642	11'421'962

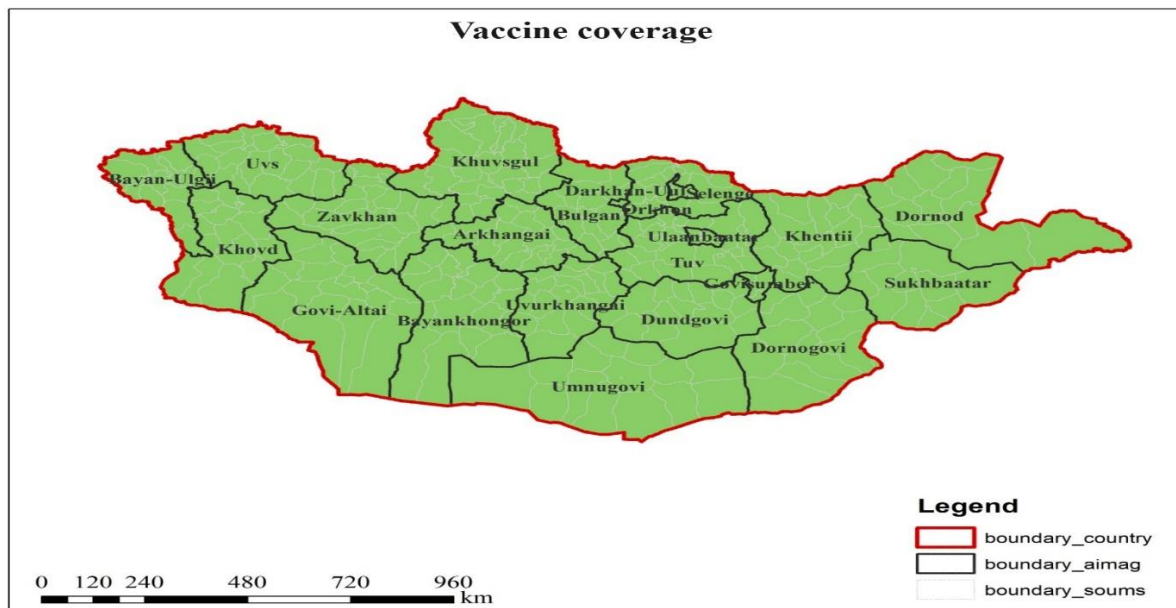
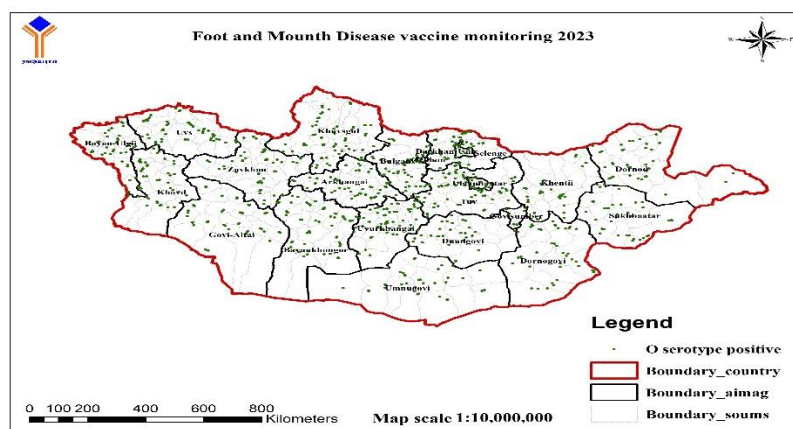


Figure 4: Detail of FMD vaccination coverage in Mongolia in 2023.



Animal movement

Temporary decisions are being made to limit the movement of livestock, but no new legal documents such as laws and regulations have been approved. For instance, in 2022, as part of integrated measures to prevent FMD, public events like horse races were prohibited, and the movement of animals across provinces was restricted for one month based on a decision from the head of the State Emergency Commission.

The movement of animals is controlled under the MAHIS system. The number of MAHS animal certificates issued is presented in Table 2, and the reasons for livestock migration and movement in 223 are detailed in Table 3.

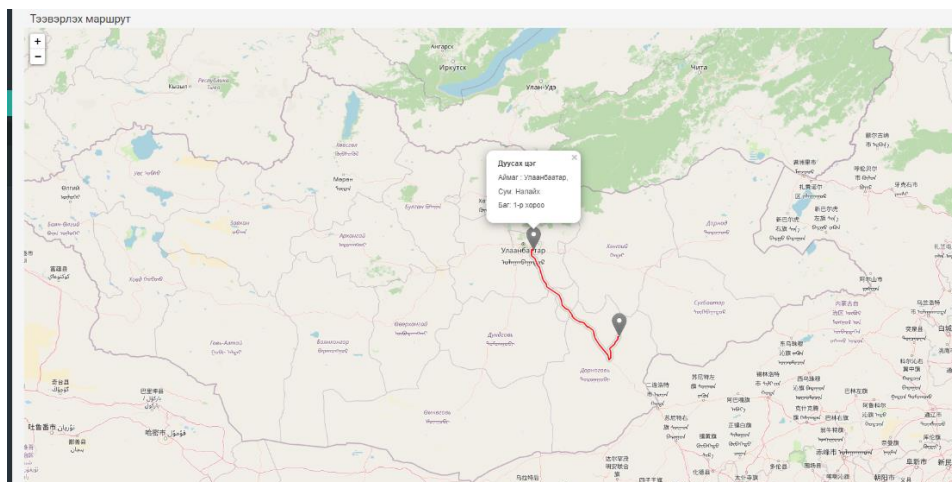


Table 2: Number of MAHIS AH certificates

	Month	Horse	Cattle	Camel	Sheep	Goat	Total
1	January	5627	1558	37	1679	829	9730
2	February	4223	728	22	978	479	6430
3	March	5010	2677	184	1757	1618	11246
4	April	7022	2490	106	2233	1393	13244
5	May	7697	2089	226	3129	958	14099
6	June	7492	4374	301	8855	2365	23387
7	July	5516	4956	189	11704	3770	26135
8	August	13311	8306	347	14221	5783	41968
9	September	14777	10120	343	14520	6970	46730
10	October	12104	11083	169	13254	8366	44976
11	November	13391	13482	61	12647	7326	46907
12	December	7223	3582	204	5154	3674	19837
13	Total	103393	65445	2189	90131	43531	304689

Table 3: Reason of livestock migration/ movements 2023

	For food	Transhumance	Breeding	AH Certificate
Horse	62833	17908	22629	103393
Cattle	49192	8762	7494	65455
Camel	1606	527	56	2189
Sheep	83868	4959	1301	90131
Goat	37598	4081	1335	43501
Total	235097	36237	32815	304669

- Any agreement signed with another countries to facilitate livestock trade and legal movement of livestock – please list with name of agreement

Communication and awareness

- Any communication and awareness activities (please list communication materials)
 - FMD simulation exercise
 - Any digitalisation activities – please list
 - EWAR – Early Warning and Response (EWAR) was launched

Governance and legislations

- Animal Health Law was evaluated in 2022/2023, and amendments to AHL were endorsed by Parliament in January 2024.
- FMD Official control programme is endorsed by MoFALI

Meetings and workshop

WOAH-CIC Workshop on Wildlife Disease Surveillance in Mongolia

A multi-stakeholder meeting to discuss wildlife health in the country was organised by CIC and WOA on 3rd August 2022. In addition, a workshop held from 5th – 6th October 2022 - organised by WOA RRAP in collaboration with CIC and the General Authority for Veterinary Services (GAVS) in Mongolia brought together over 60 participants from different sectors to discuss wildlife disease surveillance. Some participants also joined online to provide further national and international inputs. Simultaneous interpretation between Mongolian and English enabled a rich discussion.

National discussion on "Improving measures to fight animal viral infections"

During the discussion, professional organizations shared information to the public about the current situation of TADs in Mongolia, the results of various research works, the diagnosis of animal viral diseases and the measures being taken to combat them.

Other trainings organised in 2023

An overview of registered training and Continuous Professional Development events with a focusing on FMD and other TADs control and prevention from 2021 – 2024 is provided below (Table 4).

Table 4: Trainings and professional development programme from 2021 – 2024.

Subject	Period of time	# participants	# days
Quality assurance training for quality managers of the Veterinary Diagnostic Laboratory network	April 2021-December 2023	239	26
Risk assessment training for Soum and Aimag epidemiologists	June-August 2021	233	4
Data management and data analysis for central GAVS staff and the Aimag epidemiologists	Dec 2021-April 2022	76	8
Cost-benefit analysis FMD	December 2022	63	6
EWAR and PDS training for trainers	May 2022	42	2
EWAR and PDS training for private veterinarians, Soum inspectors and Soum epidemiologists			
Continuous Professional Development programme for veterinary professionals	March-April 2023 November-December 2023	882	2
Training in epidemiology	April 2024	10	2
FMD simulation exercise	August 2024	68	2.5

Other initiatives

- Any PVS Self evaluation conducted in 2023 – please list the activities
- Cost efficient synergy in prevention and control FMD and other TADs - Under the LCP-AH, GAVS piloted this cost-effective surveillance component. The objective of this initiative is to offer herders, veterinary practitioners and traders the option to call a helpline (7505 6655) on any animal health related issues. The Herder Helpline provided professional advice to the callers and would follow up on calls that were suspicious for presence of TADs.
- Horizontal activities to strengthen FMD prevention and control measures - Early Warning and Response (EWAR) was launched
- List of identified FMD expert in Mongolia
 - o Tserendulam.Ts, TADs officer of GAVS
 - o Gerelmaa. U, Director of SCVL
 - o Buyantogtokh.Kh, Virologist of SCVL

Challenges in FMD control and recommended solution to address these challenges

- Each year, a specific budget is allocated in the state budget for FMD control, but it is not sufficient to vaccinate all 71 million animals in Mongolia. As a result, the country has focused on nationwide vaccination of cattle and yak. This strategy has had a significant impact in reducing the overall "virus load" or exposure to the FMD virus within the Mongolian livestock population.
- The surge of FMD outbreaks in 2021-2022 prompted the Ministry of Food, Agriculture, and Light Industry (MoFALI) to reevaluate its export strategy. The initial plan to establish an FMD-free zone in Western Mongolia was deemed unfeasible due to the unique nature of Mongolian livestock production through pastoralism. Instead, the establishment of disease-free livestock compartments was considered a more practical approach. In 2023, a Memorandum of Understanding was signed between MoFALI, GAVS, and the International Finance Corporation of the World Bank to develop regulations for Compartmentalization Programs and Compartments.
- With endorsement of the Regulation by the Government of Mongolia in 2023, steps were taken to develop the Administrative Manual for GAVS as well as the Operation Plan and Biosecurity Manual in 2024 to ensure effective implementation.
- There is a recognized need to improve border control in Mongolia through the implementation of joint projects and programs to prevent of FMD and other TADs.
- A vaccine that provides long-term immunity (up to 12 months after a single injection) is required to effectively control FMD and prevent future outbreaks.

Way Forward – Future activities

Key activities

- Establish TADs coordination group including specialists from other Ministries, laboratory network, trade and export representatives, and private veterinarians representatives
- Establish Task force or National Committee In-charge of over seeing FMD control
- Evaluate FMD control strategies and update it if necessary
- Official Control Programme submitted for WAOH endorsement.
- Perform passive and active surveillance
- Organize FMD simulation exercise

What support you expect from WAOH and other partners?

- Endorsement of the Official Control Programme submitted by GAVS
- Have PVC assessed by WAOH
- To support the capacity building programme and specific training needs in the field

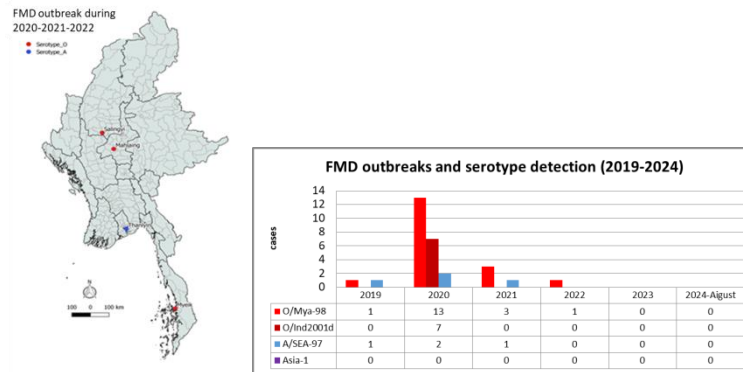
How can your country contribute to strengthen SEACFMD campaign at the regional level

- Enhancing the effective control of FMD control through targeted vaccination of cattle and yak, and progressing to FMD PCP stage 4.

Myanmar

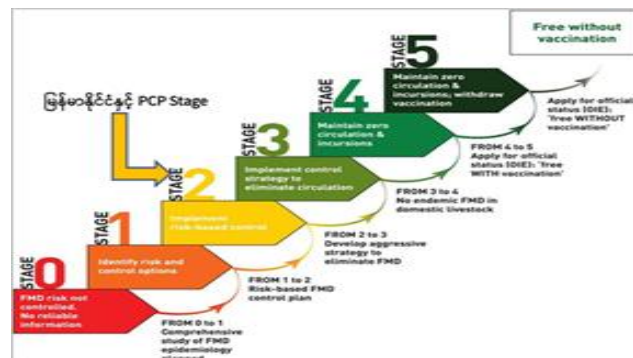
FMD Situation in 2022-2023

In 2022, there was a single outbreak of foot-and-mouth disease (FMD) in Myanmar, with the O-type strain being detected. There were no reported or laboratory-confirmed cases of FMD in 2023, indicating significant progress in controlling the disease and preventing further outbreaks.



FMD Prevention and control activities

- Current PCP-FMD stage of Myanmar is Stage- 2.
- Target in December 2025 (PCP-FMD stage) is stage -3. Myanmar has submitted self-assessment results to WOAHSRRSEA.



Key Strategies

- Addressing FMD at source,
- Establishing and expanding zones with reduced FMD incidence, and
- Protecting and maintaining areas which are FMD free.

Technical activities

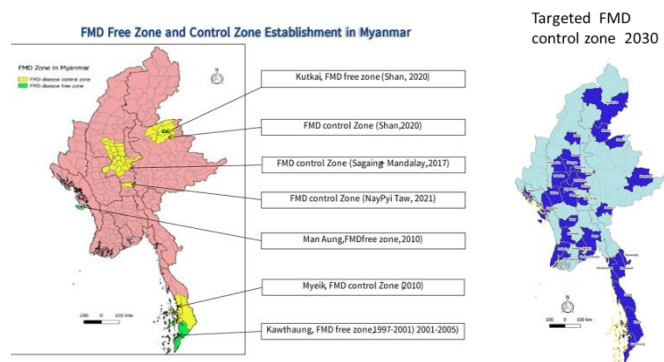
- Identification of and immediate response to foci of FMD infection,(b) elimination of the source of FMD, (c) prevention of spread of FMD, and (d) protection of susceptible hosts.

Communication and advocacy activities

- Increased cooperation in FMD prevention and control,
- Improved capacity of the veterinary services in behavior change communication and advocacy,
- Creating awareness and securing the support of veterinary services, donors, NGOs and other development partners

Coordination mechanism

- National and Sub-National levels, as well as
- Regional and international levels
- Monitoring and evaluation



Surveillance, early detection and response

- LBVD has assigned disease focal points in all states and regions to enhance preparedness activities. This decentralized approach helps to ensure a coordinated response to FMD and other TADs. In addition to these efforts, regular training and simulation exercises were conducted to improve the capacity of local teams to respond to potential outbreaks effectively.
- Furthermore, serosurveillance activities were conducted as part of the ongoing monitoring and early detection system. The results of the sero-surveillance is presented below.

No.	Year	Sample Received	NSP ELISA			LPBE (Type O)			LPBE (Type A)			LPBE (Type Asia1)			Rt-PCR	
			Tested Total	Positive	% Positive	Tested Total	Ab Positive	% Ab Positive	Tested Total	Ab Positive	% Ab Positive	Tested Total	Ab Positive	% Ab Positive	Positive	Negative
1	2021	3418	3178	1160	37%	110	74	67%	-	-	-	-	-	-	-	3
2	2022	8789	7955	3033	38%	65	45	69%	-	-	-	-	-	-	-	4
3	2023	4123	517	181	35%	2148	890	41%	204	147	72%	160	99	62%	-	66



Map shows location of FMD surveillance activities during 2022-2023

Vaccination

- National FMD control plan was developed and LBVD conducted FMD progressive zoning approach. Until 2023, LBVD has three FMD free zone and four FMD control zone in targeted locations. Vaccination coverage was achieved in disease free zones is 95% and more than 85% in control zones targeted to all cloven hooved animals.
- Continued regular vaccination program in FMD control zones using government budget
- 222,498 animals were vaccinated for FMD in 2022- 2023 achieving (95%) coverage in Kutkai FMD free zone and (>84%) in Nay Pyi Taw, Meikhtila and Bago FMD control zones, respectively.
- Trivalent FMD vaccine (with serotype O, A and Asia-1) was used in FMD free zone and Serotype O vaccine was used in FMD control zones.
- The detail of number of animals vaccinated, and vaccine types and doses produced/ imported in 2023 is presented below.

Administrative Level 1*	Number Animals vaccinated							
	Cattle		Buffalo		Pig		Sheep/ Goat	
	Population	Vaccinated	Population	Vaccinated	Population	Vaccinated	Population	Vaccinated
Nay Pyi Taw	153,352	78,236	34,200	12,781	130,433	-	39,601	-
Bago	875,543	69,838	123,157	2,005	714,140	1,611	168,542	312
Magway	1,590,477	30,579	17,971	21	216,867		668,437	
Mandalay	1,513,603	16,800	16,511	22	310,384	2,172	687,003	16,600
Yangon	162,195	5,330	24,178	100	269,884	-	99,939	-
Shan	1,236,286	3,324	180,628	1,624	674,963	1,595	106,211	243

FMD vaccines procured / produced					
Country:		Year: 2023 April - 2024 March			
Source	Number of Doses	Types (Killed/Attenuated)	Types (Indicate subtype combination for bi & trivalent vaccines)	Manufacturer and Country of production	Remarks
Gov't purchase	77,025	Inactivated	Trivalent	India	
Donor's purchase					
Private sector (commercial farms, traders)					
Vaccine produced in the country (Commercial, Government)	184,500	Inactivated	Monovalent (O)	LBVD Myanmar	

Main responses implemented to rapidly control FMD outbreak

- Quarantine of the suspect premises,
- Outbreak investigation
- Surveillance
- Sample submission to the laboratory
- Outbreak area officially defined to strictly control animal movement (Zoning)
- Animal check point set up
- Ring vaccination
- Cleaning and disinfection
- Communication Awareness and education

Animal movement

- In March 2020, LBVD issued Order No. 30/2020, which outlined key measures to control the movement of cattle and buffalo.
- Directive no. 5/2020 was issued to regulate domestic domestic movement of cattle and buffalo.
- Animal identification system was used to track and manage animal movement.

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

- On January 18, 2020, Myanmar and China signed a Letter of Agreement for the "Protocol for Quarantine Health Requirements for Slaughter Bovine to be exported from the Union of Myanmar to the People's Republic of China." This agreement laid the groundwork for ensuring that exported livestock met stringent health and quarantine standards, including those related to Foot-and-Mouth Disease (FMD).
- Following the agreement, an FMD-free zone was established in Myanmar in compliance with the protocol. This zone was officially recognized on July 14, 2023, marking a significant milestone in enhancing the country's livestock export capabilities and disease control measures.
- Currently, the LBVD is in discussions with Malaysia to formalize the official exportation of goats and sheep.

Communication and awareness

- To strengthen FMD prevention and control, Myanmar established a Rapid Response Team (RRT) that operates at multiple levels, including central, state/region, district, and township levels. The team also employs Participatory Rural Appraisal (PRA) methods to engage local communities in disease control efforts. Digital communication tools, such as social media platforms and Viber groups, were actively utilized to enhance coordination and information sharing among stakeholders.
- Regular stakeholder meetings were held to ensure collaborative decision-making and effective implementation of FMD control measures. Field activities for AQS, the establishment and maintenance of Disease Free zone, Disease Control Zone, awareness and vaccination campaigns and traceability efforts were conducted in designated zones.
- Number of face to face awareness activities were conducted as follows:

Sr.		Township	No. activities	Participants	Pamphlets
	15	93	1844	35544	35544



Governance and legislations

- LBVD enacted and issued Animal Health and Livestock Development Law (Law number 13/2020). In line with this law, LBVD had issued updated directives for the priority diseases including FMD, ASF, LSD and BSE.

Meeting and Workshops

- Six monthly meetings were conducted to review and coordination FMD control activities across all control zones. Additionally, preparatory meetings were conducted before the implementation of regular FMD vaccination programs.
- Refresher training for disease focal points, vaccinator training sessions were conducted every three months. These sessions utilized Zoom virtual meetings and also included field-based practical training.

National FMD Prevention and control Plan

- Myanmar is set to implement zoning approach for FMD control, with a particular focus on trade-based areas of Phase I.

- National FMD control plan (other than RBSP), was aligned with SEACFMD 2021-2025 Roadmap 2021 – 2025 and is in accordance with Global FMD Control Strategy.
- The FMD Plan has been endorsed by the Minister for Ministry of Agriculture, Livestock and Irrigation. A corresponding budget allocation for the implementation of this plan is currently under submission, underscoring the country's commitment to addressing FMD challenges effectively.

Other initiatives

- Animal Identification system is being upgraded using microchips for export animals to strengthen traceability and to boost export credibility.
- Establishment of intergraded livestock zone including disease free zone.
- FMD control activities was synergized with other important diseases such as LSD, Rabies and ASF to improve public awareness and education.
- LBVD has assigned specialised teams for controlling TADs including FMD focal points, laboratory team, epidemiology team and surveillance team and other rapid response team to fight against TADs control.
- SEACFMD Roadmap (2021-2025) has been leveraged to support domestic budget applications, ensuring alignment with regional goals and securing resources for effective disease control.



Challenges in FMD control and recommended solution to address these challenges

Challenges	Solution
FMD endemic	Progressive zoning approach
Typing of circulation FMD virus	Virus typing at the FMD Reference Laboratory
Sustainable funding	SECFMD Roadmap 2021-2025 and PPP guidelines, Advocacy to Union Minister
Shortage in human resources	Veterinary Assistant School established. Recruit with participation of private vet and all the relevant sectors

Routine vaccination	Recruitment of Community Animal Health Worker
Availability of vaccine to achieve targeted coverage	Locally produced vaccines, Mekong-Lancang (2023) project for maintaining FMD free zone JICA - 1 million doses vaccine plant project
Reporting and surveillance-poor	Leverage on IT tools and online virtual system Assigning Disease Focal Points in all states and regions
Reluctance of Farmer to use animal Identification	Participatory Rural Appraisals will be conducted Insurance system linked with animal Identification system will be conducted.

Way Forward – Future activities

Progressive Zoning and Safer Trade

- Expanding FMD control zones
- Maintaining FMD Free Zones and Control Zone with vaccination practice in trade-based areas.
- Mutual recognition of DFZ, AQS with GACC (PR China).
- Myanmar expected to progress to FMD PCP Stage 3 in line with FMD-PCP Guidelines and Tools including Self-assessment too.
- Strengthen SECFMD campaign by enhancing coordination and cooperation in cross border disease management activities and preventing illegal livestock trade.

Communication

- Using IT application and social medias (e.g Viber application),
- Set up RRT at all levels (central, state/region, district, township).

Vaccine

- LBVD continues to produce FMD vaccine locally, ensuring they are matched to the circulating FMDV strains.
- A vaccine plant with capacity of 1 million doses is planned to vaccine production.
- Vaccine procurement, FMD virus typing, and molecular technology support from WOA and Partners.

Surveillance

- Active and passive surveillance, Post vaccination monitoring, and outbreak investigation will be conducted to ensure effective disease control and early detection.

Traceability

- Movement control will be enhanced by upgrading to microchip ear tagging, ensuring safer and more secure trade.

Laboratory

- Capacity building, technical support from WOAAH and WOAAH Reference Laboratories or any donor collaboration.

The Philippines

FMD Prevention activities

To maintain its FMD-free status, the country's prevention activities are continuously carried out and include the following:

Strengthening of our border control measures is very important to prevent the entry of FMD virus into the country. The Bureau of Animal Industry has created a Risk Analysis Unit whose tasks include the conduct of inspection missions for live animals and recommend the approval of foreign farm facility accreditation application as well as of risk assessments related to importation or movement of animals, its products and by-products. As per the current list of the ACCREDITED COUNTRIES as SOURCES OF LIVE ANIMALS FOR EXPORT TO THE PHILIPPINES AS OF 1 MARCH 2024, there are 13 countries where we can import livestock (Annex 1).

Other border control measures include inspection of hand-carried meat products, cargo inspection at seaports, inspection of quarantine sites, 30-day quarantine of imported animals, and inspection and laboratory analysis of imported meat and meat products.

Animal Movement Management remains a major activity in FMD prevention. Local movement of animals require the licensing of livestock traders and their transport carriers, farm accreditation, and securing of Veterinary Health Certificate and Shipping Permit. For meat and meat products, a certificate from the National Meat Inspection Services is required prior to issuance of shipping permit. Animal checkpoints are put up in strategic locations nationwide where the items being shipped and shipping documents are inspected and the transport carriers/reefer vans are disinfected.

In slaughterhouses, regular cleaning and disinfection and all-in, all-out policy are practiced.

Risk-based serosurveillance is in place to enhance early warning. Provinces identified to have high and medium level of risk, based on the Risk Assessment Study conducted in 2021, are required to collect samples bi-annually and annually, respectively. From January to August 2024, a total of 1,789 samples were submitted to the Bureau of Animal Industry-National FMD Laboratory (Annex 2). (At the same period last year, a total of 1,298 samples had been submitted.) These include the 39 samples which were collected on 24-31 May 2024 from 23 owners in the province of Saranggani in Region XII which has been identified to have high level of risk of FMD incursion due to its epidemiological link to Indonesia. All the 1,789 samples tested negative for NSP-ELISA.

Preparedness and Contingency Planning

Legislations

On legislation, DA Administrative Circular No. 8, Series of 2021 or the "Revised Guidelines in Reporting Notifiable Animal Diseases to the Competent Veterinary Authority amending DA AC No. 3, S. of 2018" was issued to improve the animal disease reporting and outbreak investigation and to strengthen the implementation of the prevention, control, and eradication programs of emerging and re-emerging animal diseases. Relative to this, the Bureau of Animal Industry (BAI), through a series of collaborative activities for animal disease prioritization among Animal Health and Welfare Division (AHWD), National Veterinary

Quarantine Services Division (NVQSD), and Veterinary Laboratory Division (VLD), came up with a new list of priority notifiable animal diseases based from multiple criteria and from DA and WOA through Memorandum Circular No. 30, Series of 2024 or the “List of BAI Priority Animal Diseases and Procedures on Animal Disease Reporting. The objectives are (1) to strengthen and develop animal disease prevention, control, and eradication programs for animal disease surveillance, resource mobilization, veterinary laboratory networks, and technical development and (2) to rationalize animal disease reporting, leading to a comprehensive understanding of the national animal health and disease landscape and prevention, control, and eradication efforts.

Laboratory diagnostic capacity

The BAI National FMD Laboratory tests all the serum samples submitted using NSP ELISA. Should there be a positive result upon second collection, RT-PCR for FMD viral antigen detection shall be done. If positive, the samples shall be sent to the FMD reference laboratory for serotyping.

FMD Emergency Preparedness Plan

Our FMD Emergency Preparedness Plan which was developed in 2014 is undergoing review and revision. A Technical Working Group for its revision has been created and its members come from the different divisions and Farm Operations Group of BAI; National Meat Inspection Commission; Federation of Cattle Raisers in the Philippines; National Dairy Authority; Philippine Carabao Center; Provincial, City, Municipal Veterinarian League of the Philippines; Philippine College of Swine Practitioners; and Philippine College of Veterinary Epidemiologists. There shall be a write shop on 27-29 August 2024 in Tagaytay City.

Aside from the revision of the manual, the TWG shall serve as the pool of experts with the following functions, duties and responsibilities: (1) Provide technical expertise on FMD epidemiology, diagnostics, movement, prevention, control, and eradication; (2) Develops and reviews FMD animal health programs and strategies aligned with existing local and international guidelines; (3) Identify needs for FMD prevention, control, and eradication; (4) Advocate to support FMD animal health programs, including dissemination of information on best practices and others; and (5) Review and revise technical guidelines, standards, and recommendations for FMD interventions.

A series of Coordination Meetings and FMD Tabletop simulation exercise were conducted in different island groups as follow:

Island Group	Date	Venue
Mindanao	December 4-7, 2023	Davao City
Visayas	February 13-16, 2024	Iloilo City
North Luzon	April 2-5, 2024	Laoag City, Ilocos Norte
South Luzon & National Capital Region	March 19-22, 2024	Batangas City

The topics included FMD Updates; FMD Pathway, Program Updates and Emergency Preparedness Plan; Learning Experiences by 3 Resource Speakers; and Simulation Exercise on FMD organized and led by Ms. Eliza Ann Mayor of FAO-ECTAD.

Different hypothetical scenarios on FMD incursion and outbreak were presented to the participants in order for them to brainstorm within their groups on what to do. Each group presented their answers for panel discussion for each scenario. Some of the key points during the presentation were highlighted such as capacity building or retooling of LGU staff (eg. younger workforce); regular disease monitoring and surveillance; strengthening of biosecurity measures; animal movement control; public awareness; alternative indemnification programs; proper channels for disease reporting; improvement of laboratory capacity including collection, handling and transport of samples; translating national issuances to local ordinances; strengthening coordination and collaboration with the LGUs and LCEs (eg. Task force, provide alternative solutions); and timing and timeliness.

FMD vaccines during the emergencies

PhP 6,000,000 pesos have been allocated this year for the purchase of FMD vaccine buffer stock. BAI had a meeting with four FMD vaccine manufacturers but because of their minimum volume requirement, only one company (*Biogenesis Bago*) proceeded in submitting their quotation. The amount shall be good for 150,000 doses with the following specifications:

SPECIFICATIONS
O1 Campos monovalent strain of Foot-and-Mouth Disease (FMD) virus.
Inactivated vaccine with properties for use in Differentiating-Infected-from-Vaccinated-Animals (DIVA).
With at least 6 PD ₅₀ potency.
With published evidence of cross-immunity to circulating FMD strains in Asia, such as O/ME-SA/Ind-2001.
Indicated use for all susceptible cloven foot animal species, including swine, bovine, buffalo, sheep, and goats.
With shelf-life of at least 24 months upon the date of its delivery.
Place of delivery, and site of inspection for certification of the end-user, will be at the importer's cold storage facility within the Philippines.
Delivery period must be within thirty to ninety (30-90) calendar days.
Additional services to be provided by the importer: <ol style="list-style-type: none"> 1. Storage of delivered vaccines for at least two (2) years; 2. Provision of DIVA diagnostic kits for at least 160 samples. 3. Provision of technical assistance by the manufacturer, such as but not limited to, the training of test protocols for DIVA testing. 4. Disposal of vaccines bottles, as necessary.

Communication and Awareness

For Communication and Awareness, we are coming up with an FMD Logo and new poster materials. There are various crafted designs and they shall be presented during the FMD Write shop for the group to select. The Self Assessment for the PCP-FMD Questionnaire shall also be presented so the body can collectively assign the scores.

PVS Missions

There have been five PVS Missions to the Philippines which are as follow:

1. PVS Evaluation May 3-21, 2008
2. PVS Gap Analysis June-July 2010
3. PVS One Health Pilot Mission September 10-17, 2012
4. PVS Follow-up Evaluation 2016
5. PVS Follow-up Evaluation August 14-26, 2023

Challenges in implementation of FMD Preparedness Programme



We are faced with the following challenges in the implementation of our National FMD Preparedness Program:

1. Because of the massive outbreaks of ASF in the country, most of the activities, manpower and budget are focused on the control of ASF.
2. Currently, only the BAI FMD Laboratory has the capacity to conduct FMD NSP Elisa test. There should be Capacity Building and/ or Technical Assistance for the Regional Animal Disease Diagnostic Laboratories (RADDLs) to allow rapid detection and timely response.
3. Some of the cities and 1st class municipalities in the country still do not have veterinarians. The presence of qualified veterinary professionals at local levels is essential to facilitate the delivery of effective veterinary services across the country. The National Advisory Committee on Animal Disease Control and Emergencies (NAC-ADCE) could pass a resolution to the DA Secretary to lobby to the Secretary of the Department of Interior and Local Government to make this happen.
4. There is a need to develop standardized guidelines for sample collection, handling, and transportation that will expedite the detection and response to animal diseases, especially on FMD. These guidelines will streamline procedures and optimize reporting efficiency, enabling faster diagnosis and intervention.
5. The Local Government Units (LGUs) are in dire need of cold storage facilities or reefer vans to store and preserve animal meat for consumption in anticipation of emergencies or emergency mass slaughter of animals.
6. The criteria for the declaration of State of Calamity due to TAD Outbreaks must be amended wherein for a single confirmed case, the LGU can already declare a State of Calamity to trigger organized response efforts. This needs to be requested to the National Disease and Risk Reduction and Management Council for the necessary amendment.
7. The linkage between the national and local veterinary services and the academe needs to be strengthened to augment veterinary workforce for disease surveillance, prevention and control. BAI can spearhead this.

Ways Forward

ACTIVITIES	TIMELINE
1. 2 nd Risk assessment of all the provinces in the country	Last quarter of 2024
2. Public Consultation on the draft FMD Preparedness Guidelines	Last quarter of 2024
3. Publication of the FMD Preparedness Guidelines	Last quarter of 2024 to first quarter of 2025
4. Production and distribution of IEC materials	Last quarter of 2024 to first quarter of 2025
5. FMD Coordinators' Meeting	Second to third quarter of 2025
6. Complete and up-to-date list of epidemiological units	Second to last quarter of 2025
7. Complete and up-to-date information on the number and location of susceptible species	Second to last quarter of 2025
8. Value chain analysis	Second to last quarter of 2025
9. Socio economic studies	Second to last quarter of 2025

Annex A






Republic of the Philippines
Department of Agriculture
BUREAU OF ANIMAL INDUSTRY
5 Visayas Avenue, Barangay Vasra, Quezon City 1128
☎ +6378528-2240 ✉ director@bai.gov.ph 🌐 www.bai.gov.ph 📱 @bai.gov.ph

UPDATED LIST OF ACCREDITED COUNTRIES (SYSTEM/INDIVIDUAL/TRADITIONAL) SOURCES OF LIVE ANIMALS FOR EXPORT TO THE PHILIPPINES AS OF 1 MARCH 2024

Importables/Commodity	Accredited Countries	Type of Country Accreditation	Remarks	
1. Live Swine and Semen	Australia	Traditional		
	Belgium	System		
	Canada	System		
	Denmark	System		
	France	System		
	Germany	System		
	Ireland	System		
	Netherlands	System		
	Spain	System		
	Sweden	System		
	United Kingdom	System		
	United States of America	System		
	2. Live Cattle, semen and embryos	Australia	Traditional	
		Belgium	System	
		Canada	System	
		Denmark	System	
France		System		
Germany		System		
Ireland		System		
Japan		System		
Netherlands		System		
New Zealand		System		
Spain		System		
United Kingdom		System		
United States of America		System		
3. Live Poultry including hatching eggs, Day-old chick and semen		Australia	Traditional	
	Belgium	System		
	France	System		
	Germany	System		

Note: The list of accredited countries is subject to temporary ban upon reported occurrence of notifiable transboundary animal disease/s. For the list of countries with temporary ban, please follow this link:
https://drive.google.com/drive/folders/1zoTSx6_0pBGITeMI_eQJc8V0e2pLpZn7Rep?Rep=Banned%20Countries

Republic of the Philippines
Department of Agriculture
BUREAU OF ANIMAL INDUSTRY
5 Visayas Avenue, Barangay Vasra, Quezon City 1128
☎ +6378528-2240 ✉ director@bai.gov.ph 🌐 www.bai.gov.ph 📱 @bai.gov.ph

	Netherlands	System		
	New Zealand	System		
	Poland	System	With existing HPAI regionalization agreement **Not accredited to export Poultry semen**	
	United Kingdom	System		
	Canada	System	With existing HPAI regionalization agreement	
	United States of America	System	With existing HPAI regionalization agreement	
	4. Live Poultry/Non-poultry (EXCEPT hatching eggs, Day-old Chicks and semen)	Hungary	Traditional	
		Brazil	Traditional	
		Chile	Traditional	
		Russia	Traditional	
5. Live goats, semen and embryos	Australia	Traditional		
	Netherlands	System		
	New Zealand	System		
	United States of America	System		
6. Live sheep, semen and embryos	Australia	Traditional		
	France	System		
	Ireland	System		
	Netherlands	System		
	New Zealand	System		
	United Kingdom	System		
	United States of America	System		
7. Live Horses	Argentina	Traditional		
	Australia	Traditional		
	Belgium	Traditional		
	France	Traditional		

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https://drive.google.com/drive/folders/1zoTSx6_0pBGITeMI_eQJc8V0e2pLpZn7Rep?Rep=Banned%20Countries

Annex B. NSP-ELISA TEST RESULT

Region	Total Samples Submitted (January-August 2024)
CAR	137
I	
II	301
III	117
IV-A	199
IV-B	529
V	33
VI	50
VII	117
VIII	
IX	
X	
XI	85
XII	113
XIII	108
ARMM	
NCR	
TOTAL	1789

Singapore

Background:

Singapore is recognised by the WOAHA as a 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.

Singapore has a very small ruminant population. There are 51 heads of cattle (all age groups) and 925 heads of goats (all age groups) across 2 farms in Singapore, as of July 2024. These ruminant farms are all dairy farms licensed by the Singapore Food Agency (SFA). Captive 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 main target population for FMD surveillance is the animals at the ruminant farms in Singapore, which is synergised with other transboundary animal diseases, such as African Swine Fever (ASF). All the ruminant farms are inspected monthly by SFA officers for clinical signs of ill-health, and farms will be advised to seek further veterinary attention if needed. Serological samples are also collected annually for laboratory testing, alongside clinical surveillance by trained veterinarians to assess for characteristic clinical signs of FMD.

Serosurveillance for FMDV Non-Structural Protein (NSP) using ELISA is carried out annually at the Centre for Animal and Veterinary Sciences (CAVS) under NParks. All samples collected so far have tested with negative results.

NParks also 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 are investigated, which happened in Feb 2023 and an outbreak of African Swine Fever was detected in several wild boars.

Sera from wild boar blood samples were also collected and tested for antibodies to FMDV NSP using ELISA. All samples collected so far have tested with negative results.

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 licence 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 licence.

NParks and SFA regulate the import of animals and animal products for non-food and food-producing animals respectively. NParks and SFA will only allow import 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.

Currently, sheep for the purpose of religious slaughter, are imported once a year¹. These animals are transported only to the approved premises for slaughter and are slaughtered within a few days. SFA allows the importation of sheep and goats for the purpose of breeding and production. For both purposes, the exporting countries must be free from FMD and animals must be examined and found to be clinically healthy prior to export.

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 regard 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.

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 licences 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 WOAHP guidelines.

Sources of pigs

Pigs are imported into Singapore for slaughter from Sarawak, Malaysia. This is subject to regular audits and inspections by SFA and NParks.

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.

Laboratory capabilities for FMD

The FMD test capabilities at CAVS are as follows:

- a. Real-time RT-PCR (pan-FMDV based on amplification of 3D and 5'UTR genes) (for screening, detection & identification)
- b. NSP cELISA (for serological screening & detection)
- c. Solid-Phase Competitive ELISA, Serotype O (for typing of antibody)
- d. Solid-Phase Competitive ELISA, Serotype A (for typing of antibody)
- e. Solid-Phase Competitive ELISA, Serotype Asia 1 (for typing of antibody)
- f. Antigen Detection and Serotyping ELISA for O, A, C, Asia1, SAT1 and SAT2
- g. Whole Genome Sequencing (WGS) and bioinformatics for whole genome analysis of FMDV

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.

Challenges and recommended solutions in FMD control

While Singapore is free from FMD, there is a constant need to ensure that contingency plans and its concept of operations are fit-for-purpose. Outbreaks of FMD overseas continue to threaten Singapore's food security as Singapore depends heavily on import of livestock for food. Disease investigation teams, both field and laboratory, should undergo regular training to recognize suspect clinical signs, epidemiology and outbreak investigation protocols associated with FMD. In addition, land scarcity restrictions options for animal carcass disposal in landfills during an outbreak.

In light of the ASF outbreak in Singapore in 2023, NParks will continue to refine its contingency plans for FMD by applying lessons arising from simulation exercises (e.g. "Ex Sus", a table-top exercise for African Swine Fever (ASF), a closely related disease to FMD) and related outbreaks of TADs (e.g. ASF in 2023). This includes working with relevant government agencies and industry stakeholders on refining contingency planning, including biowaste disposal and reviewing national legislation related to control of FMD and other animal diseases.

Singapore will continue to maintain import control measures in accordance with WOA's TAHC for FMD and strengthen pre-border early warning mechanisms for import).

Regular training and capability building activities for field and laboratory investigation staff on FMD diagnostics and outbreak protocols, including inter-laboratory proficiency testing programmes, will continue to be held.

Way Forward

Singapore seeks the 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 the WOA SRRSEA's initiatives and activities that are implemented as per the M&E framework for the SEACFMD Roadmap 2021-2025

Thailand

FMD Situation in 2023

In 2023, Thailand reported 15 outbreaks of Foot-and-Mouth Disease (FMD), resulting in 1,009 cases and 23 deaths. The affected animals included beef cattle (9 out of 15 outbreaks) and dairy cattle (6 out of 15 outbreaks). Temporally, the peak of the outbreaks occurred in January with 6 outbreaks reported, while in the remaining months, 0-2 outbreaks were reported each month (Figure 1). Spatially, as shown in Figure 2, the outbreak locations were distributed across the North, Central, and South regions of Thailand. Regarding FMD serotypes in 2023, Serotype O was identified in 66% (10 out of 15) of the cases, while the remaining cases were not typed, no virus detected or not sampled.

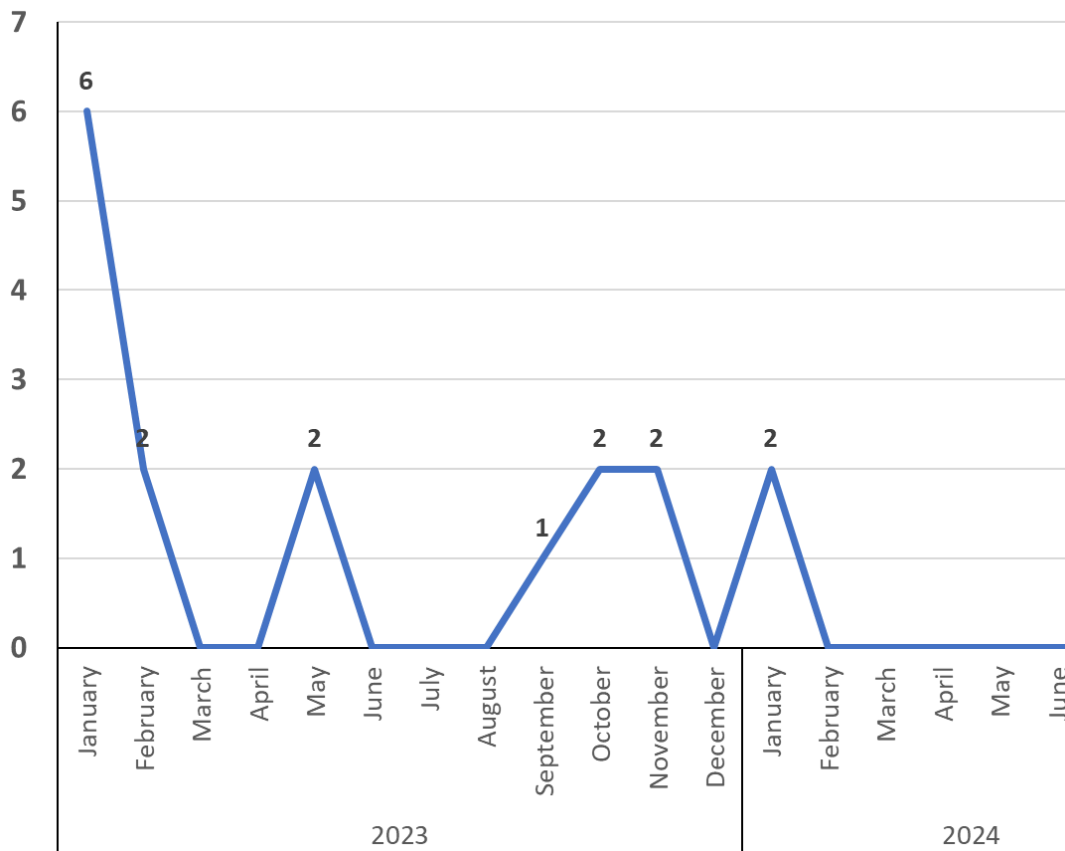


Figure 1: Temporal distribution of FMD reported in Thailand in 2023.

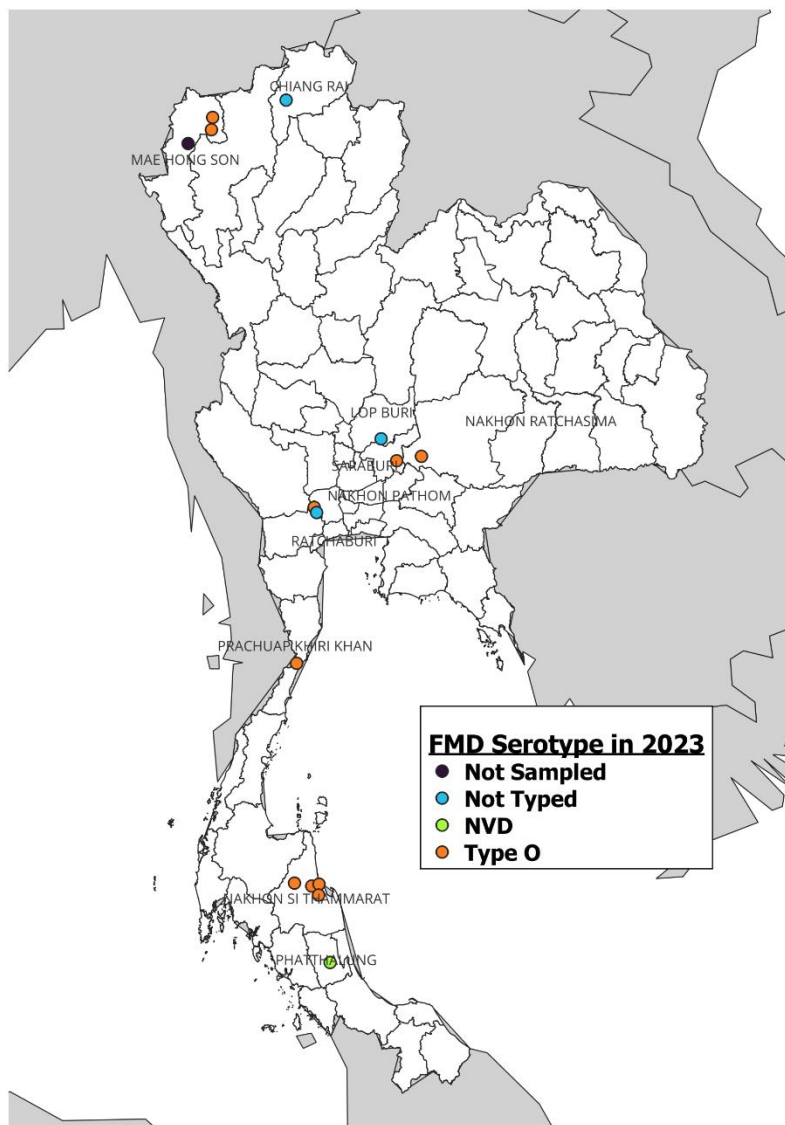


Figure 2: Spatial distribution of FMD in Thailand in 2023 by serotype diagnosed

FMD Prevention and control activities

Efforts to prevent and control Foot-and-Mouth Disease (FMD) in Thailand encompass a variety of activities:

Improvement of Farm Biosecurity

A key measure involves enhancing farm biosecurity practices to ensure better disease prevention at the farm level. This is supported by the Animal Epidemics Act, B.E. 2558 (2015), particularly Section 7, which establishes a comprehensive biosecurity framework. To further strengthen biosecurity, the implementation of both Good Farming Management (GFM) and Good Agricultural Practices (GAP) is

crucial. These certifications, administered by the DLD, address farm biosecurity standards and protocols. Additionally, commercial farms can choose to integrate the FMD-Free farm approach into their GFM/GAP practices. This integration requires strict adherence to biosecurity protocols, and farms are granted a 1-year accreditation if their herds remain negative for Non-Structural Protein (NSP) during this period.

Immunization

A strategic immunization approach is vital for FMD prevention and control in Thailand. A comprehensive vaccination campaign is in place, consisting of three rounds for dairy cattle and two rounds for beef cattle, sheep, and goats. The first round of vaccinations begins in October, coinciding with the start of the fiscal year. This timing adjustment is a proactive measure aimed at enhancing overall herd immunity, based on lessons learned from previous practices. While the pig vaccine is currently optional for individual farms, efforts are being made to encourage vaccination through the criteria outlined in the GAP farm certification process. Farmers can choose between purchasing commercial vaccines or opting for the DLD vaccine, which is offered at a subsidized rate by the government.

Outbreak Response

Thailand's approach to FMD prevention and control also includes comprehensive outbreak response strategies. Legal measures under the Animal Epidemics Act, B.E. 2558 (2015) designate FMD as a notifiable disease. In the event of an outbreak, a temporary epidemic zone, limited to a 5 km radius, is declared by the local veterinary authority. The outbreak response includes sample collection, quarantine, and treatment of affected animals, along with thorough trace-back and trace-forward activities to determine the disease's origin and potential spread. Rigorous biosecurity measures are implemented, including clinical surveillance within a 10 km radius, both passively and actively, with an emphasis on raising awareness. Additional actions involve disinfecting high-risk areas, enhancing farm biosecurity, issuing warnings, and fostering collaboration among livestock networks and cooperatives. Within the 5 km radius, a ring vaccination strategy is employed, accompanied by animal movement restrictions and close monitoring at checkpoints with disinfection measures.

Other Initiatives

Thailand has successfully maintained its Stage 3 status in the FMD Progressive Control Pathway (FMD-PCP) and is progressing towards Stage 4 by retaining the Official Control Programme for FMD. Plans are also underway to eliminate virus circulation in domestic susceptible animal populations in at least one zone of the country. According to the FMD-PCP Self Assessment Tool, Thailand has performed well in veterinary services, prevention, control, eradication, surveillance, and diagnosis. However, the assessment highlights the need for improvements in the livestock sector and stakeholder engagement to advance to the next stage.

Challenges in FMD control and recommended solution to address these challenges

Challenges in FMD Prevention and Control Efforts in Thailand Include:

1. Limited adherence to robust biosecurity measures among small-scale holders.
2. Illegal animal movements that undermine containment measures.
3. Inadequate manpower resources to effectively manage and implement control strategies.
4. Low biosecurity practices among small-scale holders.
5. Insufficient manpower to carry out necessary control measures.

Proposed Resolutions for Enhancing FMD Prevention and Control Efforts in Thailand Include:

1. Offering increased incentives to motivate farmers to elevate their farm biosecurity practices, transitioning from basic GFM to more advanced GAP standards.
2. Strengthening border control through robust collaboration with relevant agencies, enhancing vigilance.
3. Fostering strong partnerships with the private sector to ensure their active involvement in vaccination campaigns and disease surveillance programs.

Way Forward – Future activities

Key Activities (Starting September 2024)

Thailand will reinvigorate its FMD prevention and control efforts in alignment with the strategic objectives of the SEACFMD Roadmap 2021-2025. This includes supporting operators in ensuring safe animal trade, both cross-border and domestically.

Support Expected from WOA and Other Partners

Thailand seeks technical support from WOA and other partners to enhance its FMD prevention and control initiatives.

Country Contribution to Strengthen SEACFMD at the Regional Level

Thailand will contribute to strengthening the SEACFMD campaign by promoting safe trade with neighboring countries. For example, the DLD is working on health requirements for exporting live cattle to Vietnam and Malaysia.

Vietnam

FMD Situation in 2023

There were 29 FMD outbreaks reported to DAH in 2023 from 20 districts of 14 provinces. A total of 1,023 animals were infected including 103 animals being culled.

The virus found in 2023 was similar to previous years as FMDV type O/ME-SA/Ind-2001e

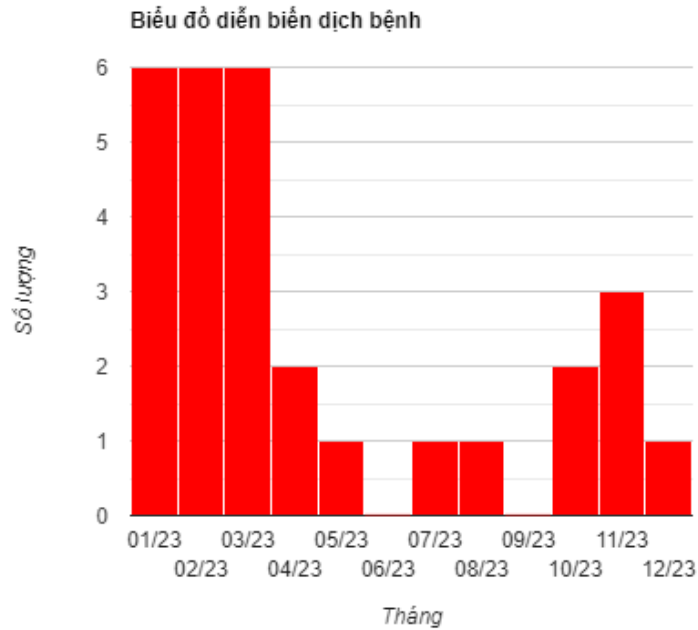


Figure 1. Temporal distribution of FMD in Vietnam during 2023

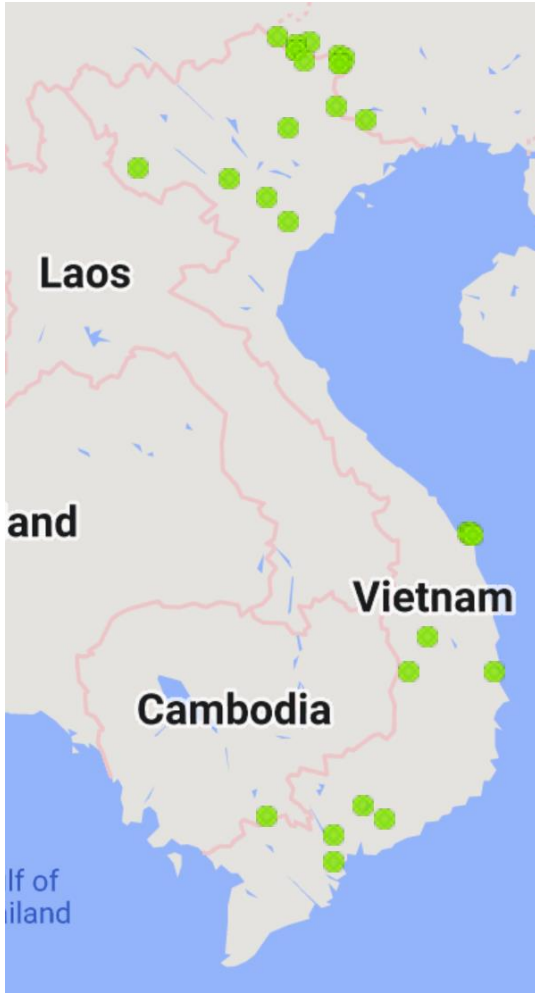


Figure 2. Spatial distribution of FMD outbreaks in 2023

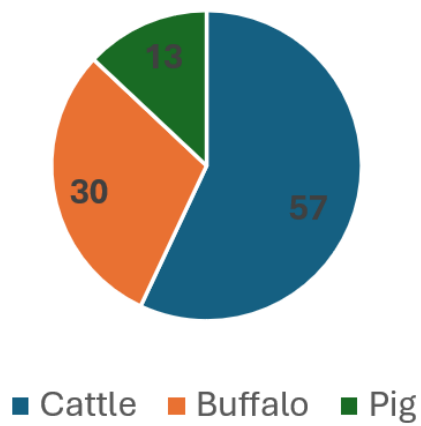


Figure 3. Species wise animal affected by FMD

FMD Prevention and control activities

Surveillance, early detection and response

The Veterinary law and the Circular No. 07/2016/TT-BNNPTNT dated 31 May 2016 of MARD regulate FMD surveillance which constitute a 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 during outbreak response phase. The plans include human resource arrangement, data preparedness and reporing, materials and equipment preparedness, disease surveillance and outbreak investigation, animal treatment and quarantine, carcass disposal and animal destruction, immunization startegies, animal movement control and disinfection, coordination with other sectors, public relations, contingency plan application and budget planning.

When FMD outbreaks occur, emergency vaccination is conducted for healthy animals at 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. Local forces are mobilized to assist with vaccination, and only trained animal health workers or individuals with prior training in vaccination are involved in the process. Local animal health management agencies are responsible for guiding, managing, implementing, and monitoring vaccination efforts.

Since 2018, Vietnam Animal Health Information (VAHIS) has been applied in all 63 provinces for the collection and reporting of animal health data.

Vaccination

In 2023, a total of 47.1 million doses of both imported & domestic vaccines were administered.

In line with the National Plan for FMD, Post vaccination monitoring was conducted in two provinces, Ha Tinh and Quang Tri. A total of 180 sera samples were collected from cattle & buffaloes, of which 142 samples tested for antibodies. However, only 93 samples (representing 51.67%) achieved protective antibody titers of > 1/32.

The vaccine antigens currently in use are homologous to the field strains of FMDV type O that have been circulating in recent years.

Animal movement

In 2023, a Memorandum of Understanding was signed between the Ministry of Agriculture and Rural Development of Viet Nam and the General Administration of Customs of China on the construction requirements of FMD free zone where vaccination is practiced.

Communication and awareness

- DAH has provided Technical guidelines for the construction of FMD free zones and related establishments (in books).

- DAH established contracts with VTV1 (the National television channel) and People Newspaper for FMD communication.

Governance and legislations

- The Government approved the "National Plan for disease control & food safety for the period 2023-2030" (the Decision No. 889/QĐ-TTg, dated 25 July 2023), which includes plans for establishing FMD free zones in accordance with WOA standards.
- Vietnam issued Circular No. 24/2022/TT-BNNPTNT on 30 December 2022 on animal disease free zones and establishments related to FMD and other TADs prevention and control that required conditions for certification more rigorously.

Challenges in FMD control and recommended solution

- Small-scale farms for livestock
- Animal movement control across provinces and border
- Free grazing practice
- Deal with infected cattle & buffaloes
- Vaccination programme: Vaccines supply & cost of vaccines
- Post-vaccination monitoring

Way Forward – Future activities

Key Activities (September 2024 – December 2025)

- Implement the “National program for FMD prevention and control for the period 2021-2025
- Establish FMD free-zone & farms
- Prevention of new FMDV introduction
- Early detection and rapid outbreak response
- Animal movement control
- Stamping out policy, especially for pigs
- Compensation
- Vaccination
- Communication

What support you expect from WOA and other partners?

- Update information on FMD outbreaks, FMDV and epidemiology in the region
- Support Vietnam to establish FMD free compartments and zones following WOA standards
- Support vaccine matching
- Support DAH to develop the next National Plan (the current National Plan will be end in 2025)

How can your country contribute to strengthen SEACFMD campaign?

- Host trainings, workshops and meetings related to FMD.



SEACFMD Campaign Secretariat
WOAH Sub-Regional Representation for South-East Asia
C/O DLD, 69/1 Phaya Thai Road
Bangkok 10400, Thailand
Tel: (662) 653 4864
Email: srr.seasia@woah.org