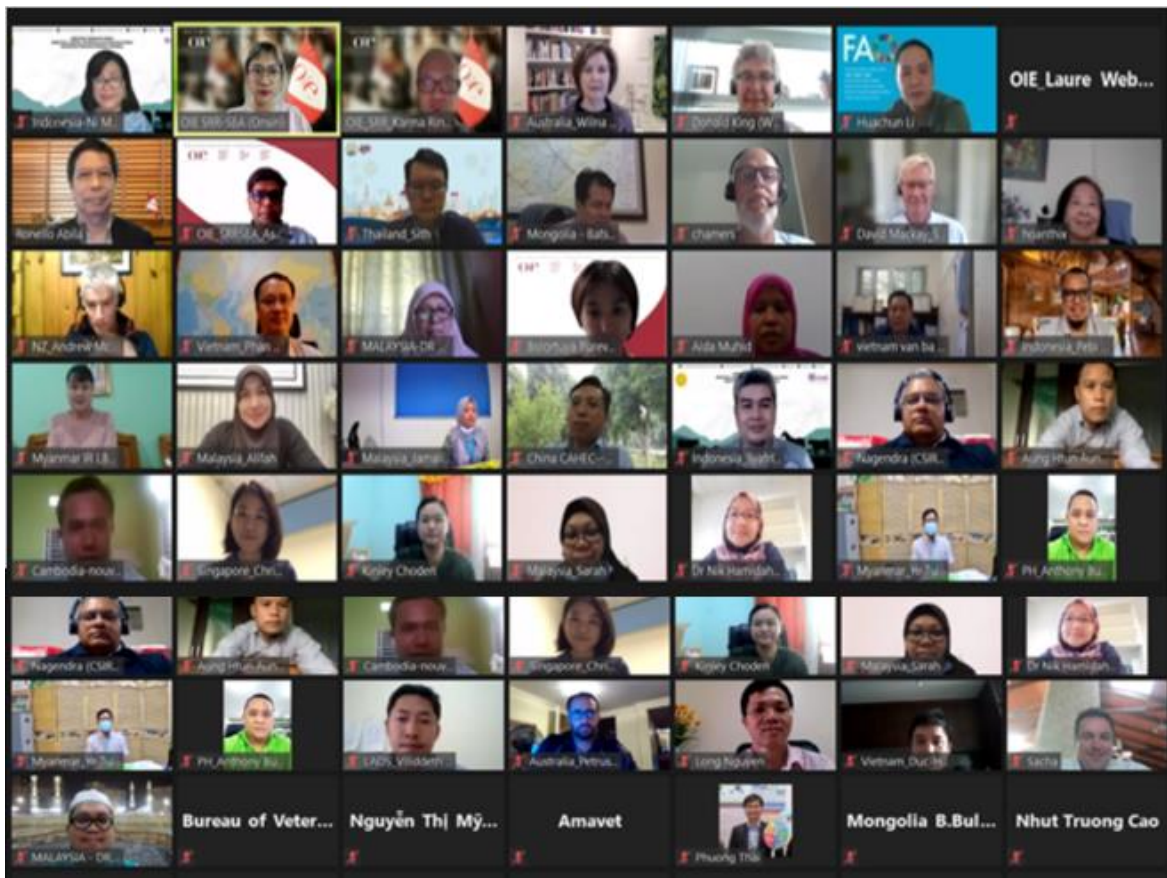


Report of the 24th SEACFMD National Coordinators Meeting



Virtual meeting on 29 & 30 July 2021



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Executive Summary

The 24th SEACFMD (South-East Asia and China Foot and Mouth Disease) National Coordinators Meeting was held virtually on 29 and 30 July 2021 from 13.00 to 15.30 (Bangkok time). The meeting was attended by SEACFMD Steering Committee Members, National Coordinators and other staff from SEACFMD Countries; Partners; Foot and mouth disease (FMD) Experts; Private sectors and staff of OIE-HQ, RR Tokyo and SRR Bangkok.

Day 1 meeting focused on updating the FMD situation at the global, regional and at the country level and on the SEACFMD Roadmap Implementation Framework. Dr Donald King (OIE Reference Laboratory for FMD, Pirbright) provided an update on Global FMD situation and Dr Bolortuya Purevsuren (OIE SRRSEA) on regional FMD situation. It was followed by poster flash talk on country's FMD situation by the member countries. Highlights were related to the spread of O/ME-SA/Ind2001e strain from South Asia to South East Asia and dominance of this strain in 2020-2021. Prior to 2020, the dominance strain in South East Asia were O/SEA/Mya98; O/ME-SA/PanAsia; and O/Cathay. The Resolution adopted by the OIE World Assembly in 2017 on FMD serotype C was reminded, included the recommendations regarding the use of live FMDV strains of serotype C in research and FMD vaccine development. The FAORAP also made a brief presentation on the FAO FMD activities in South East Asia.

The second session on day 1 focused on the SEACFMD Roadmap Implementation Framework with presentations from Dr Karen Iles (M&E Consultant) on M&E Framework for SEACFMD Roadmap 2021-2025 and Dr Karma Rinzin on Roadmap Implementation Framework, followed by breakout session to discuss the country level SEACFMD Roadmap implementation and M&E framework.

Day 2 focused on technical session on FMD vaccination. The first session updated the participants on the recommendations of the GFRA virtual Workshop on FMD Vaccination and its application in the field; on the Vaccine Pre-Qualification from EuFMD, and on ASEAN Veterinary Vaccine Registration Procedures from ASVFPVP. Vaccine Manufacturers were also invited to present a technical topic. One manufacturer (Biogenesis Bago) of the four contacted, proposed a topic: Efficacy and Cross-Reactivity Tests of FMDV Lineages Circulating in Asia Against Bovine and Swine Serum of Animals Vaccinated with Vaccines Strains from EURO-SA Topotype.

The second session on day 2 focused on the implementation of FMD vaccination in the field. Dr Karma Rinzin presented the first findings of a quite exhaustive questionnaire filled by SEACFMD member countries on their FMD vaccination programme. This was followed by sharing of success stories in implementation of FMD vaccination following the public-private partnerships model between national Veterinary Services and private sectors - Vietnam with Vaccine Manufacturer, Thailand with dairy producers and Mongolia with private veterinarians. The session ended with a plenary discussion (using Mentimeter) on the challenges in accessing the quality FMD vaccines by the member countries.

Introduction

Background:

Within the South-East Asia and China Foot and Mouth Disease (SEACFMD) Campaign, the SEACFMD National Coordinators annual meeting is an important platform to discuss current FMD risk situation, share experience in FMD surveillance and control, and formulate action plan in view of both country context and regional cooperation. Besides, it provides a platform for technical discussions including capacity building of NC and other technical people involved in SEACFMD activities.

The 24th SEACFMD National Coordinators Meeting was held virtually on 29 and 30 July 2021 from 13.00 to 15.30 PM (Bangkok time). The meeting was attended by SEACFMD Steering Committee Members, National Coordinators and other staff from SEACFMD Countries (Brunei, Cambodia, China, Lao PDR, Indonesia, Malaysia, Mongolia, Myanmar, Philippines, Singapore, Thailand and Vietnam); Partners (Food and Agriculture Organization of the United Nations – Regional office for Asia and the Pacific [FAO-RAP] and the ASEAN Secretariat); Donors (Australia, China and New Zealand); Experts from World Reference Laboratory for foot and mouth disease (WRLFMD) European Union foot and mouth disease (EuFMD), Australian Centre for Disease Preparedness (ACDP); Private sector (Vaccine Manufacturers, Dairy producers, Private Veterinarians); and the OIE (OIE-HQ, RR Tokyo and SRR Bangkok).

The first session on 29 July 2021 focused on the latest global, regional and national FMD situation in the SEACFMD member countries, and finalisation of the regional and country level SEACFMD Roadmap 2021-2025 Implementation Plan. The second session on 30 July 2021 was a technical session on FMD vaccination with presentations from experts and discussions on the challenges and modalities for accessing the quality FMD vaccines in the field.

Objective:

The objectives of this meeting were to:

- Update on the latest global and regional FMD situation and current FMD epidemiological situation amongst member countries;
- Review and endorse the regional and country level SEACFMD Roadmap 2021-2025 Implementation Plan;
- Review and endorse the SEACFMD Roadmap 2021-2025 monitoring and evaluation (M&E) framework;
- Provide update on the new development and advancement in FMD vaccines and relevant tools to enhance FMD vaccination;
- Explore approaches to synergize FMD control through public private partnership between veterinary service and private sectors (farmers, producers, vaccine manufacturers, private veterinarians and para-veterinarians) in FMD vaccination campaign.

29 July 2021: Day 1 Session

Session I: Opening session

Dr Ronello Abila, OIE Sub-Regional Representative for South-East Asia welcomed the participants to the 24th SEACFMD National Coordinators Meeting. He conveyed his appreciation and congratulation to all the SEACFMD members; the OIE FMD Reference Laboratories and Collaborating Centres and other partners for the successful implementation of the 5th phase of the SEACFMD Campaign. He briefly informed the participants about the main objectives of the meeting, insisting on the importance to finalise the SEACFMD Roadmap 2021-2025 implementation plan, including its M&E framework, since we are in the first year of the Roadmap. He expressed the need for support and commitment from all the SEACFMD member countries and partners to successfully implement the 6th phase of the campaign.

Session II: Updates on the FMD situation

The session was chaired by Dr Nguyen Van Long, Deputy Director General, Department of Animal Health on behalf of the Dr Dong Pham Van, the OIE Delegate of Vietnam who is also the Chair of Sub-Commission and Steering Committee for SEACFMD.

An update on the recent global FMD situation: risks of FMD from a global perspective and the ongoing research activities at WRLFMD

Dr Donald King, FAO World Reference Laboratory for FMD and OIE Reference Laboratory presented the recent activities carried out by the Global Network of OIE/FAO Reference Laboratories for FMD and the changing patterns of the global FMD situation. He emphasized that FMD serotype C has not been reported since 2004, when it occurred in Kenya and Brazil and that its natural elimination was envisaged.

In terms of global FMD updates, he highlighted the recent FMD outbreaks on the island of Mauritius and in Pakistan and South Africa based on the quarterly reports. Dr King pointed out the epidemiological changes and the pattern of FMD lineages in the SEA countries, including reports that the different lineages of serotype O have remained in the region, with frequent circulation of Ind2001 in the last two years. Finally, he recommended that vaccine-matching field study be conducted as a first step in improving vaccine performance and in understanding the protection from FMD infection ([Presentation available here](#)).

Update on the regional FMD situation

Dr Bolortuya Purevsuren, Project Officer, OIE SRRSEA presented the Regional FMD situation from 2018 to July 2021 with data generated from different sources such as ARAHIS, WAHIS and country reports. She introduced the FMD outbreaks in eight endemic countries by serotypes and by year from 2018 to 2021. Analysis of the findings showed: more outbreaks were reported in 2020 than in 2019; more than 50 % of the reported outbreaks were not sampled, and serotype O was still dominant in the region, particularly the Ind2001e lineage. Cambodia had reported O/ME-SA/Ind-2001 for the first time. Key challenges remained the insufficient sampling and need of further confirmation for serotypes/ subtypes. ([Presentation available here](#)).

FAO FMD Activities in South-East Asia

Dr Huachun Li, FAO-RAP Emergency Centre for Transboundary Animal Diseases presented FAO FMD activities in the South-East Asian countries. He introduced the Safe Cattle Trade Project under South-South Cooperation which focuses on safe cattle trade between certain countries. The Project implements risk management activities based on a value chain and risk analysis. Meanwhile, the project supports bilateral cattle trade protocols and their application which is intended to establish FMD free zone for concentrating fattening cattle for trade purposes. Under the Project, several trainings were conducted on FMD investigation and socio-economic impact assessment for FMD. ([Presentation available here](#)).

Country updates

Poster from FMD infected countries

Cambodia: Dr Sorn San, Deputy Director General, General Directorate for Animal Health and Production, updated the FMD situation in Cambodia. A total 288 outbreaks (serotype O only) were reported from January 2020 to June 2021. Among the affected animals approximately 97 % were cattle and 3 % buffalo. Cambodia used to carry out active surveillance, animal movement control, and public awareness activities. However, during the COVID 19 restrictions, only passive surveillance took place. Considering the lack of the vaccine doses, only 5% of the total susceptible animal were vaccinated against FMD ([Country Poster available here](#)).

China: Dr Youming Wang, China Animal Health and Epidemiology Center (CAHEC), on behalf of the National Coordinator. From January 2020 to June 2021, seven outbreaks were reported in China out of which all identified as serotype O. FMD outbreaks were reported from Xinjiang, Guangdong and Chongqing province. Three 'O' subtypes were identified out which Ind2001 involved in three outbreaks, Cathay in two outbreaks and Mya-98 in two outbreaks. China implemented a compulsory vaccination policy, culling of infected and suspected animals, passive and active surveillance, as well as establishment of FMD free zones and compartments through vaccination ([Country Poster available here](#)).

Lao PDR: Dr Viliddeth Souriya, SEACFMD National Coordinator, Department of Livestock and Fishery (DLF), updated the FMD situation in Lao PDR. FMD is still endemic in Lao PDR. In year 2020 a total of 55 FMD outbreaks was been reported in Laos which and Serotype O is involved in all outbreak. FMD outbreaks were reported in three provinces, 15 districts, 65 villages and 11,556 cattle and buffaloes. In 2021, FMD has not been reported yet. Lao PDR has progressed from PCP Stage 1 to PCP Stage 2, as formally accepted by the 25th SEACFMD Sub-Commission meeting. Several donors such as ADB and FAO continue to support FMD control in Lao PDR though various projects ([Country Poster available here](#)).

Malaysia: Dr Akma Ngah Hamid Deputy Director, Department of Veterinary Services provided brief update on the FMD situation in Malaysia. There were 68 outbreaks from January 2020 to June 2021, of which all were due to FMDV serotype O. Affected animals were cattle (96%) and buffalo (4%). Outbreaks were reported from all states in Peninsular Malaysia with highest number reported in the state of

Pahang. Malaysia carries out awareness campaign on FMD control measures, implement biosecurity measures, vaccination and post vaccination monitoring activities ([Country Poster available here](#)).

Myanmar: Dr Min Thein Maw, Director of the Disease Control, LBVD Myanmar briefly introduced the FMD situation in Myanmar. Four outbreaks were reported from January 2020 to June 2021, of which Serotype O was involved in three outbreaks and A in one outbreak. Myanmar implement active and passive surveillance, targeted vaccination and rapid containment of the reported outbreaks. Due to COVID 19 restrictions, the number of vaccinated animals was limited to around 100 000 animals. In accordance with the bilateral agreement with China, disease control zones with vaccination was established in the Kokua and Nay Pyi Taw areas ([Country Poster available here](#)).

Thailand: Dr Sith Premasthira, SEACFMD National Coordinator, Department of Livestock Development, Thailand, presented the current FMD situation in Thailand. A total of 233 FMD outbreaks were reported from January 2020 to June 2021 out of which 164 outbreaks were due to O serotype. Outbreaks were concentrated in south and north-eastern part of Thailand. Thailand carries out FMD control measures under the Law on Animal Epidemics Act and establishes a temporary epidemic zone around the outbreaks. The control measures include animal movement controls, establishment of disinfection checkpoints, surveillance, public awareness, isolation of sick animals and the ring vaccination in a 5 km radius ([Country Poster available here](#)).

Vietnam: Dr Phan Quang Minh, Head of Epidemiology Division, Department of Animal Health, updated the FMD situation in Vietnam. In the last 3 years, only serotype O was recorded; the last outbreak of 'A' type was reported in 2017. Between January 2020 and June 2021, 43 outbreaks were reported. The most important control measure was the vaccination programme. Vietnam was working towards establishment of FMD free zones/compartments and was planning to apply for the OIE Endorsement of its official control programme for FMD ([Country Poster available here](#)).

Poster from FMD free countries

Brunei: Dr Raihan Zulkifli, National Focal Point for Animal Disease Notification, Livestock Industry and Veterinary Services Division, Department of Agriculture and Agrifood, shared Brunei's level of preparedness to FMD incursion. Their preparedness activities include stringent import regulations, mandatory import risk assessment, quarantining of imported animals and health screening before entering the country. Measures within the country include routine surveillance including serological surveillance, *ante-mortem* and *post-mortem* examination in slaughterhouses and continuous awareness on FMD to the livestock owners. Desktop simulation exercises were conducted from time to time to test FMD Contingency Plan. ([Poster available here](#))

Indonesia: Dr. Pebi Purwo Sureno f Directorate General of Livestock and Animal Health Services, reported on the level of preparedness to FMD incursion in Indonesia on behalf Dr Nuryani Zainuddin, Directorate General of Livestock and Animal Health Services. The FMD Preparedness Plan aims to maintain disease-free status. The most important regulation is on the importation of FMD-susceptible animals and genetic materials by following the OIE Standards. Restrictive quarantine measures are in place at quarantine and border security points and an active surveillance programme is in place to demonstrate FMD absence. In 2020, a regulation on emergency use authorisation was approved at Ministerial level, which can be activated to use emergency vaccination in case of FMD incursion ([Country Poster available here](#)).

Philippines: Dr Arlene Asteria V. Vytiaco, SEACFMD National Coordinator, Bureau of Animal Industry, updated on the preparedness plan of Philippines. Serological and clinical surveillance were carried out to maintain FMD-free status without vaccination. In total, 2038 samples were collected and tested from January to July 2021. Within the prevention program, FMD risk assessment is conducted in all provinces. A FMD-negative reporting mobile application was developed and activated. BAI was planning to review and update the FMD Emergency Preparedness Plan Manual ([Country Poster available here](#)).

Singapore: Dr Lee Hui En Christine, SEACFMD National Coordinator, Animal and Veterinary Service, National Parks Board, presented the country report on the level of FMD preparedness to maintain FMD-free status. The preparedness strategy focuses on four components, namely surveillance and early detection, biosecurity, legislation, and disease control measures. The routine surveillance is in place to detect FMD in susceptible animals, as well as controls on the import of animals and commodities to reduce the risk of incursion of FMD. Meanwhile, the emergency response system is in place and it has been tested during a simulation exercise for a disease incursion ([Country Poster available here](#)).

Discussion

- WRL included O Campos vaccines (from Biogenesis Bago and BI) in the routine vaccine matching testing; data will be available in the summary report.
- In terms of Serotype O circulation in the region, Mya98 lineage has been the dominant strain. However recently Mya98 has been replaced naturally by Ind2001. There is no conclusive evidence on why O/ME-SA/Ind-2001 has become so dominant.
- Information was provided on "The FMD serotype C elimination Project" which was also indicated in the Resolution adopted by the OIE World Assembly in 2017 and which refers to limiting the use of live FMDV strains of serotype C in research and FMD vaccine development
- SEACFMD baseline indicators will be determined in 2021 with measuring targets.

Session III: SEACFMD Roadmap Implementation

The session was chaired by Dr Ye Tun Win, Director General of Livestock Breeding and Veterinary Department and OIE Delegate of Myanmar. Dr Ye Tun Win is currently the member of Sub-Commission and Steering Committee for SEACFMD.

M&E Framework for SEACFMD Roadmap 2021-2025

Dr Karen Iles (M&E Consultant) presented the M&E Framework for SEACFMD Roadmap 2021-2025. She talked about what is M&E framework, why we need M&E framework, how to use and who the M&E framework is for. The presentation highlighted that M&E is about providing reliable robust information and evidence to assess whether we are achieving the desired targets and objective or achieving the progress in terms of FMD control. She also informed the participants that this M&E framework is for various stakeholders involved in implementation of SEACFMD Roadmap and each stakeholder can adapt the M&E framework document to monitor the progress of FMD control based on their requirement ([Presentation available here](#)).

SEACFMD Roadmap Implementation Framework

Dr Karma Rinzin, Regional Animal Health Coordinator, OIE SRRSEA made a presentation on SEACFMD Roadmap 2021-2025 Implementation framework which include Goal, Objectives, outcomes, outputs and indicators. He also talked about some of the key activities under each outputs and on the ways how the indicators would be measured for various outputs ([Presentation available here](#)).

Breakout session

After the presentation on the SEACFMD Roadmap Implementation Framework and M&E indicator, the breakout session was organized with the following objectives.

- to review and discuss selective SEACFMD indicators of the strategic objective 1, outcome 1 and outputs.
- to assess whether those indicators are realistic, and applicable to country context.

The countries were divided into four groups depending on the FMD PCP stage. During the breakout session, discussion was focused on the country level indicator for the SEACFMD Roadmap Objective 1, Outcome 1 and some indicators for the selected Outputs. The outcome of the breakout session is presented in [Annex 4](#).

Discussion

- Participants acknowledged the robustness of the M&E framework for SEACFMD Roadmap 2021-2025 prepared by the Consultant and OIE SRR-SEA for the regional level. Meeting agreed to finalize the M&E framework for the SEACFMD Roadmap 2021-2025 and to use it for progress reporting;
- The OIE SRRSEA and SEACFMD member countries will hold bilateral meetings to come up with country level M&E indicator with a national baseline and targets.
- SEACFMD member countries agreed to finalize and implement the FMD activities of the National SEACFMD Roadmap Implementation Plan, aligned with their respective National FMD Prevention and Control Plan;
- OIE SRRSEA agreed to finalize and implement the Regional SEACFMD Roadmap Implementation Plan.
- The outcome of deliberations hold among the countries grouped as per their FMD PCP Stage during the breakout session is provided in [Annex 4](#).

Day 2: 30 July 2021

Session I: Opening session

Dr Laure Weber-Vintzel, OIE Deputy Sub-Regional Representative for South-East Asia welcomed all the participants from SEACFMD countries, partners and resource persons to the second day of the meeting. She briefly summarised Day 1 sessions and congratulated all the participants and resource persons for

the successful and productive deliberations. Laure highlighted the objectives and context of Day 2 sessions which mainly focused on FMD vaccination.

Session II: About FMD vaccines

This session was chaired by Dr Wen Dang, Research Associate of Lanzhou Veterinary Research Institute (LVRI), China, on behalf of Dr Huang Baxou, OIE Delegate of PR China and Vice President of SEACFMD Sub-Commission.

Updates of the Virtual Workshop on FMD Vaccination and its application in the field

Dr Wilna Vosloo, GFRA/ ACDP briefly summarised the Workshops conducted by GFRA, EuFMD, and OIE. The first Workshop was organized in March 2021 and focused on Vaccination against FMD: Principles and Practice for Asia and Southeast Asia. She highlighted that the aim of Workshop was to share principles and practical experiences on vaccination from different parts of the world, including vaccine matching strategies, post-vaccination monitoring, *in vivo* testing of vaccines, monitoring vaccine quality, and novel vaccines. Number of question and issues were raised and this meeting identified the needs of research projects to address the regional specific questions and how GFRA can support such activities in South-East Asia. The training of field staff, laboratory staff and senior people involved in policy decision and vaccine authorization was recommended to ensure informed decision making and successful implementation of vaccination programme in the respective countries. ([Presentation available here](#)).

Vaccine pre-qualification

Dr David Mackey, EuFMD presented the existing pre-qualification procedure for vaccines against FMD and Similar Transboundary (FAST) diseases. He explained that the procedure is an independent assurance that vaccines against FAST diseases comply with minimum internationally accepted standards, as determined in the OIE *Manual* which is similar to the procedure used by WHO for procuring human vaccines. Vaccine quality is checked against factors such as pharmaceutical quality, safety, efficacy, and standards of manufacture. The final information would be useful for manufacturer, procuring agencies and risk managers ([Presentation available here](#)).

ASEAN FMD vaccine registration procedures

Dr Ni Mase Ria Isriyanthi, Directorate of Animal Health, Indonesia introduced the registration procedures used by ASEAN. She described registration procedures, sending samples to ASEAN reference laboratories, determination of the registration code, and renewal/revocation of registration of livestock vaccines. Dr Ni Mase Ria Isriyanthi emphasized that before ASEAN registration, the National Veterinary Product authorities will evaluate the application for FMD vaccine registration. When the ASEAN secretariat receives the dossiers for the vaccine registration through National Authorities, they will circulate them to Member countries for evaluation and comments. When dossier evaluation is completed, the vaccine samples will be tested at accredited ASEAN vaccine testing laboratories, evaluated onsite and a final report on registration submitted. The approved vaccines will be given a registration number which is valid for 5 years ([Presentation available here](#)).

Efficacy and Cross-Reactivity Tests for FMDV Lineages Circulating in Asia

Mr Juver Membre, Asia Technical Manager, Biogenesis Bago presented the study result of the 'Efficacy and Cross-Reactivity tests of FMDV lineages circulating in Asia against Bovine and Swine serum of animals vaccinated with vaccine strain from EURO-SA Topotype'. He elaborated that the study design focused on determining the efficacy and cross activity of the 01 Campos, A24 Cruzeiro and A 2001 vaccine strains against Ind2001, PanAsia, Mya 98 and Cathay strains which are reported in the region. Mr Juver Membre explained that the 01 Campus strain's R value showed a close relation between natural and vaccine strains and the 01 Campus strain can induce immunity against strains selected from Asia ([Presentation available here](#)).

Discussion

Question was raised link between r values and level of protection against clinical FMD. Study results showed that the 6PD50 vaccine with an r_1 value below 0.3 still could induce protection, but not provide full protection against disease. However, it would decrease the severity of clinical disease and the amount of virus excreted by infected animals. The r_1 value needs to be interpreted with some caution because it provides some indication of the level of protection, but it is not an absolute value to determine definite protection. Many other factors will affect the vaccination result. PD50 determinations are often made from a homologous perspective but when using the vaccine in the field, it is vital that the heterologous responses are also considered. Sometimes, heterologous potency tests are performed - which provide very useful evidence to support the use of a vaccine - but where these data are missing, vaccine matching, and measurement of heterologous titers (using post-vaccination sera) can be very useful.

- The number of strains that countries have in their vaccine bank: The Pirbright Institute has developed a tool that allow countries to define the risk profile to support countries in identifying which vaccines can be used in the control program.

Session III: Implementation of FMD Vaccination Programme in the field

The session was chaired Dr Sith Premasthira, SEACFMD National Coordinator, DLD Thailand on behalf of Dr Sorraiv Thaneto, OIE Delegate of Thailand and SEACFMD Steering Committee Members.

Status of the implementation of FMD vaccination in SEACFMD countries

Dr Karma Rinzin, Regional Animal Health Coordinator, OIE SRRSEA presented the findings of the survey questionnaire on implementation of the FMD vaccination by 12 SEACFMD countries. In his presentation Dr Rinzin covered on various items related to implementation of FMD vaccination by the SEACFMD member countries such as the vaccination strategies; vaccine types used; post vaccination monitoring including vaccination coverage; existing legal instrument for procurement and registration of vaccines; and challenges faced during the implementation of FMD vaccination in the field ([Presentation available here](#)).

FMD vaccination implemented following the Public Private Partnership model: Veterinary Services and Vaccine Manufacturers

Dr Phan Quang Minh, Department of Animal Health, Vietnam presented on the background and organization structure of Department of Animal Health and its linkages with the Vaccine Manufacturing Companies. He highlighted that DAH Vietnam has collaborated with two Vaccine Manufacturers (Boehringer Ingelheim and NAVETCO) which played an instrumental role in accessing the quality FMD vaccines and implementation of FMD vaccination in Vietnam. Boehringer Ingelheim (BI) continuously supported NAVETCO to enhance its capacity for production of quality FMD vaccines in Vietnam which now meets the WHO-GMP requirement. He also reported that series of webinars on FMD with focus on FMD vaccination was jointly organized by DAH and Vaccine Manufacturers for the DAH staff and other stakeholders to enhance the knowledge and skills in FMD vaccination ([Presentation available here](#)).

FMD vaccination implemented following the Public Private Partnership model: Veterinary Services and Dairy Producers

Mr Adul Vangtal, President of Thai Holstein Friesian Association and Owner of Udom Dairy Farm shared brief background on how farmers in Thailand deal with FMD prevention and control. He shared that bigger farms are more aware of the importance of FMD vaccination while the small farmers still have difficulties in understanding the benefits of vaccination because of which they are reluctant to vaccinate their animals. As a result there are frequent FMD outbreaks in small farms which continuously pose threat to bigger farms. He also talked about the Public-Private Partnerships - KHOK-KHO MODEL (Farmers & DLD: FIGHT TOGETHER) for implementation of FMD vaccination in Thailand. In KHOK-KHO Model the Milk Collection Centres (MCC) plays a critical role in coordination and collaboration including creating awareness and implementation of FMD vaccination at national, provincial and field level ([Presentation available here](#)).

FMD vaccination implemented following the Public Private Partnership model: Veterinary Services and Private Veterinary Sector

Dr Batsaikhan Sodnom, General Authority for Veterinary Services (GAVS), Mongolia presented on the background and organization structure of GAVS, FMD zoning system and the role of various sectors involved in prevention and control of FMD vaccination. He highlighted that Private Veterinary Unit (PVU) plays a critical role in implementing FMD vaccination including vaccination reporting and creating awareness to the herders. He shared some of the challenges in implementing FMD vaccination in Mongolia by the PVU such as extreme weather condition, nomadic and extensive husbandry practices, poor infrastructure and low service tariffs. Some of the recommendations to overcome these challenges and to ensure sustainability are good policy that supports PPP and Veterinary Statutory Bodies including increase in service tariff, access to quality FMD vaccines, awareness on animal health law to herders/livestock owners, and offline mobile applications in those places without mobile network and internet facilities ([Presentation available here](#)).

Discussion

- Number of questions were raised by the participants regarding countries having reported the use of attenuated FMD vaccines. This will be further explored with the concerned countries.
- Discussions on sharing information on FMD vaccine types used by SEACFMD Countries and their accessibility highlighted that it would be very useful to collect, share and regularly update this information.
- Registration of vaccines at ASEAN level is only necessary for export purposes. Vaccine only produced for internal use should only comply with National Policy and Regulations. ASEAN registration of vaccines is a regulation for ASEAN Member State (AMS) to accommodate and arrange registration, distribution and export among AMS and other countries.

Session IV: Plenary session to discuss challenges in accessing quality FMD vaccines

Dr Ronello Abila moderated the plenary discussion using the mentimeter to seek additional information on the access to quality FMD vaccines. The participants responded to the six questions focused on the key challenges in accessing good quality FMD vaccines, the factors that influence access to quality vaccines, measures undertaken by member countries to improve access to good quality vaccines and support expected from OIE to improve access to quality vaccines. The collated answers were displayed simultaneously to the participants. The output of the plenary session is presented in [Annex 5](#).

Session V: Closing of the 24th SEACFMD National Coordinator Meeting

Dr Karma Rinzin presented the Conclusions and Recommendations of the 24th SEACFMD National Coordinators Meeting. It was decided that the OIE SRRSEA will share the draft recommendations and the SEACFMD countries will provide their comments by 16 August 2021 after which the recommendations will be considered as adopted. The final recommendations are presented in [Annex 3](#).

Dr Ronello Abila closed the 24th SEACFMD National Coordinator meeting by thanking all participants\$ for their active participation and contribution to this meeting.

Annexes

Annex 1: Meeting programme

24th SEACFMD National Coordinators Meeting

Session I: Updates on FMD situation and endorsement of SEACFMD Roadmap 2021-2025 Implementation Plan

29 July 2021 at 1 PM Bangkok time

Duration/ [Start Time]	Topic	Responsibility
I. Opening and context		
10 minutes [13.00]	<ul style="list-style-type: none"> Welcome note Context and objective of the meeting and Session 1 	Ronello Abila
II. Updates on FMD situation (Chair – Vietnam)		
60 minutes [13.10]	<ul style="list-style-type: none"> Global update on FMD Regional update on FMD <p>Update on FAO FMD activities Q&A Sessions</p> <ul style="list-style-type: none"> Country FMD updates (using poster) Plenary sessions 	Donald King, Pirbright Bolortuya Purevsuren, OIE SRR-SEA Huachun Li, FAORAP NC, SEACFMD Members Moderated by OIESRRSEA
5 minutes	<ul style="list-style-type: none"> Coffee break 	
III. SEACFMD Roadmap Implementation Framework (Chair – Myanmar)		
65 minutes [14.15]	<ul style="list-style-type: none"> M&E Framework for SEACFMD Roadmap 2021-2025 Regional SEACFMD Roadmap Implementation Framework Q & A National Implementation Plan <ul style="list-style-type: none"> Break out session Plenary session 	Karen Iles, M & E Consultant Karma Rinzin, SRR-SEA NC, SEACFMD Members Moderated by OIE SRRSEA
IV. Way Forward and closing		
10 minutes [15.20]	<ul style="list-style-type: none"> Endorsement of the SEACFMD Roadmap Implementation Plan Closing of Session 1 	Ronello Abila

24th SEACFMD National Coordinators Meeting

Session 2: Practical Application of FMD Vaccination

30 July 2021 at 1 PM Bangkok time

Duration/ [Start Time]	Topic	Responsibility
I. Opening and context		
10 minutes [13.00]	<ul style="list-style-type: none"> • Welcome note • Summary of Session 1 and Opening of Session 2 	Laure Weber-Vintzel
II. About FMD vaccines (Chair – China)		
50 minutes [13.10]	<ul style="list-style-type: none"> • Updates of the virtual Workshop on FMD Vaccination and its application in the field • Vaccine pre-qualification • FMD Vaccine registration – ASEAN process • Technical presentations by vaccine Producers • Q & A Session 	Wilna Vosloo, GFRA/ ACDP David Mackay, EuFMD Indonesia ANFPVP Juver Membrebe, Biogenesis Bago
5 minutes	<ul style="list-style-type: none"> • Coffee break 	
III. Implementation of FMD vaccination in the field (Chair - Thailand)		
50 minutes [14.05]	<ul style="list-style-type: none"> • Vaccination campaign by MC – Result of the questionnaire survey (Type, dose, frequency and campaign strategy) • Public Private Partnership (PPP) in FMD vaccination <ul style="list-style-type: none"> ○ Veterinary Services and Vaccine producers ○ Veterinary Services and Producers association supporting vaccination campaign ○ Vaccination campaign following PPP model - VS, private vets/ VPP and owners 	Karma Rinzin, SRR-SEA Vietnam Thailand Mongolia
IV. Plenary Session to discuss challenges in accessing quality FMD vaccines		
30 minutes [14.55]	<ul style="list-style-type: none"> • Plenary session to discuss on challenges in accessing quality FMD vaccines (using Mentimeter) <ul style="list-style-type: none"> ○ What are main challenges ○ How can we overcome these challenges 	Moderated by Dr Ronello Abila, OIE SRRSEA
V. Way Forward and closing		
10 minutes [16.25]	<ul style="list-style-type: none"> • Conclusions and Recommendations of the 24th SEACFMD NC Meeting • Closing of 24th SEACFMD NC Meeting 	Ronel

Annex 2: List of Participants

Sl. No.	Country/ Organisation	First Name	Last Name	Organisation	Job Title
1	Cambodia	Sorn	San	General Directorate of Animal Health and Production (GDAHP)	Deputy Director General of GDAHP
2	Cambodia	Dina	Koeut	NAHPRI	Epidemiology staff
3	Cambodia	Nouv	Sophorn	Department of Animal Health and Veterinary Public Health, GDAHP, MAFF	Vice chief of Veterinary Sanitary Inspection office
4	Cambodia	Chhim	Vutha	National Animal Health and Production Research Institute	Head of epidemiology and Analysis Information office
5	Cambodia	Sothyra	Tum	National Animal Health and Production Research Institute	Director
6	China	Wen	Dang	Lanzhou Veterinary Research Institute	Research associate
7	China	JIJUN	HE	LVRI, China	
8	China	Wen	Jiang	'中国动物卫生与流行病学中心	'副研究员
9	China	weimin	ma	'兰州兽医研究所	'助理研究员
10	China	Jianhong	Guo	Lanzhou Veterinary Research Institute	Research professor
11	China	Youming	Wang	CAHEC	
12	Indonesia	Nuryani	Zainuddin	Directorate of Animal Health, DGLAHS	Director of Animal Health
13	Indonesia	Pebi	Suseno	DGLAHS MOA	Senior Veterinary Officer
14	Indonesia	Syafrison	Idris	Ministry of Agriculture	Senior Veterinary Officer
15	Indonesia	Liys	Desmayanti	Directorate of Animal Health, Ministry of Agriculture	DVM
87	Lao PDR	Viliddeth	Souriya		
16	Malaysia	Akma	Ngah Hamid	DVS	deputy DG (veterinar health)

17	Malaysia	Jamaliah	Senawi	DVS Malaysia	
18	Malaysia	Sarah	Dadang Abdullah	Department of Veterinary Services Malaysia	Veterinary Officer
19	Malaysia	Aida	Muhid	Department of Veterinary Services	Senior Director of Disease Control and Veterinary Biosecurity Division
20	Malaysia	Muhammad Nazri	Khairuddin	DVS Malaysia	Veterinary Officer
21	Malaysia	Nik Hamidah	Nik Husin	Department of Veterinary Services, Malaysia	Veterinary Officer of Ruminant Disease Control Unit
22	Malaysia	Alifah	Ismail	Dept. Of Veterinary Services Malaysia	Dr
23	Mongolia	Bulgan	Boldbaatar	General Authority for Veterinary Services	Officer
24	Myanmar	MIN THEIN	MAW	Livestock Breeding and veterinary department	Director
25	Myanmar	WIN	MYINT	Livestock Breeding and Veterinary Department	Deputy Director
26	Myanmar	Aung	Htun	Livestock breeding and veterinary department	Veterinarian
27	The Philippines	Arlene Asteria	Vytiaco	Bureau of Animal Industry	Veterinarian IV
28	The Philippines	Rachel	Azul	bureau of Animal Industry	veterinarian III
29	Singapore	Christine	Lee	NParks /AVS	Veterinarian
30	Singapore	Tessa	Lee	NParks/AVS	Student Intern
31	Singapore	Taoqi	Huangfu	NParks/AVS	Deputy Director
32	Singapore	Shawn	Chia	NParks/AVS	Veterinarian
33	Singapore	Hwee Ping	Lim	NParks/AVS	Veterinarian
34	Thailand	Sith	Premashthira	Department of Livestock Development	Veterinarian Senior-Professional Level
35	Thailand	Kingkarn Boo nsuya	Seeyo	RRLFMD	Veterinary Officer
36	Thailand	Udon	Romphruke	RRL	Acting head

37	Thailand	Pawana	Tospitakkul	Department of Livestock Development	
38	Thailand	Jeeranant	Chottikamporn	RRL	
39	Vietnam	Long	Nguyen	Department of Animal Health	DDG
40	Vietnam	Dung	Nguyen Kim	Regional Animal Health Office No.6	Epidemiology Division
41	Vietnam	Thanh	To	AVAC Company	Senior Scientist
42	Vietnam	Phuong	Le	NAVETCO National Veterinary JSC	
43	Vietnam	Truong	Cao Nhut	Raho 7	Nhan vien
44	Vietnam	Hanh	Tran Xuan	NAVETCO	Researcher
45	Vietnam	Phuong	Nguyen Thanh	Regional Animal Health Office No.6	Center for Veterinary Diagnostics laboratory, Manager
46	Vietnam	Quang Dai	Trinh	Fivevet	Director of Vaccine factory - Fivevet
47	Vietnam	Ba	Luu Van	RAHO1	Staff
48	Vietnam	Nhon	Huu	EASTVET LTD. COMPANY	Technical Director
49	Vietnam	Dung	Nguyễn Văn	Công ty CP thuốc thú y TW Navetco	Giám đốc Trung tâm Nghiên cứu
50	Vietnam	QUACH	VO NGON	NAVETCO	Seed & Cell Culture Section
51	Vietnam	Văn Hạnh	'Đặng	Chi cục Thú y vùng III	Phó trạm trưởng
52	Vietnam	Hue	Le Dinh	Regional animal health office No 3	head of Regional animal health office No 3
53	Vietnam	Hoa	Pham	DAH	Chẩn đoán viên bệnh động vật
54	Vietnam	TÀI	'ĐINH	Chi cục Thú y vùng III	Phó trưởng trạm chẩn đoán xét nghiệm bệnh động vật
55	Vietnam	Le	Thai Thi Minh	Regional Animal Health No III- DAH	Head of Laboratory
56	Speaker	Donald	King	The Pirbright Institute	Head of WRLFMD
57	Speaker	Huachun	Li	FAO	Animal Production and Health Officer (SSC Regional Project Coordinator)
58	Speaker	Karen	Iles	Learning Change	Director
59	Speaker	Wilna	Vosloo	CSIRO	Group Leader
60	Speaker	David	Mackay	FAO	Project Manager Vaccine Security

61	Speaker	Ni Made	Ria Isriyanthi	Directorate of Animal Health, Ministry of Agriculture	DVM
62	Speaker	Juver	Membrebe	Biogenesis Bago	Asia Technical Service Manager
63	Speaker	Minh	Phan	Vietnam Department of Animal Health	Head of Epidemiology Division
64	Speaker	Adul	Vangtal	Thai Holstein Friesian Association	President
65	Speaker	BATSAIKHAN	Sodnom	General Authority for Veterinary Services (GAVS)	Deputy Director
66	Observer	Andy	McFadden	MPI	Veterinary Epidemiologist
67	Observer	Claude	HAMERS	BOEHRINGER INGELHEIM ANIMAL HEALTH FRANCE	Scientific Support & Trial Management Director
68	Observer	Griff	Dalgleish	MSD Animal Health	Regional Director of Technical Affairs, MSD Animal Health
69	Observer	Janene	Kingston	Department of Agriculture, Water and the Environment	
70	Observer	Jennifer	Davis	Department of Agriculture, Water and the Environment	
71	Observer	John	Atkinson	MSD Animal Health	Associate Director
72	Observer	Mark	Schipp	DAWE	
73	Observer	Nagendraku mar	Singanallur Balasubramanian	Australian Centre for Disease Preparedness, CSIRO Health and Biosecurity	Senior Research Scientist
74	Observer	Petrus	Jansen van Vuren	CSIRO/ACDP	Research Scientist
75	Observer	Sacha	Seneque	Ceva Animal Health	General Manager, Veterinary Public Health
76	Observer	Sally	Thomson	Department of Agriculture, Water and the Environment	
77	Observer	Thi Xuan Mai	HOANG	Boehringer-Ingelheim	Consultant Coordinator
78	Observer	Yves	LAGALISSE	MSD AH	

79	OIE	Ashish	Sutar	Oie	Project Officer
80	OIE	Bolortuya	Purevsuren	OIE	Project officer
81	OIE	Alexandre	Fediaevsky	OIE	GF-TADs regional coordinator
82	OIE	Ronello	Abila	OIE SE Asia	Sub-Regional Representative
83	OIE	Onsiri	Benjavejbhaisan	OIE SRR-SEA	Finance Officer
84	OIE	Karma	Rinzin	OIE SRR-SEA	Regional Animal Health Coordinator
85	OIE	Laure	Weber-Vintzel	OIE	
86	OIE	Kinley	Choden	OIE	AHO

Annex 3: Conclusion and Recommendations of the meeting

Recommendations

Considering

- the endorsement of the SEACFMD Roadmap 2021-2025 by the 25th SEACFMD Sub-Commission Meeting in December 2020;
- this meeting discussion on the SEACFMD Roadmap Implementation Plan (regional and national) and monitoring and evaluation (M&E) framework at the 24th SEACFMD National Coordinator Meeting;
- the existing FMD status of the SEACFMD member countries including their FMD PCP stage and FMD situation at the global and regional level;
- the challenges faced in the region to conduct effective vaccination campaigns;
- the importance of regional coordination for the effective control of FMD.

The 24th SEACFMD National Coordinator Meeting hold virtually on 29 and 30 July 2021 made the following recommendations for better implementation of the SEACFMD Roadmap activities in Southeast Asia, China PR and Mongolia:

For SEACFMD member countries:

- to finalize and implement the FMD activities of the National SEACFMD Roadmap Implementation Plan, aligned with their respective National FMD Prevention and Control Plan;
- to come up with a country level M&E indicator with national baseline and targets to measure the progress per country based on their FMD-PCP stage.
- to support the OIE SRRSEA to conduct monitoring and evaluation of SEACFMD roadmap activities as per the M&E framework for the SEACFMD Roadmap 2021-2025;
- to review and improve national vaccination protocol/ strategy in cognizance of the dynamics of circulating virus and epidemiology of FMD in the region and in the respective countries; to improve access to quality FMD vaccines compliant with the Chapter 3.1.8. of the *OIE Terrestrial Manual of Diagnostic Tests and Vaccines for Terrestrial Animals*, through (i) advocacy to policy makers, (ii) use of national and ASEAN registration systems and (iii) development /review of fit-for-purpose procurement process.

For OIE (SRR-SEA):

- to finalize and implement the Regional SEACFMD Roadmap Implementation Plan;
- to finalize the M&E framework for the SEACFMD Roadmap 2021-2025 and use this for reporting the progress;
- to support SEACFMD countries to review and improve their national vaccination protocol/ strategy with the support of the OIE network of Reference Centres;
- To identify the registration and procurement protocols for FMD vaccines in each SEACFMD member country and encourage consideration of the ASEAN procedure;
- to develop Guidelines for national procurement of good quality veterinary vaccines.

Annex 4: Output of the breakout session on M&E framework (AS)

The breakout session was organised on Day 1 under SEACFMD Roadmap Implementation Framework session. The objectives of the breakout session were

- to provide quick update on presentation prepared by VS on National FMD prevention and control.
- to review and discuss selective SEACFMD indicators of the strategic objective 1, outcome 1 and outputs.
- to assess whether those indicators are realistic, and applicable to country context.

The National Implementation Plan was submitted by nine countries namely Cambodia, China Indonesia, the Philippines, Singapore, Malaysia, Myanmar, Thailand, and Vietnam. Given the limitation of time, the reference was made to these in country plans however there were no formal presentation carried out in the breakout rooms.

40 minutes were allocated to the session exercise and break out rooms were allocated as per countries' Progressive Control Pathway (PCP)stage. The exercise plan 4.1 is described in the table below.

Exercise plan				
Description	Breakout room 1	Breakout room 2	Breakout room 3	Breakout room 4
PCP Status	PCP stage 1 and 2	PCP stage 3	Official control Programme for FMD endorsed by OIE	FMD free without vaccination
Countries	Cambodia , Laos and Myanmar	Malaysia Vietnam	People's Republic of China, Mongolia and Thailand	Brunei Indonesia Singapore The Philippines
Facilitators	Bolortuya	Ronel	Karma	Ashish
Overview of presentation against the outputs by country (PPT's are already submitted except Laos and Mongolia)	2 minutes each country Total 6 minutes	2 minutes each country Total 4 minutes	2 minutes each country Total 6 minutes	2 minutes each country Total 8 minutes
Review of indicators and nominate team leader	25 minutes for exercise for the entire group	25 minutes for exercise for the entire group	25 minutes for exercise for the entire group	25 minutes for exercise for the entire group
Summarise the discussion by team leader	4 minutes for the entire group	6 minutes for the entire group	4 minutes for the entire group	3 minutes for the entire group

With the aim to review the indicators, the common strategic objective was identified while outcome and output relevant to the PCP stage of the countries were selected as part of the exercise questions. The common question asked to all the 4 groups was on target – ‘What is your country’s target on PCP FMD stage by 2025? against the indicator of ‘FMD stage, progress within a stage or FMD-free status, of each SEACFMD member country, annually’. This indicator monitors the progress of the strategic objective 1 of the SEACFMD roadmap i.e., ‘Reinvigorated FMD prevention and control in SEACFMD member countries’

4.2 The SEACFMD countries target on FMD stage by 2025:

Strategic objective 1	Indicator											
Reinvigorated FMD prevention and control in SEACFMD member countries.	PCP-FMD stage, progress within a stage or FMD-free status, of each SEACFMD member country, annually.											
	Breakout room 1			Breakout room 2		Breakout room 3			Breakout session 4			
	Laos	Cambodia	Myanmar	Malaysia	Vietnam	China	Mongolia	Thailand	Brunei	Indonesia	Singapore	Thailand
Current status PCP stage/FMD free countries	2	1	2	3	3	4	4	4	Free	Free	Free	Free
Please indicate target [PCP stage and year (s)]	3 (2025)	tbc	3 (2025)	4 (2023)	4 (2022)	Maintain	FMD free zone without vaccination in six zones	Maintain PCP stage for whole country Extend – Eastern region as FMD free zone with vaccination and recognize by OIE as FMD free. Compartmentalization with vaccination.	Maintain freedom	Maintain freedom	Maintain freedom	Maintain freedom

The indicator ‘Prevalence of FMD at national, zone, and regional levels’ to monitor outcome 1 of the roadmap (improved surveillance, movement control, vaccination, and preparedness/response to FMD) was reviewed by the countries in breakout rooms 1,2 and 3. The countries have reviewed the indicator and agreed to that this indicator is relevant to the country context. China and Thailand suggested that expanding vaccination coverage contribute to decrease in FMD prevalence. Mongolia indicated that 40-50 % annual reduction is possible, Malaysia described gradual reduction of FMD prevalence with 10 % in 2021 followed by 15 % in 2022 could be achieved and thereafter maintaining 20 % reduction annually until 2025.

Vietnam proposed 20% annual reduction of FMD prevalence with ultimate aim to achieve FMD freedom with vaccination in the selected zones. The countries have also discussed the influencing factors and challenges such as lack of resources, new strain incursion, vaccine efficacy to new strains to achieve this target.

All the questions prepared for the exercise during breakout session could not be completed due to time constraint however some of the responses captured as an outcome are described below.

4.3 Question : Review the indicator and assess whether it is realistic and applicable to your country context?

Description	Indicator
Output 1.2 Incentives and pathways of livestock movements understood, and official animal movements promoted.	Percentage of cross-border movements of livestock movements and livestock commodities that took place through official channels, annually.
Responses	Cambodia: nearly more than 70 % of the animal movement is controlled and target 99 % be controlled by 2025 Laos: Target 99 % be controlled by 2025 Myanmar: agreement protocols, at least 70 % local movement is controlled

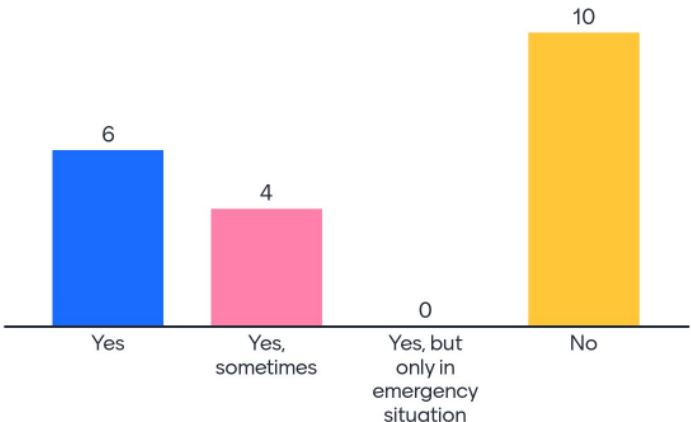
4.4 Question: Review the indicator and assess whether it is realistic and applicable to your country context?

Description	Indicator
Output 1.4 Preparedness and response capacity to both endemic and new FMD viral strains developed.	Number of countries who have functioning preparedness and response capacity to endemic and new FMD viral strains.
Responses	<ul style="list-style-type: none"> • Indonesia – Preparedness plan in place –update regularly – schedule to conduct simulation – example- how fast is sample submission. • Singapore – actual documented preparedness plan –records – after action review – cannot be specific to FMD – overall risk pathways –any relevant TAD’s- Communication food agency –OIE –Public comms • Philippines – simulation exercise
Output 2.5 Cost-efficient synergies with other livestock activities implemented.	Results achieved and cost-efficiencies gained for the SEACFMD Campaign from implementing joint activities with other TADs’ activities
Responses	Realistic for example collaborate AH programme on ASF –CBPP joint surveillance, sample collection, negative reporting system.

Annex 5: Plenary session to discuss challenges in accessing quality FMD vaccines (Outputs from the Mentimeter)

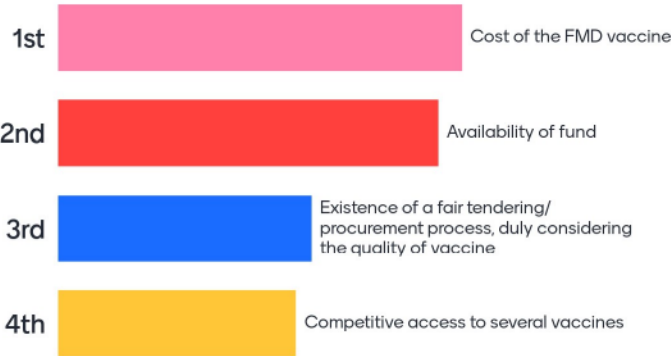
1. Has your country faced difficulties in accessing good quality FMD vaccines in the past months/years?

Mentimeter



2. According to you, please rank the factors (1 highest) that support access to good quality vaccines in your country?

Mentimeter



3. Apart from the factors listed in the previous question, what are the other main challenges in getting access to good quality FMD vaccine?

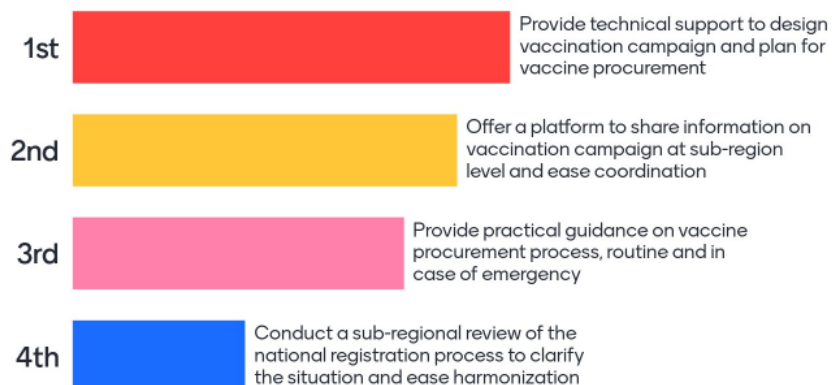
Cost and quality of vaccines	Regulation posted by OIE and government	Empirical data from the commercial company
vaccine availability	Matching and quality assurance availability, distribution of volume	Lack of good cold chain in rural areas lack of awareness of importance of vaccination in some regions
do not have many choice of vaccine or vaccine manufacturer.	cost and quality of vaccine regulation	assessment of vaccine effectiveness
Vaccine Matching and Immunological survey (eg	human resource	Quality of vaccine
Ability to evaluate the vaccine in the field	SOP for Procurement	No imports to compete in the market
Cold chain	Xaxa	Based on the Market needs
Is your country doing something to improve vaccination ? Not focus only on vaccines		

4. What is your country currently doing to improve access to good quality FMD vaccine?

epidemic strain information of neighbors country	Conducting field trial for antibody measurement	Understanding epidemiological risks
Improve communication with the user.	buy from commercial vaccine and get more funding for vaccine procurement	Consultation with oie, quality assessment
Finding extra budget	post vaccination monitoring	To improve the coverage but not sure about the quality

5. Would you recommend the OIE to

Mentimeter



6. Other recommendations to the OIE?

Mentimeter

