Report of the 23rd Meeting of the OIE Sub-Commission for Foot and Mouth Disease Control in South-East Asia and China

Siem Reap, Cambodia, 9-10 March 2017
EXECUTIVE SUMMARY 6

RECOMMENDATIONS 8

REPORT 11

I. Introduction 11

II. Opening Ceremony 13

1. Mr Pin Prakad, Deputy Governor of Siem Reap 13
2. Dr Sen Sovann, Director General of GDAHP/Delegate of Cambodia to the OIE 13
3. Dr Zhongqiu Zhang, President of the OIE Regional Commission for Asia, the Far East and Oceania/Delegate of China to the OIE 13
4. Dr Monique Eloit, Director General, World Organisation for Animal Health (OIE) 13
5. Dr Malin Hor, the Secretary of State, Ministry of Agriculture, Forestry and Fisheries 14

III. Session 1: FMD situation and risks 15

1. OIE Requirements for FMD (Dr Laure Weber-Vintzel, Head of Status Department, OIE HQ) 15
2. The Global FMD Situation and Risks (Dr Donald King, Pirbright Institute Laboratory, UK) 15
3. The Regional FMD Situation and Risks (Dr Yu Qiu, Project Officer, OIE SRR-SEA) 16

IV. Session 2: SEACFMD Campaign – Progress and Challenges 17

1. Progress against Roadmap Milestones (Dr Ronello Abila, Sub-Regional Representative, OIE SRR-SEA) 17
2. Improve Safer Cross-Border Trade (Dr Huachun Li, Yunnan Animal Science and Veterinary Institute, China and Dr Heuer Cord, Massey University) 17
3. FMD Surveillance and Monitoring (Dr Htun Htun Win, LBVD of Myanmar; Dr Wilna Vosloo, Australia Animal Health Laboratory) 18
4. FMD Vaccination/Post-Vaccination Monitoring (Dr Sith Premashthira, SEACFMD National Coordinator; Dr Yanmin Li, OIE Reference Laboratory at Lanzhou) 19
5. Coordination, Advocacy, Policy and Governance (Dr Sen Sovann, OIE Delegate for Cambodia) 19
6. Plenary discussion on Challenges to FMD Control/Eradication (Facilitator Dr Ronello Abila, Sub-Regional Representative, OIE SRR-SEA) 20

V. Session 3: Updates from Partners 21

1. FMD control initiatives in East Asia (Dr Caitlin Holly, Regional Veterinary Officer, OIE Regional Representation for Asia and the Pacific) 21
2. FAO Regional Office for Asia and the Pacific (Dr Katinka de Balogh, Senior Animal Production and Health Officer, FAO Regional Office for Asia and the Pacific) 21
3. New FMD Technologies (Dr Alasdair King, Director, Intergovernmental Veterinary Health, MSD) 22
4. How to Anticipate Peaks in Vaccine Demand (Dr Cédric Dezier, Veterinary Public Health, Merial) 22

VI. Session 4: FMD Campaign – the Way Forward 24

1. Historical Experience and Lessons Learnt from Successful FMD Eradication in South America (Dr Francisco D’Alessio, SENASA of Argentina, presented on behalf of Dr Ottorino Cosivi, Director of The Pan American Centre for FMD (PANAFTOSA)) 24
2. Summary of PCPFMD Assessment (Dr Laure Weber-Vintzel, Head of Status Department, OIE HQ) 24
3. SEACFMD Campaign Priorities and Action Plan for 2017/2018 (Dr Ronello Abila, Sub-Regional Representative, OIE SRR-SEA)

VII. Session 5: Recommendations and Closing
<table>
<thead>
<tr>
<th>Annex</th>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annex 1</td>
<td>Programme</td>
<td>27</td>
</tr>
<tr>
<td>Annex 2</td>
<td>List of participants</td>
<td>30</td>
</tr>
<tr>
<td>Annex 3</td>
<td>Agenda Paper: Regional FMD Situation</td>
<td>38</td>
</tr>
<tr>
<td>Annex 4</td>
<td>Agenda Paper: Status of Priority SEACFMD Actions</td>
<td>41</td>
</tr>
<tr>
<td>Annex 5</td>
<td>Agenda Paper: SEACFMD Campaign Progress Report</td>
<td>49</td>
</tr>
<tr>
<td>Annex 6</td>
<td>Agenda Paper: The 19th SEACFMD National Coordinators Meeting Outputs</td>
<td>52</td>
</tr>
<tr>
<td>Annex 7</td>
<td>Agenda Paper: The 13th UMWG Meeting Outputs</td>
<td>55</td>
</tr>
<tr>
<td>Annex 9</td>
<td>Agenda Paper: Risk Assessment Study to Support Establishment of Export Zones, in Lao PDR and Myanmar</td>
<td>61</td>
</tr>
<tr>
<td>Annex 10</td>
<td>Agenda Paper: FMD Surveillance and Monitoring</td>
<td>63</td>
</tr>
<tr>
<td>Annex 11</td>
<td>Agenda Paper: FMD Vaccination and Post-Vaccination Monitoring</td>
<td>64</td>
</tr>
<tr>
<td>Annex 12</td>
<td>Agenda Paper: Coordination, Advocacy, Policy and Governance</td>
<td>66</td>
</tr>
<tr>
<td>Annex 15</td>
<td>Agenda Paper: Joint Statement on Harmonising Procedures for Livestock Movement Among Great Mekong Sub-Region</td>
<td>76</td>
</tr>
<tr>
<td>Annex 16</td>
<td>Agenda Paper: Revised Term of Reference of OIE SEACFMD Sub-Commission</td>
<td>78</td>
</tr>
<tr>
<td>Annex 17</td>
<td>Country Report: The Philippines</td>
<td>81</td>
</tr>
<tr>
<td>Annex 18</td>
<td>Country Report: Singapore</td>
<td>84</td>
</tr>
<tr>
<td>Annex 19</td>
<td>Country Report: Cambodia</td>
<td>87</td>
</tr>
<tr>
<td>Annex 20</td>
<td>Country Report: Lao PDR</td>
<td>95</td>
</tr>
<tr>
<td>Annex 21</td>
<td>Country Report: Malaysia</td>
<td>100</td>
</tr>
<tr>
<td>Annex 22</td>
<td>Country Report: Mongolia</td>
<td>105</td>
</tr>
</tbody>
</table>
LIST OF ABBREVIATIONS

ARAHIS  ASEAN Regional Animal Health Information System
ASEAN  Association of Southeast Asian Nations
CIRAD  Centre de coopération internationale en recherche agronomique pour le développement
DLD  Department of Livestock Development
DAHP  Department of Animal Health and Production
DFAT  Department of Foreign Affairs and Trade
ELISA  Enzyme-Linked Immunosorbent Assay
EU-HPED  European Union Regional Cooperation Programme on Highly Pathogenic and Emerging and Re-emerging Diseases in Asia
FAO  Food and Agriculture Organization of the United Nations
FAO RAP  FAO Regional Office for Asia and the Pacific
FMD  Foot-and-Mouth Disease
FMDV  Foot-and-Mouth Disease virus
GDAHP  General Directorate of Animal Health and Production (Cambodia)
GF-TADs  Global Framework for Transboundary Animal Diseases
JTF  Japan Trust Fund
KAP  Knowledge, Attitudes and Perceptions
LBVD  Livestock Breeding and Veterinary Department
LP ELISA  Liquid Phase Blocking ELISA
MAFF  Ministry of Agriculture, Forestry and Fisheries
MARD  Ministry of Agriculture and Rural Development
MOA  Ministry of Agriculture
MOH  Ministry of Health
NSP  Non-structural proteins
OIE  World Organisation for Animal Health
OIE SRR SEA  OIE Sub-Regional Representation for South-East Asia
PANAFTOSA  Pan American Centre for FMD
PCP  Progressive Control Pathway
PVM  Post-Vaccination Monitoring
PVS  Performance of Veterinary Services
RBSP  Risk-Based Strategic Plan for FMD Control
RRL  Regional Reference Laboratory
SEA  South-East Asia
SEACFMD  South-East Asia and China Foot-and-Mouth Disease Campaign
STANDZ  Stop Transboundary Animal Diseases and Zoonoses
TADs  Transboundary Animal Diseases
TOR  Terms of Reference
TPI  The Pirbright Institute
VNT  Virus Neutralisation Test
VS  Veterinary Service
WAHID  World Animal Health Information Database
WAHIS  World Animal Health Information System
WRL FMD  World Reference Laboratory for Foot-and-Mouth Disease
The 23rd Meeting of the OIE Sub-Commission for FMD in South-East Asia and China was held in Siem Reap, Cambodia, on 9-10 March 2017. The event gathered around 90 participants, including OIE Delegates or their representatives of the 12 SEACFMD Member Countries and neighbouring countries/territories, OIE staff from Headquarters and the OIE Regional Representation for Asia and the Pacific and Sub-Regional Representation for South-East Asia, representatives of international organisations and private sectors, as well as FMD experts and observers.

The Opening Ceremony was honoured by the presence of, Dr Malin Hor, the Secretary of State Ministry of Agriculture, Forestry and Fisheries of Cambodia, Dr Sen Sovann, the Director General of Cambodia General Directorate of Animal Health and Production, Mr Pin Prakad, the Deputy Governor of Siem Reap, and Dr Zhongqiu Zhang, the President of the OIE Regional Commission for Asia, the Far East and Oceania. All addressed welcome messages and stressed the importance of FMD control in the SEACFMD region considering the substantial FMD susceptible animal populations and the critical role of livestock production for a growing human population.

In her Keynote Address, Dr Monique Éloit, OIE Director General, thanked Cambodia for hosting this meeting. She congratulated the SEACFMD Member Countries for their achievements in controlling FMD risks. Four out of twelve Member Countries have maintained FMD freedom without vaccination (Brunei, Indonesia, Philippines and Singapore), with one country having free-zone without vaccination (Malaysia) and three FMD endemic Member Countries have their National FMD Control Plan endorsed by the OIE (China, Mongolia and Thailand).

The meeting reviewed the requirements in the OIE Terrestrial Code and Manual that are relevant to FMD trade, vaccine and diagnostics. Updates on the latest global and regional FMD situation and challenges were discussed. The recent cross-regional transmissions of FMDV O/ME-SA/Ind-2001d were highlighted and Member Countries were requested to actively monitor the spread of this exotic virus strain and establish risk-based control and prevention measures.

Updates on the Campaign’s progress against the SEACFMD Roadmap milestones and selected case studies from Member Countries were presented to showcase the good practices and lessons learned in implementing the SEACFMD Roadmap, namely in the areas of cross-border animal movement control, FMD surveillance and outbreak investigation, vaccination and post-vaccination monitoring, as well as coordination, advocacy, policy and governance. The discussions underlined that further in-depth research is needed to understand and predict the epidemiological patterns of FMDVs and to improve vaccine selection. Better diagnostic methods and especially better vaccines are needed to significantly facilitate FMD control in endemic countries. In particular, vaccines with a longer duration
of immunity are highly desirable given the difficulty in implementing repeated vaccinations in resource-limited countries.

On the second day, FMD relevant activities from OIE and FAO Regional Representations for Asia and the Pacific, as well as industry reports from vaccine manufacturers were presented. Other key partners, including OIE Regional Reference Laboratories for FMD, Veterinary Authorities of neighboring countries/territories, and research institutes, shared their recent developments in FMD research or control through poster presentations. Moreover, Dr Francisco D’Alessio, representative of SENASA, shared their successful experience of South America in the FMD eradication, notably the importance of a regional governance and coordination mechanism and veterinary service capacity building, a tailored regional surveillance and mass vaccination strategy, as well as sustained political and financial commitment of Member Countries and the strong private-public partnerships.

The meeting endorsed the evaluation outcomes of applicant countries for their FMD Progressive Control Pathway (PCP-FMD) status, namely Cambodia, Lao PDR and Myanmar retain their Stage 1 status, and Malaysia and Vietnam remain at Stage 3. The importance of a proper risk assessment in Stage 1 for the future success of the FMD programme was highlighted. It was recommended that countries at PCP Stage 1 need to assess the FMD situation and impact at national level more accurately, and countries completing PCP Stage 1 should consolidate their national plans and to base the control measures on the risks identified in Stage 1.

In the end of the meeting, the SEACFMD campaign priorities and action plan for 2017/2018 were reviewed. The meeting concluded with key recommendations which will serve as a guideline for the SEACFMD Campaign’s work in the following year. The discussions were fruitful and the recommendations will be submitted to the OIE World Assembly in May 2017 for endorsement.
RECOMMENDATIONS

23rd Meeting of the OIE Sub-Commission for Foot and Mouth Disease Control in South-East Asia and China
Siem Reap, Cambodia, 9-10 March 2017

The OIE Sub-Commission for Foot and Mouth Disease in South-East Asia and China notes the considerable progress made since the 22nd Sub-Commission Meeting, and agrees that the recommendations and views of the 23rd Sub-Commission should form the basis for the 2017-2018 SEACFMD Operational Plan. The following recommendations have been developed based on discussions at this meeting. Progress against these recommendations will be reviewed at the 20th National Coordinators’ Meeting, 2017, and at the 24th Sub-Commission Meeting, 2017. The Sub-Commission:

Coordination and Programme Management:

1. NOTES the progress of the SEACFMD Members in the prevention and control of FMD made since the 22nd Sub-Commission Meeting and AGREES that the recommendations and views of the 23rd Sub-Commission to be incorporated into the draft 2017-2018 SEACFMD Action Plan;

2. ENDORSES the revised Terms of Reference of the SEACFMD Sub-Commission;

3. RECOMMENDS to invite neighboring countries from South Asia and East Asia to attend the next SEACFMD Sub-Commission meeting to present their FMD situation, share their experiences in FMD control as to what has and hasn’t worked, and identify risks of animal movements into the SE Asian region; AGREE to explore this proposal during the next OIE Regional Conference for Asia, the Far East and Oceania which will take place in Malaysia in November 2017;

4. ENDORSES the recommendations from the Meeting of the National Coordinators in August 2016 and Upper Mekong Working Group in February 2017;

5. AGREE to learn from the successful experience of South America in the FMD eradication through continued engagement with our South American colleagues. Thus far learnings have included the importance of sustaining a regional governance and coordination mechanism and strengthening national veterinary service capacity building, the successful application of surveillance and mass vaccination tailored for the livestock production systems, and carefully managed movement control of livestock, as well as sustained political and financial commitment of Member Countries and the strong private-public partnerships with the active involvement of farmers and producers.

Technical

6. NOTES the recent changes in the global and regional FMD status and AGREES to assess the risk of incursions of exotic FMDV strains considering the recent incursions of FMDV O/ME/India2001d and the potential greater threat posed by A/ASIA/G-VII given the current unavailability of suitable vaccines; NOTES the forthcoming qualitative risk assessment of the possible incursion of exotic
strains into the SEACFMD Member Countries and AGREES to actively support this study and formulate risk-based control/prevention measures to mitigate the potential risks;

7. AGREES to strengthen early detection, timely reporting and outbreak investigations of FMD outbreaks, collection of both quantified and qualified field samples and submission to OIE/FAO Reference Laboratories on a regular basis; RECOMMEND to base control measures on a sound epidemiological analysis of FMD occurrence and risks;

8. Recommends review of the SEACFMD EpiNet definition of an FMD “outbreak”;

9. NOTES that implementation of the provisions of the OIE Terrestrial Animal Health Code for FMD can be particularly difficult for less developed, endemic countries and NOTES that the OIE will launch a new project in 2017 to establish an "Observatory" which will aim to identify the constraints of an effective implementation of OIE standards in its Member Countries;

10. RECOMMENDS that socio-economic impact assessment be utilised to better prioritize resources to national livestock sectors or geographical zones where FMD has the greatest impact;

11. RECOMMENDS that countries carry out routine post-vaccination monitoring (PVM) studies as per the OIE/FAO FMD PVM guidelines and optimize future vaccination strategies based on these study findings.

**PCP Evaluation and FMD Plans:**

12. RECOMMENDS that countries in PCP Stage 1 assess more accurately the FMD situation at national level, including considering the added-value of serological surveys to identify whether risk hotspots occur (vs. endemic exposure) and by assessing the impact of FMD in the different production systems and zones;

13. NOTES the importance of a proper risk assessment in Stage 1 for the future success of the FMD programme and RECOMMENDS that countries completing PCP Stage 1 to consolidate their national plans and to base the control measures on the risks identified in Stage 1;

14. RECOMMENDS FMD free countries to continue to actively monitor and maintain their FMD free status, including updating and testing the contingency plans periodically;

15. NOTES that a template for Risk-Based Strategic Plans is available and that on-line trainings are accessible from the website of the European Commission for the control of FMD (EuFMD);

16. NOTES the results of the PCP Evaluation and ENDORSES the recommendations of the PCP Evaluation Committee;

17. RECOMMENDS that SEACFMD Member Countries explore ways to ensure the sustainability of their FMD national plan;
18. RECOMMENDS that SEACFMD Member Countries use the findings and recommendations from PVS Pathway missions to strengthen their Veterinary Services including for the effective implementation of their FMD national plan.

**Acknowledgements**

19. THANKS Member Countries, partners and observers for their active participation in the meeting;

20. THANKS the Government of Cambodia and the Ministry of Agriculture, Forestry and Fisheries and the General Directorate of Animal Health and Production for hosting an outstanding and successful meeting.

**Next Meeting**

21. REQUESTS Vietnam to host the 24th Meeting of OIE Sub-Commission for Foot and Mouth Disease Control in South-East Asia and China in 2018.
I. Introduction

Preceding the 23rd Meeting of the OIE Sub-Commission for Foot and Mouth Disease Control in South-East Asia and China, meetings of the Steering Committees of the STANDZ Initiative and the SEACFMD Campaign were held in Siem Reap on the morning of 8 March, 2017. The SEACFMD Steering Committee Meeting was attended by the OIE staff, representatives of donors, FAO and the meeting hosting country. The meeting discussed the achievements of the past year and priorities of the coming year, and the proposed revisions of the Sub-Commission Terms of Reference. The attendees were informed of and discussed the progress of the FMD projects run by the OIE SRR-SEA, including STANDZ-funded FMD vaccination campaigns in Northern Laos and Central Myanmar, New Zealand-funded FMD vaccination projects in Southern Laos and Central Myanmar, and China-funded risk assessment study to support the establishment of FMD control zones along China-Myanmar and China-Laos borders. The attendees were also informed of the planning of an Australia DFAT-funded regional risk analysis for incursions of exotic strains of FMDV into the SEACFMD region. Moreover, the meeting reviewed the agenda of the following 23rd OIE SEACFMD Sub-Commission Meeting and allowed the key members of the Sub-Commission to give their inputs in what would be discussed in the Sub-Commission Meeting.

The Progressive Control Pathway for FMD (PCP-FMD) Progress Assessment Meeting was held on the afternoon of 8 March, 2017, and was attended by the OIE staff, SEACFMD National Coordinators, FMD experts, and observers. The meeting was an occasion for FMD endemic countries to report their activities and progress in implementing the SEACFMD Roadmap and PCP-FMD, as well as provided an avenue for the regional PCP Evaluation Committee (PEC) to assess the PCP status of applicant countries (Myanmar, Cambodia and Laos for applying PCP-FMD Stage 2; Malaysia and Vietnam for applying PCP-FMD Stage 3).

The meeting started with presentations of eight FMD endemic countries on their national FMD status, the technical, coordination, advocacy and governance activities for FMD control strategy as well as challenges encountered and future plans for FMD control. Following the presentations, two groups of PEC-Country closed-door interview were held simultaneously. During the interview, countries were requested to justify/clarify their PCP checklist answers that were submitted to the PEC together with supporting documents prior to the Assessment Meeting. Each PEC group was composed of representatives of OIE and FAO, a Sub-Commission Vice-President or the representative, and an international FMD expert. The PEC members agreed on the evaluation outcome and assigned representatives to report it to the SEACFMD Sub-Commission for endorsement.
The 23rd Meeting of the OIE Sub-Commission for FMD in South-East Asia and China gathered around 90 participants, including national Delegates or their representatives of the 12 SEACFMD Member Countries and neighbouring countries/territories, key OIE staff headed by Director General Dr Monique Elloit, OIE Regional Representative for Asia and the Pacific Dr Hirofumi Kugita, and OIE Sub-Regional Representative for South-East Asia Dr Ronello Abila, representatives of international organisations and private sectors, as well as FMD experts and observers.

The two-day meeting had 6 sessions in total. On Day 1, sessions 1 provided updates on the FMD situation on a global and regional scale. Session 2 included countries’ reports in implementing the SEACFMD Roadmap and scientific reports from invited speakers on the key technical issues. On Day 2, session 3 included FMD project/research activities from OIE RR-AP, FAO and international vaccine manufacturers. In sessions 4, the representative from SENASA shared the successful experience of South America in the FMD eradication. The PCP evaluation outcomes were reviewed and the gaps identified were discussed. In session 5, the SEACFMD campaign priorities and action plan for 2017/2018 were reviewed, and meeting recommendations were developed and endorsed by the Member Countries. The last session of the meeting discussed some other OIE issues, including the updated system for elections to the OIE Specialist Commissions and Performance of Veterinary Service (PVS). The discussions were fruitful and the recommendations adopted during the meeting will be submitted to the OIE World Assembly in May 2017 for endorsement.
II. Opening Ceremony

1. Mr Pin Prakad, Deputy Governor of Siem Reap

Mr Pin Prakad, Deputy Governor of Siem Reap Province, commenced the opening ceremony of the 23rd Meeting of the OIE Sub-Commission for FMD Control in South-East Asia and China by welcoming participants on behalf of the Government of Siem Reap Province. The government well recognises the importance of the livestock production sector in the agriculture industry and the impact of FMD on farmers’ livelihoods. Mr Pin Prakad acknowledged OIE’s efforts and achievements on the control of animal disease including FMD and promoting animal health in the region, and wished all participants a fruitful meeting.

2. Dr Sen Sovann, Director General of GDAHP/ Delegate of Cambodia to the OIE

Dr Sen Sovann, Director-General of GDAHP and Delegate of Cambodia to the OIE, expressed his gratitude for the opportunity for GDAHP to host the 23rd OIE Sub-Commission for FMD Control in South-East Asia and China. He thanked the OIE for its continuous support of FMD control and prevention activities in Cambodia and the whole region. Dr Sovann highlighted the growing potential of the region’s livestock sectors, noting the significant impact and threat that transboundary animal diseases pose to these industries. FMD remains endemic in the majority part of Southeast Asia and China, being a great threat to the agriculture industry. The coordination activities of SEACFMD are critical to progress FMD control in the region. Cambodia has been a SEACFMD Member Country since its initiation and will continue to work closely with other Member Countries on FMD activities under the programme framework. Dr Sovann ended by appreciating Dr Monique Eloit and other OIE staff for organising the meeting, hoping this event will bring new insights into the FMD control.

3. Dr Zhongqiu Zhang, President of the OIE Regional Commission for Asia, the Far East and Oceania/ Delegate of China to the OIE

Dr Zhongqiu Zhang, President of the OIE Regional Commission for Asia, the Far East and Oceania, appreciated the coordination role of the SEACFMD Campaign and the commitment of Member Countries in regional FMD control. Dr Zhang stressed the importance of FMD control in the SEACFMD region considering the substantial FMD susceptible animal populations and the critical role of livestock production for a growing human population. The SEACFMD Campaign has been playing a critical role in leading countries to combat FMD, and the framework provides an excellent model for the control of other regional transboundary animal diseases. More than FMD, the SEACFMD Campaign has been actively coordinating cross-border animal movement management in the Great Mekong Sub-Region, which contributes significantly to promoting safer cross-border animal trade. In the end of his speech, he thanked the Government of Cambodia for hosting the event, and wished participants a very productive meeting.

4. Dr Monique Eloit, Director General, World Organisation for Animal Health (OIE)

Dr Monique Eloit, Director-General of the OIE, thanked the Government of Siem Reap and GDAHP for hosting the meeting, and welcomed participants from SEACFMD Member Countries, OIE representatives, partner organisations and observers. Dr Eloit congratulated the SEACFMD Member
Countries for their achievements in controlling FMD risks. Four out of twelve Member Countries have maintained country-wide FMD freedom for decades and three FMD endemic Member Countries have their National FMD Control Plan endorsed by the OIE. She also acknowledged donors, including Governments of Australia, New Zealand and China, for their financial supports to SEACFMD activities. Dr Eloit encouraged Member Countries to use the SEACFMD Roadmap and the OIE-FAO Global FMD Strategy as guidelines for FMD control activities, and stressed the importance of promoting joint participation of the public and private sectors in the project implementation. Dr Eloit also encouraged Member Countries to use a risk-based approach in FMD control, especially for countries with limited resources. Finally, she expressed her very best wishes for a successful meeting.

5. Dr Malin Hor, the Secretary of State, Ministry of Agriculture, Forestry and Fisheries

Dr Malin Hor, the Secretary of State, Ministry of Agriculture, Forestry and Fisheries, welcomed participants to Siem Reap, and expressed her gratitude for the opportunity for Cambodia to host the 23rd OIE Sub-Commission for FMD Control in South-East Asia and China. She thanked the OIE for its support of FMD control activities in Cambodia and in the region as a whole. Dr Malin Hor underlined the growing potential of the region’s livestock sectors, noting the significant impact and threats that transboundary animal diseases pose to these industries as well as to the livelihood of farmers. She also noted that FMD is very difficult to control given its ability to spread rapidly, survive under various conditions, and infect many domestic and wild species. Sticking to national strategic plans endorsed by the OIE can help Thailand to achieve FMD control progressively and eventually eradication. Dr Harintharanon urged Member Countries to enhance multilateral cooperation under the SEACFMD Framework, and wished participants a productive meeting.
III. Session 1: FMD situation and risks

(Chaired by Dr Sen Sovann)

1. OIE Requirements for FMD (Dr Laure Weber-Vintzel, Head of Status Department, OIE HQ)

Dr Laure Weber-Vintzel introduced OIE’s requirements on FMD diagnosis, vaccine production, and international trade as detailed in the horizontal and FMD-specific chapters of OIE Terrestrial Codes and Manuals. In her presentation, Dr Weber-Vintzel emphasized that the FMD chapter is designed to prevent FMDV from being introduced into an importing country, taking into account the nature of the traded commodity, the animal health status of the exporting country, and the risk reduction measures. She further explained the differences in the requirement of importing live FMD susceptible animals and their products from FMD free countries/zones with or without vaccination, FMD infected countries/zones with or without an official control programme. The presentation helped participants to better understand the importance of using OIE Codes and Manuals for safe trade and disease control.

2. The Global FMD Situation and Risks (Dr Donald King, Pirbright Institute Laboratory, UK)

Dr Donald King presented the current FMD situation globally. Similar to previous years, serotype A and O remain as the dominant serotypes worldwide. During 2014-2016, a total of 4526 samples were submitted to The Pirbright Institute (TPI) for FMD diagnosis, of which 1612, 629 and 89 samples tested positive for serotypes O, A and Asia-1, respectively. However, 1709 samples (37.7% of submitted) had no virus detected. Dr King stressed that continued attempts are needed to improve local sample collection and more reliable methods for shipment, especially initiatives to improve sample collection/testing in Pool 4 (East Africa) and Pool 5 (West Africa). No FMD outbreak has been reported in South America since 2013, and serotype C has not been detected worldwide since 2004. New FMD-free zone (without vaccination) have been established in northern Kazakhstan and Russia (except a new containment zone).

This presentation highlighted the latest epidemiological situation regarding two emerging lineages of particular significance to SEACFMD: O/ME-SA/Ind2001 and A/Asia/G-VII. Both lineages were originated from the Indian Subcontinent (Pool 2) and multiple trans-pool movements have been recorded. The O/ME-SA/Ind2001 strain, following its trans-regional movements to the Middle East and North Africa, has been detected in several countries in South-East Asia (SEA), including Laos, Myanmar, Vietnam and Thailand since 2015, and it has further spread to China, South Korea and Russia in 2017. Vaccine matching studies for O/ME-SA/Ind2001 showed good response to O-3039 and O/TUR/5/2009. O1 Manisa showed variability and this strain was used for a potency study. The results, using O/ALG/2014 as the challenge virus, showed a heterologous PD50 of approximately 3. The second strain, and the latest challenge, is A/Asia/G-VII which is now present in The Middle East. Vaccine matching studies for this strain carried out at TPI indicated a poor antigenic match with available vaccines, although there was some evidence that vaccine based on A-SAU/95 or A/May/97 may confer approximately 60% protection in in-vivo challenge studies.

Discussion focused on the incursions of the exotic FMDV strain O/ME-SA/Ind-2001d in multiple countries in the SEACFMD region, and its rapid spread following its introduction. It was recommended that member countries should be more vigilant in the surveillance and monitoring of FMDV, especially
O/ME-SA/Ind-2001d to further assess whether it has become established in the region and outcompeted the endemic strains. It was also noted that the significant risks posed by other exotic viral lineages, including Asia-1 and A/Aisa/G-VII, which are circulating in South Asia. It was recommended to conduct a risk analysis to quantify the risk and identify the potential risk pathway for introduction and spread of exotic FMDVs into the region.

3. The Regional FMD Situation and Risks (Dr Yu Qiu, Project Officer, OIE SRR-SEA)

The presentation summarised that the total number of outbreaks reported in 2016 was 520 – this is a 49% increase as compared to the 348 outbreaks in 2015, 63% as compared to 318 outbreaks reported in 2013 and a 116% increase as compared to 2013 in which there were 240 outbreaks. Amongst all outbreaks reported, 34% were due to serotype O and 5% were due to serotype A. The rest are reported as untyped or with results pending. This represents a continuous trend since 2013 that serotype O becomes the predominant in this region. In 2015, 49% were characterized as being caused by Serotype O virus, while 9% were serotyped as being caused by Serotype A. In 2014, serotype O was identified in 31% of outbreaks and serotype A in 25% of outbreaks, and in 2013, serotype O was identified in 28% of outbreaks and serotype A in 33%. Cattle was the main species affected, followed by buffalo, pig and goat. The majority of FMDVs isolated were not serotyped. Like in 2015, amongst those characterised viruses, only two serotypes - A and O – FMDVs were detected.

The outbreaks due to O/ME-SA/Ind-2001 strain in four countries in South-East Asia are of particular concern, as this strain had not been isolated in South-East Asia before 2015. In April 2015, this strain caused FMD outbreaks in Vientiane Capital of Laos, and during May-October 2015, similar viruses caused field outbreaks in four provinces in southern Vietnam. In October 2015, this strain caused outbreaks in Maung Taw township, Rakhine state of Myanmar, which shares border with Bangladesh. In September 2016, this strain was further isolated in Nonthaburi province of Thailand from cattle allegedly smuggled from Myanmar. Phylogenetic analysis of viral VP1 shows that a high similarity between viruses from Myanmar and Thailand, which are divergent from viruses from Laos and Vietnam. This represents at least two separate incursions of Ind-2001d have recently occurred.

The presentation highlights the importance of timely outbreaks reporting to the OIE, and encourage Member Countries to be more active in sample collection and submission for FMDV characterisation, and to actively monitor O/ME-SA/Ind-2001d and establish measures to control the associated risks.

Discussions focused on the how to improve serotyping of FMD outbreaks, since viruses from more than half outbreaks were not characterised every year. The major causes identified include a lack of sampling materials or transport medium at district level, insufficient human resources for investigating the outbreak and taking samples, delayed outbreak investigation when the majority of animals have already recovered from the disease, samples collected are of insufficient quantity and/or quality for laboratory tests. It was recommended to employ the SEACFMD LabNet and EpiNet framework to provide technical support to address these gaps. Meanwhile, countries were encouraged to allocate more resources at district/village level to strengthen FMD outbreak investigation and control.

See Annex 3 for more information
IV. Session 2: SEACFMD Campaign – Progress and Challenges
(Chaired by Dr Zhongqiu Zhang)

1. Progress against Roadmap Milestones (Dr Ronello Abila, Sub-Regional Representative, OIE SRR-SEA)

Dr Ronello Abila presented the progress of the SEACFMD campaign during the 2016/17 period. In the technical field, OIE SRR-SEA continued supporting Member Countries in FMD outbreak reporting and investigating, and implementing FMD mass vaccination campaign and post-vaccination monitoring (PVM) in Northern Laos and Central Myanmar under the STANDZ project. Under New Zealand funded project, baseline surveys have been conducted to investigate the FMD prevalence in project pilot areas in Southern Laos and Central Myanmar. Dr Abila also updated participants on the progress of China funded risk assessment study for supporting safer cross-border trade.

In the communication and advocacy field, a Joint Statement on harmonising procedures for livestock movement has been signed by 7 OIE Delegates. The aim of this Joint Statement is to encourage countries to work together to stem the illegal flows of animals in the region by making it more feasible for traders/producers to legally move their animals across borders based on OIE standards. In addition, various public awareness activities on FMD control and vaccination were launched in pilot areas in Southern Laos and Central Myanmar under the NZ funded FMD project.

In the coordination and programme management field, the SEACFMD Campaign has expanded geographically with Mongolia formally accepted as the new member of the SEACFMD Sub-Commission. OIE SRR-SEA organised the 22nd SEACFMD Sub-Commission Meeting in March 2016 and the 19th SEACFMD National Coordinators Meeting in August 2016 in order to update the latest FMD situation and control activates in the region, as well as facilitate the information exchange between Member countries and key partners. In addition, the 3rd edition of SEACFMD Roadmap has been published and manuals covering activities described in the Strategy Components have been developed.

The OIE SRR-SEA has compiled a number of key recommendations of the 22nd OIE Sub-Commission for FMD in South-East Asia and China, the 19th SEACFMD National Coordinators Meeting, and the 13th Upper Mekong Working Group Meeting. Participants were updated on the status of implementation of those recommendations.

See Annex 4 and 5 for more information

2. Improve Safer Cross-Border Trade (Dr Huachun Li, Yunnan Animal Science and Veterinary Institute, China and Dr Heuer Cord, Massey University)

Dr Huachun Li presented China’s FMD surveillance along the border between Yunnan Province and SEA, and the initiative of establishing border control zones to promote safer cross-border trade. In the targeted FMD surveillance in the selected areas near the border, sera and oropharyngeal fluid (OPF) were collected routinely from live cattle and buffaloes originating from SEA. In addition, lymph nodes were collected from slaughtered cattle, buffaloes and pigs at border abattoirs on a regular basis. Samples were tested at Yunnan Animal Science and Veterinary Institute for FMDV specific antibodies and RNA. In 2016, among the 2799 serum samples from importing cattle and buffaloes, 34.7% had
NSP antibodies, and 29.9%, 7.2% and 30.7% tested positive for serotypes O, A and Asia-1, respectively. Among the 216 OPF samples, 4.6% tested positive for FMDV by real-time PCR; 1.4% and 0.9% of samples tested positive for serotype O and A by RT-PCR, respectively. Serotype Asia 1 was not detected in any OPF samples collected. Among the 400 lymph node samples collected from cattle and buffaloes, only 6 samples tested positive for FMDV by real-time PCR and the viruses were characterized as belong to O/SEA/Mya-98 or O/Cathy by VP1 sequencing. The 360 lymph node samples collected from pig all tested negative by RNA tests. The study concluded that cross-border and long-distance movements of livestock into China represent a significant risk pathway of disease incursion and spread from SEA. FMD from SEA continues pose significant risks to the substantial susceptible livestock population in China.

Following the country’s report, Dr Cord Heuer presented the principle of risk analysis for movement control as demonstrated by example of FMD control in Southern Laos. Risk zones were established that consider major cross-border trade routes. The zones were validated by a baseline survey in high and low risk areas. Findings underline that the success of a risk based approach heavily depends on the accuracy of available information. It is suggested to focus the discussion on ways to generate reliable information.

3. FMD Surveillance and Monitoring (Dr Htun Htun Win, LBVD of Myanmar; Dr Wilna Vosloo, Australia Animal Health Laboratory)

Dr Htun Htun Win presented the Myanmar’s investigation findings on the recent significant FMD epidemiological changes, including the incursion of O/ME-SA/Ind2001d strain. The O/ME-SA/Ind2001d strain was first detected from field outbreaks in Rakhine state in October 2015. Field investigation found that the incursion was likely due to the unregulated cross-border movements of humans and animals between Rakhine and Bangladesh. Onward spread of O/ME-SA/Ind2001d has been detected, which have affected Sagaing, Ayewaddy and Yangon States. The presentation also outlined the challenges in the current FMD surveillance in Myanmar, which include but are not limited to the insufficient reporting and sample submission from field outbreaks, and lack of resources to support sustainable surveillance and laboratory activities.

Following the country’s report, Dr Wilna Vosloo presented the value of diagnostic assays in FMD control from a scientific perspective. In her presentation, Dr Vosloo talked about the development of genomic sequencing and use of swabs to support FMD diagnosis. Conventionally, only the VP1 gene of FMDV is sequenced, based on which the virus can be classified into various genotypes/topotypes/lineages. The development of next-generation sequencing (NGS) can yield increasing information on viral genetic diversity, even from very low levels of viruses. NGS platforms have already been applied to FMDV, such as to assist epidemiological investigation of FMDV transmission during the outbreaks in UK in 2007. The diagnosis of FMD is frequently limited by the difficulty to find suitable clinical material to confirm an outbreak. Most FMD lesions rupture within 2-3 days post infection (dpi), and it is difficult to confirm the presence of virus from the rapidly healing lesions. Antibodies against FMDV can only be detected after 7-10 dpi. Dr Vosloo introduced that nasal/oral swabs can be a good addition to lesion and serum samples for diagnosis and surveillance of FMD, especially in the early detection of FMDV infection as it can detect virus as early as from 1 dpi. Nasal and oral swabs are easy to collect, making it easily implemented in the field situation.
4. FMD Vaccination/Post-Vaccination Monitoring (Dr Sith Premashthira, SEACFMD National Coordinator; Dr Yanmin Li, OIE Reference Laboratory at Lanzhou)

Dr Sith Premashthira first introduced the various FMD vaccination strategies used in different animal husbandry systems in Thailand. The majority of FMD vaccines used are manufactured in Thailand. The primary vaccine used for ruminants are bivalent serotypes O and A vaccines. Monovalent vaccine for serotype O or A, and trivalent O + A + Asia 1 vaccines are also used. Bivalent O+A vaccines are used in pigs, in addition to imported commercial vaccines. Repeated vaccination against FMD are required for dairy cattle every 4 months, and for beef cattle every 6 months. Field PVM studies based on a trivalent vaccine in large ruminants showed that only antibodies against serotypes A and Asia reached the protective levels after the 1st vaccination. After the 2nd vaccination, antibodies against all the three serotypes were above the protective levels, but the magnitude and duration varied significantly between serotypes (A > Asia 1 > O). In the end of his presentation, Dr Premashthira briefly discussed how to use the PVM results to guide future vaccination campaign activities to maximise the benefits.

Following the country’s report, Dr Yanmin Li gave a presentation to review the methods for FMD vaccine matching. The most commonly used “r1” value examination is an in vitro test to measure the antigenic similarity between the FMDV field isolates and vaccine strains by comparing the cross reactivity of a vaccinal serum against a field isolate and a vaccine virus. The interpretation of the r1 value need to be careful especially when it suggests an inadequate match between the field isolates and the vaccine strain. Tests using for monitoring the herd immunity post vaccination include LPBE, SPCE and VNT. Causes of the non-ideal results from the PVM are complicated as the effectiveness of vaccination can be affected by a number of crucial factors including the potent and the stability of the antigen, the application of the vaccine as well as the performance of the testing methods.

5. Coordination, Advocacy, Policy and Governance (Dr Sen Sovann, OIE Delegate for Cambodia)

Dr Sen Sovann presented the updated FMD governance and policy status in Cambodia. Department of Animal Health and Production (DAHP) was upgraded to the General Department of Animal Health and Production (GDAHP) on 28 October 2016. GDAHP is an administrative technical institution under Ministry of Agriculture, Forestry and Fisheries (MAFF), and comprises four departments and one research institute. It is mandated to manage the veterinary services and animal production, animal disease control, zoonosis, sanitary measures and acts as law and regulation enforcement. GDAHP’s functions are funded by MAFF and other national or international development programs. A new law on animal health & production was promulgated on 28 January, 2016, which provides legal framework to (1) support animal health and production; (2) protect human health, animal health and welfare and the environment; (3) eradicate, prevent and control the spread of animal diseases; (4) strengthen the provision of veterinary services; (5) facilitate domestic and international trade of animals and animal products; (5) promote the safe and effective use of veterinary medicines and animal feed. In his presentation, Dr Sovann also introduced the development of the National FMD Control Plan. The FMD National Plan was drafted in 2013 under the OIE SRR-SEA’ supports. To develop the plan, stakeholder consultation meetings were conducted in Siem Reap in January 2014, and a study to evaluate FMD economic impacts was conducted in 11 provinces out of 25 provinces in the country. The National FMD Plan of Cambodia was officially endorsed by MAFF in June 2015. This Plan was reviewed and revised in February 2017 with the supports from OIE SRR-SEA, and consultation meetings were conducted and attended by key veterinary staff from all national and provincial veterinary services. It
was proposed in the new plan to set up 5 control zones in the country for a more effective resource allocation and disease control.

6. **Plenary discussion on Challenges to FMD Control/Eradication (Facilitator Dr Ronello Abila, Sub-Regional Representative, OIE SRR-SEA)**

The plenary discussion on challenges in FMD control was facilitated by Dr Ronello Abila, and it focused on the key areas in FMD control including animal movement management, FMD surveillance and diagnosis, vaccination and PVM, and coordination, policy and advocacy. The key discussion outcomes are summarised as below:

I. **Animal Movement management**

- Priority actions to further improve management
- Affordable and harmonized animal identification
- Actions to reduce the risks of cross-border FMDV spread
- Actions to implement the “Joint Statement on Animal Movement Management in the Greater Mekong Sub-Region”
- Improve the capacity of the members to apply Risk Analysis in the prevention, control and eradication of FMD
- Prevent incursion of FMDV in OIE recognized FMD-free countries and zones

II. **Surveillance and Diagnosis**

- How to improve early detection, investigation, and response to FMD outbreaks
- Actions to comply with OIE standards on disease surveillance
- Improve sample submission and diagnosis
- New techniques/technologies to improve early detection and diagnosis
- Type of surveillance systems for FMD-free countries/zones to support risk mitigation measures

III. **Vaccination and PVM**

- Challenges in implementation FAO/OIE guidelines on FMD PVM
- How to standardized cut-off titers for PVM serological monitoring
- How to measure vaccination success in the field
- Vaccine potency

IV. **Coordination, Policy and Advocacy**

- How to engage governments of SEACFMD members to provide more logistics and financial support for FMD control
- Are existing policies and legislations enough to prevent, control and eradicate FMD
- How to utilize PVS missions/reports to engage governments to support FMD and other priority TADs control programmes
V. Session 3: Updates from Partners

(Chaired by Dr Kamarudin Md ISA)

1. FMD control initiatives in East Asia (Dr Caitlin Holly, Regional Veterinary Officer, OIE Regional Representation for Asia and the Pacific)

Dr Caitlin Holly presented the recent OIE/JTF Project activities on FMD and transboundary animal diseases (TADs) control. Japan proposed the OIE/JTF Project on FMD Control in Asia during the 5th meeting of the Regional Steering Committee of GF-TADs for Asia and the Pacific, in July 2011. This initiative was endorsed by the Committee during the meeting. Goal of the project was to decrease the impact if FMD outbreaks occur in Asia and create a coordination mechanism regionally to strengthen prevention and control measures against FMD. Under this project, a FMD Roadmap was developed for East Asian countries to strengthen prevention and control measures against FMD and decrease impact of FMD outbreaks in Asia.

The implementation phase for East Asia is now finished. The coordination mechanisms have been established so the scope now includes other priority TADs, co-ordination, strengthening veterinary services and capacity building across Asia and the Pacific. In 2016 the 1st TADs coordination meeting for East Asian members was held in Shanghai, China. This was followed up later in the year with a meeting of CVOs in East Asia where a forum was established for co-ordination on technical issues. Other coordination meetings for TADs control include the 9th FAO/OIE Regional Steering Committee Meeting of GF-TADs for Asia and the Pacific was in June 2016 and sub-regional GF-TADs meetings for ASEAN, SAARC, SPC and East Asia CVOs forum meetings in 2017. These meetings are valuable for sharing of information on activities and issues as well as establishing stronger relationships and networks across the region.

In January 2016, NIAH in Japan and SCVL in Mongolia began an OIE twinning project to improve the diagnostic techniques for FMD in Mongolia. NIAH provides training in Japan to SCVL staff and experts visit Mongolia to provide field workshops. OIE RR-AP also facilitated the donation of FMD vaccines from Japan MAFF to countries in the region.

The future plans of the OIE/JTF Project include continue to identify gaps and provide training and capacity building opportunities across Asia and the Pacific with members, experts, partner organisations and OIE reference laboratories and collaborating centres to improve the TADs situation in the region.

2. FAO Regional Office for Asia and the Pacific (Dr Katinka de Balogh, Senior Animal Production and Health Officer, FAO Regional Office for Asia and the Pacific)

The presentation summarised the FAO FMD Control projects/activities in this region. While PCP is a tool for individual countries to set intermediate objectives and measure progress along the pathway, Regional Roadmaps (RRs) have been also created based on the homogeneous pools of FMD viruses identified in different regions of the world. In this regard, Afghanistan is part of the West Eurasia regional roadmap (along with Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Iran, Iraq, Pakistan, Syria, Tajikistan, Turkey, Turkmenistan and Uzbekistan). FAO and EU-FMD have played a vital role for the implementation of such roadmap. The types of FMD viruses (and related lineages)
circulating in the region belong to type A, O and Asia-1. Regional roadmaps provide a platform where countries can meet and share their respective information and possibly develop common strategies. During November 2014 - October 2017, Japan funded a project in Afghanistan on building resilience and self-reliance of livestock keepers by improving control of FMD and other TADs. In Pakistan, under the FAO project (GCP/PAK/123/USA), funded by the United States Department of Agriculture (USDA), a project on the development of technical framework for PCP-FMD was implemented during 2011-2016. The project aimed on the development of risk-based progressive control of FMD strategy officially approved by the Government. It has successfully helped Pakistan to upgrade in the FMD PCP from Stage 1 to Stage 2 in April 2015. In addition, under “FAO-China South-to-South Cooperation Project”, FAO is coordinating TADs control along the borders between China, Laos and Myanmar, including vaccination, certification and quarantine, to promote safer trade of animals and animal products.

In her presentation, Dr de Balogh also introduced some FAO training activities on FMD and other animal disease control, with an emphasis on FETPV and EuFMD online learning platform. The latter includes a number of online training courses such as FMD emergency preparation and field investigation, to help enhance practitioners’ capacity in FMD surveillance and control.

3. New FMD Technologies (Dr Alasdair King, Director, Intergovernmental Veterinary Health, MSD)

While high quality, high potency traditional FMD vaccines are effective, there are still a number of areas that can be improved. These hurdles include stability, cross-protection and vaccination schedules. New technologies such as empty capsids and replicon RNA particles may provide solutions that will make future vaccination campaigns easier. The presentation by Dr Alasdair King provided an update on the state of these technologies and provisional results from trials.

4. How to Anticipate Peaks in Vaccine Demand (Dr Cédric Dezier, Veterinary Public Health, Merial)

Dr Dezier presented that vaccine-matching r1 values are commonly used by reference laboratories and vaccine manufacturers to predict how a vaccine strain may confer protection against heterologous field isolates. Using the virus neutralization test, a r1 value greater than 0.3 is indicative of a good antigenic match while a r1 value below 0.3 suggests a poor match. However, the r1 method can intrinsically give highly variable results and r1 values below 0.3 may not necessarily be associated with a poor protection in animals. In a cattle vaccination-challenge study, cattle were immuned with a high potency vaccine (>18 PD50) comprising a strain from the A/ASIA/Sea-97 lineage, and sera were collected at 21 days post-vaccination to determined r1 values against various viral isolates. The r1 values were very low (< 0.2) for several isolates from the A/ASIA/Sea-97 lineage. Vaccinated cattle were later challenged with A/TAI/17/2016, which is also from the A/ASIA/Sea-97 lineage but only has a r1 value of 0.15 using the post-vaccination sera. In spite of the low r1 value, a strong protection against challenge was demonstrated. Dr Dezier concluded that predicting vaccine protection performance only based on r1 value with 0.3 as a threshold may be misleading, and high potency vaccines may be able to protect against genetically & antigenically distant strains, even in case of low r1-values.

Discussion focused on the strengths and weaknesses of using r1 value for vaccine selection. It was noted that stakeholders, especially decision-makers, should have some knowledge about the
strengths and weaknesses of this method for vaccine selection. Since it is not economically or ethically justifiable to always assess vaccine performance through \textit{in-vivo} challenge studies, alternative laboratory tools are highly desirable to provide a more robust prediction of heterologous vaccine protection.
VI. Session 4: FMD Campaign – the Way Forward

1. Historical Experience and Lessons Learnt from Successful FMD Eradication in South America (Dr Francisco D’Alessio, SENASA of Argentina, presented on behalf of Dr Ottorino Cosivi, Director of The Pan American Centre for FMD (PANAFTOSA))

Dr Francisco D’Alessio, on behalf of SENASA, introduced South America’s successful experience in FMD control and eradication. Currently, FMD Free zones or countries, with and without vaccination, cover 95% of the Cattle population in South America. This has been achieved through 60 years of work by the official veterinary services with considerable support of the livestock sectors and the technical support of PANAFTOSA. In addition to the national disease programs, with the aim of advancing towards the eradication of the disease, countries signed the Hemispheric Program for the Eradication of FMD (PHEFA), and agreed on a Plan of Action for 1988–2009. This plan did not reach the original goal of eliminating the disease from the continent but made remarkable progress. Based on this experience, a new Plan of Action for 2011–2020 was developed and is now being implemented.

As an example of this regional history, Dr D’ Alessio briefly presented the case of the FMD eradication in Argentina, emphasising the significant impact on strengthening national veterinary services. In the end of his presentation, Dr D’ Alessio concluded the key lessons learnt from the FMD eradication campaign, including (1) FMD can be eradicated by vaccination; (2) FMD eradication requires sustained political and technical commitment with regional vision, scientific evidence and coordinated approaches; (3) public and private sectors must be aligned towards the same objectives; (4) surveillance control and eradication strategies must follow changes of the livestock production systems; (5) FMD programs have been contributing at the development and strengthening of the Veterinary Services.

2. Summary of PCPFMD Assessment (Dr Laure Weber-Vintzel, Head of Status Department, OIE HQ)

Dr Laure Weber-Vintzel, on behalf of the PCP Evaluation Committee (PEC), presented a summary of countries’ PCP evaluation outcomes. As recommended in the 22nd OIE SEACFMD Subcommission meeting, assessment of a country’s PCP-FMD status is intended to be done during the Subcommission meeting every 1-2 years. The evaluation process includes three steps: (1) applicant countries prepare and submit the completed self-assessment questionnaires indicating their respective status in relation to PCP-FMD stages; (2) applicant countries make presentations to provide evidence and support their self-assessment for being classified at the claimed stage; (3) PEC members (experts from OIE, FAO, and international/regional FMD LabNet/EpiNet) conduct individual interviews with country representatives to discuss evidence of progressive FMD control; (4) PEC to review steps 1-3 to assess claimed FMD control progress per country; (5) countries to continue progressive FMD control and keep track of the level of implementation and impact to demonstrate evidence in next Subcommission meeting.

The current evaluation was carried out on 8 March 2017, the day before the Subcommission meeting. The first group evaluated included Cambodia, Laos and Myanmar, countries applying for upgrading to PCP Stage 2. The second group included Malaysia and Vietnam, countries applying for PCP Stage 3. After a careful and transparent examination of countries’ application dossier, the PEC proposed that Cambodia, Lao PDR and Myanmar retain their Stage 1 status, and Malaysia and Vietnam retain their
status as Stage 3. The PEC further highlighted the importance of a proper risk assessment in Stage 1 for the future success of the FMD programme. It was recommended that countries at PCP Stage 1 need to assess the FMD situation and impact at a national level more accurately, and countries completing PCP Stage 1 should consolidate their national plans and to base the control measures on the risks identified in Stage 1.

In the end of her presentation, Dr Weber-Vintzel explained the approach and use of the Risk based Strategic Plan (RBSP) for FMD control in endemic countries. The RBSP template was developed by EuFMD and FAO/OIE GF-TADs FMD Working Group. The RBSP is designed to assist countries that want to progress on the PCP-FMD from Stage 1 to 2. In developing the RBSP, FMD risks are assessed and prioritized. This allows a country to effectively target the limited resources available for disease control to high risk areas. Once written, the RBSP is a powerful tool for communication between veterinary services, farmers and decision makers. During the implementation phase, the RBSP supports monitoring and evaluation of the impact and implementation of the FMD control measures.

Discussion focused on how to help PCP Stage 1 countries to better understand their country’s FMD risk and develop risk-based control measures. It was recommended that OIE SRR to organize workshops and trainings to help countries to develop a strategic framework to guide risk identification and control activities that are achievable in a short term.

3. SEACFMD Campaign Priorities and Action Plan for 2017/2018 (Dr Ronello Abila, Sub-Regional Representative, OIE SRR-SEA)

Dr Ronello Abila first presented the draft revised Terms of References (TOR) of the SEACFMD Subcommission, including proposed changes under the membership of the Subcommission, election of president and vice-presidents, as well as the mandates of SEACFMD National Coordinators and Laboratory and Epidemiology Network. Member Countries were encouraged to review the draft TOR carefully after the Subcommission meeting and provide comments or suggestions if any. The agreed TOR will be presented at the next OIE Regional Committee Meeting for the Asia and Pacific Region for endorsement.

See Annex 16 for the revised TOR of the SEACFMD Subcommission

Dr Abila also presented the SEACFMD action plan for 2017-2018 in the technical, communication and advocacy, and coordination and programme management fields. The presentation highlighted the plans to conduct a regional risk analysis on incursions of exotic strains of FMDV into the SEACFMD region, and to enhance engagement with high level country officials (such as Ministers) and with ASEAN, including updating the ASEAN/OIE MoU. The implementation plan for the SEACFMD Roadmap for 2016-2020 and its progress were also reviewed. Member Countries’ Roadmap implementation plans were reviewed and key actions indicators were outlined. The meeting endorsed the SEACFMD action plan and implementation plan, and advocated members to report their progress against the milestones regularly.

See Annex 13 and 14 for more information
The assembly reconvened for the presentation, review and revision of the draft recommendations and statements that were developed during the two-day meeting.

The 23rd Meeting of the OIE Sub-Commission for FMD Control in Southeast Asia and China was formally closed by a speech from the Director-General of the OIE Dr Monique Eloit, the President of the OIE Regional Commission for Asia, the Far East and Oceania Dr Zhongqiu Zhang, the Secretary of State MAFF of Cambodia Dr Malin Hor, the Director-General of GDAHP and Delegate of Cambodia to the OIE Dr Sen Sovann. In all their speeches, they appreciated the interesting presentations and constructive discussions throughout the meeting. Dr Monique Eloit further thanked the staff of GDAHP for their hard work and assistance in organising the meeting, and concluded that the meeting was very informative and productive, providing a sound frame for Member Countries progressing towards the goals of SEACFMD. Dr Sen Sovann, on behalf of the government of Cambodia, officially closed the meeting by commending the achievement the meeting and acknowledging all participants for their active participation.
## 23rd Meeting of the OIE Sub-Commission for Foot and Mouth Disease Control in South-East Asia and China

Siem Reap, Cambodia, 9-10 March 2017

### AGENDA

#### Day 1:

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>08:00 – 09:00</td>
<td>SEACFMD Sub-Commission Meeting Registration</td>
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<tr>
<td>09:00 – 09:30</td>
<td>Opening Ceremony:&lt;br&gt;• Welcome Speech by H.E. Pin Prakad, Deputy Governor of Siem Reap&lt;br&gt;• Speech by H.E. Sen Sovann, Director General of GDAHP&lt;br&gt;• Speech by Dr. Zhang Zhongqiu, President of the OIE Regional Commission for Asia, the Far East and Oceania&lt;br&gt;• Speech by Dr. Monique Eloit, Director General of OIE&lt;br&gt;• Keynote Speech and Official Opening by H.E. Hor Malin, Secretary of State, MAFF</td>
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<td>09:30 – 10:00</td>
<td>Key Current OIE Issues Including FMD</td>
<td>Dr. Monique Eloit</td>
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<td>10:00 – 10:30</td>
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**Session 1**

**FMD Situation and Risks**

*(Chair: Dr. Sen Sovann)*

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<tr>
<td>10:30 – 10:45</td>
<td>OIE Requirements for FMD (trade, vaccine, diagnostics)</td>
<td>Dr. Laure Weber-Vintzel</td>
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<tr>
<td>10:45 – 11:15</td>
<td>The Global FMD Situation and Risks</td>
<td>Dr. Donald King</td>
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<td>11:15 – 11:30</td>
<td>The Regional FMD Situation and Risks</td>
<td>Dr. Yu Qiu</td>
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<td>11:30 – 12:30</td>
<td>Plenary Discussion on Regional FMD Situation and Risks</td>
<td>All</td>
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<td>12:30 – 13:30</td>
<td>Lunch and Poster Tour</td>
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**Session 2**

**SEACFMD Campaign: Progress and Challenges**

*(Chair: Dr. Zhongqiu Zhang)*

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<td>13:30 – 13:50</td>
<td>Progress against Roadmap Milestones</td>
<td>Dr. Ronello Abila</td>
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**Key Issues Pertaining to FMD Control in SEACFMD Member Countries**
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<th>Time</th>
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<tr>
<td>13:50 – 14:05</td>
<td>Movement Management Initiatives and Trade Zones</td>
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<td>14:05 – 14:20</td>
<td>Discussion to Improve Safer Cross-Border Trade</td>
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<td>14:20 – 14:35</td>
<td>FMD Surveillance and Monitoring</td>
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<td>14:35 – 14:50</td>
<td>Discussion to Strengthen FMD Surveillance and Investigation</td>
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<td>14:50 – 15:05</td>
<td>FMD Vaccination/Post-Vaccination Monitoring</td>
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<td>15:05 – 15:20</td>
<td>Discussion to Improve Herd Immunity</td>
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<td>15:20 – 15:50</td>
<td>Coffee Break</td>
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<td>15:50 – 16:00</td>
<td>Coordination, Advocacy, Policy and Governance</td>
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<td>16:00 – 16:10</td>
<td>Discusssion to get better political commitments and resourcing</td>
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<td>16:10 – 17:10</td>
<td>Plenary discussion on Challenges to FMD Control/Eradication</td>
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<td>17:10 – 17:30</td>
<td>Wrap-up of the day</td>
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<td>18:30 – 21:00</td>
<td>OIE Hosted Dinner</td>
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**Session 3**

**Partner Reports**

(Chair: Dr. Kamarudin Md ISA)

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<tr>
<td>08:00 – 09:00</td>
<td>Presentations from Key Partners (ASEAN, SAARC, OIE RR AP, FAO, Private sectors)</td>
</tr>
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<td></td>
<td>Discussions</td>
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**Session 4**

**SEACFMD Campaign: the Way Forward**

(Chair: Dr. Pairoj Hengseangchai)

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
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<tbody>
<tr>
<td>09:00 – 09:30</td>
<td>Historical Experience and Lessons Learnt from Successful FMD Eradication in South America</td>
</tr>
<tr>
<td></td>
<td>Dr. Francisco D’Alessio</td>
</tr>
<tr>
<td>09:30 – 10:00</td>
<td>Summary of Countries’ PCP Assessment and the Identified Gaps</td>
</tr>
<tr>
<td></td>
<td>SC Representative</td>
</tr>
<tr>
<td>10:00 – 10:30</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>10:30 – 12:00</td>
<td>Plenary Discussion on the SEACFMD Campaign Priorities and Action Plan for 2017/2018</td>
</tr>
<tr>
<td></td>
<td>All</td>
</tr>
<tr>
<td>12:00 – 14:00</td>
<td>Lunch and Poster Tour</td>
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</table>

**Session 5**

**Conclusions and Closing**

(Chair: Dr. Ye Tun Win)

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>14:00 – 14:20</td>
<td>Brainstorming Discussion on non-FMD Issues</td>
</tr>
<tr>
<td></td>
<td>Dr. Monique Eloit</td>
</tr>
<tr>
<td>14:20 – 14:40</td>
<td>Conclusions and Recommendations of the Meeting</td>
</tr>
<tr>
<td></td>
<td>Dr. Ronello Abila</td>
</tr>
<tr>
<td>14:40 – 15:00</td>
<td>Closing Ceremony</td>
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</table>

**Day 2:**

**Session 3**

**Partner Reports**

(Chair: Dr. Kamarudin Md ISA)

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<tr>
<td>15:00 – 15:30</td>
<td>Coffee Break</td>
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<tr>
<td>15:30 – 15:40</td>
<td>Proposed system for elections to the OIE Specialist Commissions</td>
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<td>15:40 – 16:00</td>
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<td>16:00 – 16:10</td>
<td>Lessons learned from OIE PVS Pathway in SE Asia</td>
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<tr>
<td>16:10 – 16:45</td>
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## Annex 2: List of Participants

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<table>
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<tr>
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<th>Name</th>
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</table>

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Meeting of the OIE Sub-Commission for FMD Control in South-East Asia and China

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Annex 3: Agenda Paper: Regional FMD Situation

PURPOSE

To summarize the recent status of FMD in the SEACFMD region.

BACKGROUND

- FMD outbreaks and status are reportedly regularly by Information Focal Points in countries to the ASEAN Regional Animal Health Information System (ARAHIS) and through the World Animal Health Information System (WAHIS) for immediate notifications and 6-monthly disease status reports. ARAHIS serves as a regional core for WAHIS.
- The OIE SRR-SEA bases its analysis of the regional status on the reports uploaded by the Members in the ARAHIS as well as WRLFMD reports, WAHIS and country reports at meetings. However, ARAHIS has had functionality problems in late 2016, which leads to some data being incomplete.
- Frequently, reports from some members are delayed and/or are not updated to reflect updates in laboratory results such as serotyping, including results from the Regional Reference Laboratories. This leads to potential flaws to analysis. Members are urged to update these results on ARAHIS and/or make them publicly available.

SUMMARY

- In 2016, FMD outbreaks have continued to affect traditionally endemic countries (Cambodia, China, Lao PDR, peninsular Malaysia, Mongolia, Myanmar, Thailand, and Vietnam). The FMD-free areas of East Malaysia (Sarawak and Sabah), Brunei, Indonesia, Philippines and Singapore remained FMD-free.
- The total number of outbreaks reported in 2016 is 520 – this is a 49% increase as compared to the 348 outbreaks in 2015, 63% as compared to 318 outbreaks reported in 2013 and a 116% increase as compared to 2013 in which there were 240 outbreaks.
- Amongst all outbreaks reported, 34% were due to serotype O and 5% were due to serotype A. The rest are reported as untyped or with results pending. This represents a continuous trend since 2013 that serotype O becomes the predominant in this region. In 2015, 49% were characterized as being caused by Serotype O virus, while 9% were serotyped as being caused by Serotype A. In 2014, serotype O was identified in 31% of outbreaks and serotype A in 25% of outbreaks, and in 2013, serotype O was identified in 28% of outbreaks and serotype A in 33%.
- Cattle was the main species affected, followed by buffalo, pig and goat.
- The number of outbreaks decreased in April but increased again in August and reached the peak in November (Table 1).
Table 1. FMD outbreaks reported in each month in each country

<table>
<thead>
<tr>
<th></th>
<th>Myanmar</th>
<th>Malaysia</th>
<th>Cambodia</th>
<th>Vietnam</th>
<th>Thailand</th>
<th>Laos</th>
<th>China</th>
<th>Mongolia</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>5</td>
<td>7</td>
<td>11</td>
<td>19</td>
<td>11</td>
<td>17</td>
<td>11</td>
<td>17</td>
<td>42</td>
</tr>
<tr>
<td>Feb</td>
<td>5</td>
<td>3</td>
<td>17</td>
<td>11</td>
<td>8</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>53</td>
</tr>
<tr>
<td>Mar</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>15</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>34</td>
</tr>
<tr>
<td>Apr</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>May</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Jun</td>
<td>11</td>
<td>5</td>
<td>1</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>25</td>
</tr>
<tr>
<td>Jul</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>0</td>
<td>22</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>37</td>
</tr>
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<td>Aug</td>
<td>2</td>
<td>7</td>
<td>13</td>
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<td>38</td>
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<td>1</td>
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<td>53</td>
<td></td>
</tr>
<tr>
<td>Oct</td>
<td>1</td>
<td>13</td>
<td>3</td>
<td>4</td>
<td>32</td>
<td>1</td>
<td>1</td>
<td>53</td>
<td></td>
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<td>Nov</td>
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<td>5</td>
<td>0</td>
<td>61</td>
<td>2</td>
<td>2</td>
<td>83</td>
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<tr>
<td>Dec</td>
<td>1</td>
<td>2</td>
<td>9</td>
<td>0</td>
<td>24</td>
<td>1</td>
<td>1</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>total</td>
<td>21</td>
<td>71</td>
<td>71</td>
<td>54</td>
<td>262</td>
<td>36</td>
<td>4</td>
<td>36</td>
<td>520</td>
</tr>
</tbody>
</table>

- The majority of FMDVs isolated were not serotyped. Like in 2015, amongst those characterised viruses, only two serotypes - A and O – FMDVs were detected. The detailed genotype (strain) distribution in each member country is shown in Table 2.

Table 2. FMDV strains detected in SEACFMD Member Countries in 2015-2016, as characterised by World and/or Regional Laboratory for FMD.

<table>
<thead>
<tr>
<th>Country</th>
<th>Serotype O</th>
<th>Topotype...</th>
<th>Serotype A</th>
<th>Topotype</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>SEA/Mya-98</td>
<td>ME-SA/PanAsia</td>
<td>ME-SA/Ind-2001d</td>
</tr>
<tr>
<td>Cambodia</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>China</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Myanmar</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Malaysia</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Mongolia</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Thailand</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

*: the FMDV lineage present in the country.

- The outbreaks due to O/ME-SA/Ind-2001 strain in four countries in South-East Asia are of particular concern (Figure 1), as this strain had not been isolated in South-East Asia before 2015. In April 2015, this strain caused FMD outbreaks in Vientiane Capital of Laos, and during May-October 2015, similar viruses caused field outbreaks in four provinces in southern Vietnam. In October 2015, this strain caused outbreaks in Maung Taw township, Rakhine state of Myanmar, which shares border with Bangladesh. In September 2016, this strain was further isolated in Nonthaburi province of Thailand from cattle allegedly smuggled from Myanmar. Phylogenetic analysis of viral VP1 shows that a high similarity between viruses from Myanmar and Thailand, which are divergent from viruses from Laos and Vietnam. This represents at least two separate incursions of Ind-2001d have recently occurred.
RECOMMENDATIONS

The Sub-Commission:

- NOTES the status report and PROVIDES comments.
- ENCOURAGES timely and complete reporting of FMD outbreaks to OIE, using WAHIS Regional Core for ASEAN (ARAHIS) and WAHIS Immediate Notification.
- ENCOURAGES more sample submission for FMDV characterisation, including sequencing, to Reference Laboratories.
- ENCOURAGES countries to actively monitor the spread of O/ME-SA/Ind-2001d and establish measures to control the associated risks.
- SUPPORTS a regional Risk Analysis on possible incursions of exotic strains of FMDV into the SEACFMD region.
Annex 4: Agenda Paper: Status of Priority SEACFMD Actions

PURPOSE

To advise on the status of priority actions of the SEACFMD Campaign.

BACKGROUND

- The OIE SRR-SEA has compiled a number of key recommendations for the below draft action plan from recommendations from the OIE Sub-Commission for FMD in South-East Asia and China, the SEACFMD National Coordinators, and Upper Mekong Working Group meetings in 2016/17.
- Key recommendations and actions from the 2015 SEACFMD National Coordinators Meeting and 2016 OIE Sub-Commission for FMD in South-East Asia and China were discussed in a workshop at the 2016 SEACFMD National Coordinators Meeting, in order to gather information on progress of key actions.
- Actions have been color-coded according to status and priority:
  - Green = Complete
  - Yellow = Ongoing/Longer-term
  - Red = Urgent Action needed
- Besides regular meetings and information exchange within SEACFMD and with partners, a number of actions have been completed or have commenced during the past year. This includes (but is not restricted to) the northern Lao and central Myanmar FMD projects, and Risk Assessment study.
- This document serves as a living document, and will be adjusted according to inputs from Sub-Commission members at this meeting, with new recommendations to be added and actions to be revised at subsequent Meetings of the OIE Sub-Commission for FMD in South-East Asia and China and SEACFMD National Coordinators Meetings, with the OIE SRR-SEA regularly updating progress and pushing actions forward along with member countries.

RECOMMENDATIONS

The Sub-Commission:
- NOTES the key actions and PROVIDES comments.
- ENCOURAGES members to implement priority actions.
<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Progress/Status</th>
<th>Responsibility</th>
<th>Problems/Constraints</th>
<th>Action(s) to be taken</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUPPORTS Mongolia’s application to join the OIE Sub-Commission for Foot-and-Mouth Disease in South-East Asia and China, and ENCOURAGES the World Assembly of Delegates to endorse this proposal in May 2016.</td>
<td>OIE GS 2016 resolution 24 approved Mongolia membership</td>
<td>OIE SRR-SEA, Sub-Comm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RECOMMENDS that advocacy and actions be undertaken based on the findings of the Animal Movement Study and the 2015 Animal Movement Management meeting</td>
<td>A joint statement signed by OIE Delegates of GMS in May 2016</td>
<td>OIE SRR-SEA, MC’s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOTES the OIE/FAO FMD Progressive Control Pathway (FMD PCP) as a reference for Member Countries’ goals and activities, and RECOMMENDS that Member Countries review their progression along the FMD PCP throughout the period 2016-2020, including that:</td>
<td>Progression along PCP from 2016-2020 reviewed at the 2016 NC meeting, MCs presented their progress at PCP meeting prior to the 23rd Sub-Comm</td>
<td>OIE SRR-SEA, MC’s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• OIE develops a transparent and robust process for evaluation of PCP status and progression along the pathway; • OIE prepare a 5 year PCP plan for the region; • Members report to Sub-Commission against activities relevant to their PCP status</td>
<td>Implementation Plan refined at the 2016 NC meeting</td>
<td>MC’s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RECOMMENDS that Member Countries implement the SEACFMD Roadmap Implementation Plan and provide progress reports.</td>
<td>DFAT approved AUD 100K to fund Risk Analysis study in 2017; China allocate USD 600K for various SEACFMD</td>
<td>OIE SRR-SEA, MC’s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RECOMMENDS that OIE investigates additional and alternative funding sources to support important SEACFMD activities, and provides progress reports</td>
<td>Project proposals being developed for continuous support to SEACFMD Campaign.; Engagement</td>
<td></td>
<td></td>
<td></td>
<td>Ongoing implementation</td>
</tr>
</tbody>
</table>
activities; New Zealand provided more than NZD 2.2 M in 2016 for the FMD project

| RECOMMENDS | OIE SRR-SEA, MC’s | Ongoing |
| RECOMMENDS monitoring trends in animal movement (legal/illegal) and other factors that contribute to the emergence and/or spread of FMD, and AGREES to continue to review FMDV strains and monitor evolving trends. | Updated movement pathways from Risk Assessment study; Continues submission of samples to RRL and Pirbright |

| RECOMMENDS that the Guidance Document prepared by the Scientific Working Group be used by Member Countries to inform decisions and technical activities, and be considered for future research directions by inclusion in the SEACFMD research framework. | Guidance Document used in updating the SEACFMD research framework |

| RECOMMENDS that OIE works with World and Regional Reference Laboratories to verify diagnostic proficiency, and respond to and report on relevant challenges | Expert from Pirbright visited Pakchong in June2016 |

| ACKNOWLEDGES PR China’s initiative in development of control zones to support management of animal movement and NOTES the request from PR China for advice from OIE | OIE contracted a consultant to conduct a Risk Assessment study on incursions of FMDv to the proposed Control |

| RECOMMENDS that ASEAN+1 facilitates development of sanitary protocols that support safe trade in live animals across the region. | For discussion at next ASWGL meeting |

| NOTES the goals and objectives underlined in the SEACFMD Roadmap 2016-2020, development by June 2016 of Manuals to support the Strategy Components identified in the SEACFMD Roadmap 2016-2020 for | Manuals presented at the NC meeting in August 2016; Case examples were received |

| with MC governments to provide additional funding to support FMD control | For final editing and layout |

| 09/2016 to 04/2017 | June 2017 |
consideration by National Coordinators, and Roles and Responsibilities for key stakeholders underlined in the relevant agenda paper and the Roadmap from MCs until Feb 2017

**ENCOURAGES** Member Countries, including reference centres, to contribute towards the sharing of genomic sequences and their analysis.

| Genomic sequences for 2015 and 2016 FMDv isolates have been shared by RRL and WRL | OIE SRR-SEA, OIE Ref Lab, MC’s | Ongoing |

**AGREES** that communication and advocacy are essential components of regional and national programs, and **COMMITS** to pursue high-level advocacy by OIE at the ASEAN+1 level and by Member Countries at the National Level to reinforce political and resource support for Phase 5 of the SEACFMD Campaign.

| Ongoing engagement with ASWGL and MCs government | OIE SRR-SEA, MC’s | Ongoing |

Recognising the lower risk associated with imports of animal products compared to live animals, **ENCOURAGES** Member Countries to review and implement risk-based import protocols for such products that comply with OIE Standards.

| Ongoing Risk Analysis studies will provide guidance to MCs | OIE SRR-SEA, MC’s | Apply the results from Risk Analysis study May 2017 |

**AGREES** that Member Countries will continue to improve the application of OIE standards for disease surveillance, diagnosis and notification, as well as for animal movement management within and between countries in the region.

| Various training conducted on surveillance and lab diagnosis | OIE SRR-SEA, MC’s | Ongoing |

**CONGRATULATES** Thailand and Mongolia, whose Official Control Programmes for FMD will be proposed for endorsement by Members in 2016, and **ENCOURAGES** other Member Countries to prepare their Official Control Programmes for FMD for submission to the OIE in 2016 for formal endorsement.

| No additional country applied in 2016. | OIE SRR-SEA, MC’s | Red |
**RECOMMENDS that OIE** develop a statement on the benefit of countries having endorsed Official Control Programmes for FMD Official Control Programmes for FMD.

**ENCOURAGES Member Countries** receiving endorsement of their Official Control Programmes for FMD to share dossiers within the region to support other applications.

19th SEACFMD National Coordinators Meeting, August 2016

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Status</th>
<th>Responsible Parties</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AGREES that serotype O/India/2001d and A/Asia/GVII potentially pose serious risks to SEACFMD Member Countries and that to help understand and mitigate risk two actions, medium and short term, be taken.</strong></td>
<td>Risk Analysis study will start in March 2017</td>
<td>OIE SRR-SEA, MC’s</td>
<td>Ongoing (May 2017)</td>
</tr>
<tr>
<td>A policy paper and recommendations be developed by the SRR SEA for Sub-Commission consideration on risk and risk management approaches, including the possible conduct of a formal Risk Analysis study.</td>
<td>Has been established and conduct its first assessment during this Sub-Comm</td>
<td>OIE SRR-SEA, MC’s, FAO, Partners</td>
<td></td>
</tr>
<tr>
<td><strong>AGREES to the establishment of a regional PCP Evaluation Committee comprising OIE, FAO, the two Vice Presidents of the Sub-Commission or their alternates should conflicts of interest arise, to review Member Country applications for PCP status for endorsement by the Sub-Commission.</strong></td>
<td>Developed at NC Meeting for submission at Sub-Comm</td>
<td>OIE SRR-SEA, MC’s</td>
<td></td>
</tr>
<tr>
<td><strong>AGREES to the framework of a SEACFMD Implementation Plan (2016-2020) and that this be refined by the SRR SEA for final approval by National Coordinators before submission to the Sub-Commission for endorsement.</strong></td>
<td>Draft document developed</td>
<td>OIE SRR-SEA, MC’s</td>
<td>For further refinement (June 2017)</td>
</tr>
<tr>
<td>Date</td>
<td>Activity</td>
<td>Details</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>May 2017</td>
<td>AGREES to implement the priority activities identified to operationalize the Joint Statement on Animal Movement Management in the Great Mekong Sub-Region.</td>
<td>Ongoing OIE SRR-SEA, MC’s</td>
<td></td>
</tr>
<tr>
<td>May 2017</td>
<td>AGREES to continue to monitor and establish measures to control the risks of exotic FMDV strains such as O/ME-SA/Ind2001d, and to actively support OIE’s Regional risk analysis for incursions of exotic strains of FMD in South-East Asia.</td>
<td>Ongoing OIE SRR-SEA, MC’s</td>
<td></td>
</tr>
<tr>
<td>May 2017</td>
<td>AGREES to continue to enhance sample collections in field outbreaks and sample submissions to Regional FMD Reference Laboratories for strain characterization.</td>
<td>Ongoing OIE SRR-SEA, MC’s</td>
<td></td>
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<tr>
<td>May 2017</td>
<td>AGREES to continue performing systematic FMD outbreak investigations in order to better understand the sources of FMD outbreaks and prevent their spread.</td>
<td>Ongoing OIE SRR-SEA, MC’s</td>
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<tr>
<td><strong>AGREES to assist member countries to develop FMD surveillance strategies upon request.</strong></td>
<td>Ongoing</td>
<td>OIE SRR-SEA, MC’s</td>
<td>April 2017</td>
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<tr>
<td><strong>AGREES to actively support the ongoing Risk Assessment study and provide data requested.</strong></td>
<td>Ongoing</td>
<td>OIE SRR-SEA, MC’s</td>
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<td><strong>EXPLORES the possibility of accrediting private farms/holding yards to serve a pre-quarantine facility for animals to be moved to the proposed “control zones” along Myanmar-China and Lao PDR-China borders.</strong></td>
<td>For discussion among UMWG MCs</td>
<td>OIE SRR-SEA, MC’s</td>
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<tr>
<td><strong>AGREES to engage in greater regional cooperation, high level advocacy and promote collaboration amongst inter-governmental agencies (e.g. border security and commerce departments) to reduce illegal cross-border livestock movements and promote legal movements.</strong></td>
<td>Ongoing</td>
<td>OIE SRR-SEA, MC’s</td>
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<tr>
<td><strong>AGREES to continue monitoring the effectiveness of FMD vaccination campaign as per the FAO/OIE Post-Vaccination Monitoring (PVM) guidelines.</strong></td>
<td>Ongoing: a training in Myanmar conducted in Feb 2017</td>
<td>OIE SRR-SEA, MC’s</td>
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<tr>
<td><strong>EXPLORES the effectiveness of risk-based vaccination strategies in high- and low-risk animal populations.</strong></td>
<td>A training will be conducted in June 2017</td>
<td>OIE SRR-SEA, MC’s</td>
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<tr>
<td><strong>AGREES to conduct socio-economic impact studies in order to better elucidate the benefits of FMD Control Programmes including vaccinations and support member countries to build capacities to implement such studies</strong></td>
<td>Targets are northern Lao PDR and central Myanmar pilot FMD control areas</td>
<td>OIE SRR-SEA, MC’s</td>
<td>June 2017</td>
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<tr>
<td><strong>AGREES to re-consider the scope and boundaries of the Upper Mekong Zone in relation to the proposed animal movement control zones along Myanmar-China and Lao PDR-China borders</strong></td>
<td>For discussion among UMWG MCs</td>
<td>OIE SRR-SEA, MC’s</td>
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### Pending actions of recommendation from SEACFMD meetings in 2014/15

<table>
<thead>
<tr>
<th>Action</th>
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<tbody>
<tr>
<td><strong>AGREES that engagement with industry should occur, and that animal movement management guidelines for regional trade consistent with the Greater Mekong Sub-region ‘single window inspection’ approach be drafted for consideration by Member Countries.</strong></td>
</tr>
<tr>
<td><strong>AGREES to pursue high-level advocacy at the ASEAN and National Level to reinforce the need for political and resource support for Phase 5 of the SEACFMD Campaign.</strong></td>
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<tr>
<th>Status</th>
<th>OIE SRR-SEA, MC’s</th>
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<tbody>
<tr>
<td>Ongoing discussion</td>
<td>For discussion at ASWGL</td>
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Annex 5: Agenda Paper: SEACFMD Campaign Progress Report

PURPOSE

To advise the 23rd Meeting of the OIE Sub-Commission for FMD in South-East Asia and China on the progress of the SEACFMD Campaign from March 2016 to February 2017.

BACKGROUND

This report covers the achievements of the SEACFMD Campaign based on the priority activities identified for 2016/17 and the recommendations endorsed at the 22nd Sub-Commission meeting.

SUMMARY

Major highlights of the SEACFMD Campaign during this reporting period include continuation of vaccination programs in northern Lao PDR and central Myanmar, provision of support to Member Countries in updating of National FMD Control Programs to align within the Roadmap 2016-2020.

Technical

- With support from STANDZ, pilot FMD vaccination campaigns continue in Lao PDR and Myanmar. Approximately 240,000 animals in 27 districts in northern Lao PDR have been vaccinated, of which 186,190 were revaccinated in 2016. To date, no outbreak has been reported in the vaccinated areas in northern Lao PDR, the last outbreak being in April 2013. In Myanmar, the project has covered 18 townships in Central Myanmar and vaccinated approximately 226,814 cattle and buffaloes. No outbreaks were reported in the vaccinated areas in 2016, an improvement compared to 2015 wherein 14 vaccinated villages reported outbreaks.
- Post vaccination monitoring, based on the OIE/FAO Guidelines, provided a better picture on the outcome of pilot vaccination areas in the STANDZ supported projects in northern Lao PDR and central Myanmar.
- The STANDZ project will also support a socio-economic impact study to determine the benefits of pilot FMD control in northern Lao PDR and central Myanmar.
- The New Zealand funded (NZ) FMD project supported the conduct of a Risk Assessment in southern Lao PDR and Central Myanmar to identify high risk villages for priority vaccination. The Risk Assessment examine various factors such as FMD outbreaks, animal population density, distance to main roads, livestock markets, etc.
- A baseline survey was also conducted to establish the FMD prevalence in pilot areas. In southern Lao PDR, survey interviews were conducted in 100 villages including 457 households (Savannakhet 268 and Champasak 189), and serological samples were collected from 1,803 animals including cattle, buffalo and goats. Initial results from the FMD Non-specific protein (NSP) sero-prevalence samples collected revealed that 1,803 serological samples, 51% (130/255) of buffalo, 46% (700/1514) of cattle and 15% (5/34) of goats tested NSP positive, indicating previous exposure to FMD virus.
- In central Myanmar baseline survey 4,080 blood samples were collected and 952 households interviewed with pre-deigned questionnaires from 24 townships within the project area across Mandalay and Sagaing Divisions.
- With support New Zealand, 500,000 FMD vaccines were delivered to Lao PDR in 2016 and 600,000 doses will be delivered to Myanmar in March 2017.
- Regular support for regional laboratory activities is also continuing, including providing assistance and coordination for further investigation, with assistance from WRL Pirbright.
of some questionable results produced for typing FMDv isolates from Cambodia. SRR is also supported serological analysis at the National Veterinary Laboratory in Vientiane, Lao PDR, following training delivered by OIE and RRL Pakchong staff in 2015. SRR has also donated diagnostic kits to RRL Pakchong, as well as to laboratories in Lao PDR and Myanmar. These kits will be used to support outbreak investigation and PVM for the vaccination projects in Lao PDR and Myanmar.

- **FMDV** outbreak investigations and phylogenetic analysis to better understand the source and spread of the **O ME-SA Ind2001** strain of FMDV incursion to SE Asia has led to the development of a scientific paper that will be submitted to a peer-reviewed journal for publication.

- **A Risk Assessment** study, with support from China, was launched in September 2016 to determine the risks of FMDV incursion into the proposed FMD Control zones along the China-Myanmar and China-Lao PDR borders. The study involved stakeholder meetings in the capital cities and border provinces, and field visits to the key movement pathways and proposed zone areas.

- **A benefit cost analysis (BCA)** study on the maintenance of FMD freedom of Indonesia started in October 2016. The BCA is expected to finish by 2\textsuperscript{nd} half of 2017.

**Communication and Advocacy**

- **A Joint Statement** on harmonising procedures for livestock movement has been signed by 7 OIE Delegates. The aim of this Joint Statement is to encourage countries to work together to stem the illegal flows of animals in the region by making it more feasible for traders/producers to legally move their animals across borders based on OIE standards.

- **Various public awareness activities** were launched in pilot areas under the NZ funded FMD project. In Lao PDR, 44 FMD awareness meetings were in Champasak province reaching 1,041 farmers, 272 VVWs and 136 village heads. Out of a total of 1,491 participants, 390 attendees were women (26.2%). In Savannakhet province, 18 FMD awareness meetings were organised with the participation of 939 community representatives out of which 258 (25.6%) were women. The participants were farmers (585), VVWs (172) and village heads (121) representing project target villages. In Myanmar, 100 FMD awareness meetings were conducted from January to February 2017.

- **SEACFMD Facebook** continue to provide updates of regional activities. The NZ funded FMD project in Myanmar launched its own Facebook page uploading various activities of the project.

**Coordination and Programme Management**

- **The 22\textsuperscript{nd} Meeting** of the OIE Sub-Commission for FMD Control in South-East Asia and China was held in Chiang Rai, Thailand, from 8 to 11 March 2016. Among then key recommendations from the meeting included: review of Member Countries’ progression along the FMD Progressive Control Pathway; commitment to the SEACFMD Roadmap Implementation Plan; investigation of alternative funding sources for SEACFMD activities; monitoring trends in animal movement and FMDV strain analysis; and support for China’s initiative for the development of animal movement control zones.

- **Expansion of the SEACFMD Campaign** with Mongolia formally accepted as the new member of the SEACFMD Sub-Commission.

- **The SEACFMD Roadmap** has been published and manuals covering activities described in the Strategy Components have been developed.

- **The 19\textsuperscript{th} SEACFMD National Coordinators Meeting** was organised by SRR in Bangkok, Thailand on 17-19 August 2016. A total of 55 participants attended including National Coordinators from Member Countries, donors, partners, observers and OIE staff. The meeting updated the FMD situation and highlighted the significant threat posed by a recently introduced FMD virus strain.
O/ME-SA/Ind2001d, and called Member Countries to increase timely FMD surveillance and reporting as well as transparent exchange of information. The NC meeting drafted an implementation plan for the SEACFMD Roadmap (2016-2020), identifying individual country targets to achieve by 2020.

- Supported the on-going revisions of National FMD plans in Cambodia, Lao PDR and Myanmar to align with new Roadmap 2016-2020

RECOMMENDATIONS

The Sub-Commission:

- NOTES progress of the SEACFMD Campaign in 2016/17.
Annex 6: Agenda Paper: The 19th SEACFMD National Coordinators Meeting Outputs

PURPOSE

To inform the Sub-Commission on the 19th Meeting of the SEACFMD Campaign’s Coordinators and Partners, held in Bangkok, Thailand on August 17-19, 2016.

BACKGROUND

The 19th National Coordinators Meeting aimed to:

- Review and progress the recommendations of the 22nd Sub Commission and 18th National Coordinators Meeting;
- Assess the current FMD situation and risk and advise on risk mitigation measures;
- Consider PCP and National FMD Plan issues including PCP Guidelines, Member Country developments and progress, and future activities;
- Examine SEACFMD 2020 Roadmap progress and milestones and endorse the SEACFMD Implementation Plan;
- Discuss laboratory and science inputs to SEACFMD, and endorse as appropriate a SEACFMD R & D Strategy and Manuals to support the 2020 Roadmap;
- Discuss key governance and resource issues

SUMMARY

The SEACFMD National Coordinators Meeting was held in Bangkok, Thailand on 17-19 August 2016. A total of 55 participants attended including the SEACFMD National Coordinators from 12 Member Countries, donors, partners and observers. The meeting updated the latest foot and mouth disease (FMD) situation in the region, served as a platform to discuss and share experience on technical and coordination issues, and formulated recommendations of technical, political, and governance matters of the SEACFMD Campaign.

The meeting was opened by Dr Prapas Pinyocheep, Director of the Bureau of Disease Control and Veterinary Services, Department of Livestock Development, Thailand, who welcomed participants to Bangkok and highlighted the achievements of SEACFMD over the preceding years and his hope for ongoing strong regional cooperation on FMD surveillance and control. Dr Gardner Murray, President of the OIE Sub-Commission for FMD Control in South-East Asia, China and Mongolia, summarised the key objectives of this meeting, highlighting the importance of a strategic implementation plan in each Member Country to guide progression consistent with the SEACFMD Roadmap and FAO/OIE Progressive Control Pathway for FMD (PCP-FMD).

Participants reviewed the progress of the priority actions recommended at the 22nd Meeting of the OIE SEACFMD Sub-Commission Meeting and the 18th National Coordinators Meeting. Participants were also provided with an update on the regional FMD situation in the past year. Significant epidemiological changes include the incursion of the 0/ME-SA/Ind2001d strain in Lao PDR and Vietnam and serotype A viruses in Myanmar. Subsequently, representatives from Lao PDR, Vietnam and Myanmar presented their investigation activities and outcomes in the above-mentioned outbreaks. In the following workshop, participants identified the key FMD risks for Member Countries, including delayed responses due to under-detection/under-reporting of FMD outbreaks; illegal cross-border movements of livestock and their by-products; poor biosecurity practices at farms; and low
vaccination coverage. Risk-mitigation approaches were also identified, including optimising FMD surveillance and reporting systems and sending more samples to reference laboratories on a regular basis; enhancing multi-national and multi-sectoral collaboration on animal movement management; strengthening veterinary services; launching advocacy/communication campaigns to increase biosecurity awareness; developing zoning approaches and tailor vaccination campaigns using a combination of broadscale and targeted vaccination strategies campaigns.

In the afternoon, a poster tour was held during which Member Countries presented their country’s FMD situation, key activities to implement the activities outlined in the 3rd edition of the SEACFMD Roadmap, and major challenges. Given the majority of Member Countries have not yet applied for OIE endorsement of National Plans for FMD Control nor have experience with PCP-FMD evaluation, a workshop was facilitated to advise participants about relevant guidelines. Country delegates reviewed and discussed the questions in the PCP-FMD checklist and underlined those that may be difficult to address. OIE SRR-SEA confirmed its willingness to provide targeted support based on the workshop outcomes, to assist Member Countries prepare for OIE endorsement of National Plans, and for PCP evaluation

The second day started with a wrap-up of the previous day’s activities, followed by a facilitated workshop on the Roadmap and PCP implementation plan for 2016-2020. The regional implementation plan was reviewed and, subsequently, strategic targets aligned with the regional strategy were identified by each country delegate. In the afternoon, a poster tour was held during which partners presented their FMD research and prevention activities. This was followed by a workshop on identifying the SEACFMD research priorities for 2016-2020. Participants reviewed past and present research activities/achievements and outlined their priority research needs for the following 5 years. The most common research needs/gaps included technical advances in FMD detection and surveillance; design and optimization of broadscale FMD vaccination strategies; identification of cost-effective biosecurity measures for large-scale applications; analysis of the regional value chain of animals and animal products as well as the underlying socio-economic drivers. The workshop also discussed the potential partnership between Member Countries and partners as well as the coordination role of OIE SRR-SEA. It was agreed that the OIE SRR will develop a regional SEACFMD research strategy for 2016-2020 based on the workshop outcomes. In the following session, the SEACFMD Roadmap manuals were reviewed and National Coordinators were urged to submit case study activities/outcomes to annex to the manuals, which would allow for experience sharing and development of collaboration.

On the third day, delegates from China, Thailand and Lao PDR presented their country’s implementation plans of the SEACFMD Roadmap. In the subsequent workshop, Member Countries detailed their action plan for 2016-2017, which was in line with the implementation plan targets they identified on the previous day. Potential bi/multi-lateral collaborations that could contribute to the implementation activities were also discussed. In the last session, Dr Murray re-emphasised that the sustainability of the SEACFMD Campaign requires strong commitment from Member Countries and continued support from donors. He also presented the preparation work for the 23rd SEACFMD Sub-Commission Meeting, which will be held in March 2017 in Cambodia. In the end, recommendations out of this meeting were reviewed and discussed:

The 19th SEACFMD National Coordinators Meeting:

• NOTE that the Recommendations of the 22nd OIE SEACFMD Sub-Commission have or are being actioned successfully.

23rd Meeting of the OIE Sub-Commission for FMD Control in South-East Asia and China
• AGREE that serotype O/ME-SA/India-2001d and A/Asia/GVII potentially pose serious risks to SEACFMD Member Countries and that to help understand and mitigate risk two actions, medium and short term, be taken:

- A policy paper and recommendations be developed by the SRR SEA for Sub-Commission consideration on risk and risk management approaches, including the possible conduct of a formal Risk Analysis study.

- The actions discussed at the Meeting which will be documented in the National Coordinators Report be implemented by Member Countries.

• AGREE to the establishment of a regional PCP Evaluation Committee comprising OIE, FAO, the 2 Vice Presidents of the Sub-Commission or their alternates should conflicts of interest arise, to review Member Country applications for PCP status for endorsement by the Sub-Commission.

• AGREE to the framework of a SEACFMD Implementation Plan (2016-2020) and that this be refined by the SRR SEA for final approval by National Coordinators before submission to the Sub-Commission for endorsement.

• AGREE to the framework of a SEACFMD (2016-2020) R & D Strategy to be finalised by the SRR SEA for submission for endorsement by the Sub-Commission.

• AGREE that the comments and views of National Coordinators be taken into account in drafting the Roadmap Manuals, and that an editorial group comprising the OIE SRR SEA and the President as well as the two Vice Presidents be delegated the job of finalising the Documents for submission to the Sub-Commission for endorsement.

• AGREE to a new framework for the 2017 OIE SEACFMD Sub-Commission Meeting and that this together with a draft Agenda be forwarded to the Director General OIE for approval.

• EXPRESS our appreciations to Dr Naheed for his contributions, support and friendship during his association with the FMD Campaign since its start.

• THANK the Government of Thailand and its Department of Livestock Development for hosting the 19th SEACFMD National Coordinators Meeting.

RECOMMENDATIONS

The Sub-Commission:
• ENDORSES the recommendations from the 2016 National Coordinators’ Meeting
• NOTES the work of the SEACFMD Campaign and its partners, and encourages member countries and partners to work together to improve FMD control in the region.
Annex 7: Agenda Paper: The 13th UMWG Meeting Outputs

PURPOSE

To advise the 23rd Meeting of the OIE SEACFMD Sub-Commission Meeting on the output of the 13th Meeting of the Upper Mekong Working Group (UMWG) on FMD zoning and animal movement management.

BACKGROUND

The 13th UMWG Meeting aimed to:

- To update the status of FMD and control activities within the Upper Mekong Zone and regionally.
- To discuss FMD investigation techniques to improve outbreak response and epidemiological understanding in the region.
- To review countries’ activities/plans on establishing FMD control zones along China-SEA borders and discuss risks and risk-mitigation strategies.
- To review current vaccination and post-vaccination monitoring activities and identify key areas for improvement.

SUMMARY

The 13th Meeting of the Upper Mekong Working Group on Foot and Mouth Disease Zoning and Animal Movement Management (UWWG) was held in Mandalay, Myanmar, on 9-10 February, 2017. Participants include officials from national or provincial veterinary authority of the 5 Upper Mekong Sub-Region Member Countries (China, Myanmar, Lao PDR, Viet Nam and Thailand), OIE staff from Regional Representation for Asia and the Pacific (RR-AP) and Sub-Regional Representation for South-East Asia (SRR-SEA), representatives of FAO and donor organisation, observers and researchers.

Dr Ronello Abila, OIE Sub-Regional Representative for South-East Asia, addressed a welcome speech to the participants and thanked Livestock Breeding and Veterinary Department (LBVD) of Myanmar for its hosting this meeting. Dr Abila underlined the socio-economic importance of FMD control and animal movement management in this region, and emphasized the capacity of veterinary service to address the current challenges and progress against the objectives the UMWG and the milestones of the SEACFMD Roadmap 2016-2020. Dr Ye Tun Win, Director General of Myanmar LBVD, acknowledged OIE’s key role in coordinating FMD control in this region and expressed his hope for enhanced multinational cooperation in the future.

Following the opening ceremony, Dr Abila presented the progress against the recommendations from the 11th and 12th UMWG Meetings, notably the completion of the Upper Mekong Animal Movement Study; successful implementation of FMD vaccination projects in pilot areas in Northern Lao PDR and Central Myanmar; signing of a Joint Statement on Harmonizing Procedures for Livestock Movement Management; identification of possible areas for the establishment of “control zones” in Myanmar-China and Lao PDR–China border areas; conducting a Risk Assessment study on the possible incursion of FMDV into the proposed “border control zones”.

In the following session, participants received updates on the regional and national FMD situation and the key animal movement pathways. One major change of FMD epidemiology was the detection of a new FMD virus strain O/ME-SA/Ind2001d, which originated from South-Asia, in field outbreaks in Lao
PDR, Viet Nam, Myanmar and Thailand. Countries were urged to monitor FMD outbreaks more actively and submit more samples to the Regional Reference Laboratories for characterisation, in order to improve our knowledge about the spread of this exotic strain in this region.

In the facilitated workshops, country representatives identified that the insufficient capacity of veterinary service (often due to lack of human resources and funding), lack of public awareness, and the absence of strong, high-level political support are the major constrains in FMD surveillance and implementation of the Joint Statement on Harmonizing Procedures for Livestock Movement in the GMS. Potential solutions to overcome these challenges were also identified, including enhancing the engagement of OIE Delegates in decision-makings during the SEACFMD Sub-Commission Meetings, increasing resource allocation in awareness promoting activities, and exploring more funding sources/opportunities to enhance local veterinary services for better FMD monitoring and control.

Participants were also provided with detailed information on the initiatives of setting up FMD control/livestock trade zones along China-Myanmar and China-Lao PDR borders. A risk assessment study, organised by the OIE and funded by China Ministry of Agriculture, has been launched in September 2016 for the purpose to identify the risk of FMD virus incursion into the proposed border zones and make recommendations on risk mitigation measures. The presentations and discussions identified the key issues for setting up and maintaining the control zones, namely harmonised quarantine and animal movement management procedures, systematic surveillance, veterinary service capacity, communication and public awareness, and resources. Continued bi-/tri-national collaboration, especially technical and financial support from China, and coordination by OIE SEACFMD were considered as pivotal to progress the zoning project.

The second day started with a field trip to a dairy farm in Mandalay. It showcased the benefits of FMD control in significant improved animal production. In addition, through the Myanmar-New Zealand Dairy Excellence Project that started in March 2014, significant improvements have been made in the forage and animal feeds, milk quality and farm management.

In the afternoon, the meeting continued with presentations and workshop discussions on FMD post-vaccination monitoring (PVM) and approaches to improve vaccine field performance. PVM studies have shown that vaccination was able to reduce the incidence of clinical FMD, and meanwhile the short-lived nature of vaccine-induced immunity was underlined. Apart from the quality and antigenic matching of FMD vaccines, key factors identified that impact vaccine field effectiveness include vaccine delivery system, vaccination schedule and coverage, and training of vaccinators. Countries were encouraged to optimise the vaccination regimen and programme on a sound scientific basis and to include the monitoring of vaccination programmes and of population immunity in their surveillance systems. Recommendations of the meeting are listed below:

The 13th UMWG Meeting:

1. NOTE the developments and progress in the Upper Mekong Zone since the 12th UMWG Meeting in 2015, notably: the completion of the Upper Mekong Animal Movement Study; successful implementation of FMD vaccination projects in pilot areas in Northern Lao PDR and Central Myanmar; signing of a Joint Statement on Harmonizing Procedures for Livestock Movement Management; identification of possible areas for the establishment of “control zones” in
Meeting of the OIE Sub-Commission for FMD Control in South-East Asia and China

Myanmar-China and Lao PDR–China border areas; conducting a Risk Assessment study on the possible incursion of FMDV into the proposed “border control zones”.

2. AGREE to implement the priority activities identified to operationalize the Joint Statement on Animal Movement Management in the Great Mekong Sub-Region.

3. On FMD surveillance:
   - AGREE to continue to monitor and establish measures to control the risks of exotic FMDV strains such as O/ME-SA/Ind2001d, and to actively support OIE’s Regional risk analysis for incursions of exotic strains of FMD in South-East Asia.
   - AGREE to continue to enhance sample collections in field outbreaks and sample submissions to Regional FMD Reference Laboratories for strain characterisation.
   - AGREE to continue performing systematic FMD outbreak investigations in order to better understand the sources of FMD outbreaks and prevent their spread.
   - AGREE to assist member countries to develop FMD surveillance strategies upon request.

4. On animal movement management:
   - AGREE to actively support the ongoing Risk Assessment study and provide data requested.
   - EXPLORE the possibility of accrediting private farms/holding yards to serve a pre-quarantine facility for animals to be moved to the proposed “control zones” along Myanmar-China and Lao PDR-China borders.
   - Agree to engage in greater regional cooperation, high level advocacy and promote collaboration amongst inter-governmental agencies (e.g. border security and commerce departments) to reduce illegal cross-border livestock movements and promote legal movements.

5. On vaccination:
   - AGREE to continue monitoring the effectiveness of FMD vaccination campaign as per the FAO/OIE Post-Vaccination Monitoring (PVM) guidelines.
   - EXPLORE the effectiveness of risk-based vaccination strategies in high- and low-risk animal populations.
   - AGREE to conduct socio-economic impact studies in order to better elucidate the benefits of FMD Control Programmes including vaccinations and support member countries to build capacities to implement such studies.

6. AGREE to re-consider the scope and boundaries of the Upper Mekong Zone in relation to the proposed animal movement control zones along Myanmar-China and Lao PDR-China borders.

7. NOTE that the recommendation of the 13th UMWG will be presented to the March 2017 SEACFMD Sub-Commission Meeting for endorsement.

8. AGREE to hold the 14th Meeting of the Upper Mekong Working Group on Foot and Mouth Disease Zoning and Animal Movement Management in February 2018, and PROPOSE China/Thailand to host the meeting.
9. THANK the officials and staff of Myanmar Livestock Breeding and Veterinary Department for their hospitality and excellent hosting of the meeting.

RECOMMENDATIONS

The Sub-Commission:

• ENDORSES the recommendations from the 13th UMWG Meeting
• NOTES the work of the UMWG and its partners, and encourages member countries and partners to work together to improve FMD control and zoning as well as safer cross-border livestock trade in the Upper Mekong sub-region.

PURPOSE

To advise the Delegates of the 23rd Meeting of the OIE SEACFMD Sub-Commission on priority issues currently faced in the region on animal movement and current associated risk assessment.

BACKGROUND

• The OIE SRR-SEA undertook a study on animal movements associated with FMD in 2015 (Cocks et.al) to inform decisions on measures aimed at reducing the risk of spreading Foot and mouth disease (FMD), and other trans-boundary animal diseases, through trade related movement of large ruminants.
• An important outcome of the study is identification of new sources of livestock entering the region, with reported movement of large ruminants from India and Bangladesh to Myanmar and Thailand. There is also reports of increasing numbers of cattle being imported from Australia into Vietnam and Malaysia.
• At the 84th General Session of the World Assembly of OIE Delegates seven countries of the Greater Mekong Region signed a ‘Joint Statement on Animal Movement Management in the Greater Mekong Sub-Region’ promoting greater cooperation between signatory nations.
• AS part of the implementation of the “Joint Statement” and with support from China, a Risk Assessment study was launched in September 2016 to determine the risks of FMDv incursion into the proposed FMD Control zones along the China-Myanmar and China-Lao PDR borders (see Agenda item 02/2-a).
• Furthermore, an FMD project funded by the New Zealand government has included animal movement infrastructure (international animal quarantine facilities, animal markets, land transport routes etc.) in identifying the high risk livestock populations in southern Lao PDR and central Myanmar to be prioritised for vaccination.
• Most recently the 13th Upper Mekong Working Group (UMWG) meeting on FMD control supported the hypothesis that illegal animal movements driven by market forces are a major factor in the regional spread of FMD, in support of the above studies.

ISSUES

• What priority actions to be taken to further improve management of animal movement, particularly unofficial movement of animals, throughout the region?
• Would an affordable and harmonized animal identification scheme feasible to implement in the region?
• Taking into consideration the current animal movement pathways in the region, what actions to take to reduce the risks of cross-border FMDV spread, including incursion into the proposed control zones?
• What actions to take to prevent incursion of FMDV in OIE recognized FMD-free countries and zones?
• What priority actions to undertake to implement the ‘Joint Statement on Animal Movement Management in the Greater Mekong Sub-Region’?
• How to improve the capacity of the members to apply Risk Analysis in the prevention, control and eradication of FMD?
RECOMMENDATIONS

The Sub-Commission:

• ENDORSES the key recommendations from the 13th UMWG meeting namely that the UMWG;
• NOTES the issues discussed and AGREES to implement the priority actions identified in this meeting.
Annex 9: Agenda Paper: Risk assessment study to support establishment of export zones, in Lao PDR and Myanmar, for FMD-susceptible livestock destined for China

PURPOSE

To advise the 23rd Meeting of the OIE Sub-Commission for FMD in South-East Asia and China on the progress and initial findings of a study to assess the risk of FMDV infected livestock entering the proposed control zones (CZ) along China-Myanmar and China-Laos borders.

BACKGROUND

A study conducted in 2015 and commissioned by OIE SRR-SEA, entitled ‘Movement pathways and market chains of large ruminants in the Greater Mekong Sub-region’ highlighted the extent of FMD-susceptible livestock movement from across South-East Asia, destined for high value markets in China and Vietnam.

During the SEACFMD Animal Movement Management Meeting held in August, 2015, approaches for facilitating safer trade in livestock were discussed. One of the initiatives raised at this meeting was establishment of export zones in border areas of countries neighbouring China, namely Lao PDR and Myanmar, from which livestock of higher health status, compared to the country in which the zones are based, could be officially exported to China. The study described in this paper forms one component of efforts to support this initiative.

SUMMARY

This study is an assessment of the risk of FMDV incursions into proposed CZs in Lao PDR and Myanmar through movement of FMD susceptible livestock. The study focuses on two of the main cross-border movement pathways of livestock from South-East Asia into China, namely: from Shan State of Myanmar to Ruili in Yunnan Province of China and from Bokeo and Luang Namtha provinces of Lao PDR to Mengla in Yunnan Province of China.

Field data collection for this study involved visiting the proposed zone areas and collecting data, through semi-structured interviews of various stakeholders and some follow-up questionnaire interviews to gather data on: the volume of livestock moving through the proposed CZs; stakeholders involved in the movement of livestock; costs of transporting livestock; details of any regulatory procedures in place; and detailed descriptions of the source of livestock and the pathways taken en-route to the proposed CZs.

The resulting data, together with information gathered from other sources (i.e. published literature, meeting reports, expert opinion), were combined to generate a stochastic risk model to estimate the risk that livestock entering the CZ are infected with FMDV. While there remains significant uncertainty in many of the parameters used to furnish this model, the model provides a useful baseline estimate, into which further information could be added as more data becomes available in the future. As well as estimating the risk of FMDV incursions into the proposed CZs, this study also aims to model the impact of risk mitigation measures on the risk of FMDV incursions into the CZ. The model is a relatively simple representation of livestock movements and is based on: estimates of prevalence of FMDV in source countries; the volume of livestock originating from each of those countries; and any intervention procedures currently in place.
In addition to providing estimates of risk, a key output of this study was identifying pathways of livestock movement not described in previous studies. Significant movement of pigs and small ruminants through the CZs and into China was identified during the current study, in addition to validating information previously described on large ruminant movement. According to the estimates provided during this study: up to 220,000 cattle and buffalo, 30,000 small ruminants and 50,000 pigs move through the proposed CZ of Muse each year; and up to 305,000 cattle and buffalo and 16,800 pigs move through the proposed CZ in Luang Namtha, Lao PDR each year. In addition to the livestock movement through the proposed CZs, there is an active livestock trade pathway from Northern Thailand, via the Mekong River, to Sob-Luay Port in Mynmar and then into China. It is estimated that up to 365,000 cattle and buffalo and 442,000 pigs could move along this pathway each year and it will thus be essential to consider this pathway in any risk management measures implemented in this area.

Results of the study indicate that there is a very high risk that FMDV infected cattle and buffalo will enter in the proposed CZ in Luang Namtha, Lao PDR and Muse, Myanmar each year. For pigs, the risk appears to be far lower as a result of both lower estimated prevalence of FMD in pigs and the lower volume of movement. Similarly, for the CZ in Muse, large ruminants represent the greatest risk for FMDV incursions, and pigs the lowest risk. However, there is also movement of small ruminants through this zone, which also represent a significant risk of FMDV incursions. It should be noted that considerable uncertainty and variability exist in the data used to furnish this model and the estimates should not be regarded as absolutes. It does, however, provide a useful baseline against which to model potential impact of risk mitigation measures.

The main source of ruminants to the proposed CZ is Central Myanmar, with far lower numbers originating from other parts in the region. There is also suspicion of unofficial movement of live cattle from Bangladesh and India. Therefore, implementing measures to reduce the prevalence of FMDV in Central Myanmar is likely to have the greatest impact on the overall risk of FMDV incursions into the CZs (both Muse and Luang Namtha). While the volume of livestock originating from South Asia is lower than those originating in Central Myanmar, it could represent a risk for incursions of FMD strains currently exotic to South-East Asia.

Of the risk mitigation measures considered in this study, the use of pre-quarantine of livestock prior to movement into the proposed CZ demonstrates the most significant reduction in risk compared to a baseline (no intervention measures) level of risk. The importance of establishing official pathways of livestock movement that are economically attractive to livestock traders while providing an acceptable level of protection against FMD incursions into the CZs is also discussed in this study.

RECOMMENDATIONS

The Sub-Commission:
- NOTES the key actions and PROVIDES comments.
- ENCOURAGES members to actively support the study and provide data requested.
Annex 10: Agenda Paper: FMD Surveillance and Monitoring

PURPOSE

To advise the Delegates of the 23rd Meeting of the OIE SEACFMD Sub-Commission on priority issues currently faced in the region on FMD surveillance, outbreak investigation, disease reporting and laboratory diagnosis.

BACKGROUND

- During the past two decades since the launching of SEACFMD Campaign, one of the biggest challenges faced by the programme is the continuous changes in the epidemiology of the FMD viruses.
- In late 1990s, the regions suffered from a pandemic of serotype O PanAsia that affected all countries of mainland SE Asia. Cyclical epidemics of FMDV O/Myanmar 98 has been reported. In 2013, a variant serotype A SE Asia was detected that caused also widespread outbreaks. And more recently, outbreaks due to O/ME-SA/Ind-2001 strain in four countries in South-East Asia is currently posing a big challenge in the region.
- Rapid diagnosis to confirm new or variant strains causing epidemics has to be further improved. Although big improvements in the capacity of members has been seen over the past 20 years, the challenges posed by changing dynamics of the FMDv need to confronted with better capacity of the VS in the region.

ISSUES

- How to improve early detection, investigation, and response to FMD outbreaks?
- What actions to undertake to comply with OIE standards on disease surveillance, and to achieve a faster and reliable disease reporting?
- How to improve faster submission of samples and diagnosis to determine FMD topotypes?
- What are the new techniques/technologies that could adapted in the region to improve early detection and diagnosis?
- What type of surveillance systems to institute in FMD-free countries/zones to support risk mitigation measures to prevent FMDV incursion?

RECOMMENDATIONS

The Sub-Commission:
- NOTES the issues discussed and AGREES to implement the priority actions identified in this meeting.
Annex 11: Agenda Paper: FMD Vaccination and Post-Vaccination Monitoring

PURPOSE

To advise the 23rd Meeting of the OIE Sub-Commission for FMD in South-East Asia and China on the regional key issues and challenges in FMD vaccination and post-vaccination monitoring.

BACKGROUND

Vaccination is one of the most important tools to combat FMD. It is crucial to optimise vaccine-based control programmes on a scientific basis to ensure a sustained control of disease and optimised use of limited resources in attaining expected objectives. Since many factors can influence the effectiveness of vaccination against FMD, the vaccine components and vaccination regimens and programmes must be monitored continuously to identify any failings and to ensure sustained control of the disease by the use of limited resources.

SUMMARY

One of the essential components of vaccination is the duration of vaccine-induced protective immunity and at what time point there may be a requirement to boost vaccinated animals. Protective levels of antibody produced by a single vaccination tend to be shortlived, lasting only a few months, although this depends very much on the type of vaccine and the possible interference from maternally acquired antibodies. Further re-vaccinations at regular intervals, depending upon the epidemiological situation, are required to maintain protective immunity. However, in countries where FMD is endemic and resources are limited, it is desirable to use vaccines that provide as long a period of protection as possible, to avoid frequent re-vaccination and improve protection against field outbreaks. Potential approaches to improve the duration of protective immunity include: selection of vaccine strains and adjuvant, increasing antigen purification and payload, optimising antigen delivery into the susceptible animals, etc.

Appropriate vaccine strain selection is a critical element in the control of FMD and is necessary for the application of vaccination programmes in FMD-affected regions as well as for the establishment and maintenance of vaccine antigen reserves to be used in the event of new FMD incursions. Sending samples from recent outbreaks to the reference laboratory for virus characterisation and selection of an appropriate vaccine is a prerequisite for a successful vaccination programme. Vaccine matching has two purposes: firstly to chose the most effective vaccine for use in a particular circumstance and secondly to monitor the suitability of vaccines maintained in vaccine antigen reserves. The serological relationship between a field isolate and a vaccine virus (‘r’ value) can be determined by ELISA, VNT or CFT. In vitro neutralisation may be more relevant to in vivo protection than other measures of virus-antibody interaction, but it is laborious needs to be performed in high-level biocontainment facilities. Advantages of ELISA are that the test is rapid and utilises smaller volumes of post-vaccination sera which are often available in limited quantities. A disadvantage of the ELISA method is that it is harder to standardise the virus antigen concentration used in the test.

The correlation between protection and r value has been quantified in VNT or ELISA tests. In practice, the correlation may be affected by many variables (the type of vaccine, the type and reproducibility of the test used to measure the serological response, the strain of virus against which protection is needed, the weight of challenge, etc.). Further studies to better elucidate/validate the correlations in various field situations would be desirable.
PVM is necessary to optimise the vaccination programme, and the use of limited resources in attaining expected objectives. It comprises serological surveys on the individual level to assess the magnitude and longevity of vaccine-induced immunity as well as to assess the population immunity against FMD in vaccinated areas as a whole. Field PVM study, especially investigation of outbreaks that occur in vaccinated animals, is an important aspect of monitoring the performance of vaccination but is largely neglected in this region. A systematic approach described by *FAO/OIE FMD Vaccination and PVM Guidelines* is recommended in order to check off all the steps where problems could potentially have occurred from initial vaccine quality and suitability, through vaccine storage, delivery and vaccination, vaccine coverage, induced immunity and the nature of the challenge, which might have been overwhelming owing to weight of infection, long post-vaccination interval or change in antigenic phenotype.

**ISSUES**

- Is the FAO/OIE guidelines on FMD PVM being implemented in your countries? Any challenges on its implementation?
- How to standardize cut-off titers for PVM serological monitoring?
- How to measure vaccination success in the field? Vaccine potency?

**RECOMMENDATIONS**

The Sub-Commission:
- NOTES the key issues and challenges of FMD vaccination and PVM in this region
- ADVISES future approaches to improve vaccine efficacy and field performance monitoring
Annex 12: Agenda Paper: Coordination, Advocacy, Policy and Governance

PURPOSE

To demonstrate how importance of coordination, advocacy, policy and governance for effective FMD control and prevention

BACKGROUND

Regional coordination is one of the key factors in achieving a sustainable approach to FMD control and prevention particularly in the extent of cross-border livestock movements. Under Phase 5 of the SEACFMD Campaign (2016-2020), Strategy Component 2: Coordination and Advocacy aimed to: (1) coordinate the development and implementation of control strategies, training and communication; (2) support the development and application of advocacy strategies to increase political commitment to FMD control; and (3) extend advocacy to the public and private sectors to promote campaign awareness and support.

In addition, governance and policy of national Veterinary Services is essential for implementing FMD control measures. Strategy Component 3: Governance and Policy is defined with the objectives to: (1) provide governance at the national and regional levels; (2) assist Member Countries in evaluating and strengthening their Veterinary Services; (3) develop a regional policy framework and support development of legislation in Member Countries for management of animal and zoonotic diseases in their territories; and (4) define funding needs and pursue opportunities for additional support.

ISSUES

- How to engage governments of SEACFMD members to provide more logistics and financial support for FMD control.
- Are existing policies and legislations enough to prevent, control and eradicate FMD?
- How to utilize PVS missions/reports to engage governments to support FMD and other priority TADs control programmes.

RECOMMENDATIONS

The Sub-Commission:

- AGREES to use the PVS mission reports in engaging governments of SEACFMD members to support the activities of FMD control;
- AGREES to develop regional legislative framework for animal movement control to support FMD prevention, control and eradication.

PURPOSE

To advise the 23rd Meeting of the OIE Sub-Commission for FMD in South-East Asia and China on the provisional programme for 2017/18.

BACKGROUND

The Provisional Activities for 2017/18 is drafted based on the remaining funds provided under the Australian funded STANDZ Initiative with no-cost extension until December 2017, the New Zealand funded FMD project until 2020, and contributions from China for specific SEACFMD activities. In-country implementation are mostly funded by the governance of SEACFMD members with a few contributions from external donors and partner organizations such as FAO.

PROVISIONAL ACTIVITIES FOR 2017/18

In line with recommendations from the various consultation meetings held at the regional and national level, the following activities are identified as possible priority areas for implementation for the period of 2017/18. These provisional activities will be further refined based on the recommendations of the 23rd Sub-Commission meeting.

Technical

- Support accurate and prompt reporting of FMD outbreaks by Member Countries
- Outbreak Investigation Training as requested
- Facilitate missions from RRL Pakchong to support member country laboratories
- Facilitating transport for proficiency testing round
- Facilitating transport of samples from SEA to WRLFMD
- Provide FMD vaccine to Cambodia to support FMD control activities in that country
- Finalise a study of the costs and benefits of maintaining FMD freedom in Indonesia
- Finalise a study on the socio-economic impact on the of pilot FMD vaccination and other control measures in northern Lao PDR
- Publish a paper on the “Incursion of Exotic FMDV O/ME-Asia/India 2001 in SE Asia in 2015”
- Conduct Retrospective outbreak investigations
- Complete post vaccination monitoring in STANDZ-funded campaign areas
- Produce regular bulletins on genotypic analysis of SEACFMD isolates
- Dissemination of studies to partners for funding, policy and sustainability advocacy
- Continue to implement the key activities in NZ-funded Projects in Laos and Myanmar particularly baseline surveys, vaccination, training
- Engaging with contingency planning activities in FMD-free countries
- Finalise a Risk Assessment study to support establishment of export zones for FMD-susceptible livestock destined for China in Lao PDR and Myanmar
- Conduct a regional Risk Analysis on possible incursions of exotic strains of FMDV into the SEACFMD region

Communication and Advocacy

- Engagement with high level officials, Ministers, and with ASEAN, including updating the ASEAN/OIE MoU
- Continue the publication of SEACFMD News
• Assist members to conduct FMD awareness campaigns and educational drives for promoting FMD control and prevention
• Advocacy for improved regulation of livestock movements in the region
• Promote country commitments and achievements with regards to FMD control

**Coordination and Programme Management**
• Organize Meetings of the 24th SEACFMD Sub-Commission, 20th National Coordinators, and Epidemiology and Laboratory Network. (14th UMWG meeting?)
• Assist to advocate funding and implementation of the National FMD Plans in Cambodia, Lao PDR and Myanmar.
• Support the alignment of National FMD Plans of CLMV with SEACFMD Roadmap 2016-2020
• Support national self-assessment to review member’s PCP level. Incorporate priority activities identified in the PCP assessment with the FMD National Plan
• Continue to promote and coordinate existing and potential resources from other partner agencies such as the FAO-ROK FMD Project, OIE RR JTF FMD Project, ACIAR, New Zealand FMD project, etc.
• Engage high-level policy-makers to support FMD control

**RECOMMENDATIONS**

The Sub-Commission:
• ENDORSES the provisional activities of SEACFMD Campaign 2017/18
• ENCOURAGES members to explore additional and alternative funding sources to support important SEACFMD activities.

Table 1. Targets and Activities for implementing the SEACFMD Roadmap identified by advanced PCP level countries *(Workshop Output from the 19th SEACFMD National Coordinators Meeting)*

<table>
<thead>
<tr>
<th>Elements</th>
<th>China</th>
<th>Mongolia</th>
<th>Malaysian (peninsula)</th>
<th>Thailand</th>
<th>Viet Nam</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technical targets/Activities 2016-2020</strong></td>
<td>In 2016 decrease Prevalence through vaccination, PVM and biosecurity measures.</td>
<td>In 2016 continue performing NSP testing in surveillance area, and expand vaccination coverage (eastern Zone 2016-2020)</td>
<td>By 2017 presenting paper on Private quarantines for FMD control and public awareness and endorsement of National control plan.</td>
<td>In 2016 will continue to improve animal health information system</td>
<td>2016 continue to characterize FMD viruses during 2016-2020.</td>
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<td></td>
<td>Animal movement control by setting up control zones with bordering countries and enhanced certification/tracing systems.</td>
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<td>Develop rapid screening test for the in the field FMD diagnosis</td>
<td>Vaccinate animals in high risk areas for FMD</td>
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<td></td>
<td>Increase FMD free zoning approach in target areas in China</td>
<td>Update National FMD control plan.</td>
<td>Identify circulating strain of FMD</td>
<td>Improve reporting of FMD cases nationally</td>
<td>In 2017 will develop FMD free zones with vaccination</td>
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<tr>
<td></td>
<td>Enhance FMD surveillance in target areas and outbreak response</td>
<td></td>
<td>Develop information system and sharing information</td>
<td></td>
<td>Enhance identification of circulating strains of FMD through increased outbreak investigations and sample collection</td>
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<td></td>
<td>Increased technical capacity for FMD control by conducting two technical FMD meetings/year</td>
<td></td>
<td>Continue to strengthen the laboratory network in order to support FMD control.</td>
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<td>Test all imported animals for FMD</td>
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<tr>
<td></td>
<td>Strengthening laboratory services.</td>
<td></td>
<td>2017 – Aim to have national control plan endorsed</td>
<td></td>
<td>Outbreak investigation training for hot spot area</td>
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<td></td>
<td></td>
<td></td>
<td>Central Region PCP 3 to 4 - Develop check points,</td>
<td></td>
<td>2018 Aim to make all live animal trades official (e.g. eliminate</td>
</tr>
</tbody>
</table>
Survey, training, and public awareness

Eastern Region PCP 2 – Target vaccination, PVM, surveillance, emergency outbreak investigation, training and information sharing

By 2018 aim to achieve the FMD free status with vaccination.

Disease investigation training by end of 2016.

By 2017 to increase private licenses for quarantine services by presenting paper on Private quarantines for FMD control and public awareness and endorsement of National control plan.

Increase private sectors’ engagement

By 2018 no more clinical incidence of FMD.

Surveillance to identify free areas and gradually increasing into zone and the full country Animal movement according to OIE code

By 2019 Sustain efforts for 2016-2019 and robust surveillance.

Responses effectively and contain all new FMD outbreaks by validating new field tests in the field

Conduct epidemiological study such as a transmission model, spatial model and cohort study, socio-economical study, social network analysis

2019-2020 Wide scale implementation of new pen side tests for use in the field for use in molecular serotyping

Strengthening the laboratory network capacities and capabilities

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**Coordination and advocacy**

Increase Public awareness on FMD control.

Increased exchange of FMD information Bilateral meetings with OIE/FAO

Perform Lab PT Testing with partnering countries

Partners to offer FEPTV training

2017 endorsed national control plan Training on animal movement control

Public awareness campaign through Q + A sessions with stakeholders Ministerial endorsement by creating a FMD proposal for funds 2017-2020

Monitoring and Evaluation meetings for National FMD Control plans

2016 – coordinate with other organizations and countries to control illegal animal movements

Continue engaging other government departments and ministries in the control of FM
2017: Bilateral meeting with Thailand and may be with Myanmar.
Table 2. Targets and Activities for implementing the SEACFMD Roadmap identified by PCP level 1 countries (Workshop Output from the 19th SEACFMD National Coordinators Meeting)

<table>
<thead>
<tr>
<th>Elements</th>
<th>Cambodia</th>
<th>Laos</th>
<th>Myanmar</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PCP Stages</strong></td>
<td>By 2019 achieve PCP stage 3 and maintain this stage through to 2020</td>
<td>By 2016 - 2019 continue to sustain PCP 2 and aim for PCP 3 by 2020</td>
<td>In 2016 continue to maintain PCP stage 1 and gradually progress to PCP 2 in 2017</td>
</tr>
<tr>
<td><strong>Technical</strong></td>
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<tr>
<td>Identify the hotspot of FMD and conduct FMD vaccination in these areas</td>
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<td>2016 – to improve understanding of FMD cases over time through baseline survey, negative reporting and sero-surveillance FMD control measures applied, such as risk based vaccination and increased outbreak reporting Activities will include further training on serotype diagnosis and RT-PCR training for FMD genotyping By 2017 continue to build upon FMD surveillance and control measures including more outbreak investigations. During 2018-19 continue to work on control measures. By 2020 declare FMD control zones in Lao PDR. Develop centralized information system</td>
<td>Store FMD lab results, report outbreaks. Vaccination and PVM in central part of Myanmar In addition, include sero-surveillance and outbreak investigation in Central Myanmar. Activities will include training staff on sample submission and early reporting. By 2017 ensure serotype specification vaccines against all circulating strains of FMD 2018 Measure incidence of FMD During 2018-2019 reduce the FMD outbreak by 100% By end of 2019, limit the spread of FMD by controlling animal movements and identification system. Activities shall include: Establishing FMD control measures in large zones. Training of Veterinarians in outbreak investigation. Conduct simulation exercises</td>
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<tr>
<td>Estimate FMD prevalence in Southern Laos</td>
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<td>Identify the stakeholder’s involvement in FMD through stakeholder questionnaire</td>
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<td>Improve FMD surveillance.</td>
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<td>By 2017 identify the specific causes of transmission of FMD. Develop animal health database that links data from the laboratory and field</td>
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<td>Conduct vaccination campaign in hot spot areas</td>
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<td>Conduct PVM post vaccination</td>
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<tr>
<td>Farm registration for identifying the stakeholders of FMD</td>
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<tr>
<td>Continue promoting animal Identification</td>
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<tr>
<td>Train the staff on outbreak investigation</td>
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<tr>
<td>By 2019 strengthen the surveillance as FMD control measures. Design survey to measures FMD incidence By 2020 the geo-referenced and data storage in a centralized information system</td>
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</tr>
<tr>
<td><strong>Coordination and advocacy</strong></td>
<td>2016 to understand the movement of the key livestock through activities such as cross</td>
<td>Seek Public Private Partnership as well as secure funding support by end of 2017.</td>
<td>Public awareness for all stakeholders including farmers and private</td>
</tr>
<tr>
<td>Elements</td>
<td>Cambodia</td>
<td>Laos</td>
<td>Myanmar</td>
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<tr>
<td>border trader’s meetings, coordination with border control authorities, raising awareness on animal movement regulation, and farmers meeting Push for the more funding for the FMD control by the government and external stakeholders Develop FMD control plan with input from stakeholder and have it endorsed by DAFF</td>
<td>Collaborative Bilateral/trilateral/Multilateral meetings with neighbouring countries. Mass public awareness for animal disease control and prevention Increase public and private funding support for FMD control</td>
<td>sector to support FMD control Continue to have meetings to facilitate regional cooperation 2017 Develop a strategy to eliminate FMD from a zone in the Myanmar and have it nationally endorsed</td>
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</tbody>
</table>

**Policy and Governance**

<table>
<thead>
<tr>
<th>Cambodia</th>
<th>Laos</th>
<th>Myanmar</th>
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<tbody>
<tr>
<td>Prepare the decree and push for the announcement on the basis of existing law. Advocate for political and financial support from the government Develop the regulation on animal movement control Advocate for more fund allocation</td>
<td>Legislation on animal movement and control. Strengthen legislation to allow for FMD eradication</td>
<td>Workshops/meetings to review PCP stage and to support progression of PCP</td>
</tr>
<tr>
<td>Elements</td>
<td>Brunei</td>
<td>Indonesia</td>
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<tr>
<td><strong>Technical</strong></td>
<td>In 2016 passive surveillance and active surveillance activities to continue throughout the country</td>
<td>In 2016 will Review of FMD strategy</td>
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<td></td>
<td>Maintain FMD technical capacity of vets through trainings</td>
<td>Capacity building amongst VS in skills relevant to FMD</td>
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<td></td>
<td>2017 active surveillance monitoring program and prof testing for FMD</td>
<td>Review of surveillance strategy and IS IKHNAS for farmers reporting to expand and include negative reporting Conduct annual sero-surveys 2017 risk assessment to study the risk of FMDv reintroduction Farmer reporting system and active surveillance Design IEC material FMD lab capacity building such as PCR training Review and publish Indovet plan for FMD preparedness and perform annual simulation Outbreak investigation training with field and laboratory linkages</td>
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<td></td>
<td>Conduct forum/seminars/dialogue with all stakeholders in FMD contingency planning</td>
<td>Continue training of vets and lab staff on developments in FMD research and technical developments (disease management and risk assessment) Have the national FMD preparedness plan endorsed at the ministerial level 2018 Set up a real time disease information system and link system to other sources Endorsement of animal disease and quarantine order</td>
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</table>
### Elements

<table>
<thead>
<tr>
<th>Elements</th>
<th>Brunei</th>
<th>Indonesia</th>
<th>Philippines</th>
<th>Singapore</th>
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<tbody>
<tr>
<td></td>
<td>Engage stakeholder in FMD awareness</td>
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<td>in capacity building training</td>
<td>Have well informed stakeholders by designing new IEC materials in 81 provinces</td>
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<td>2018 to include FMD and other important diseases as a national agenda and priority</td>
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<td>Meetings/dialogues at senior official levels</td>
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<td></td>
<td>2019</td>
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<td></td>
<td>Inter-agencies involvement in FMD surveillance, facilitation of national control posts and quarantine stations</td>
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<td>Work to have the national FMD programme endorsed at the ministerial level, and dissemination of roles and responsibilities of related gov’t agencies and stakeholder, and dissemination of roles and responsibilities of related gov’t agencies during an FMD outbreak</td>
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<td></td>
<td>Review FMD policies with changes in OIE Code</td>
<td>Inter-ministerial funding mechanism for preparedness and emergency response established</td>
<td>Increase budget allocation</td>
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<tr>
<td>Policy and Governance</td>
<td>Complete amendment of animals and birds act to strengthen animal disease prevention and control legislation</td>
<td></td>
<td>Legislation on the quarantine. Risk management plan</td>
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<td></td>
<td>Activities include to request a PVS legislation mission, conduct an internal review of PVS findings and request for a new national budget based on these findings</td>
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<td>Compliance to new risk management system</td>
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<td>Formulate a national policy to strengthen biosecurity and harmonize SPS and quarantine regulation</td>
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Annex 15: Joint Statement on Harmonising Procedures for Livestock Movements Among Great Mekong Sub-Region Countries

Joint Statement on Harmonizing Procedures for Livestock Movement among Cambodia, China, Laos, Malaysia, Myanmar, Thailand and Vietnam

We, the Directors General of the Veterinary Authorities of Cambodia, PR China, Lao PDR, Malaysia, Myanmar, Thailand and Vietnam, jointly agree on the approach to harmonizing procedures for livestock movement in our region.

This Joint Statement is drawn from discussions during the SEACFMD animal movement meeting held on 25 August 2015, in Qingdao, China, based on technical principles and the situation in each of our countries. While not legally binding, it is intended to provide guidance and direction to developing and improving management of livestock movement in our region.

We have reviewed current procedures for management of livestock movement in Member Countries, including problems and constraints, and considered the needs and opportunities for enhancement of these procedures as well as international support for such initiatives.

We acknowledge recent and pending development of regional infrastructure that promotes rapid transport of commodities, including livestock, between countries. We recognize the increasing need to strengthen animal movement regulation and biosecurity procedures in the region, in order to control transboundary animal diseases, ensure food safety, and protect the health of animals and the public in our countries to achieve national, regional and global benefits.

WE JOINTLY AGREE THAT:

1. Veterinary Services of Member Countries shall develop, strengthen and improve procedures for managing the movement of livestock and their products in each country, in order to control transboundary animal diseases, promote food safety, and protect the health of animals and the public in our countries and our region.
2. Procedures for managing biosecurity and the health risks associated with the movement of livestock and their products, including international health certification, will be developed and harmonized based on the OIE Code and other international standards.
3. Bilateral or multi-lateral agreements on regional livestock movement and trade should be developed and implemented.
4. The Upper Mekong Working Group, coordinated by OIE Sub Regional Representation for South-East Asia, should serve as the focus for development of standardised protocols and procedures to support cross-border trade in livestock, including consideration of the development of control zones. The representatives of individual Member Countries on this group will be suitably supported by our respective Veterinary Services to assist in this important coordination work.
5. Veterinary Services continue to encourage technical collaboration and information sharing among Member Countries on managing the movement of animals and animal products, including biosecurity, animal identification, information systems, communication and import risk analysis.
6. International donors and partner agencies, including OIE and FAO, should continue to support capacity building in the region through workshops and training sessions, with assistance from relevant international experts.
7. We will continue to utilize various regional platforms such as the ASEAN+1 (ASEAN+China) and ADB-initiated Greater Mekong Subregion SPS Agreement, in pursuing the harmonisation of
regional biosecurity and livestock movement management, including development and mutual recognition of control zones.
Annex 16: Revised Term of Reference of OIE SEACFMD Sub-commission

Terms of reference of the OIE Sub-Commission for foot and mouth disease in South-East Asia, China and Mongolia

(Updated on 10 March 2017)

1 The OIE Sub-Commission for foot and mouth disease in South-East Asia, China and Mongolia (SEACFMD)

1.1 The role of the OIE Sub-Commission for foot and mouth disease in South-East Asia and China

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

1.2 Duties and responsibilities of the Sub-Commission:

- Provide advice on the coordination, management and future direction of the SEACFMD campaign, and the SEACFMD annual work plan
- Provide advice to OIE, ASEAN and major donors on SEACFMD monitoring, audit and evaluation activities
- Provide advice on working arrangements with related FMD management programs and consistency with the recommendations of OIE/FAO Global FMD Conferences.
- Member country delegates will provide reports and make every effort to coordinate the implementation of agreed actions within their countries
- Other Members will provide reports on activities of relevance to the SEACFMD Campaign.
- Members will, as appropriate, conduct business between meetings
- The OIE Sub-Regional Representative will be Secretary to the Sub-Commission and shall provide reports to the Sub-Commission, the OIE Regional Commission, ASEAN and major donors or as required
- Take into account in their deliberations the views of the wide range of observers from countries and organisations who participate in the meetings of the Sub-Commission

1.3 Secretariat, frequency and location of meetings:

- The Secretariat shall be provided by the OIE Sub-Regional Representation for South-East Asia
- The Sub-Commission shall meet at least once a year in February or March
- Meetings will be held in a member country and the order of rotation shall be agreed by Member Countries
- The Secretary shall be responsible for preparing agendas, invitations, recommendations and the Reports of Annual Meetings, as well as the management and coordination of business between Meetings.
- When considered appropriate, the Steering Committee to the Sub-Commission may conduct business between Annual Meetings and report to the Sub-Commission.
- An Extraordinary Meeting of the Sub-Commission can be convened with the agreement by the President of the Sub-Commission and Director General of the OIE

1.4 Membership of the Sub-Commission

- OIE Delegates from the member countries in South-East Asia, China and Mongolia
- OIE Director General
- OIE Regional Representative for Asia and the Pacific
- OIE Sub-Regional Representative for South-East Asia
- A Representative from ASEAN Secretariat
- A Representative from FAO
• Representative/s from donor organisations contributing $150,000 US per annum or equivalent
• Any person whose presence the President deems useful shall also be eligible to participate in the work of the Sub-Commission. Such persons shall have no voting rights

1.5 Election of the Sub-Commission President and Vice-Presidents
• The President and two Vice-Presidents shall be elected, by the OIE Delegates, among the OIE Delegates of Member Countries for a period of one year. Their mandate may be renewed if re-elected.
• The President shall represent the Host Country.
• The 1st Vice President shall represent the likely Host for the following year.
• The 2nd Vice President shall ensure a geographical distribution of representation.
The Sub-Commission may vary these arrangements depending on circumstances. The Sub-Commission will endorse arrangements at the start of each Sub-Commission Meeting.

2 Steering Committee to the Sub-Commission
2.1 Role of the Steering Committee
• Act as the Executive to the Sub-Commission.
• Provide policy, strategic and governance advice to the Sub-Commission.
• Promote the SEACFMD campaign

2.2 Duties and responsibilities of the Steering Committee
• Analyse and advise the Sub-Commission on SEACFMD Campaign developments, key issues for consideration and recommended actions.
• Participate in Steering Committee activities during annual Sub-Commission Meetings and contribute as required to Steering Committee business out of session

2.3 Secretariat and modus operandi
• The Secretariat shall be provided by the OIE Sub-Regional Representative who is also Member of the Steering Committee.
• The Secretariat shall provide agendas for meetings, and prepare concise records of meetings with recommendations as appropriate for the consideration of the Sub-Commission.
• The Steering Committee will meet immediately before and as required during the annual Sub-Commission Meeting
• Between annual Meetings, business shall be conducted by correspondence, telephone or under exceptional circumstances face-to-face if agreed by the President of the Sub-Commission.
• The Steering Committee will have a quorum of 50% plus 1 of its Members.
• Decision-making shall be by consensus: however should there be disagreement on a particular issue(s), the Steering Committee shall advise the Sub-Commission of the nature of any problem for Sub-Commission decision.
• Subject to obtaining the prior agreement of the Chair, the Secretary may invite observers or advisors to meetings. Such observers and advisors shall have no voting rights
• The costs of the Steering Committee will be met from provisions in the budget of the SEACFMD.

2.5 Membership of the Steering Committee
• The President of the Sub-Commission (Chair)
• The Vice Presidents (2) of the Sub-Commission
• The OIE Delegate or nominee of the host country who will serve on the Steering Committee until the next Sub-Commission Meeting
• A Representative of the Director General, OIE
• The OIE Regional Representative for Asia and the Pacific
• A Representative of the ASEAN Secretariat
3 SEACFMD National Coordinators, Epidemiology and Laboratory Network

3.1 SEACFMD National Coordinators

- Each member country of the SEACFMD Sub-commission shall designate a SEACFMD National Coordinator to provide technical support to the OIE Delegates. SEACFMD National Coordinators shall be supported in their tasks by the OIE Sub-Regional Representation; as well as by designated SEACFMD epidemiology and laboratory focal persons.
- A meeting of the National Coordinators shall be held during August of each year and, if necessary, at other times of the year between Sub-Commission Meetings. They shall discuss technical issues and draft recommendations for the endorsement of the Sub-Commission; and follow-up on matters put to them by the Sub-Commission.
- National Coordinators will be invited to attend the Sub-Commission meeting to support the OIE Delegates but cannot be nominated or vote in the election of the Sub-Commission.

3.2 SEACFMD Epidemiology Network (EpiNet) and Laboratory Network (LabNet)

- The SEACFMD EpiNet shall provide technical inputs on disease surveillance, prevention and control to the National Coordinators, and the SEACFMD LabNet shall provide technical inputs on disease diagnosis and other laboratory support on the prevention and control FMD in the region. Each member country shall designate EpiNet and LabNet focal persons to support the SEACFMD National Coordinators.
- The SEACFMD EpiNet and LabNet shall hold a joint meeting once a year.
Annex 17: Country Report: The Philippines

23rd Meeting of the OIE Sub-Commission for FMD in South-East Asia and China

Siem Reap, March 9-10, 2017

NARRATIVE COUNTRY REPORT

PHILIPPINES

ABSTRACT

The Philippines maintains its status as being a FMD-free country without vaccination. Sustaining its freedom remains a challenge and is the main objective in the implementation of the country’s FMD Prevention and Preparedness Program. But insufficient budgetary allocation is a pressing concern to effectively carry out all the identified activities. A funding proposal has been prepared and submitted to the Philippine Council for Agriculture and Fisheries.

Surveillance, animal movement management, biosecurity are still vital technical components. A follow-up OIE evaluation of the performance of the veterinary services in the Philippines has been conducted on 21 November - 2 December 2016. It was noted that some progress has been made since the first evaluation in 2008, but there are still several areas which must be improved/strengthened by the veterinary services staff.

For coordination and advocacy, there were continuous engagements with both the National and Regional Advisory Committee for Animal Disease Control and Emergency. There was also the annual National FMD Coordinators’ Meeting and a series of four FMD Risk and Crisis Communication Workshops. For IEC, FMD informative banners were produced and shall be fully distributed this 2017.

FMD STATUS

FMD-FREE COUNTRY without vaccination

ANIMAL HEALTH MANAGEMENT ACTIVITIES

The FMD Prevention and Preparedness Program of the Philippines is actively implemented from the national down to the barangay level by all the FMD coordinators who remain committed to the program’s primary objective to maintain FMD freedom.

TECHNICAL

For serological surveillance, a total of 5,802 samples were tested for NSP ELISA at the FMD Laboratory from January to December 2016. There were twenty-two positive results with the following details: 5 from LUZON – 3 in Pangasinan and 1 in Mindoro, all backyard piggeries, and 1 from a cattle at Sorsogon Dairy Farm/ 11 from VISAYAS – 5 from swine at different slaughterhouses, 1 from a goat center, 2 from swine, 2 from cattle, and 1 from sheep, all backyard farms/6 from MINDANAO – all from backyard piggery farms.

For negative monitoring, a total of 118,370 head animals were inspected by the livestock inspectors from 21,422 barangays in 2016.
For animal movement management, quarantine checkpoints are maintained in strategic locations in Luzon. All transport carriers passing through are disinfected and the shipping documents inspected. Local seaports have also veterinary quarantine offices which are handled by the BAI and LGU quarantine inspectors. Major/international and seaports are manned 24/7 by BAI quarantine staff. Strengthened quarantine activities have resulted to the confiscation of meat, meat products, byproducts and biologics.

Biosecurity measures are actively implemented which include the disinfection of vehicles at Veterinary Quarantine checkpoints, presence of footbaths/wheel baths at major port/seaports, regular cleaning and disinfection and All in, All out Policy in slaughterhouses, and distribution of disinfectants to backyard farms.

The OIE PVS Evaluation Follow-up Mission has been conducted on 21 November-2 December 2016. The following were identified as the key changes from the 1st OIE PVS Evaluation in 2008: Rationalization plans; Investment in premises & equipment (NMIS, BAI training facilities, BAI lab, LGUs); Recruitment freeze over; Increased salaries; FMD-free status obtained (+PPR +AHS); Reduced number of check points; Rabies: planning, coordinating, implementing; Test on residues (>2013) & AMR (2015); New legislation: export certification, food safety act etc.; and Reporting of import confiscation to DA.

COORDINATION AND ADVOCACY

A series of FMD Risk and Crisis Communication Workshop have been conducted throughout the country from April to July 2016. The specific objective was to assess the capability of veterinary services frontline officers in responding to FMD disease incursion and enhance/hone appropriate communication and technical skills. The participants were the veterinarians from the BAI National Veterinary Quarantine Services, Regional Field Offices, and Local Government Veterinary Offices.

We also had the Annual FMD Coordinators’ Meeting which was held on 6-8 December 2016. The 2016 accomplishments of the FMD Prevention and Preparedness Program as well as the FMD activities for 2017 at the national, regional and provincial levels were presented by the FMD coordinators. Major challenges/constraints as well as the possible solutions were discussed.

Any urgent matter and update on FMD activities are presented to the National Advisory Committee on Animal Disease Control and Emergency (NACADCE) during its regular monthly meetings. We also participate in the quarterly meetings of the Regional Advisory Committee on Animal Disease Control and Emergency (RACADCE).

At the regional and provincial levels, the Regional FMD interagency task forces conduct meeting every quarter where issues & concerns of FMD prevention are being discussed. All local government veterinarians and concerned stakeholders (eg. livestock farmers) are required to attend. Some of the provinces have special meetings with Provincial Board Chairman on Agriculture, Trade, Tourism and Investment. They also conduct Livestock inspectors’ meetings, Barangay animal health aide basic/refresher training courses, and Animal disease management trainings.

For IEC, we have an initial production of 500 pieces of tarpaulins which basically is an informative material about FMD. They shall be distributed to the 86 provincial veterinary offices, 16 regional field offices and veterinary quarantine offices in major ports and seaports. In addition, we have produced roll-up banners on FMD (and AI) which are displayed in major ports and seaports.

As the last recorded outbreak in the country was on 28 December 2005, the general public as well as the new and young FMD coordinators who have not encountered an actual FMD case may not be
familiar with FMD anymore. Hence, we have included in the conceptualization of new IEC materials the production of tarpaulins containing information about FMD – its cause, species affected, clinical signs complete with graphics, and means of spread/transmission. The tarpaulins shall be displayed in each of the 81 provincial veterinary offices for the awareness of the new staff and the general public.

GOVERNANCE AND POLICY
We have prepared and submitted a P33,000,00 budget proposal for the FMD Prevention and Preparedness Program for 2018 to the Philippine Council for Agriculture and Fisheries (PCAF) to enable us to carry-out the activities necessary to maintain freedom. In addition, the National Advisory Committee for Animal Disease Control and Emergency have prepared and submitted a resolution to the Secretary of the Department of Agriculture requesting for an initial fund of US$20,000 as reservation fee to the OIE vaccine bank to make FMD vaccine readily available in case of an incursion and yearly allotment of US$2,000.00 as maintenance fee.

CONSTRAINTS AND SOLUTIONS

<table>
<thead>
<tr>
<th>CONSTRAINTS</th>
<th>SOLUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Late submission of samples to FMD laboratory</td>
<td>1. Constant follow-up to regional/provincial FMD coordinators</td>
</tr>
<tr>
<td>2. Influx of foreigners through International Airport carrying undocumented meat and meat products.</td>
<td>2. a. Strengthen quarantine inspection in airports b. Display of informative roll-up banners c. Close coordination with the customs officers</td>
</tr>
<tr>
<td>3. Lack of knowledge on FMD by new LGU Veterinarians and newly appointed FMD regional coordinators</td>
<td>3. a. Conduct of FMD Orientation/ Seminar b. Distribution of IEC materials</td>
</tr>
<tr>
<td>4. Decreasing yearly FMD budget allocation</td>
<td>4. a. Submission of request for FMD budget allocation to the Phil. Council for Agriculture and Fisheries b. Submission of NAC-ADCE Resolution to the DA Secretary requesting for budget allocation for FMD buffer vaccine</td>
</tr>
</tbody>
</table>

FUTURE ACTIVITIES
- Continuous bi-annual sero-surveillance and monthly clinical surveillance
- Review and revision of the FMD-EPP manual
- Conduct of a series of Incident Command System (ICS) Training Course nationwide
- Conduct of annual National FMD Coordinators’ Meeting
- Distribution of FMD IEC posters/banners
- Conduct of regular meetings of FMD task forces and yearly technical updates to livestock inspectors in the regions
- Conduct of FMD tabletop simulation exercise by some regions
Annex 18: Country Report: Singapore

23rd Meeting of the OIE Sub-Commission for FMD in South-East Asia and China

Siem Reap, March 9-10, 2017

NARRATIVE COUNTRY REPORT

Singapore

ABSTRACT

Singapore remains as a FMD free country where vaccination is not practised. Due to limited land for farming, the local livestock industry is small. Hence, Singapore depends heavily on import of animals and animal products for its food supply.

By adopting a multi-approach strategy, Singapore maintains FMD-disease free status through stringent import control measures, source accreditation, increasing laboratory testing capability and local disease surveillance. This integrated disease control system is based on a risk-based approach and scientific evidence.

Moving forward, the Agri-Food and Veterinary Authority of Singapore (AVA) will continue to actively engage relevant stakeholders to look into reviewing existing emergency protocols and FMD contingency plans.

FMD STATUS

Singapore is recognised by the OIE as a FMD free country where vaccination is not practised. There has been no outbreak of FMD and vaccination against FMD has not been carried out. There is also no evidence of FMDV from surveillance and monitoring of local and imported animals and animal products.

ANIMAL HEALTH MANAGEMENT ACTIVITIES

1. Surveillance
Singapore has a very small local population of animals susceptible to FMD. There are three dairy cattle farms, one goat farm, and a zoological collection.

AVA conducts regular monitoring on the local farms through active serological and clinical surveillance. The last serological surveillance was done in December 2016, and all samples were tested sero-negative for FMD.

AVA also conducted a baseline survey on susceptible ruminant and swine species in our zoological collection in 2014-2016 and all samples were tested sero-negative for FMD.

2. Laboratory Activities
780 samples were taken for FMD testing at the AVA Animal Health Laboratory (AHL) from the period of January 2016 to December 2016. AHL provides FMD diagnostic test capabilities using OIE recognised methods, and is ISO17025 accredited. The laboratory also actively participates in inter-laboratory
proficiency programmes to maintain a rigorous quality assurance standard. The lab works closely with the OIE regional reference lab in Pakchong, Thailand, and FMD reference lab in Pirbright, UK.

<table>
<thead>
<tr>
<th>FMD test capabilities</th>
<th>Proficiency testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSP ELISA</td>
<td>Participated in inter-laboratory proficiency programmes with Pakchong and Pirbright in 2015 with 100% satisfactory results.</td>
</tr>
<tr>
<td>Liquid phase blocking ELISA for serotypes O, A, Asia 1, C</td>
<td>Participated in inter-laboratory proficiency programmes with Pirbright in Oct 2016 (Pending final report)</td>
</tr>
<tr>
<td>RT-PCR molecular detection of FMDV RNA</td>
<td></td>
</tr>
</tbody>
</table>

3. Advocacy
Through regular meetings and dialogue sessions, AVA actively engages relevant stakeholders such as the local farms, meat traders and trade associations, and the zoo, to create awareness and stress the importance and impact of FMD.

At the national level, AVA is involved in a tripartite relationship with the National Environment Agency and Ministry of Health under the mandate of the One Health Framework, employing an integrated approach for the control of animal and zoonotic diseases. High level coordinating committee meetings are conducted annually. Working groups meet more regularly to discuss and develop initiatives in the areas of protocols, communication, surveillance and risk assessment, and capability development.

Singapore also collaborates with Jilin City and the Ministry of Agriculture, China, to maintain an FMD disease free zone in Yongji County in Jilin province. As a member of the OIE and ASEAN, Singapore also works closely with other member countries towards eradicating FMD in the region. AVA organised a training workshop “OIE Recognition for FMD Freedom with Vaccination” for Jilin officers from 13-16 October 2015 in Singapore. The workshop was to covers the process to obtain OIE recognition for FMD freedom, with expert trainers from OIE Prof John Edwards, Dr Ronello Abila and Dr Phil Widders, and an expert from MOA China Prof Zheng Zengren.

4. Import Control
Singapore is an island state where routes of entry into the country are restricted to the sea port, airport and two road links to Peninsular Malaysia. AVA will inspect all live animal imports at the border checkpoints. AVA has in place standard operating procedures with Immigration and Checkpoint Authority (ICA) to deal with illegal imports of animals and animal products.

AVA has an accreditation system for susceptible animal species, meat and meat product imports, whereby only country sources and establishments, which have been approved by AVA, may export animals, meat and meat products to Singapore. Import of animals and raw meat are only allowed from FMD free countries and zones, and processed meat or dairy products are only allowed where risk mitigation measures are applied, such as heat-treatment or pasteurisation, in accordance to OIE guidelines.

AVA has in place strict import regulations. All importers must be licensed and import permits are required for each consignment of animals, animal products (including animal feeding stuffs), meat and meat products. Consignments must also arrive with valid health certificates endorsed by the relevant overseas competent authorities, and are physically inspected and samples taken for laboratory tests.

5. Review FMD Contingency Plans
Due to land scarcity in Singapore, AVA is exploring alternative methods of mass disposal of carcases that is effective in controlling and preventing animal disease spread.
AVA will continue to review the existing FMD contingency plans. We will also evaluate the feasibility of an emergency vaccination strategy for the control of FMD outbreaks in the zoo collection.
Annex 19: Country Report: Cambodia

23rd Meeting of the OIE Sub-Commission for FMD in South-East Asia and China

Siem Reap, March 9-10, 2017

NARRATIVE COUNTRY REPORT

Cambodia

ABSTRACT

From January to July 2016, there are 71 outbreaks of FMD reported from 16 provinces (Kampong Speu, Kandal, Prey Veng, Tboung Khmum, Takeo, Pursat, Svay Rieng, Kampong Chhnang, Mondulkiri, Preah Vihear, Kampong Cham, Siem Reap, Kampot, Ratanakiri, Kratie and Kampong Thom) and cause 13,145 heads of cattle; 3,154 heads of buffaloes and 132 heads of swine are shown clinical signs of FMD and among that there are 65 heads of cattle, 06 heads of buffaloes and 15 heads of swine are dead. The 17 samples have been collected and the testing results are Sero-type O and Sero-type A (January-July, 2016). Another 20 samples also have been collected from August to December 2016 and the results of testing are pending.

In January 2017, there are 09 outbreaks of FMD reported from 06 provinces (Kampong Speu, Svay Rieng, Siem Reap, Prey Veng, Kandal, Odar Meanchey). A total of 09 samples have been collected and the results of testing are pending.

With support from OIE and EU, the vaccination campaign is implemented in target provinces (Takeo, Kampot, Kampong Speu and Kandal).

With OIE support, staff of GDAHP, Chief/Vice Chief of 25 Provincial Animal Health and Production Offices and graduated CAVET-2 Trainees is invited to participate in the OIE Training on the Application of Standard and Guidelines for Surveillance, Control and Response on 20-22 July 2016 in Siem Reap province.

With strong support from Ministry of Agriculture, Forestry and Fisheries and financial support from DTRA-CBEP, CAVET-3 Training Course has been conducted in Kampong Cham National School of Agriculture, Kampong Cham province from July 11, 2016 to August 12, 2016. The 06 months research is completed in target provinces where CAVET-3 Trainees has been selected.

FMD STATUS

- January 2016, there are 07 outbreaks of FMD reported from 05 provinces (Kampong Speu, Kandal, Prey Veng, Tboung Khmum, Takeo) and cause 189 heads of cattle; 104 heads of buffaloes and 32 heads of swine are shown clinical signs of FMD.
- February 2016, there are 03 outbreaks of FMD reported from 03 provinces (Kampong Speu, Prey Veng, Tboung Khmum) and cause 161 heads of cattle and 07 heads of buffaloes are shown clinical signs of FMD and among that there are 02 heads of cattle are dead.
- March 2016, there are 02 outbreaks of FMD reported from 03 provinces (Kampong Speu, Prey Veng, Takeo) and cause 295 heads of cattle and 07 heads of buffaloes are shown clinical signs of FMD and among that there are 07 heads of cattle are dead.
- April 2016, there is 01 outbreak of FMD reported from 01 province (Pursat) and cause 83 heads of cattle and 10 heads of buffaloes are shown clinical signs of FMD.
May 2016, there are 02 outbreaks of FMD reported from 03 provinces (Kampong Speu, Pursat, Svay Rieng) and cause 167 heads of cattle and 123 heads of buffaloes are shown clinical signs of FMD and among that there is 01 head of cattle and 01 head of buffalo are dead.

June 2016, there are 05 outbreaks of FMD reported from 04 provinces (Kampong Speu, Pursat, Svay Rieng, Kampong Chhnang) and cause 576 heads of cattle and 122 heads of buffaloes are shown clinical signs of FMD and among that there are 04 head of cattle and 01 head of buffalo are dead.

July 2016, there are 08 outbreaks of FMD reported from 07 provinces (Kampong Speu, Svay Rieng, Prey Veng, Mondulkiri, Takeo, Tboung Khmum, Preah Vihear) and cause 2,676 heads of cattle, 269 heads of buffaloes, and 01 head of swine are shown clinical signs of FMD and among that there are 10 head of cattle are dead.

August 2016, there are 13 outbreaks of FMD reported from 10 provinces (Kampong Cham, Tboung Khmum, Siem Reap, Kampot, Mondulkiri, Prey Veng, Kampong Speu, Ratanakiri, Kandal, Svay Rieng) and cause 3,715 heads of cattle and 553 heads of buffaloes are shown clinical signs of FMD and among that there are 16 heads of cattle are dead.

September 2016, there are 13 outbreaks of FMD outbreaks from 09 provinces (Kratie, Tboung Khmum, Siem Reap, Kandal, Kampong Chhnang, Mondulkiri, Prey Ven, Kampong Speu, Takeo) and cause 2,622 heads of cattle and 1,067 heads of buffaloes are shown clinical signs of FMD and among that there are 09 heads of cattle and 03 heads of buffaloes are dead.

October 2016, there are 03 outbreaks of FMD reported from 05 provinces (Tboung Khmum, Kapong Thom, Prey Veng, Kampong Cham, Kampong Speu) and cause 900 heads of cattle, 48 heads of buffaloes and 20 heads of swine are shown clinical signs of FMD and among that there are 02 heads of cattle are dead.

November 2016, there are 05 outbreaks of FMD reported from 02 provinces (Kampong Speu, Pursat) and cause 939 heads of cattle and 297 heads of buffaloes are shown clinical signs of FMD and among that there are 03 heads of cattle are dead.

December 2016, there are 09 outbreaks of FMD reported from 04 provinces (Kampong Speu, Pursat, Svay Rieng, Siem Reap) and cause 822 heads of cattle, 537 heads of buffaloes and 79 heads of swine are shown clinical signs of FMD and among that there are 03 heads of cattle are dead.

January 2017, there are 09 outbreaks of FMD reported from 06 provinces (Kampong Speu, Svay Rieng, Siem Reap, Prey Veng, Kandal, Odar Meanchey)

Control measures:

- District and provincial veterinarians work closely with village animal health workers and local authority to treat sick animals with antibiotic and distribute the blue methylene to farmers, separate sick animal from healthy animals
- Arrange the meeting with farmers to advise them on how to control and prevent the spread of FMD in their district
- Conduct ring vaccination around the infected villages
- Strictly control animal movements from infected villages
- Make public awareness in the infected villages and also distribute the FMD leaflets and posters to farmers
- Advise farmers on how to take care their animals during the FMD outbreaks and how to prevent their animals from FMD
### Table 1: Distribution of FMD outbreaks by month in 2016

<table>
<thead>
<tr>
<th>Month</th>
<th>Number of outbreaks</th>
<th>Number of cases/deaths</th>
<th>Province</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New</td>
<td>Ongoing</td>
<td>Bovine</td>
</tr>
<tr>
<td>Jan 2016</td>
<td>7</td>
<td>0</td>
<td>189/0</td>
</tr>
<tr>
<td>Feb 2016</td>
<td>3</td>
<td>3</td>
<td>161/2</td>
</tr>
<tr>
<td>Mar 2016</td>
<td>2</td>
<td>3</td>
<td>295/7</td>
</tr>
<tr>
<td>Apr 2016</td>
<td>1</td>
<td>0</td>
<td>83/0</td>
</tr>
<tr>
<td>May 2016</td>
<td>2</td>
<td>1</td>
<td>167/1</td>
</tr>
<tr>
<td>Jun 2016</td>
<td>5</td>
<td>3</td>
<td>576/4</td>
</tr>
<tr>
<td>Jul 2016</td>
<td>8</td>
<td>3</td>
<td>2676/10</td>
</tr>
<tr>
<td>Aug 2016</td>
<td>13</td>
<td>3</td>
<td>3715/16</td>
</tr>
<tr>
<td>Sep 2016</td>
<td>13</td>
<td>4</td>
<td>2622/9</td>
</tr>
<tr>
<td>Oct 2016</td>
<td>3</td>
<td>2</td>
<td>900/2</td>
</tr>
<tr>
<td>Nov 2016</td>
<td>5</td>
<td>1</td>
<td>939/3</td>
</tr>
<tr>
<td>Dec 2016</td>
<td>9</td>
<td>5</td>
<td>822/11</td>
</tr>
<tr>
<td>Total</td>
<td>71</td>
<td>28</td>
<td>13145/65</td>
</tr>
</tbody>
</table>

### Table 2: Number of FMD outbreak in January 2017

<table>
<thead>
<tr>
<th>Month</th>
<th>Number of outbreaks</th>
<th>Number of cases/deaths</th>
<th>Province</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New</td>
<td>Ongoing</td>
<td>Bovine</td>
</tr>
<tr>
<td>Jan 2017</td>
<td>9</td>
<td>5</td>
<td>1979/54</td>
</tr>
</tbody>
</table>
Fig 1: Number of FMD outbreaks by month from January 2016 to January 2017

Fig 2: Location of FMD outbreaks and Sero-type of FMD from January to July 2016 in Cambodia
ANIMAL HEALTH MANAGEMENT ACTIVITIES

TECHNICAL

- Collect FMD report from provinces every month
- Collect FMD samples from district/provinces (17 FMD samples have been collected and testing results are sub-type O and Sero-type A)
- With support from OIE, General Director of Animal Health and Production organize the workshop on updating of Cambodia FMD National Plan on 16-17 February 2017 in Siem Reap province
- Conduct surveillance in provinces
- Conduct vaccination
- Conduct public awareness
- Implement disinfection and biosecurity
- Control animal movement

Picture 1: Opening session for Workshop on Updating of Cambodia FMD National Plan (2015-2018)

- With financial support from DTRA-CBEP and strong support from Ministry of Agriculture, Forestry and Fisheries, The Third Cambodian Applied Veterinary Epidemiology Training Course (CAVET-3) has been conducted from July 11, 2016 to August 12, 2016 at Kampong Cham National School of Agriculture, Kampong Cham province. There are 20 CAVET-3 Trainees participated in theory and field practices.
Picture 2: Opening session for CAVET-3 Training

Picture 3: Activity of CAVET-3 Training

Picture 4: Closing session for CAVET-3 Training
Fig 3: Location of CAVET-3 Trainees Working Office, 2016

Working Offices of CAVET-3 Trainees in Cambodia, 2016

COORDINATION AND ADVOCACY
- General Directorate of Animal Health and Production has coordination with Provincial Animal Health and Production Offices and local authority
- National FMD Plan approved (2015)
- Law on Animal Health and Production (January 2016)
- Participated in Training on application of OIE standards and guidelines for animal disease surveillance, prevention and control, Siem Reap, 20-22 July 2016 (OIE, Australia, New Zealand funded)
- Coordinate with EU funded Programme and ADB-SPS, ACIAR
- Law on animal health and production endorsed by National Assembly on 14 January 2016
- Cambodia FMD National Plan is approved and endorsed by Ministry of Agriculture, Forestry and Fisheries on June 30, 2015
- Animal Disease Surveillance Strategy for implementation in Cambodia

GOVERNANCE AND POLICY

1. Governance
- Strategic Planning Framework for Livestock Development (SPL) approved by MAFF in January 2016
• Support activity of provincial animal health and production
• MAFF issue letter on the FMD outbreak zone
• Have law, sub-degree and announcement to support the control activities of FMD in the country
• Have teams to conduct surveillance, investigation and response at the provincial level

2. Strengthening Veterinary Service
• General Directorate of Animal Health and Production has regular annual bilateral meeting with Thailand (August 2016) and Vietnam (October 2016)

3. Legislation and regulation
• Law on Animal Production and Health
• FMD National Plan
• Sub-degree
• Prokas
• Announcement

4. Funding
• ADB-SPS Project
• EU funded Programme
• GDAHP Project (government fund)

CONSTRAINTS AND SOLUTIONS
• Late reporting from village level so how to encourage grass-root level to participate in the report system?
• Involvement of private sectors in the reporting of animal diseases
• How to improve the biosecurity at farms/village level?
• Low number of samples collected during FMD outbreaks
• Lack of reagents for laboratory diagnosis
• The budget to purchase the vaccines from government is limited

FUTURE ACTIVITIES
• Organize the workshop for extension of Law on Animal production and Health
• Implement Law on Animal production and Health and the national FMD control plan
• Strengthen animal disease surveillance, outbreak investigation and response; and disease reporting system
• strengthen disease diagnosis and proficiency testing
• Conduct the public awareness for all stakeholders on animal diseases and its impact
• Collaboration on field of Epidemiology and laboratory between Cambodia and Argentina
• Conduct animal disease surveillance (FMD, HS, CSF, PRRS) in three target provinces supported by ADB-SPS Project
• Strengthen disease reporting system through supporting from EU-Project
• Continue to conduct Cambodia Applied Veterinary Epidemiology Training for district/provincial veterinary officers which is supported by DTRA-CBEP
• Implement FMD control measures in zoning

23rd Meeting of the OIE Sub-Commission for FMD in South-East Asia and China

Siem Reap, March 9-10, 2017

NARRATIVE COUNTRY REPORT

Lao People’s Democratic Republic

ABSTRACT

Previous year, the Government of Lao People Democratic Republic (Lao PDR) has strong effort to control foot and mouth disease as like as trans boundary animal diseases following the South East Asian and China Foot and Mouth Disease Roadmap to eradicate this disease on 2020. At present, Lao PDR has carried out to develop National Foot and Mouth Disease Control Plan was approved by Minister of Agriculture and Forestry, and in during on October 2016 the amendment Law on Livestock and Veterinary Matters were endorsed by National Parliament of Lao PDR. This law had developed to improve and strengthen the trans boundary animal disease control as well as foot and mouth disease and also allocated the annual budget to Department of Livestock and Fisheries to control foot and mouth disease and others animal diseases.

Otherwise, the northern provinces of Lao PDR has involved Upper Mekong Foot and Mouth Disease Control Zone by strong support of OIE, Department of Livestock and Fisheries foot and mouth disease control project, foot and mouth disease were disappeared since the end of 2013 until now have no foot and mouth disease outbreak in Northern of Lao PDR. However, the project were finished on 2016 and lets us big challenge that how to maintain the Zero FMD outbreak or can be set up FMD free zone in the future.

Of course, the control and prevention of foot and mouth disease, Lao PDR has coordinated and collaborated closely with neighbouring countries, donors, international organization concerning the sharing information of disease, technical issues development, capacity building and its control and prevention and border animal movement control to ensure border animal and animal products safer trade in the future.

And during 2016, Lao PDR were got the support New Zealand OIE Department of Livestock and Fisheries foot and mouth disease control project in Southern (Savannakhet, Champasack and Xiengkhouang province) by Government of New Zealand. The goal of the project is to declare foot and mouth disease of this zone.

FMD STATUS

However, foot and mouth disease in Lao PDR were decreased year by year but still have reported continuing foot and mouth disease outbreaks especially, in central and southern of Lao PDR. Showily, that foot and mouth disease is still endemic and for the year 2016 to 2017 has been reported 12 outbreaks, 45 villages affected, 9 district in 5 provinces such as Vientiane capital, Bolikhamxay, Khammouane, Savannakhet and Champasack province. Susceptible animal as like cattle and buffalo affected approximately 3,800 heads and 100% foot and mouth disease virus were detected positive FMDV serotype O.
ANIMAL HEALTH MANAGEMENT ACTIVITIES

TECHNICAL

A. UNDERSTANDING THE EPIDEMIOLOGY OF FMD IN YOUR COUNTRY
The public awareness is key activity were conducted in Lao PDR. In recent year have been conducted in southern of Lao PDR both deeply by conducting the farmers or stakeholders meeting and superficially by radio and distributed, posters, leaflets,... supported by NZ OIE DLF FMD control project, conducted vaccination campaign in northern and southern of Lao PDR. Of course, for the confirmation of FMD after receiving infected or suspected cases from passive surveillance that report weekly and monthly by negative reporting system conducted outbreak investigation to find source of FMD infection, at the same time, collected samples sent to National Animal Health Laboratory to detect foot and mouth disease virus and submit samples to Regional Reference Laboratory and World Reference Laboratory to confirm further detail of virus genotyping.

B. IDENTIFICATION AND ANALYSIS OF RISK FACTORS
Usually, Lao PPR conducted baseline survey and serosurveillance study to determination of identification and analysis of risk factors. The result (data information shown that clear the risk factors) received from baseline survey and serosurveillance study can be used for planning the control and prevention of FMD and control animal and animal product movement. Therefore, the NZ OIE DLF
FMD control project conducted baseline survey and serosurveillance study completed on the year 2016.

C. DEVELOPMENT AND APPLICATION OF CONTROL STRATEGIES

- Planning and implementing vaccination campaigns, PVM, bio security in 10 Provinces of central and northern Lao PDR under FMD project until the end of 2016.
- Planning and implementing vaccination campaigns, PVM, bio security in 3 Provinces (Savannakhet, Champasack and Xiengkhouang province) under NZ OIE DLF FMD Control project.
- Planning and operating rapid outbreak investigation and response (capacity building, training staffs, samples collection, ring vaccination, separation animal and treatment, animal movement control, ...)

D. MAINTENANCE OF DISEASE FREEDOM IN ZONES AND COUNTRIES

Northern provinces of Lao PDR under Upper Mekong Zone have no outbreak of foot and mouth diseases since the end of 2013 until now and the OIE DLF foot and mouth diseases project finished on June 2016 but have some continuing activities such as vaccination campaign, outbreak investigation, ... until December 2016. At present has no project opposite need to maintain free foot and mouth diseases of these areas to prevent the spread of diseases will be operated some activities such as: strict border animal movement control, clear sources of animal, animals should be vaccinated foot and mouth diseases vaccine, close cooperation and collaboration with neighbouring countries, set up border control zones, may develop together policy and procedures at the border, emergency response planning and preparedness.

COORDINATION AND ADVOCACY

A. COORDINATION, TRAINING AND COMMUNICATION FOR CONTROL STRATEGIES

- Developed and endorsed national FMD control plan for Lao PDR on 2015 by Minister of Agriculture and Forestry. Published and distributed to DLF offices and provincial livestock and fisheries offices.
- The amendment Law on Livestock and Veterinary Matters endorsed by National Parliament of Lao PDR on October 2016.
- Conducted the training course on the Application of OIE Standards and Guidelines for Animal Disease Surveillance and Control 29 February-2 March 2016, Vientiane capital.
- On Job on Vaccination Technique training conducted in Savannakhet and Champasack supported by NZ OIE DLF FMD Control Project on June-July 2016
- Conducted bio security training workshop to provincial and district livestock and fisheries staffs in Savannakhet and Champasack supported by NZ OIE DLF FMD Control Project.

B. ADVOCACY

- Advisory group and coordination committee established to oversee progress of activities.
- Provincial and district focal point for FMD have been assigned.
- Published and distributed IEC materials (poster, leaflets ...)
- Radio broadcasts ongoing; newspaper articles released after major activities

C. PROMOTION OF CAMPAIGN AWARENESS

- Conduct district public awareness meeting on FMD understanding and vaccination campaign attending head of FMD high risk villages of 9 districts in Champasack province and 10 districts in Savannakhet, financial supported by NZ OIE DLF FMD control project.
- Hired radio channel to broadcast the content of IEC materials and other urgent notice regarding FMD prevention and control.
- Production of 38 billboards provided 7 billboards for Vientiane capital, 4 for Bilikhamxay, 3 for Khammouane, 7 for savannakhet, 4 for saravane, 7 for Champasack, 2 for sekong and 4 billboards for Attapeu and other IEC materials

GOVERNANCE AND POLICY
A. GOVERNANCE
Lao PDR has closed coordination and cooperation with neighboring countries concerning the sharing information of disease and its control and prevention and border animal movement control to ensure border animal and animal products safer trade by rotating manner conducted the meeting as below:
- The 1st Lao, China and Myanmar meeting to address TAD was conducted in Lao PDR, December 2015.
- The 11th Bilateral meeting with Kingdom of Thailand (in Thailand)
- The 12th Bilateral meeting with Kingdom of Thailand (in Lao PDR)
- The 12th Bilateral meeting with Vietnam SR (in Vietnam)
- The 13th Bilateral meeting with Vietnam SR (in Lao PDR).
- The 2nd Trilateral meeting with China-Lao-Myan (in Lao PDR)
- The 1st Multilateral meeting with China-Lao-Mya-Thai-Viet (in Lao PDR)
- Stakeholders workshop (China,-Lao-Myanmar) conducting in Kunming, PR China on September 2016 discussed to set up border control zones and animal quarantine to support border animal safer trade among China-Lao-Myanmar, supported by Government of China.
- Workshop and Field Trip on Transboundary Animal Diseases Control Cross Border among China-Lao and China-Myanmar to discuss Transboundary Animal Diseases Control Cross Border and field visit cattle and buffalo fattening/quarantine farms and live animal markets in border China sides on February-March 2017, supported by Government of China.

B. STRENGTHENING VETERINARY SERVICES
On the year 2015-2016, the Government of Lao PDR provide funding support for animal disease surveillance and control amount 80,000 $ and strengthening International animal check point and veterinary certifications amount 80,000$,

C. DEVELOPMENT OF LEGISLATION
The amendment Law on Livestock and Veterinary Matters were endorsed by National Parliament of Lao PDR on October 2016. This law should develop, improve and strengthen the trans boundary animal disease control as well as foot and mouth disease.

D. FUNDING
The Department of Livestock and Fisheries submitted the requirement budget plan 2016-2020 to maintaining FMD free 10 Northern provinces of Lao PDR and control of FMD in 4 central provinces of Lao PDR.

CONSTRAINTS AND SOLUTIONS
The constraints for the prevention and control of FMD in Lao PDR are:
- Not enough field veterinary epidemiology so we need to conduct the short or middle term training course in country or overseas..
- Most of animals are free-grazing and/or sharing of grazing areas, should be improved the raising system such as to be grouping, or farming and with good bio security.
- Delay report or under report is usually in country, may be farmers no understanding of FMD impact, should be provided more education or public awareness.
- FMD vaccine cost’s very high. Vaccination campaign conducted only targeted villages under project or ring vaccination in cases FMD outbreaks. If possible should vaccinate more areas.
• How to maintain FMD free in Northern provinces of Lao PDR after the end of OIE DLF FMD control project on 2016, should continue to support by donors or Government of Lao PDR.

FUTURE ACTIVITIES
• The Government of Lao PDR has the efforts to control FMD and animal movements by strengthening the collaboration among the neighboring countries on information sharing, development of safer trade mechanism particularly on FMD for cattle movement, and get the support from Chinese government for animal disease control projects.
• Maintaining the Zero FMD outbreak Northern of Lao PDR after ending the FMD Control Project by proposal of the funding support from the Government.
• Animal disease surveillance, outbreak investigation and rapid response, ring vaccination, public awareness, vaccination campaign and ear tagging and vaccine effective monitoring in Southern of Lao PDR (Savannakhet and Champasack province) under the support by New Zealand FMD Control project.
Malaysia

FMD STATUS

Foot-and-Mouth-Disease (FMD) is a notifiable disease in Malaysia. As such, there is a National FMD Control and Eradication Plan and annual federal government budget provided by the Ministry of Agriculture and Agro-Based Industry for implementation of control, prevention and eradication measures.

The States of Sabah and Sarawak are OIE recognized FMD free zones in Malaysia without vaccination since 2004 and maintained FMD free status in this period of report. In Peninsular Malaysia which is the Control zone, the status of FMD improved with significance in year 2015, with reduction in outbreaks by 97% from 146 outbreaks the highest number of outbreaks in year 2008. The status of FMD in the Malaysia-Thailand-Myanmar (MTM) control zone (Border States) in Peninsular Malaysia also improved significantly in the year 2015 compared to the same period in 2014. There were only two states with FMD outbreaks out of 6 Border States in the Malaysian MTM control zone, namely 1 outbreak in the state of Kedah and 3 outbreaks in the state of Terengganu. The total number of outbreaks for the country were 10 outbreaks in 5 states (Kedah, Terengganu, Pahang, Negeri Sembilan and Melaka) out of 12 states and 7 states had no FMD outbreaks. There was continuity of better reporting of FMD outbreaks.

There were 10 FMD outbreaks in year 2015 with the range from 0 – 3 outbreaks which occur in the months of March, April, June, July, September and October. This year, temporally there was no trend of outbreaks progressively increasing in the last quarter (festive season) of the year compared to since the first ever incidence of FMD in Malaysia. Also there were 6 months of no FMD outbreak in the country due to the effective implementation the FMD Control Plan 2009 – 2016, especially due to the better management of imported animals in approved temporary licensed private quarantine stations which has significantly reduced illegal animal movement across the border and strategic vaccination. Where there were outbreaks it was related to animal movements within the country and a very small number of illegal animal movements from across the northern border.

Cattle were the only affected species. Serotyping results of specimens from outbreaks were serotypes ‘O’ and there was no outbreak involving serotype ‘A’ in Malaysia for the year 2015. The specimens are in process of being sent to OIE FMD WRL, Pirbright, UK for sequencing and vaccine matching.

The livestock importation policy to facilitate trade enabled better risk management measures for live animal imports from FMD infected countries. Even though the new strategy for control and eradication of FMD that is the licenced temporary quarantine stations has tremendously reduced the illegal movement of live animals across the border, there were still very small number of cattle that were illegally brought into the country causing outbreaks. With effective strategic and ring vaccinations, the endemic status has significantly improved for this period.
Diagnosis for FMD is done at the National FMD Laboratory in Kota Bharu, Kelantan which is a ISO 17025 accredited laboratory. There has been improvement in submission of good specimens and weight of the epithelial tissues. The threat of incursions across the border has been constant. Animal health and Veterinary measures related to FMD control include management of animal movement, strategic vaccination, legislation, disease investigation and outbreak management, surveillance, public awareness campaigns and reporting.

### FMD Prevention and Control Activities

**TECHNICAL**

FMD prevention and control activities are summarised as below:

The Master Document FMD Protocol – FMD Control Plan (PVM 1/9:1/20011) and supporting documents (SOP’s) is a risk based FMD control plan, where livestock sourcing from endemic countries had to undergo Pre-Border and Post-Border control, that is in pre-border there is risk assessment and management of the animal sources and the mitigation output is the Import Protocol, whereas the post-border are the control measures before release of animals from the quarantine station.

Diagnostic work is done at the National FMD Laboratory at Kota Bharu, Kelantan where serotyping is done and sub-typing and vaccine matching is done at the OIE World Reference Laboratory for FMD, Pirbright, England. From 27 outbreaks in the country 57 epithelial tissues were sent to the National FMD Laboratory for diagnosis and confirmation. Thirty-two (32) samples were serotyped as ‘O’ and two (2) samples were serotyped ‘A’, while no virus was detected (negative) in twenty-one (21) because this samples were taken from aged FMD lesions in the same outbreaks.

The following activities were implemented to rapidly identify FMD foci and eliminated the source of FMDV;

- Mandatory reporting by stakeholders of occurrence or suspicion of FMD like syndrome under Section 30 of Animal Act (Revised 2006).
- Initiation of **Outbreak Investigation** applying epidemiology as according to SOP APVTM 22(f):1/2011.
- Effectively implement “Outbreak Control Management” according to SOP APVTM(16a/16b(1):2009.
  - From detection of outbreak until free from disease is verified after two incubation periods. This includes movement control, quarantine of premises affected, vaccination, disinfection and reporting.

To prevent the spread of FMDV the following activities were implemented;

- **Management of Animal Movement** through e-permit which regulates the animal movement from areas of same status, Veterinary Health Certificate key document for strict compliance for approval of permit.
- Approved Licensed Private Temporary Quarantine Stations in MTM control zone to facilitate trade. This act as the first line of risk mitigation measure and have been successful in the reduction of FMD virus release into the country.
  - A meeting with the Authorised Agency (MAQIS) is in the planning to discuss on the importance of this stations acting as first line of disease filters as well as the ease of doing Veterinary inspection, and to increased back to the numbers that were before.
- **Ring vaccination during outbreaks.**
  - Strategic vaccination at the hotspots and trade pathways
For the protection of susceptible animals, **strategic vaccination** at critical points, hotspots and ring vaccination during outbreaks was done. Animal owners and around their premises mandatorily vaccinated 14 days prior to receiving new animals if the last vaccination date exceeded 5 months. Animals that are to be transferred out to another area were also vaccinated 14 days prior to movement. A new directive from the decision makers of DVS Malaysia that any livestock are no more required to be tested for NSP ELISA test if they are moved for slaughter purpose and approved to move to established free areas. This can cause high risk to local community livestock if these non-tested animals are stayed longer than required before slaughter.

**Historically in Malaysia cattle and to lesser extend buffaloes are the main species involved in the spread and outbreaks of FMD.** From the total population 435,500 of cattle and buffaloes in the hotspots and movement pathways, 280,513 cattle and buffaloes were vaccinated with **trivalent (O manisa, O 3039, A Malaysia 97 and Asia 1 shamir)** vaccine manufactured by Merial, Pirbright, England. This accounts to **64.4 % of the target population vaccinated** that plays the most important role in FMD outbreaks in the country. Due financial constraints to purchase 500,000 doses of FMD vaccine, DVS Malaysia could purchase 300,000 doses and the expected coverage of 89 % at the end of the year was not achieved.

Surveillance for the **Post Vaccination Monitoring** was done where 14,307 samples were tested using LPBE ELISA and 12,733 (89 %) samples resulted in positive protective titres.

**COORDINATION AND ADVOCACY**

National meetings of two important committees were held as follows:

- Committee for National Disease Control – Chaired by the Director General of DVS. Discussions are on the Policy, Strategy effectiveness and Budget, twice a year.
- **Sub-National Committee for Coordination and Implementation of FMD Control** which meets thrice a year to evaluate the progress of control plan and discuss any constraints.

At regional level attended Meeting of the OIE National Coordinators and Meeting of the OIE SEACFMD Sub-Commission.

Public awareness and communication is a continuous activity. For year 2016 there 1540 campaigns held with a total of 7,663 stakeholder attendees.

- **Public awareness and communication to inform:**
  - importance of early reporting of FMD
  - negative impact of FMD on their livelihood
  - stakeholder’s important role in FMD control
  - understanding the Control Plan and their effective role

**GOVERNANCE AND POLICY**

Private License Temporary Quarantine Stations were established with the collaboration of livestock traders and importers for effectively facilitating trade and risk management. These quarantine stations were coordinated and regulated by Malaysian Agriculture Quarantines and Inspection Services (MAQIS) department on livestock importation but the control of disease was under the jurisdiction of DVS Malaysia.
There have been some issues that may have resulted in the reduction of these facilities from 55 stations in year 2008 to just 10 in year 2016. There is plan to discuss with the authorised agency (MAQIS) to solve this important mitigation measure.

DVS Malaysia will submit to Ministry of Agriculture and Agro-Based Industry (MOA) in the middle of 2017 its proposal for budget requirement in FMD control based on new timeline to achieve freedom form FMD.

Bilateral meetings with neighbouring countries from which livestock are imported to Malaysia has not been held for more two years. DVS Malaysia will request again for this bilateral meetings to discuss pertinent matters concerning importation of livestock and FMD control.

**ACTIVITIES – CROSS-CUTTING ELEMENTS**

FMD Control Plan refresher courses were held for DVS staff at the field to keep them aligned to the policies and the strategy to control, prevent and eradicated FMD. States are kept informed of the location of outbreaks for decision making prior to allowing animal movement.

**CONSTRAINTS AND SOLUTIONS**

- Land border always a threat to incursions of infected FMD animals into the country. (Collaboration with multi-agency at the border to assist in the control of animal movement beside vigilance by DVS).
- A challenge to source cattle for importation from FMD endemic countries where price is reasonable and abundant of cattle. (Bilateral meetings must be agreed upon as priority and never failed to be held. This will help in review of import protocols).
- Reduction in Private Licensed Quarantine Station from 55 stations in 2009 to just 10 stations this year is a great challenge in risk management and implementing mitigation measures as can be seen in the slight rise of FMD outbreaks in year 2016. More outbreaks can be expected as enforcement needs sufficient resource personnel. (To hold discussions with MAQIS on the issues and assist in overcoming any shortfall)
- Due to budget constrains for the past two years, caused lower number of doses of FMD vaccine being purchased which has enable to vaccinate less number of susceptible animals in hotspots and during outbreaks. Purchase of diagnostic kits have also been affected by the budget constraints. (Justification and request for budget to the Ministerial level).

**FUTURE ACTIVITIES**

- Current FMD Control Plan Time line revision to be present to MOA and is being studied if there are any other changes to the strategies needed. (2017)
- Application for a new budget with the new time line for achieving freedom from FMD is in progress.(2017)
- Preparation of a paper on the “Positive impact of private licensed Qtn stations in control and eradication of FMD” for presentation to MAQIS with objective to convince MAQIS and to increase approved Licensed Qtn Stations.(2017)
- To initiate bilateral meeting with border neighboring country and countries with whom livestock importation will take place for better solutions collectively. (2017/2018)
- Encourage importation of beef to meet the demand rather live animals . Live animals will be imported with strict protocols for breeding purposes.
- Malaysia will sustain its PCP Stage 3 until 2019 and will progress to PCP Stage 4 in 2020 and PCP stage 5 in 2025.
- DVS Malaysia will work towards better PVS progression after gap analysis.
• DVS Malaysia will improve in prompt and verified FMD outbreak report to ARAHIS.

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Siem Reap, March 9-10, 2017

NARRATIVE COUNTRY REPORT

Mongolia

FMD STATUS

The numbers of FMD outbreaks are listed in below by serotype A, O, Asia-1 for period between from 2000 to 2016:

1. Serotype A - FMD outbreak. In 2013, 2016 the outbreak occurred in 3 provinces (6 sub-provinces) in western and eastern region of Mongolia.
2. Serotype Asia-1 - FMD outbreak: Only one case of Asia-1 serotype was reported in 2005 which were occurred in Dornod province (1 sub-province) in eastern region.
3. Serotype O - FMD outbreak: Since 2000, totally 54 outbreaks were occurred in 11 provinces (47 sub-provinces) in eastern, central, western region of Mongolia wherein bordering with neighbouring countries.

Based on our registration data, we would analyse that FMD outbreaks often reported in long period of winter time from February until May, which is reasonable with cold condition and animal immunities.

Every case of confirmation for FMD test had been sent to Reference laboratories which are OIE Reference laboratory for FMD, Federal Governmental Institute, Centre for Animal Health, Vladimir, Russia and FAO reference laboratory for FMD, Pirbright Institute, UK. Results of each confirmation test are listed with one table in below, including new cases of 2016.

Table 1. Characterization of FMD genotyping (2000-2016)

<table>
<thead>
<tr>
<th>Years</th>
<th>Serotype</th>
<th>Topotype</th>
<th>Genotype /strain</th>
<th>Related viruses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>O</td>
<td>ME-SA</td>
<td>Pan-Asia</td>
<td>China. 1999</td>
</tr>
<tr>
<td>2001</td>
<td>O</td>
<td>ME-SA</td>
<td>Pan-Asia</td>
<td>China. 1999</td>
</tr>
<tr>
<td>2004</td>
<td>O</td>
<td>SEA</td>
<td>Mya-98</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>Asia-1</td>
<td>SEA</td>
<td>Mya-98</td>
<td>Russia, China. 2005</td>
</tr>
<tr>
<td>2010</td>
<td>O</td>
<td>SEA</td>
<td>Mya-98</td>
<td>Russia. 2010</td>
</tr>
<tr>
<td>2013</td>
<td>A</td>
<td>Asia</td>
<td>SEA-97</td>
<td>Kazakhstan. 2013</td>
</tr>
<tr>
<td>2015</td>
<td>O</td>
<td>SEA</td>
<td>Mya-98</td>
<td>Mongolia, Russia. 2010</td>
</tr>
<tr>
<td>2015</td>
<td>O</td>
<td>ME-SA</td>
<td>Pan_Area</td>
<td>Mongolia. 2014</td>
</tr>
<tr>
<td>2016</td>
<td>A</td>
<td>Asia</td>
<td>SEA-97</td>
<td>Russia, China. 2013</td>
</tr>
</tbody>
</table>

Since 2010, we have done several numbers of FMD-sera active and passive surveillances for target species in three zones (western, central and eastern region) wherein divided by purpose of control for
FMD free zone, control zone and vaccinated zone. Surveillances are performed with commercial diagnostic kits supplied by the Government of Mongolia.

**ANIMAL HEALTH MANAGEMENT ACTIVITIES**

**TECHNICAL**

*Brief of diagnostic capacity of FMD*

In SCVL, FMD diagnosis is performing in BSL-3 laboratory and mobile laboratory. Diagnostic and technical capacity has built up with recommendations by OIE manual. Listed in below:

a. Virus Isolation (BHK-21, IBRS, MDCK cell culture for TADs)

b. Immunological methods
   - Ag detection ELISA
   - Complement fixation test
   - Lateral flow device test
   - Virus neutralization test

c. ELISA tests
   - SPC-ELISA
   - LPB-ELISA
   - NSP-ELISA

d. Nucleic acid recognition methods:
   - RT-PCR
   - Real-time PCR
   - Lamp PCR
   - Gene sequencing

Screening and diagnostic test are based on immunological method and molecular biology such as NSP-ELISA and RT-PCR in level of 21 provincial veterinary lab of Mongolia.

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NARRATIVE COUNTRY REPORT

Thailand

ABSTRACT

There were 262 FMD outbreaks reported from 8 livestock regions in Thailand, except from the eastern region. Beef cattle was major production type affected from FMD. FMD virus type O was found in higher number than type A and the type O found in western side of the country. The topotype O-India 2001 was first diagnosed in Thailand in 2016 and this was reported to OIE via annually WAHID report. Temporal distribution shows that the trend of outbreaks in 2016 gradually decreased from January to May and highly increased in July through the end of the year. FMD surveillance programmes are active. Post vaccination monitoring programmes is conducted. Vaccine development plan and FMD research in the country is going on. OIE endorsed and recognized the FMD Official Control Programme for Thailand and DLD had regional meetings to clarify about the programme. Annual updates on the progress in the official control programme and information on significant changes will be reported to OIE.

FMD STATUS

In 2016, there were overall 262 FMD outbreaks in Thailand. Affected animals were beef cattle (45%), dairy cattle (35%), pig (9%), and buffalo (7%). Type O (59%) and type A (12%) were found in 2016. Temporal distribution shows that the trend of outbreaks in 2016 gradually decreased from January to May and highly increased in July through the end of the year. Spatial distribution shows that type O distributed almost throughout the country while type A mostly distributed on the western side. Eastern region (Region 2) has been still free from FMD. A type O-beef cattle outbreak in September in Nonthaburi was later diagnosed as type O topotype MESA- India 2001 by sequencing. The type O samples have been more diagnosed by sequencing and later found that additional 11 provinces were found the O-India. Vaccine matching found that the O-India is good matching with the O strain (O-189) in vaccine produced by DLD. In 2017, there have been 21 FMD outbreaks reported and type O and type A were diagnosed. Two type A outbreaks were tested vaccine matching and found that the r-values were in moderate level with type A strain in current DLD vaccine. Many control measures including seed vaccine development from field strains for emergency vaccine production have been conducted.

ANIMAL HEALTH MANAGEMENT ACTIVITIES

TECHNICAL

National surveillance programme including clinical surveillance, serological surveillance and border surveillance are active in order to monitor FMD situation and its control measures. Post vaccination monitoring are conducted in order to evaluate vaccination coverage, estimated herd immunity and explore barriers to success of the vaccination programme. Seed vaccine development and
management has been doing in order to prepare vaccine production if the strain of virus changed. Mass vaccination and booster have been conducting in target regions and ring vaccination by using monovalent vaccine is used for control outbreaks. Backward sequencing for samples with serotype O in 2016 has been conducted and found more O-India 2001 topotype in 11 provinces. Vaccine matching for all O-India samples and all A samples with the vaccine strains is conducting. FMD research on simulation modeling of FMD spread, risk assessment of FMDV introduction into pig farms in compartmentalisation and systemic analysis for forecasting and warning of FMD is going on.

COORDINATION AND ADVOCACY

OIE endorsed and recognized the FMD Official Control Programme of Thailand. DLD had regional meetings to clarify about FMD zones, the control programme, and FMD free zones establishing to provincial officers and private sectors. For the FMD free zone establishment, Ministerial Proclamations on FMD control zones (Eastern and Southern region) was announced in government gazette. DLD Ordinance on regulatory and authorization of animal movement into the FMD control zones in the eastern region was announce in government gazette. Meetings with private sectors on legislations on FMD free zone establishment were conducted. In Public-Private Collaboration for FMD, there was a seminar on FMD control in National Dairy Festival. Private sector requested FMD to be a national agenda. Bilateral meetings with Cambodia and Lao PDR have been continuously in the coordination plan. Technical collaboration. Tripartite cooperation (JICA-Myanmar-Thailand) on FMD control in Myanmar is going on.

GOVERNANCE AND POLICY

In order to prevent and control FMD, the new laws under the Animal Epidemics Act B.E.2558 (2015) were drafted, proposed and enforced for example biosecurity of animal farm, animal movement regulatory and authorization and also legal proceedings and surveillance regulatory. Internal KPIs for provincial livestock offices on FMD prevention and control, such as vaccination coverage, quality of vaccination programmes and outbreak reports, has been used for the effectiveness of FMD prevention and control within the country. DLD strengthens on FMD control measures in special occasions, for example movement control of animals before Hari Raya festival in August and movement control of animals in FMD high season (the third quarter of the year).

CONSTRAINTS AND SOLUTIONS

In the past year, there has been more commercial animal movement in the country even within or between provinces. Therefore, FMD risks from the movement is higher. Failure to notify outbreak by some farmers is occurred. Low vaccination coverage in some groups of animals was also the risk of FMD spread. To leverage the progress of FMD control, Thailand will need to focus on social and economic impact of the disease, risk factors of supply chain information, risk factors of social networks in the production and trading of animals, choice to manage the risk of disease, reprocessing investigation to know the source of the disease, enhancement of understanding between farmers and officers, public relations and establish a collaborative network to control the disease even more. In the successful of FMD control, these measures, such as animal movement control and trade, vaccination programme and its monitoring, collaboration, traceability system and training programme, need to be strictly and all the time conducted.

FUTURE ACTIVITIES

Epidemiological research: An investigation of outbreaks of foot and mouth disease in Thailand (2015-2016) and feasibility of compartmentalization or containment zone establishment started. Vaccine development and management and sero-surveillance for comprehensive animal movement crossing border will be strengthen. New regulations of animal and animal product movement control (especially movement into the proposed free zones) are compliance with OIE standards. Annual updates on the progress in the official control programme and information on significant changes will
be reported to OIE. Bilateral meetings and some technical collaboration programmes will be continued. The OIE PVS reports and the principle of OIE PVS pathway are continuously applied to enhance veterinary services in Thailand.
Annex 24: Country Report: Viet Nam

NARRATIVE COUNTRY REPORT

Viet Nam

ABSTRACT

In 2016, 37 outbreaks of foot and mouth disease (FMD) were reported in Viet Nam with the occurrence of FMD serotype O&A. The country has continued to apply an integrated control programme using the combination of measures best suited to its existing situation and implement activities of the first year of the national plan to control FMD for the period from 2016 to 2020. Vaccination approach remains the key intervention. Other control measures include early detection, outbreak investigation and response; compartmentalisation/zoning approach; closely monitor the virus; and enhanced animal movement control.

Veterinary Law approved in 2015 and being effective since 1 July 2016. The government has also approved the National Programme for FMD Control and Prevention for 2016 – 2020. Self PCP-FMD assessment showed that Viet Nam has completed PCP-FMD Stage 2 and entered Stage 3.

FMD STATUS

In 2016, there were 37 FMD commune-outbreaks reported affecting 387 buffaloes, 601 cattle, and 8 pigs (Table 1 and Figure 1). Both FMDV serotypes O and A were recorded in 2016 (Figure 2). Table 1: A summary of FMD situation in Viet Nam in 2016.

<table>
<thead>
<tr>
<th>Month</th>
<th>No. of out.</th>
<th>No. of infected animals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>buf</td>
</tr>
<tr>
<td>Jan.</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>Feb.</td>
<td>11</td>
<td>133</td>
</tr>
<tr>
<td>Mar.</td>
<td>11</td>
<td>168</td>
</tr>
<tr>
<td>Apr.</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>May</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Jun.</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Jul.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Aug.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sep.</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>Oct.</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Nov.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dec.</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>387</td>
</tr>
</tbody>
</table>
Figure 1: Graph showing the number of FMD affected animals by month in Viet Nam in 2016.

Figure 2: Map of Viet Nam showing locations of FMD outbreaks in Viet Nam in 2016.
ANIMAL HEALTH MANAGEMENT ACTIVITIES

TECHNICAL

A. UNDERSTANDING THE EPIDEMIOLOGY OF FMD IN YOUR COUNTRY
- Characterize the molecular epidemiology of circulating FMDV strains.
- Investigate the role of persistently infected ruminants in FMDV ecology.
- Capacity building; establishment of various standard operating procedures

B. IDENTIFICATION AND ANALYSIS OF RISK FACTORS
The government has been continually monitoring FMD, and has been collecting samples to identify the circulating strains for vaccine matching purposes.

C. DEVELOPMENT AND APPLICATION OF CONTROL STRATEGIES
Under 2016 – 2020 National FMD control and prevention programme, 3.4 million doses of FMD vaccine were used in control zones in 2016, of which 1.5 million doses of monovalent type O and 1.9 million doses of bivalent type O&A. In addition, the government also provided vaccines for localities to promptly contain outbreaks.

D. MAINTENANCE OF DISEASE FREEDOM IN ZONES AND COUNTRIES
FMD zoning has been implementing in two provinces in the Red River Delta and under the approved National FMD control programme for 2016 – 2020 it is being seen as a candidate for freedom recognition.

COORDINATION AND ADVOCACY

A. COORDINATION, TRAINING AND COMMUNICATION FOR CONTROL STRATEGIES
The Vietnamese government approved the National programme for FMD control and prevention 2016 – 2020 (Decision No. 476/QD-BNN-TY on 17/02/2016).
Technical measures include:
- Zoning
- Disease free zone/compartamentalization
- Vaccination
- Animal movement control
- Slaughter and veterinary hygiene management
- Surveillance, laboratory and research
- Outbreak investigation and response
- Communication

B. ADVOCACY
Studies supported by international organisation and countries have been conducted in recent years which have provided scientific information for the development of policies/regulations on FMD control and prevention in Viet Nam.

C. PROMOTION OF CAMPAIGN AWARENESS
PCP-FMD guidelines and Vietnamese Veterinary Law have been translated into Vietnamese and English respectively.
GOVERNANCE AND POLICY

A. GOVERNANCE
National programme for FMD control and prevention 2016 – 2020 has been implemented. Technical measures include zoning, establishment of disease free zone/compartment, vaccination, animal movement control, slaughter and veterinary hygiene management, surveillance, laboratory and research, outbreak investigation and response, and communication.

B. STRENGTHENING VETERINARY SERVICES
A total budget of the National FMD control and prevention programme is VND 823.5 billion (~USD 37 million); of which, central budget of USD 12.5 million and local budget of USD 24.5 million.

C. DEVELOPMENT OF LEGISLATION
The National Assembly promulgated the Law on Animal Health (Law No. 79/2015/QH13) being effective since 1 July 2016 which regulates prevention, treatment and control of animal diseases; quarantine of animals and animal products; control of slaughter, preliminarily processing and processing of animals and animal products; inspection of veterinary hygiene; management of veterinary drugs; veterinary practices.
Circular on terrestrial animal disease control and prevention (No. 07/2016/TT-BNNPTNT dated on 31/5/2016)

D. FUNDING
Under the newly approved National FMD control programme for 2016 – 2020, local budget will be mobilized for purchasing of vaccine in buffer zones (whereas in 2011 – 5015 plan, central budget covered 50% of FMD vaccine for buffer zones and local budget covered the rest).

CONSTRAINTS AND SOLUTIONS
Late detection of FMD outbreaks has remained a major constraint to the effective prevention and control of FMD, subsequently caused late response to contain outbreaks including emergency vaccination.

FUTURE ACTIVITIES
• Implementing the 2016 – 2020 National programme for FMD control and prevention.
• Surveillance programmes including post vaccination monitoring and virus sequencing/matching.
• In-country FMD vaccine production.
23rd Meeting of the OIE Sub-Commission for FMD Control in South-East Asia and China

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