



CURRENT FMD EPIDEMIOLOGICAL ACTIVITIES IN MYANMAR

SEACFMD Epinet Meeting
Yogyakarta, Indonesia
5-6 April 2018



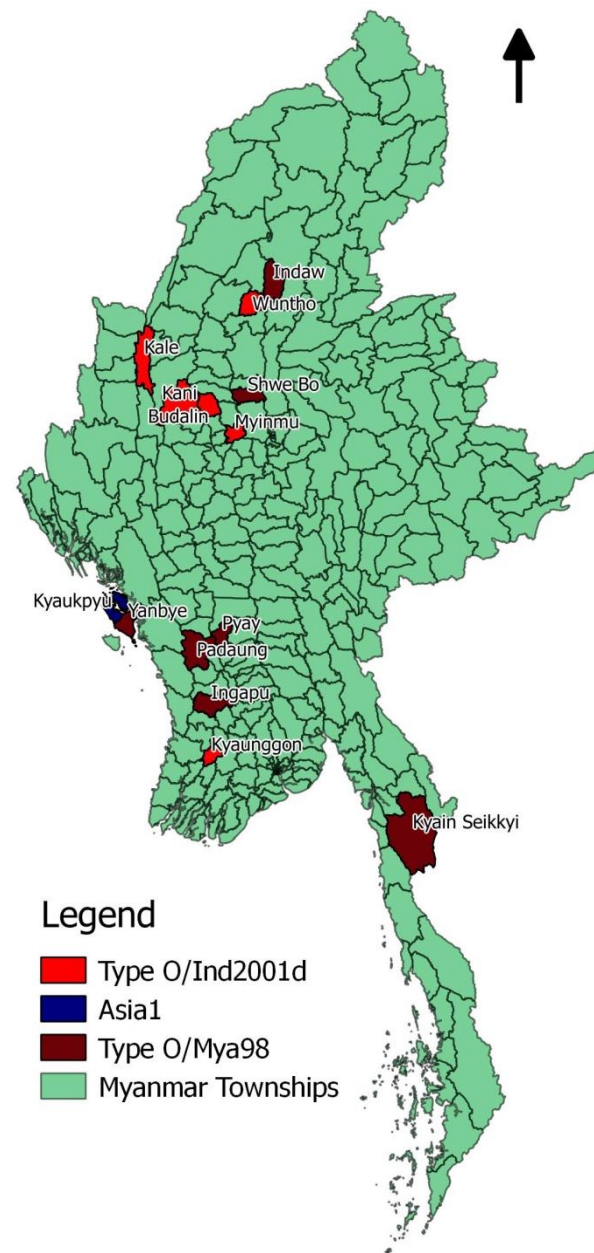
OUTLINE

- FMD situation
- Organization structure of the Epi Unit
- Epidemiological activities
- Epidemiological tools
- Funding
- Constraints and possible solution
- Priorities and Future Plans

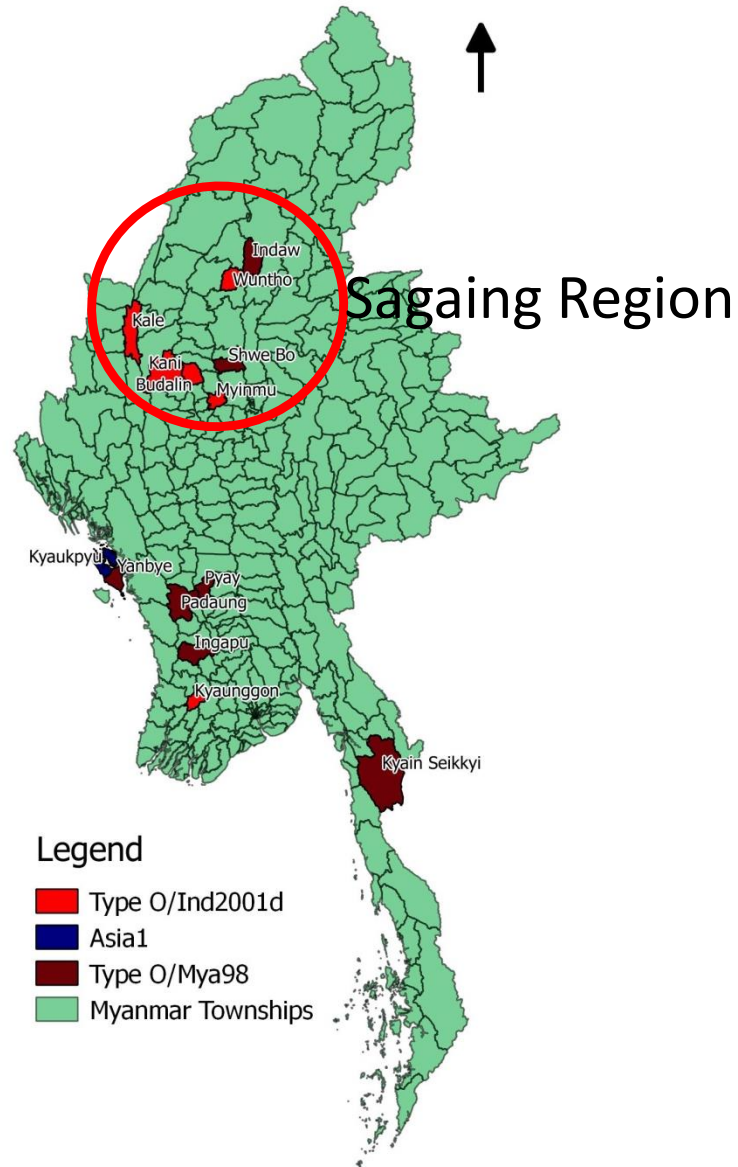
FMD Situation (2017) (Updated in ARAHIS)



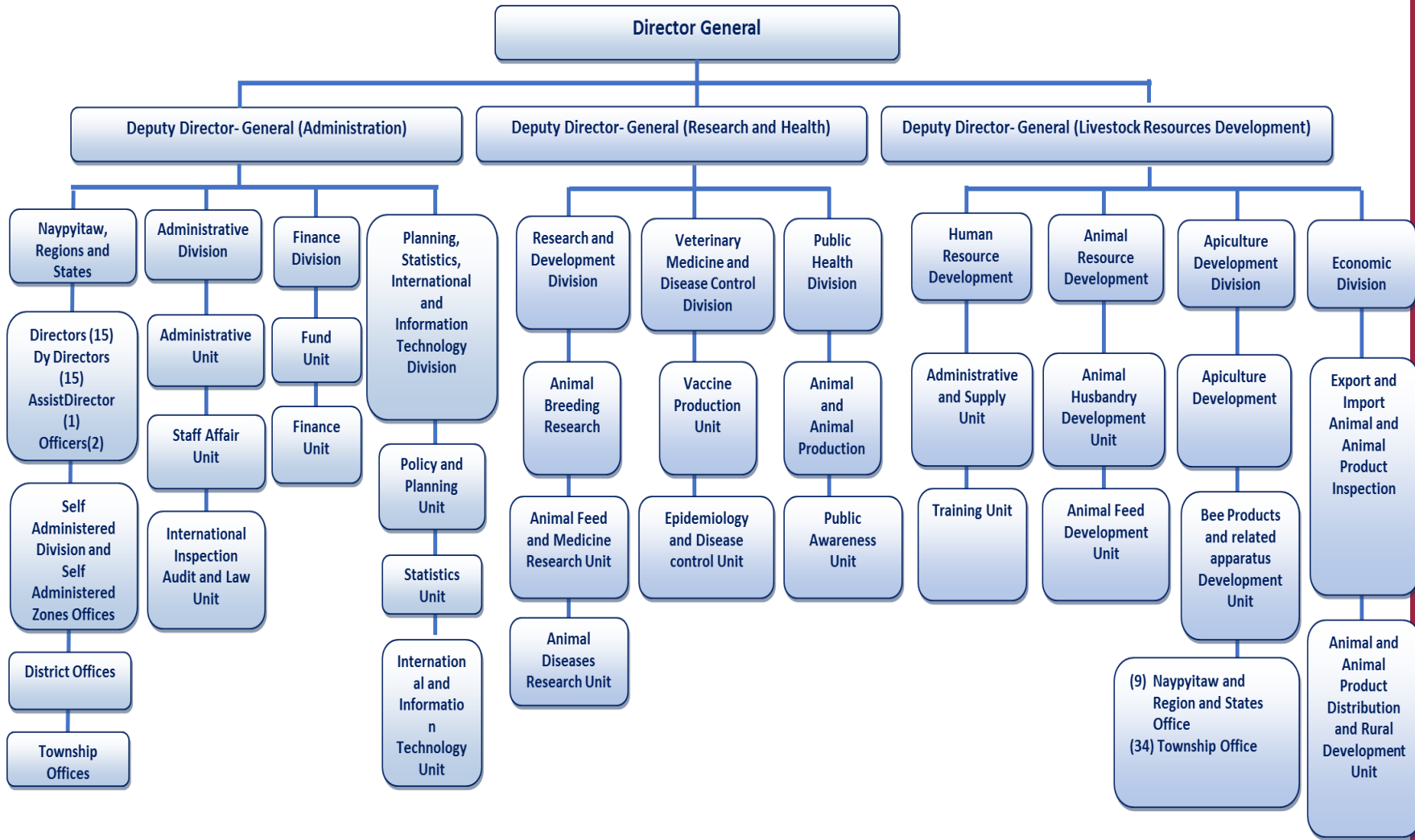
Month	States/ Regions	Township	No. of Affected Villages	Myanmar Lab -Results	RRL Lab Results
Jan	Sagaing	Kani	1	Type "O"	Ind-2001d
		Myinmu	1	Type "O"	Ind-2001d
	Sagaing	Budalin	1	Type "O"	Ind-2001d
	Rakhine	Kyaukphyu	2	Type "Asai1"	Asia1
Feb	Ayeyarwaddy	Kyaungkone	1	Type "O"	Ind-2001d
March	Sagaing	Shwebo	1	Type "O"	No result
		Wuntho	1	Type "O"	Ind-2001d
May		Indaw	1	Type "O"	
April	Rakhine	Ramree	1	Type "O"	
July	Kayin	Kyarinnseik gyi	1	Type "O"	
	Ayeyarwaddy	Ingapu	4	Type "O"	
	Sagaing	Kale	24	Type "O"	
August	Bago	Pyay	1	Type "O"	
		Padaung	3	Type "O"	
Oct	Sagaing	Wuntho	4	Type "O"	



FMD Spatiotemporal Pattern



Organization Chart of Livestock Breeding and Veterinary Department

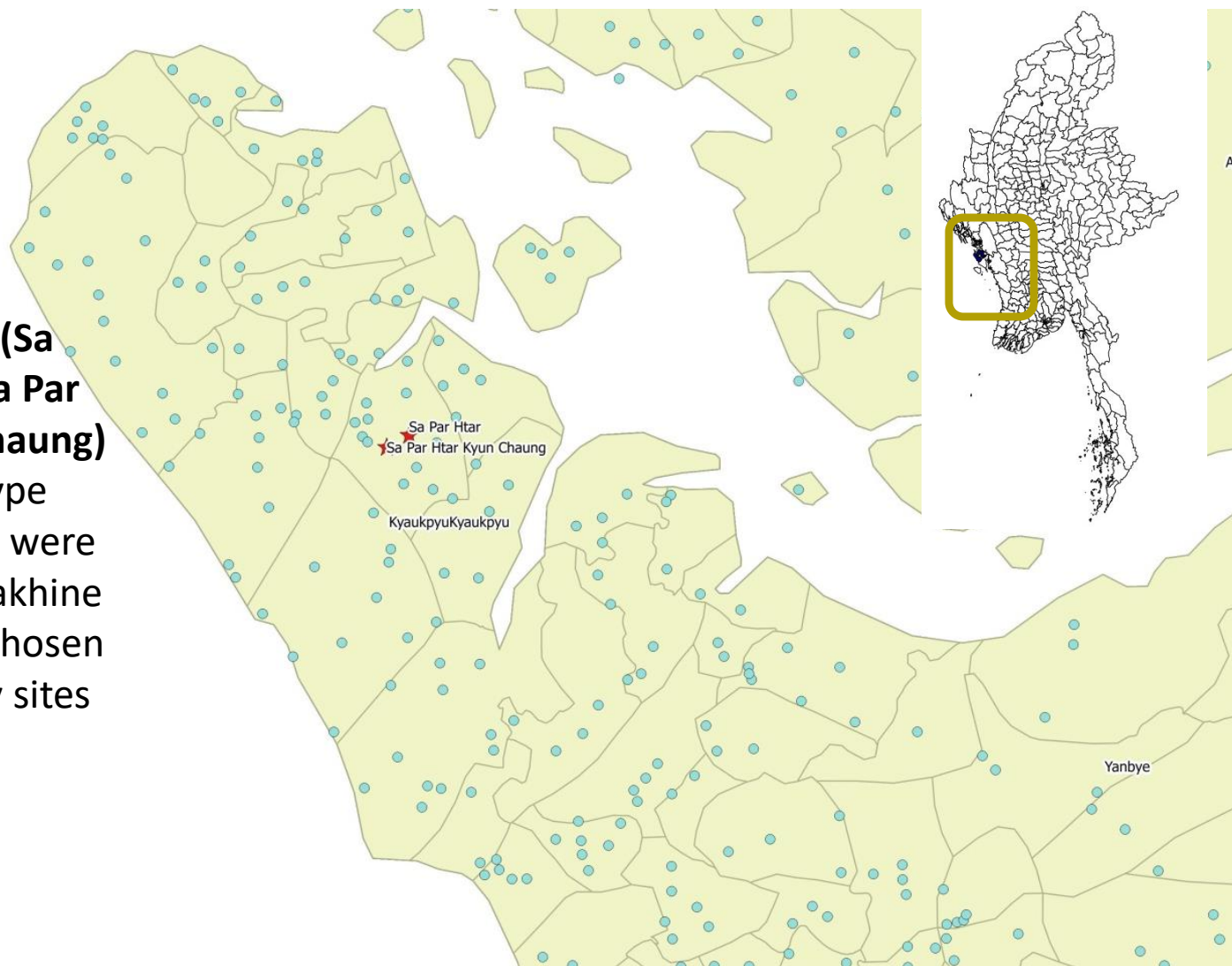


Organization Chart of Epidemiology Unit



Asia1 Outbreak Investigation

Two villages (Sa Par Htar & Sa Par Htar Kyun Chaung) where serotype Asia1 viruses were isolated in Rakhine State, were chosen as case study sites

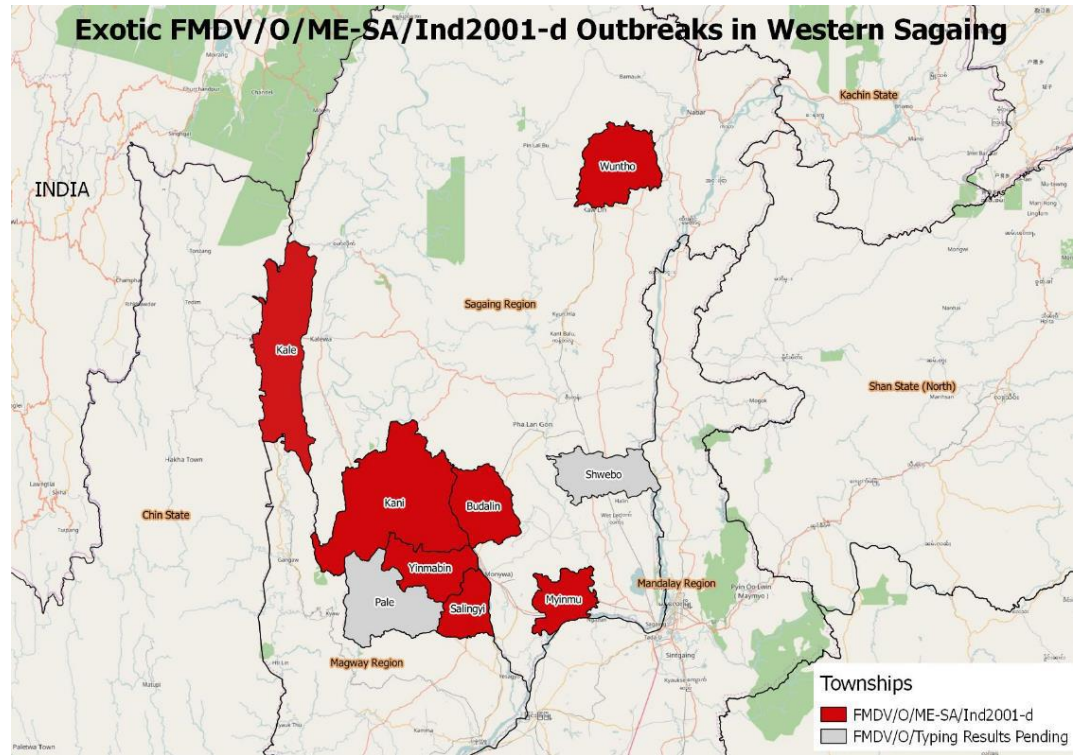


Epidemiological Activities

Investigating the Spread of Exotic FMDV O/ME/India-2001d Strain in Myanmar

Study Area

- Kale Township, Western Sagaing Region
- 165 km far from the India border and connect with India-Myanmar Friendship road (Tamu-Kale road)
- Reported outbreak -29th July 2017
- Outbreak investigation – 16th-19th August 2017
- Semi-structure interview & Group discussion



Investigating the Spread of Exotic FMDV O/ME/India-2001d Strain in Myanmar

Findings

- **Kale Township**

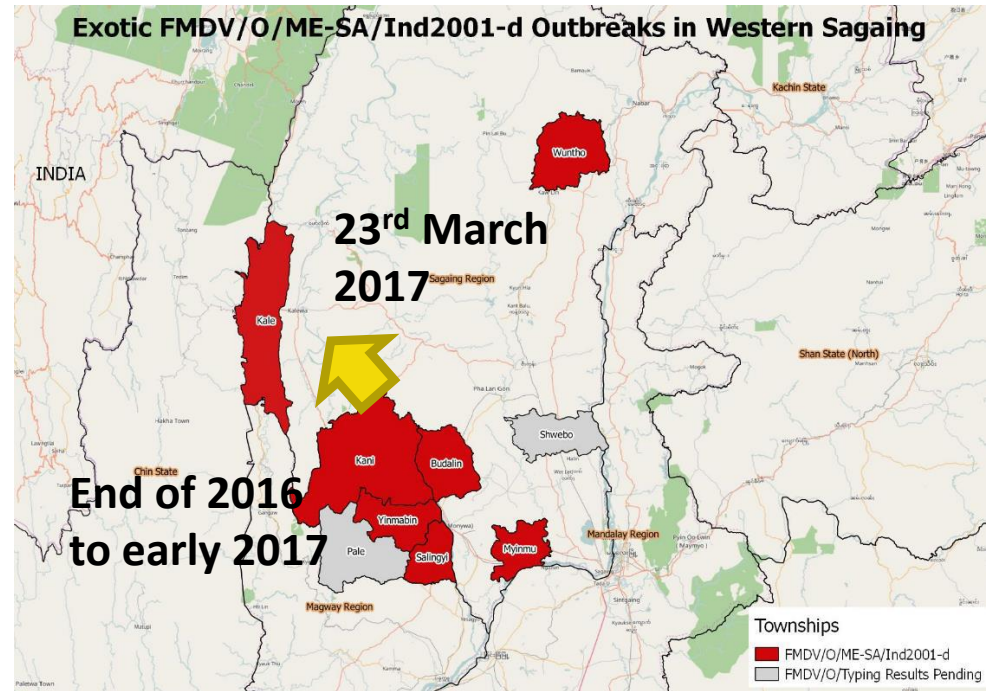
- 24 villages have been affected
- First outbreak began in 15th July in Kangyi village
- 90% of cattle/water buffalo showed FMD clinical signs
- Common grazing pasture and natural water resources

- **Kalewa Township**

- 10 villages of unofficial FMD outbreak report in 7th July 2017

- **Mingin Township**

- 20 villages of unofficial FMD outbreak report in 23rd March 2017



Investigating the Spread of Exotic FMDV O/ME/India-2001d Strain in Myanmar

Animal movement

- **Local**

- most of the cattle are raised and bred within the district
- Some farmers may still purchase cattle from traders in other townships depending on what is available and their needs

- **Cross border**

- Surplus of cattle in Kale district that traders will buy cattle to be sold in China, estimates 60 cattle per month
- no official or unofficial animal movements from India into Kale district
- occasionally cattle and pigs from Myanmar are sold to local Chin people who live on the Indian side of the border but no livestock come directly into Myanmar from India

Epidemiological Activities

FMD Baseline Survey 2017

- **Objectives:** To estimate the prevalence of FMD, identify risk factors, understand farmer practices and economic impact
- 136 Villages Included
- 4080 Serum Samples
- 816 Stakeholder Questionnaires

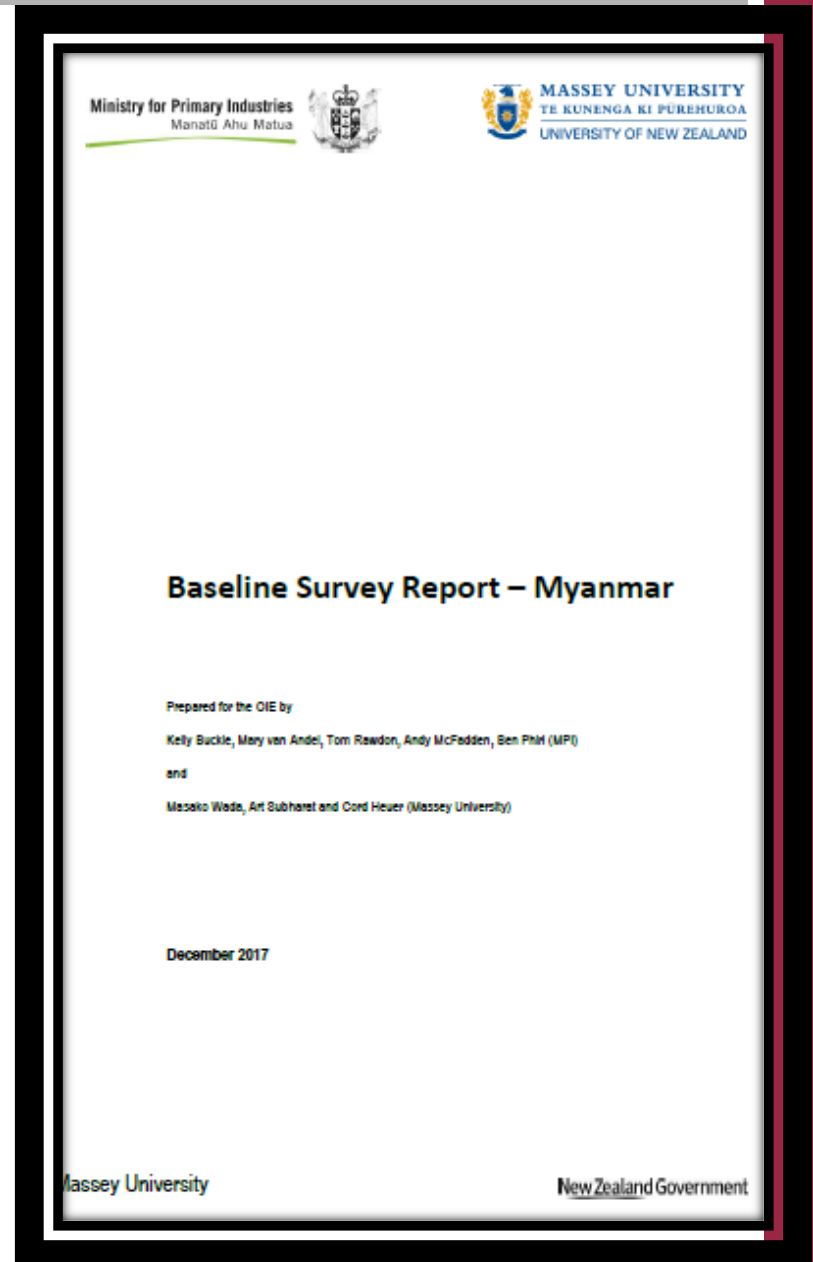
FMD Occurrence

- 29% of cattle in study area were previously infected with FMD
- FMD present in 100% of townships and 99% of villages in study

Conclusion

FMD is endemic and widespread throughout central Myanmar

Outbreaks likely occurring at a much greater frequency than reported



FMD Baseline Survey 2017

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- 4080 Serum Samples
- 816 Stakeholder Questionnaires

Socioeconomic Impacts

- Draft cattle were most commonly owned by 97% of households, followed by pigs (8%), dairy cattle (4%), goats (3%), buffaloes (2%) and sheep (1%)
- Median annual household income: USD 1419 from agricultural activities
- No apparent reduction in total annual household income by occurrence of FMD in the past 5 years

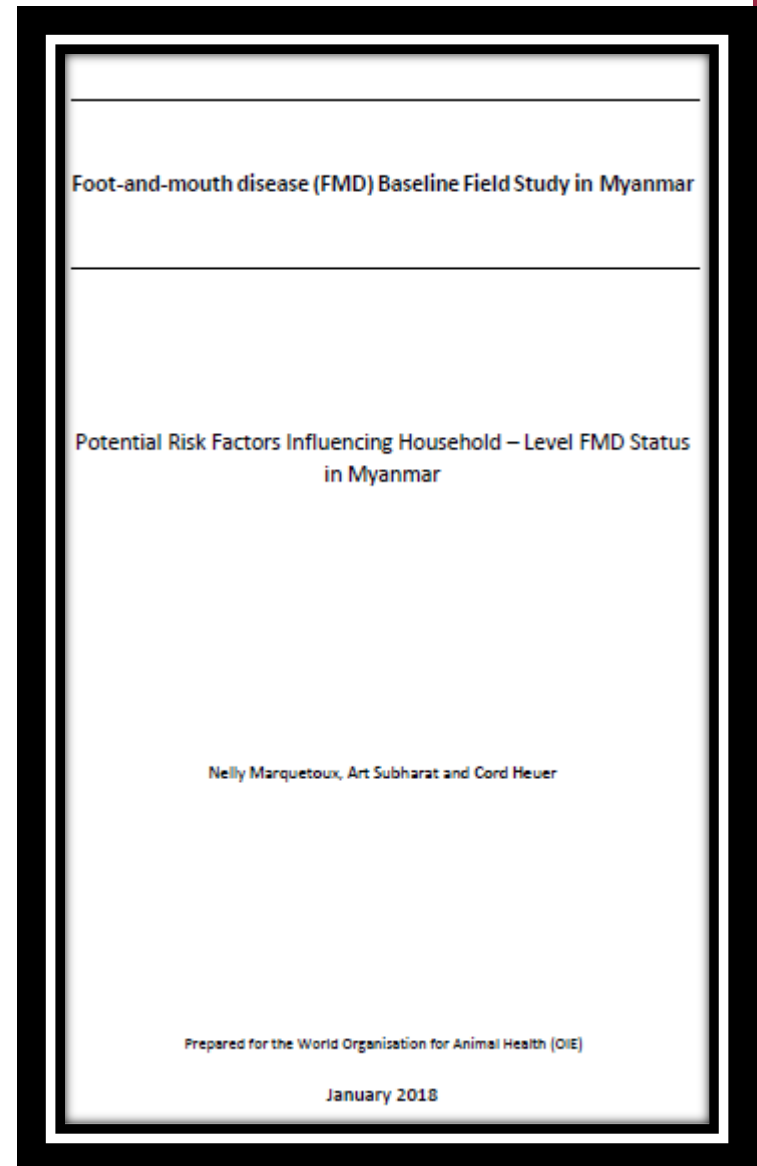


FMD Baseline Survey 2017

- **Objectives:** To estimate the prevalence of FMD, identify risk factors, understand farmer practices and economic impact
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Potential risk factors influencing household level

- Observation of clinical FMD: Communal grazing and presence of pig in the household were risk factors
- NSP sero-prevalence of FMD were associated with increasing herd size, large ruminant population in the village and communal grazing



Epidemiological Activities

FMD Serological Surveillance and Questionnaire activities in 2018

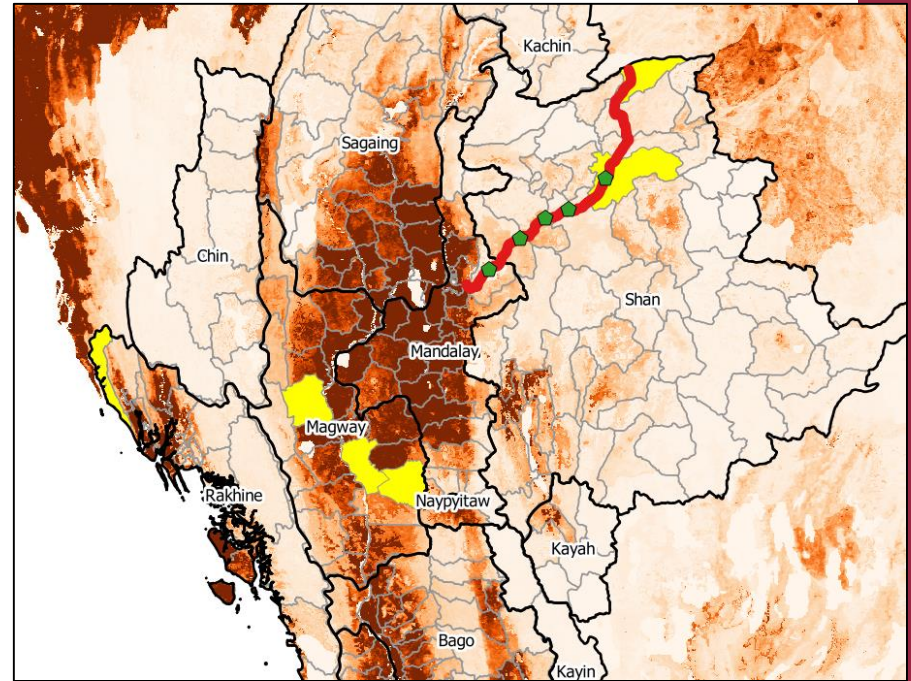
- **Objectives:** To understand the FMD distribution, prevalence, risk and economic impact at target townships - Magway, Taungdwingyi, salin, muse, lashio, maungtaw (Magway Region, Shan State, Rakhine State)
- 60 Villages Included
- 1800 Serum Samples
- 360 Stakeholder Questionnaires

Serology -

serotypes O, A and Asia-1 in large animal (cattle/buffalo), goats and pig (2: 2: 1)

Questionnaire -

Conduct questionnaire surveys in the target villages to collect information on historic FMD outbreak and vaccination and the existence of potential risk factors.



Epidemiological Tools

- EpiInfo
- EpiCalc
- WinEpiScope
- GIS

Funding sources to support epi activities

year	Funds from government (in USD)	Funds from external sources (in USD)
2015	In kind	STANDZ (AUSAid)
2016- 2020	In kind	Newzealand (OIE-LBVD FMD Control Project)
2017- 2018	Est. 20000 (Gov budget)	

Constrains and Solutions

Constrains in FMD epi activities	Possible solutions
Sample submission	<ul style="list-style-type: none">• Meeting with local veterinarian to collect more FMD outbreak samples and submit to National FMD Lab
Poor Quality of FMD Sample	<ul style="list-style-type: none">• Improve staff skill• Logistic support
Official reporting	<ul style="list-style-type: none">• To submit official report of FMD outbreak to understand FMD situation on ground level

Priorities and Future plans

- Prepare the National Strategy Framework on Foot-and-Mouth Disease Control Myanmar with OIE and LBVD.
- Continues OIE- LBVD FMD control project in 24 Townships of Sagaing and Mandalay Regions funded by Newzealand.
- Progressing FMD sero-serveillance and questionnaires in 6 Townships of Rakhine, Shan and Magway.
- Plan for sero-survey of goat serum of central dry zone that cooperate with FAO- LIFT (about 6000 samples)
- Processing FMD vaccination plant with JICA, expect in 2019.
- Cooperate with KOICA for technical exchange of FMD in second quarter of 2018.
- Collected 200 cattle/buffaloes serum, anal swab at muse quarantine station that before move to china before Chinese new year festival – processing.

Priorities and Future plans

- IAEA provide PCR kit and reagents for FMD according Supporting the National Foot-and-Mouth Disease Control Programme project that cooperate with science and technical department under ministry of planning and finance, but we need technical assistance for using PCR technique.
- To increase outbreak information system, plan to increase IRIS program adding software in mobile or tablets (will use experience of data entry of animal census of township officers- discussing Dr Ian and Dr Bolor).
- Plan to upgrade monthly phone survey for disease information and outbreak.

THANKS FOR ATTENTION