

## Meeting on FMD for the East African Regional Laboratory Network (EARLN)

Addis Ababa, Ethiopia, December 12-14th 2017



At Harmony Hotel



At NAHDIC

### 1. Introduction

The meeting was arranged in consultation with IGAD and FAO under the auspices of an OIE Reference Laboratory Twinning Project between The FMD World Reference Laboratory (WRLFMD) of the Pirbright Institute, UK and the National Animal Health and Diagnosis Laboratory (NAHDIC) at Sebeta, Ethiopia.

### 2. Aims of the meeting

These were to:

- i. Share information about the FMD situation in the region
- ii. Review FMD laboratory diagnostic capacity in East Africa
- iii. Decide on immediate training priorities for lab diagnostics
- iv. Develop and encourage a more sustainable Network platform for regional FMD lab activities

### 3. Participation

Representatives were present from FMD laboratories of seven East African countries as well as from WRLFMD, the Ethiopian Ministry of Livestock and Fishery, the European Commission for the Control of FMD (EuFMD), the Ethiopian National Veterinary Institute (NVI), the Ethiopian Agricultural Transformation Agency (ATA) and the Pan African Veterinary Vaccine Centre (PANVAC) - Annex 1.

### 4. The topics for the presentations and discussions

These are listed below:

Tuesday Dec 12th, Harmony Hotel

1	Welcome	Mesfin Sahle, NAHDIC Director
2	Opening address	Mesrak Makonnen, State Minister MoLF
3	Introductions and meeting aims and agenda	Don King, Pirbright Daniel Gizaw, NAHDIC
4	Overview of FMD Regional Situation	Don King, Pirbright
5	FMD situation in Ethiopia	Yismashewa Wegayehu, MoLF

6	FMD situation in Democratic Republic of Congo	Ezechiel Bushu Mulinda, Goma
7	Break out discussions: improving sample submissions	In 3 groups
8	FMD situation in Kenya	Abraham Sangula, Emabakasi
9	FMD situation in Sudan	Yazeed A/Raouf, CVRL
10	FMD situation in Tanzania	Joseph Masambu, TVLA
11	FMD situation in Uganda	Susan Kerfua, NADDEC
12	FMD situation in Somalia	SharifoAli Elmi, CVL
13	Gap analysis questionnaire findings	David Paton, Pirbright

### Wednesday Dec 13th, Harmony Hotel

14	Background on previous meetings and issues addressed	Kees van Maanen, EuFMD
15	Sample shipment	Daniel Gizaw, NAHDIC
16	Break out discussions: benefits of networking and actions needed; biosecurity needs and implementation in East African settings; QA needs and implementation in East African settings. Includes PTS	In 3 groups
17	Field Diagnostics Update	Don King, Pirbright
18	Approaches to and implementation of laboratory support for vaccine use and quality control	David Paton, Pirbright
19	Plans for vaccine use in Ethiopia	Asmamaw Duressa, MoLF
20	Vaccine production in Ethiopia	Essayas Gelaye, NVI
21	Future ambitions for vaccine QC at PANVAC	Edith Chitungo, PANVAC
22	Round table discussion: laboratory roles in assuring the quality of vaccines and vaccination	All

### Thursday Dec 14th, National Animal Health and Diagnosis Laboratory

	Travel to Sebeta	
23	OIE Twinning between NAHDIC and TPI	Daniel Gizaw
24	Discussions to agree priorities and future actions	All
25	Networking and continuous professional education by virtual means	Kees van Maanen, EuFMD
26	Wrap-up and close	Mesfin Sahle, NAHDIC
27	Tour of NAHDIC	All
	Return to Addis Ababa	

## **5. Conclusions and recommendations of the break-out and round-table discussions**

### Improving sample submissions

- i. Need to raise awareness, buy-in, incentives and timely feedback to improve reporting and veterinary follow-up
- ii. In-house sampling kits can be provided cheaply by labs and could include supplementary collection of samples into RNA preserving solutions ("lysis buffers")

- iii. Training of field staff is required and pragmatic protocols are needed to guide sample and data collection, packaging and submission.
- iv. Field staff (vets and animal health workers) should report FMD suspect cases using simple geo-referencing smart phone apps. The information derived could be used to target case investigations.
- v. Active surveillance by collecting samples (swabs and probangs) for virological testing from apparently healthy animals, e.g. at abattoirs and markets, could complement case investigations
- vi. WRLFMD can provide advice about the logistics of shipments of samples to OIE Reference Centers for analyses (and may help support financial costs).

#### Benefits of Networking and Actions Needed

- i. There is great enthusiasm for improving the network and encouraging collaborations
- ii. Benefits: core objective is exchange of information and experiences, e.g. on disease diagnosis, circulating serotypes and strains, diagnostic technologies, ongoing research, progress in FMD control; recognition of areas for improvements and next steps; strengthening functional linkage between professionals
- iii. Challenges faced include: lack of consistent information and knowledge sharing systems; turn-over of participants; designation of responsibility; lack of budget to implement agreed action points; collaborative projects mainly with external partners and not with one another
- iv. Actions needed include: joint activities and projects to foster collaboration and familiarity; incentive mechanisms for focal points; clear terms of reference

#### Biosecurity needs and implementation in East African settings

- i. Biosafety levels in FMD labs in East Africa are very variable but few meet stringency of international standards aimed at FMD free countries.
- ii. More realistic targets and priorities are needed and one suggestion is to aim for a minimum requirement of BSL2 with specific additional precautions to mitigate the main risks for FMD dispersion (BSL2+).
- iii. The FMD laboratory sub-network should elaborate a set of guidelines identifying the areas where additional controls are needed over and above BSL2. These would include: use of biosafety equipment (e.g. safety cabinets) and personal protective clothing; livestock access restrictions on staff; laboratory access controls; waste disposal; sample submission; a designated biosafety officer; management commitment; training of personnel. Existing guidelines from various sources can be reviewed, e.g. the EuFMD contingency lab guidelines.
- iv. These principles should be incorporated into the quality systems being implemented in the laboratories. Best practices can be shared by exchange of standard operating procedures and quality management documents.

#### Quality assurance needs and implementation in East African Settings including proficiency testing

- i. The critical importance of training and proficiency testing (PT) are recognised.
- ii. Quality assurance systems should be introduced in all of the labs and best practices for their implementation should be shared within the network.
- iii. Funding should be sought for an annual, regional PT system. Such a recurring, joint activity can provide a focus for the FMD East African Laboratory Sub-network.

#### Laboratory roles in assuring the quality of vaccines and vaccination

- i. The core requirements are regular collection and characterisation of representative samples, independent evaluation of the quality and match of vaccines, and establishing reliable serological methods to measure post vaccination immunity and undisclosed virus infection, so as to monitor the effectiveness of vaccination.
- ii. The involvement of vaccine producers as well as reference laboratories is needed to support the FMD lab network activities.

### **6. Overall Conclusions and Recommendations for the Network**

FMD remains endemic in all of the countries in East Africa and plans for improving control measures are mostly at an early stage of implementation (see country reports; presentation items #5-6, 8-12).

The capacity to diagnose and characterise FMD varies widely in the region (see presentation item #13, for a summary of information provided by the participants). The National FMD labs in many of the countries of the region do not have sufficient access to quality diagnostic kits and reagents and neither collect nor refer sufficient numbers of samples from FMD cases to fully understand the epidemiology of the disease and the risks for the emergence and spread of new strains.

The Ethiopian National Animal Health Diagnostic and Investigation Center (NAHDIC) benefits from strong national support, a new, well staffed laboratory and a growing range of FMD diagnostic capabilities. It has established a good collaboration with the WRLFMD at Pirbright (see presentation item #23).

Vaccination is set to be a critical element of National plans for FMD control in the region (see for example presentation item #19). As well as improving access to vaccines and knowledge about how best to use them, the capabilities for the quality control of vaccines and vaccination programmes must be strengthened. This represents an important role to be developed by FMD laboratories (see presentation items #18-22).

It has been difficult to maintain momentum and active engagement within the East African Regional Laboratory Network and this also applies to the sub-network dealing with FMD (see presentation item #14 for a review of the challenges faced).

In organising this meeting, it was difficult to identify the most appropriate people to invite - they should be scientists/veterinarians dealing with day-to-day issues of the laboratory diagnosis and characterisation of FMD.

The FMD sub-network of the East African Regional Laboratory sub-network should prioritise the following four areas in the coming year:

1. Establishing current focal points and exchanging information about FMD in East African countries to inform epidemiological patterns and regional risks

2. Promoting standards and equivalence of laboratory tests for FMD
3. Adapting existing international guidelines on laboratory biosafety to make them relevant and appropriate for the countries in East Africa
4. Encouraging the development of laboratory capacity to help monitor the effectiveness of FMD vaccination programmes

In support of these priorities, the following actions were agreed:

1) Review and Update of the FMD Sub-network Membership

It is proposed that a set of FMD sub-network national focal points be nominated. From the countries represented, a set of nominees were suggested (Annex 2). Abraham Sangula will take responsibility to complete the list (including emails) and Joseph Masambu will follow up on getting endorsement of the procedure by the parent EARL-network. Finally, each proposed delegate will need to seek the endorsement of their national authority.

2) Establish an online meeting of the new delegates with technical support of EuFMD. The new delegates will need to appoint a coordinator and a deputy. If the online forum is successful, follow-up meetings should be arranged on a regular basis. Action: Kees van Maanen in collaboration with Abraham Sangula.

3) Prepare a template for information to be exchanged between national focal points in order to summarise the overall regional FMD situation. Action: Kees van Maanen in collaboration with Abraham Sangula.

4) NAHDIC to organise a FMD lab training in 2018 for participants from FMD labs in the East Africa region. The focus to be on:

- (i) SP ELISA for post vaccination monitoring
- (ii) RT-PCR diagnosis of FMD including strain specific tests
- (iii) Antigen detection ELISA.

Other focal points should confirm if these are the correct priorities, and if not what else should be included.

5) NAHDIC and Embakasi who are already developing enhanced biosecurity procedures will see if a set of top-level biosecurity principles for working safely with FMD could be extracted for sharing with the network. Action: Daniel Gizaw and Abraham Sangula.

6) To contact FMD vaccine producers (Kevevapi, NVI, BVI, ME-Vac, Merial, IIL) about participation in future meetings and to discuss joint interests including access to reagents such as batch release antisera. Action: Abraham Sangula and WRLFMD.

Annex 1. Participants at the meeting of the East African FMD laboratory sub-network

Name	Country	Institute	email
Ezechiel Bushu Mulinda	Democratic Republic of Congo	FP FMD, Goma-Lab	bushuezechiel@ymail.com mulindabushuezechiel51@gmail.com
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<sup>1</sup> Present: 13-14 Dec 2017; <sup>2</sup> Present: 13 Dec 2017; <sup>3</sup> Present: 12 Dec 2017; <sup>4</sup> Present: 12-13 Dec 2017;

Annex 2. Suggested nominees for national focal points for the FMD laboratory sub-network of the East African region.

<b>Country</b>	<b>Nominee</b>	<b>email</b>
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Rwanda	To be confirmed	
Burundi	To be confirmed	
Eritrea	To be confirmed	
South Sudan	To be confirmed	