Food and Agriculture Organization of the United Nations

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ROME 20-21 APRIL 2017

Report Appendices

42ND GENERAL SESSION OF THE EUROPEAN COMMISSION FOR THE CONTROL OF FOOT-AND-MOUTH DISEASE (EuFMD)

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
European Commission for the control of Foot-and-Mouth disease (EuFMD)
Rome, 2017

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Please note the Report is available online and as a separate document on the EuFMD website.

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EuFMD Staff

Executive Secretary	Keith J.Sumption
Contingency Planning Officer	Mark Hovari
Training Programmes Manager	Jenny Maud
Communications and Networks Manager	Nadia Rumich
Short Term Placement officers	Maria De la Puente; Karima Ouali; Maria Teresa Scicluna; Hendrik Camphor
Intern	Fanny Parenton
Workplan Coordinator	Cecile Carraz
HR, Travel and Training Supervisor	Erica Tomat
e-Learning & Training Logistics Manager	Chiara Addari
Operations and meetings	Maurizio Licastro
Operations and meetings	Emanuela Pirrello
Research assistant on Public and private area Operational and Technical support	Filippo Pedulla’
Consultants HQ	Paolo Motta; Gunel Ismailova
Consultants non-HQ	Enrique Anton; Nick Lyons; Chris Bartels; Kees van Maanen; Carsten Potzsch; David Paton

Appendix 1
Agenda

Appendix 1 Agenda

AGA-701/42/2017 **E**

April 2017

	منظمة الأغذية والزراعة للأمم المتحدة	联合国粮食及农业组织	Food and Agriculture Organization of the United Nations	Organisation des Nations Unies pour l'alimentation et l'agriculture	Продовольственная и сельскохозяйственная организация Объединенных Наций	Organización de las Naciones Unidas para la Alimentación y la Agricultura

FORTY SECOND SESSION OF THE EUROPEAN COMMISSION FOR THE CONTROL OF FOOT-AND-MOUTH DISEASE (EUFMD)

Rome, Italy, 20 - 21 April 2017

PROVISIONAL AGENDA

Thursday 20th April 2017

Morning 0900 hrs

Opening of the Session

1.	Adoption of the Agenda	*for decision*
2.	Global Foot and Mouth Disease (FMD) surveillance report	*for information*
3.	The GF-TADS Global Strategy : progress over the first 5 years	*for information*
4.	Technical Item 1: Towards a framework for resolving ethical conflicts relating to disease control measures	*for information*
5.	Technical Item 2: The private sector role in FMD emergency preparedness	*for information*
6.	Technical Item 3: Confidence in early detection of FMD– when is passive surveillance sufficient and what are the options for increasing confidence in disease freedom?	*for information*
7.	Technical Item 4: Training Needs assessment: results of the survey of member states and non-member states in the European neighbourhood and other regions	*for information*
8.	Report of the Executive Committee on the actions since the 41st Session	*for information*

9.	Proposed updating to the four year Strategic Plan (2015-19) and the proposed "Pillar" work programmes for the biennium to April 2019;	*for decision*
	a. Pillar 1: Better preparedness for FMD crisis management in member states (MS)	
	b. Pillar 2: Reducing the risk to MS of FMD in the European Neighbourhood	
	c. Pillar 3: support to the Global FMD Control Strategy of FAO and OIE	

Friday 21 April 2017

Morning 09.00 hrs

10.	Report on the status of FMD antigen and vaccine banks in the European Neighbourhood	*for information*
11.	Report of the Standing Technical Committee and its working groups	*for information*
12.	Technical Guidelines and updated Standards presented for adoption	*for decision*
13.	Technical Committees and their functions in the upcoming biennium	*for decision*
14.	Financial Report, Budget and membership contributions for the biennium 2018-2019	*for decision*
15.	Election of the Executive Committee	*for decision*
16.	Any other issues	

Appendix 2

Global Monthly FMD report

March 2017


MARCH
2017
MONTHLY REPORT
FOOT-AND-MOUTH DISEASE SITUATION
Food and Agriculture Organization of the United Nations
European Commission
eufmd

Foot-and-Mouth Disease Situation

Food and Agriculture Organization of the United Nations
Monthly Report

March 2017

Guest Editor:
Dr. Donald King – WRLFMD, Pirbright, UK

#INFORMATION SOURCES USED:

Databases:
OIE WAHID World Animal Health Information Database
FAO World Reference Laboratory for FMD (WRLFMD)
FAO Global Animal Disease Information System (EMPRES-i)

Other sources:
FAO/EuFMD supported FMD networks
FAO/EuFMD projects and field officers

The sources for information are referenced by using superscripts.
The key to the superscripts is on the last page.

Please note that the use of information and boundaries of territories should not be considered to be the view of the U.N. Please, always refer to the OIE for official information on reported outbreaks and country status.

Guest Editor's comments

I am pleased to be asked to write a few words to attempt to summarize the latest global situation for FMD; however, I am conscious that events are changing on an almost weekly basis, such that this synopsis will almost certainly be out of date almost as soon as this issue of the EUFMD Month Report goes to press!

At the end of 2016, we highlighted the re-emergence of South Asia (endemic Pool 2) as a major source of infection for international spread (particularly for the O/ME-SA/Ind-2001d lineage that had caused unexpected outbreaks of FMD in North Africa, The Middle East, the Indian Ocean, Southeast Asia). This lineage appears now to be established in Southeast Asia (endemic Pool 1; Laos, Myanmar, Thailand and Vietnam). Further to the sporadic FMD cases that were reported in Russia at the end of 2016, during the past three months there have been new reports of field outbreaks due to this rapidly spreading genotype in the Republic of Korea (in February 2017) and in Xinjiang Province in the western part of China (reported at the SEACFMD Meeting in Siem Reap, Cambodia). The challenges of FMD control in Republic of Korea has been further complicated by the almost simultaneous detection of a second FMD serotype (from the A/ASIA/Sea-97 lineage) in another part of the country during February 2017. The porous nature of the borders in southeast and East Asia was highlighted at the recent SEACFMD meeting by a presentation (by Dr Li Huachun, from the Yunnan Animal Science and Veterinary Institute) that provided evidence of extensive animal movements into Yunnan Province in China from Thailand and Myanmar. These new incursions remind us about how easily FMD can cross international boundaries, and further demonstrate how outbreaks in East Asian countries are intimately linked to endemic FMD circulation in mainland Southeast Asian countries.

In the Middle East, there have been reports of new FMD outbreaks due to the exotic O/EA-3 topotype in Israel and Palestine (in and close to the Gaza Strip) – described in more detail in this report. However, the greatest concerns have been associated with the reports to the OIE on 31/3/2017 of new FMD outbreaks in Algeria. Local diagnosis by the Central Veterinary Laboratory has been supplemented by rapid testing and sequencing of representative specimens by the OIE/FAO Reference Laboratory at IZSLER, Brescia, Italy. The sequence data shows that the FMD virus causing these outbreaks belongs to the A/AFRICA/G-IV lineage, which is yet another new (and unexpected) incursion into the European neighbourhood. Although recent outbreaks due to this lineage have also occurred in Egypt (in 2016), the genetic analyses demonstrates closest genetic relationship to viruses collected in Nigeria (in 2015) and Cameroon (in 2013). While there are still gaps in our surveillance in west and central Africa and it is difficult to pinpoint the precise origin, these results suggest that this new incursion is due to viruses from West Africa (rather than from elsewhere in North Africa). These are the first reports of FMDV serotype A in Algeria since 1977, and represent the first "trans-Sahara" transmission of FMDV since 1999, when the West African O-Maghreb strain caused FMD outbreaks in Algeria (and Neighbouring countries). These recent events were reviewed at the EuFMD General session in Rome last week, and will provide a topic for discussion at the NRL Workshop of representatives from EU National Reference Laboratories (in Horsley, UK) at the beginning of May.

These dynamic virus movements reinforce the importance of work to collect, test and characterize samples from representative field cases of FMD, as well as the initiatives of the OIE/FAO FMD Laboratory Network to share and disseminate these data to the FMD community.

Looking forward to quieter times!

Don King
Pirbright, April 2017

I. GENERAL OVERVIEW

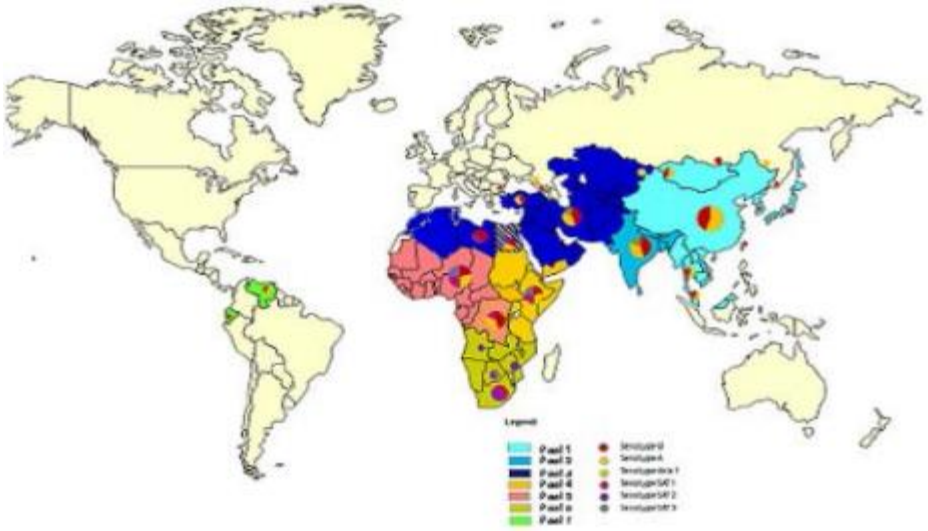
Pools represent independently circulating and evolving foot-and-mouth disease virus (FMDV) *genotypes; within the pools, cycles of emergence and spread occur that usually affect multiple countries in the region. In the absence of specific reports, it should be assumed that the serotypes indicated below are continuously circulating in parts of the pool area and would be detected if sufficient surveillance was in place (Table 1).*

Table 1: List of countries representing each virus pool for the period 2011 – 2016

POOL	REGION/COUNTRIES – colour pools as in Map	SEROTYPES
1	**SOUTHEAST ASIA/CENTRAL ASIA/EAST ASIA** Cambodia, China (People's Rep. of), China (Hong Kong, SAR), China (Taiwan Province), Korea (DPR), Korea (Rep. of), Laos PDR, Malaysia, Mongolia, Myanmar, Russian Federation, Thailand, Viet Nam	**O, A and (Asia 1 not detected since 2006)**
2	**SOUTH ASIA** Bangladesh, Bhutan, India, Mauritius, Nepal, Sri Lanka	**O, A and Asia 1**
3	**WEST EURASIA & MIDDLE EAST** Afghanistan, Algeria, Armenia, Azerbaijan, Bahrain, Bulgaria, **Egypt**, Georgia, Iran, Iraq, Israel, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, **Libya**, Morocco, Oman, Pakistan, Palestine, Qatar, Saudi Arabia, Syrian Arab Republic, Tajikistan, Tunisia, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan	**O, A and Asia 1**
4	**EASTERN AFRICA** Burundi, Comoros, **Congo D. R.**, Djibouti, **Egypt**, Eritrea, Ethiopia, Kenya, **Libya**, Rwanda, Somalia, Sudan, South Sudan, Tanzania, Uganda, Yemen	**O, A, SAT 1, SAT 2 and SAT 3**
5	**WEST/CENTRAL AFRICA** Benin, Burkina Faso, Cameroon, Cape Verde, Central Afr. Rep., Chad, **Congo D. R.**, Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea Biss., Guinea, Liberia, Mali, Mauritania, Niger, Nigeria, Sao Tome Principe, Senegal, Sierra Leone, Togo	**O, A, SAT 1 and SAT 2**
6	**SOUTHERN AFRICA** Angola, Botswana, **Congo D. R.,** Malawi, Mozambique, Namibia, South Africa, Zambia, Zimbabwe	**{O, A}*, SAT 1, SAT 2 and SAT 3**
7	**SOUTH AMERICA** Ecuador, Paraguay, Venezuela	**O and A**

Egypt, Libya and **Congo D. R.** (highlighted in bold) are indicated as being in multiple pools, since they have evidence of FMDV originating from 2 or more pools in the past four years. * ONLY IN NORTH ZAMBIA AS SPILL-OVER FROM POOL 4

MAP 1: Foot-and-mouth disease (FMD) virus pools: world distribution by serotype in 2011-2016



II. HEADLINE NEWS

POOL 1- SOUTHEAST ASIA/CENTRAL ASIA/EAST ASIA

China (People's Rep. of) [1, 2, 3] – Further to the outbreaks reported in Xinjiang, in January and February 2017, another FMD event still caused by serotype O was observed on the 23rd of March 2017 on a pig farm in Guangdong which, is on the other side of the country to where the previous outbreaks occurred.

FMDV VP1 sequences submitted by the Dr. Yamin Li of the Lanzhou Veterinary Research Institute, China were genotyped by the WRLFMD as O/ME-SA/Ind-2001d.

Korea (Rep. of) [2] - Isolates collected from the two outbreaks that occurred during February 2017 and repectively genotyped as A/ASIA/SEA-97 and O/ME-SA/Ind2001d were subjected to VMSD tests. Vaccine strains with good matching results were detected for each viral lineage.

Mongolia [1] – Further to the outbreaks reported on the 24th and 29th of January 2017, on three multispecies ruminant farms situated in Sukhbaatar and Dornod, twelve other outbreaks, still due to FMDV serotype O involving cattle sheep and goats occurred, between the 2nd of February and the 3rd of April 2017, in the same localities of the previous events and also in Khentii and Dornogovi.

POOL 2 - SOUTH ASIA

Bhutan [4] – FMD outbreaks were reported in cattle in March 2017 in Samtse, while during the same month the disease was also suspected in pig farm in Dagana.

India [5] – The Indian Council of Agricultural Research - Project Directorate on Foot and Mouth Disease (ICAR-PDFMD), Mukteswar, India reported for the current month the detection of FMDV serotype O in clinical samples of cattle and buffaloes.

Nepal [2, 6] – the National Foot and Mouth Disease and TADS Laboratory reported the circulation FMDV serotype O. FMDV isolates detected in nineteen samples, collected from cattle between January 2016 and 2017, were genotyped as O/ME-SA/Ind2001d.

POOL 3 - WEST EURASIA & MIDDLE EAST

Algeria [1, 2, 7] – Three FMD outbreaks were reported on the 24th of March and 2nd of April on three cattle farms respectively in Relizane, Medea and Bordj Bou Arreridj.
The virus detected in these outbreaks by the Algerian National Laboratory was sequenced by Dr. Emiliana Brocchi of the Istituto Zooprofilattico Sperimentale della Lombardia ed Emilia Romagna (IZSLER), Brescia, Italy (OIE/FAO FMD Reference Laboratory). The sequences were shared with the WRLFMD for confirmation to demonstrate that FMDV A/AFRICA/G-IV is the viral lineage responsible of these outbreaks.

Israel [2] – The virus that caused the FMD clinical outbreak on the 4th of February 2017, at a dairy farm in the Kibutz Nir Yizhak, Beer-Sheva, Hadarom was genotyped as O/EA-3.

Jordan [1] – Four FMD outbreaks due to serotype O were observed between the 21st of February and 9th of March 2017, involving sheep, goats and cattle farms, respectively located in Hamman, Al Balqa and Irib, Jordan.

Pakistan [8] - The Progressive Control of Foot and Mouth Disease Project reported 153 FMD outbreaks occurring in the country during March 2017. FMDV serotypes A, ASIA 1 and O were responsible for the outbreaks. No further reporting will be submitted for this Project which has been completed during this month.

Palestinian Auton. Territories [2] – FMDV field isolates from the outbreaks that respectively occurred on the 2nd and 5th of February 2017 in two cattle farms in Rafah and Jabalia, in the Gaza Strip were sequenced as O/EA-3 by the WRLFMD.

Saudi Arabia [2] – FMDV serotypes A and O were detected in the 25 samples collected in the country between October and December 2016, from cattle and sheep. The viral lineages identified for these serotypes were respectively A/ASIA/G-VII and O/ME-SA/PanAsia 2ANT-10.

POOL 4 - EASTERN AFRICA

Ethiopia [9] – The National Animal Health Diagnostic and Investigation Center (NAHDIC) detected FMDV serotypes A, O and SAT 1 in the bovine, tissue and probang samples collected from a recent outbreaks.

Kenya [10] - The National FMD Reference Laboratory Embakasi, Kenya reported for the current month, the detection of FMDV O and SAT 1 in bovine samples.

POOL 5 - WEST/CENTRAL AFRICA

No FMD outbreaks were reported during March 2017 for this Pool.

POOL 6 - SOUTHERN AFRICA

Republic of South Africa [1, 11] – the serotype responsible of the FMD outbreak that occurred on the 1st of March 2017 at a cattle farm in Mpumalanga was identified as FMDV SAT 2.

Zimbabwe [1] – FMD outbreaks caused by serotype SAT 2 continue to occur further to those reported in January 2017 respectively in the villages of Matabeleland North and Midlands.

POOL 7 - SOUTH AMERICA

Latin America [1, 12] – No new FMD outbreaks were reported for this Region during January 2017. During the OIE/FAO FMD Laboratory Meeting held in November 2016, PANAFTOSA reported sequence data for historical FMD outbreaks that occurred in Venezuela in 2013. These now represent the most recent confirmed FMD cases in South America.

The 44th Meeting of the South American Commission for the Control of Foot-and-Mouth Disease (COSALFA) was held in March 2017, Reun, Brazil to analyze the strategies for the final stage of the Hemispheric Program Eradication of Foot-and-Mouth Disease (PHEFA).

COUNTER

****** 39 MONTHS SINCE THE LAST OUTBREAK IN SOUTH AMERICA WAS REPORTED***

****** 151 MONTHS SINCE THE LAST SEROTYPE C OUTBREAK WAS REPORTED***

III. DETAILED POOL ANALYSIS

A. POOL 1 – *SOUTHEAST ASIA/CENTRAL ASIA/EAST ASIA*

China (People's Rep. of) [1, 2, 3]

In addition to the FMD outbreaks that occurred in small and large ruminants in Rinbung, Tibet and in Xinjiang, respectively in January and February 2017, the disease was again reported on the 23rd of March 2017, in a pig farm at Guangdong, which is on the other side of the country to where the previous outbreaks occurred.

The Lanzhou National Foot and Mouth Disease Reference Laboratory (OIE Reference Laboratory) confirmed the diagnosis on the 30th of March using reverse transcription - polymerase chain reaction (RT-PCR). Summary of the animals involved and location of outbreak are reported in Table 2 and Map 2.

The source of the outbreak is unknown and the control measures adopted are disinfection, movement control inside the country, quarantine, zoning, surveillance within containment and/or protection, stamping out, official disposal of carcasses, by-products and waste, zoning and vaccination in response to the outbreak, quarantine.

Table 2: summary of the animals involved in the FMD outbreak of the 25th March 2017, in Guangdong China (People's Rep. of).

Species	Susceptible	Cases	Deaths	Destroyed	Slaughtered	Apparent morbidity rate	Apparent mortality rate	Apparent case fatality rate	Proportion susceptible animals lost*
Swine	73	37	0	73	0	50.68%	0.00%	0.00%	100.00%

*Removed from the susceptible population through death, destruction and/or slaughter

Map 2: location of the FMD outbreak of the 25th March 2017 in Guangdong China (People's Rep. of)

The two FMDV VP1 sequences obtained by the Lanzhou Veterinary Research Institute, China from the viruses detected in the field samples collected in XinJiang, for which species and location from where the samples were collected is not reported, were genotyped by the WRLFMD as O/ME-SA/Ind-2001d. The virus not pertaining to the country that is most closely related to these field isolates is Zabaikalskiy/3/RUS/2016 with a sequence identity (seq. id.) between 99.4 and 99.7%.

Korea (Rep. of) [2]

Field isolates, A/SKR//2017 and O/SKR/ 1 and 2/2017, responsible of the outbreaks that occurred in cattle in Korea (Rep. of) during February 2017 and which were respectively genotyped as A/ASIA/SEA-97 and O/ME-SA/Ind2001d were subjected to VMSD tests:

- good matching results were obtained with vaccine strains A IRN/2005 and A22 IRQ/24/64 but not for A/MAY/97, A/TUR/20/2006 and A24/Cruzeiro for A/ASIA/SEA-97,
- good matching results were obtained with vaccine strains O 3039, O 5911, O Campos 04, O Manisa, O SKR and O/TUR/5/09 for O/ME-SA/Ind2001d.

Mongolia [1]

Further to the notification of outbreaks at the end of January 2017, in Sukhbaatar and Dornod, FMD, due to serotype O, FMD reoccurred between the 2nd of February and the 3rd of April 2017, on twelve new holdings where large and small ruminants were present. Khentii and Dornogovi are the new localities involved in addition to those of the previous events.

Summary of the animals involved and location of outbreaks are reported in Table 3 and Map 3. The number of cases reported is very high for FMD.

The source of the outbreaks is still unknown and the control measures adopted in the area are the following: movement control inside the country, screening, vaccination in response to the outbreak (for details see February Report), quarantine, disinfection, stamping out and zoning.

Table 3: summary of the animals involved in the FMD outbreaks that occurred between the 2nd of February and the 3rd of April 2017, in Mongolia.

Species	Susceptible	Cases	Deaths	Destroyed	Slaughtered	Species	Apparent morbidity rate	Apparent mortality rate	Apparent case fatality rate	Proportion susceptible animals lost*
Cattle	/	2322	0	2322	0	Cattle	**	**	0.00%	**
Goats	/	38	0	38	0	Goats	**	**	0.00%	**
Sheep	/	321	0	321	0	Sheep	**	**	0.00%	**
Totals	**/**	**2681**	**0**	**2681**	**0**	**0**	**	**	**0.00%**	**

*Removed from the susceptible population through death, destruction and/or slaughter
**Not calculated because of missing information

Map 3: location of the FMD outbreaks, which occurred between the 24th and 29th of January 2017, in Sukhbaata, Dornod, Khentii and Dornogovi, Mongolia.

Russian Federation [13]

The Russian Federation Regional Reference Laboratory for FMD, Russia has examined 1,265 cattle serum blood samples collected in Korea (Rep. of) for the presence of FMDV antibodies for monitoring post-vaccination immunity investigations being conducted in the latter country. This activity was carried out within a collaborative study between the two countries.

The FGBI-ARRIAH constantly provides support to the Federal Service for Veterinary and Phytosanitary Surveillance of the Ministry of Agriculture of the Russian Federation and to the Veterinary Services of the Russian Federation Subjects by respectively supplying materials and technical advice.

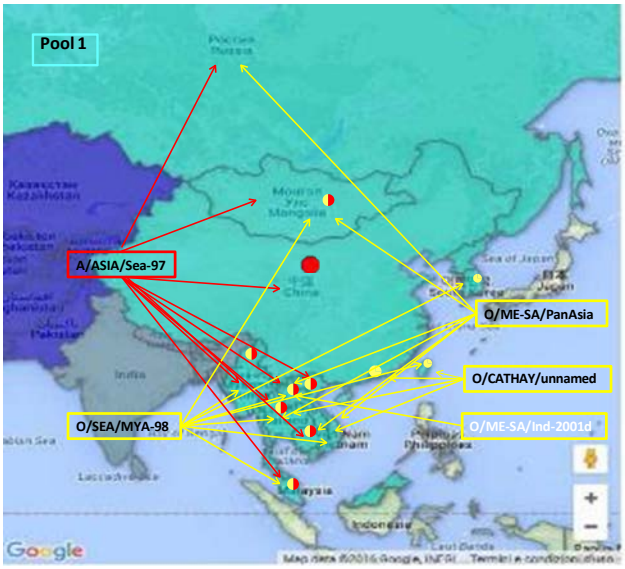
Table 4: Summary of the history of FMD Pool 1, 2012 – 2016, for geographic distribution see Map 4 below.

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE between 2012 – 2015 **(1st semester)	LAST OUTBREAK REPORTED/SEROTYPE # see pg. 1	Comment
Cambodia	O, 2013-2015/NOT SAMPLED	July 2016/ not typed or not sampled, Sep 2015/O and A, Aug 2014/ not typed, June 2014/not typed	Follow-up needed
China (People's Rep. of)	2012-2013/O, 2013 & 2015/A 2012 - 2014/NOT TYPED**	March 2017/O, May 2015/A	See text Follow-up needed
China (Hong Kong, SAR)	O**	Aug 2016/O	Follow-up needed
China (Taiwan Province)	2012-2013/O, A/2015**	Jun 2015/A	Follow-up needed
Korea (DPR)	2012-2013/DISEASE ABSENT 2014 & 2015/ NO DATA REPORTED	May 2014/not confirmed, July 2014/O	Follow-up needed
Korea (Rep. of)	2012-2013/DISEASE ABSENT 2014/O, 2015/ NO DATA REPORTED	Feb 2017/O & A	See text Follow-up needed
Laos PDR	2012/DISEASE PRESENT WITH QUANTITATIVE DATA BUT WITH AN UNKNOWN NUMBER OF OUTBREAKS 2015/ NO DATA REPORTED	Mar 2016/O Mar 2015/A,	Follow-up needed
Malaysia	2012 –2015/O 2013 & 2015/NOT TYPED	August 2016/A & O	Follow-up needed
Mongolia	2013/A & NOT TYPED, 2014 & 2015**/O	April 2017/O, Sept 2013/A,	See text Follow-up needed
Myanmar	2012-2014/O, 2015/A & NOT TYPED	Aug 2016/O, July 2016/ not typed, Oct 2015/A	Follow-up needed
Russian Federation	2012, 2014 & 2015/O, 2013 - 2015/A	Dec 2016/O, Oct 2016/Asia 1, Jan 2016/ A	See text
Thailand	O, A NOT SAMPLED & NOT TYPED	Sep 2016 /A, Aug 2016/O June – July 2016/not typed	Follow-up needed
Vietnam	O, NOT SAMPLED, NOT TYPED 2013, 2014 & 2015/A,	November 2016/A, Aug 2016/O and not typed	Follow-up needed

Map 4: FMD distribution by serotype and topotype in South East Asia, 2012 – 2016 – white script in map refers to new introduction of viral lineage in pool or country of the pool during 2016.

Conjectured circulating FMD viral lineages in Pool 1 per 2016 [2, 17]:

- Serotype O: O/SEA/Mya-98, O/ME-SA/PanAsia, O/CATHAY, O/ME-SA/Ind-2001d (new detection in Myanmar and Thailand during 2016)
- Serotype A: A/ASIA/Sea-97 and Iran-05^{SIS10} sublineage
- Serotype Asia-1 has not been detected in the region since 2006 (Vietnam) and 2006 (China (People's Rep. of) and Vietnam)



B. POOL 2 – South Asia

Bhutan [4]

Suspicion of clinical FMD, for which control measures were adopted, was reported on the 8th of March 2017 in cattle in the villages of Dangragoan and Devithan. Another suspect outbreak was reported on the 14th of February 2017 on a private pig farm at Dagana Dzongkhag, where 28 pigs were presenting severe foot lesions. The Livestock extension centre is conducting epidemiological investigations while laboratory testing will be carried out at National Centre for Animal Health (NCAH). There are about 1100 pigs at risk in the village involved. Investigations are being conducted to identify the infection source. Even in this case control measures, represented by isolation and treatment of affected animals, were adopted.

India [3]

The ICAR-PDFMD, Mukteswar, India reports since May 2015 the sole detection of FMDV serotype O among the clinical samples examined using FMDV antigen and/or RNA detection: samples were collected from 20 cattle and five buffaloes; ten field isolates were genotyped for serotype O. Further to this, four field viruses belonging to serotype O and another set of five samples belonging to serotype A were subjected to vaccine matching exercise. Within ongoing epidemiological studies, 7, 455 serum samples were tested for FMDV antibodies. The FMD diagnostic kits used for these analyses were developed at ICAR-DFMD, Mukteswar.

The personnel of ICAR-PDFMD continue to be involved in the field investigations of FMD outbreaks and in providing expert advice to the Government and to the National and Local authorities. The institution is continuing research studies and collaborations with international organizations.

Nepal [2, 6]

FMDV O was also reported by National Foot and Mouth Disease and TADS Laboratory as the only serotype circulating in the country.

Bovine FMDV positive samples, collected between November 2016 and January 2017, were forwarded by the above laboratory and were genotyped as O/ME-SA/ind-2001d. These set of viruses are all closely related to other isolates previously detected in the country during 2016 and 2015. Location of the isolates is shown in Map 5.

Map 5: location of the areas in Nepal from where the set of FMDV genotyped samples were collected between November 2016 and January 2017.

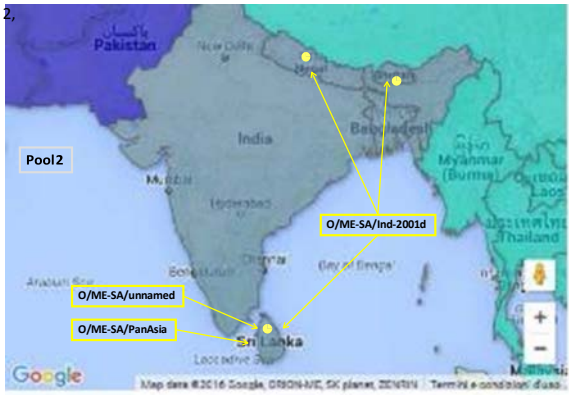
Table 5: Summary of the history of FMD Pool 2, 2012 – 2016, for geographic distribution see Map 6 below.

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE between 2012 – 2015 **(1st semester)	LAST OUTBREAK REPORTED/SEROTYPE # see pg. 1	Comment
Bangladesh	DISEASE PRESENT BUT WITHOUT QUANTITATIVE DATA	Dec 2016/A, ASIA 1 and O	Follow –up needed
Bhutan	NOT TYPED, 2013 & 2014/NOT SAMPLED 2013-2015/O	June 2016/O, March 2017/Untyped	See text
India	O, A, NOT SAMPLED 2012-2014/Asia 1 2013/NOT TYPED	March 2017/O, Apr 2015/A Asia 1	See text
Mauritius	DISEASE ABSENT	Sep 2016/0	Follow-up needed
Nepal	O, 2012-2103/Asia 1	Feb 2017/O	See text
Sri Lanka	2012 – 2014/O, 2015/NO DATA REPORTED	2016/O	Follow-up needed

Map 6: FMD distribution by serotype and topotype in South Asia, 2012 – 2016 (EuFMD).

Conjectured circulating FMDV lineages in Pool 2 per 2016 [2, 17]:

- O/ME-SA/Ind-2001d predominates (the O/ME-SA/Ind-2011 lineage that emerged during 2011 has not been recognized during 2012-15)
- Outbreaks of O/ME-SA/Ind-2001d detected in Mauritius during 2016 (**not reported in Map**)
- O/ME-SA/PanAsia-2 (last detected in 2014 in Sri Lanka)
- A/ASIA/G-VII (genotype 18)
- Asia-1 (lineage C subdivided into Eastern and Western clusters)?



C. POOL 3 – *West Eurasia & Middle East*

Algeria [1, 2, 7]

Three FMD outbreaks were reported on the 24th of March and 2nd of April on three cattle farms respectively in Relizane, Medea and Bordj Bou Arreridj that are situated in the Northern part of the country facing the Mediterranean. Fattening bulls involved in the outbreaks presented lameness, stomatitis, lingual lesions and salivation.

The diagnosis was confirmed on the 4th of April 2017 by the Laboratoire Central Vétérinaire (National laboratory) using real-time reverse transcriptase/polymerase chain reaction (RRT-PCR) and typing ELISA indicating that FMDV serotype A was responsible for these outbreaks. Samples sent to IZSLER were sequenced and forwarded to the WRLFMD for genetic analysis. The five sequences investigated belong to A/AFRICA/G-IV. All the sequences from the Algerian outbreaks are relatively closely related (seq id 98.9 and 100%), while the closest field virus not pertaining to the country is NIG/01/15 isolated from cattle in Nigeria with a seq id between 97.3 and 98.4%. Although the two countries are linked by this lineage, the great distance between them leaves open the question of the possible introduction of FMDV in Algeria.

Egypt is the other country of Pool 3 where the same lineage was isolated in 2016. However, in this case the most closely related virus, not pertaining to the country, was an isolate detected in Ethiopia in 2015.

This information indicates that the two variants of the same viral lineage are following independent spreading pathways.

The present outbreaks are the first evidence of the circulation of FMDV serotype A in the country since 1977, as the previous outbreaks were due to FMDV serotype O, with latest lineage represented by O/Me-SA/Ind2001d.

A summary of the animals involved and location of the outbreak are presented in Table 6 and Map 7.

The Sanitary measures that were put in place by the country are movement control inside the country, disinfection, stamping out and vaccination if the appropriate vaccine exists.

Table 6: summary of the animals involved in the FMD outbreaks that occurred between the 24th of March and the 2nd of April 2017, in Algeria.

Species	Susceptible	Cases	Deaths	Destroyed	Slaughtered	Species	Apparent morbidity rate	Apparent mortality rate	Apparent case fatality rate	Proportion susceptible animals lost*
Cattle	28	12	0	0	28		42.86%	0.00%	0.00%	100.00%

*Removed from the susceptible population through death, destruction and/or slaughter

Map 7: location of the FMD outbreaks that occurred between the 2nd of March and the 2nd of April 2017, in Relizane, Medea and Bordj Bou Arreridj Algeria.

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Israel [2]

The virus detected in the eight bovine samples collected during the FMD clinical outbreak that occurred on the 4th of February 2017, on a dairy farm in the Kibutz Nir Yizhak, at Beer-Sheva, Hadarom was genotyped as O/EA-3 with a 100% seq id to those isolated in the outbreaks that occurred simultaneously in Palestinian Auton. Territories.

Jordan [1]

Four FMD outbreaks occurred between the 21st of February and 9th of March 2017, involving sheep, goats and cattle farms which are respectively located in Hamman, Al Balqa and Irib, Jordan. The diagnosis was confirmed on the 28th of February by the Animal Wealth Laboratories (National laboratory) using antigen (Ag) detection ELISA. The Veterinary College Research Laboratory, Jordan University of Science and Technology confirmed the results using in addition, the PCR test. The latter laboratory is also carrying out sequencing of the FMDV serotype O detected, results of which are still pending.

Details of the animals involved and location of the outbreaks are presented in Table 7 and Map 8.

The affected species presented fever, lameness in the small ruminants, lesions in the mouth of the cattle, drop in milk production and neonatal deaths in sheep and goat after ingestion of milk. The outbreak at Al Balqa occurred after the introduction of a new cow that was purchased at a livestock market.

All the outbreaks were reported as resolved on the 9th of April.

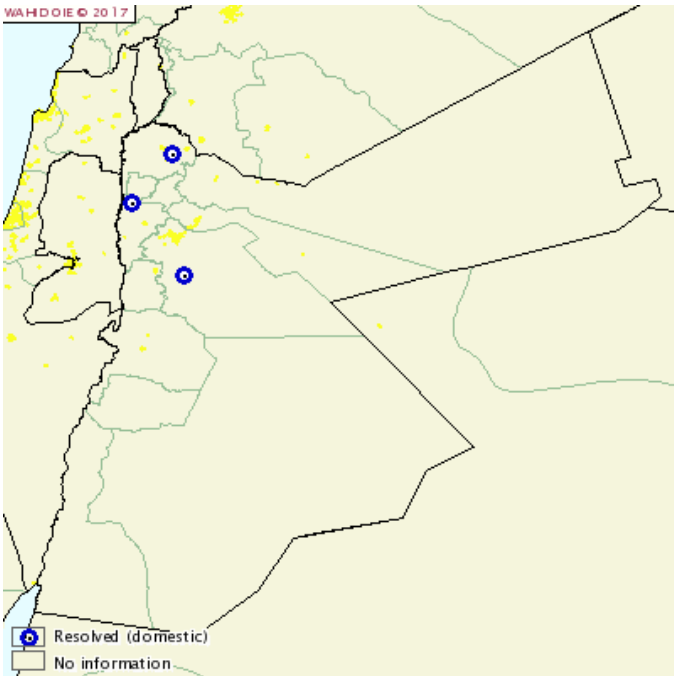
Control measures put in place are vaccination in response to the outbreaks, disinfection, quarantine, surveillance outside containment and/or protection zone, official disposal of carcasses, by-products and waste, surveillance within containment and/or protection zone and treatment of affected animals with antibiotics.

Table 7: summary of the animals involved in the FMD outbreaks that occurred between the 21st of February and 9th of March 2017, in Jordan.

Species	Susceptible	Cases	Deaths	Destroyed	Slaughtered	Apparent morbidity rate	Apparent mortality rate	Apparent case fatality rate	Proportion susceptible animals lost*
Sheep	1900	300	150	0	0	15.79%	7.89%	50.00%	7.89%
Goats	150	13	3	0	0	8.67%	2.00%	23.08%	2.00%
Cattle	35	3	0	0	0	8.57%	0.00%	0.00%	0.00%
Cattle	20	15	0	0	0	75.00%	0.00%	0.00%	0.00%
Totals	**2105**	**331**	**153**	**0**	**0**	**16.67%**	**7.27%**	**46.22%**	**7.27%**

*Removed from the susceptible population through death, destruction and/or slaughter

Map 8: location of the FMD outbreaks that occurred between the 21st of February and 9th of March 2017, in Hamman, Al Balqa and Irib, Jordan



Pakistan [8]

The Progressive Control of Foot and Mouth Disease Project reported that 153 FMD outbreaks occurred in the country during March 2017. The distribution among the provinces of the country of the FMDV serotypes (A, ASIA 1 and O) responsible for these events is represented in and Table 8 and Map 9. The present Project has been completed in all its phases and therefore here will be no further reporting.

Vaccination in response to outbreak was also carried out within the project with the administration of 7,575 doses during March 2017. A summary of the number of interventions carried out in the different Provinces is presented in Table 9.

Table 8: Province and District distribution of FMD outbreaks with relative serotypes that occurred in Pakistan during March 2017.

Location of Outbreaks (N°)		Number of Outbreaks due to FMD Virus Serotype(s)				
Province	**District**	**'O'**	**'A'**	**'Asia-1'**	**'Mixed'**	**Un-Typed**
Sindh (23)	Karachi (5)	3	1	--	--	1
	Thatta (5)	5	--	--	--	--
	Nawab shah (1)	1	--	--	--	--
	Matiari (1)	--	--	--	--	1
	Larkana (11)	5	--	--	--	6
Federally Administered Tribal Areas (3)	Bajaur Agency (1)	1	--	--	--	--
	FR-Peshawar (1)	1	--	--	--	--
	FR-Bannu (1)	--	--	--	--	1
Khyber Pakhtunkhwa (14)	Swat (9)	7	--	--	2	--
	Peshawar (5)	1	--	--	--	4
Azad Kashmir (11)	Mirpur (9)	3	--	1	--	5
	Bhimber (2)	1	--	1	--	--
Punjab (89)	Faisalabad (12)	5	--	1	--	6
	Khanewal (13)	9	--	--	--	4
	Bhawalnagar (4)	3	--	--	--	1
	Chiniot (1)	1	--	--	--	--
	Sargodha (5)	5	--	--	--	1
	Gujrat (2)	2	--	--	--	--
	Lodhran (2)	2	--	--	--	--
	Rawalpindi (5)	1	1	--	--	3
	Sahiwal (1)	1	--	--	--	--
	Lahore (12)	7	2	1	--	2
	Sheikhupura (5)	5	--	--	--	--
	Vehari (11)	5	3	--	--	3
	Nankana (3)	--	--	--	--	3
	Gujranwala (5)	2	--	1	--	2
	Jhang (1)	1	--	--	--	--
	Kasur (2)	2	--	--	--	--
	Multan (5)	1	1	--	--	3
Islamabad Capital Territory (9)	Islamabad (9)	--	--	6	--	3
Balochistan (4)	Hub, Lasbella (4)	3	--	--	--	1
Totals (153)		80	8	11	2	52

Map 9: Location of the Districts where FMD outbreaks occurred in Pakistan during March 2017.

Table 9: Vaccination activities carried out during March 2017 in the various Provinces of Pakistan.

Province	Ring Vaccination
Sindh	2,000
Balochistan	550
Khyber Pakhtunkhwa	1,250
Punjab	2,375
Azad Kashmir	625
Islamabad Capital Territory	775
Total	**7,575**

Palestinian Auton. Territories [2]

The eight samples collected from the outbreaks that occurred during February 2017, on two cattle farms in Rafah and Jabalia, in the Gaza Strip were all sequenced as O/EA-3. As previously mentioned, seq id of these isolates was nearly complete with those responsible of the episodes that simultaneously occurred in Israel, varying from 99.7 to 100%.

Saudi Arabia [2]

Genotyping of the FMDVs serotypes, detected in eight of the 25 samples collected in the country from cattle and sheep, between October and December 2016 were respectively identified as A/ASIA/G-VI and O/ME-SA/PanAsia 2^{ANT-10}. A summary of the species, location and sequence homology of the field isolates is given in Table 10 and Map 10.

As can be noted from Table 10, the field isolates of viral belonging to O/ME-SA/PanAsia 2^{ANT-10} divide into two groups, respectively relating to location origin.

Table 10: summary of the genotyped field isolates collected in Saudi Arabia from cattle and sheep between October and December 2016.

Sample Identification	Location Origin	Species from which isolate was detected	Date of collection	Genotype	Most Closely Related Viruses not belonging to the country (Seq id %)	Host species
SAU/21/2016	Mekkah	cattle	19/10/2016	A/ASIA/G-VII	IRN/21/2015 (98.6 - 98.7)	cattle
SAU/22/2016						
SAU/24/2016						
SAU/37/2016	Kharj		29/12/2016		/	
SAU/40/2016						
SAU/41/2016						
SAU/42/2016						
SAU/27/2016	Durma	sheep	07/11/2016	O/ME-SA/PanAsia 2ANT-10	BAR/1/2014 (97.8%)	cattle

Map 10: Location origin of genotyped samples collected in Saudi Arabia from cattle and sheep between October and December 2016.

Table 11: Summary of the history of FMD Pool 3, 2012 – 2016, for geographic distribution see Map 11 below.

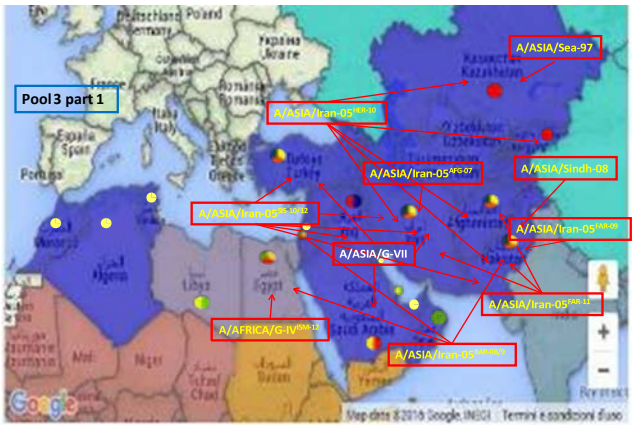
COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2012 – 2015 **(1st semester)	LAST OUTBREAK REPORTED/SEROTYPE # see pg. 1	Comment
Afghanistan	2013-2015**/O, A, Asia 1, NOT TYPED 2012/SEROTYPE NOT REPORTED	Jul 2016/O, Jun 2016/Asia 1 & May 2016/A,	Follow –up needed
Algeria	2014 -2015**/O	Apr 2017/A, Apr 2015/O	See text
Armenia	2012-2014/DISEASE ABSENT 2015/A	Dec 2015/A	Follow –up needed
Azerbaijan	DISEASE ABSENT**	2007/0	Follow –up needed
Bahrain	2012, 2014 &2015 /O	Oct 2014/O	Follow –up needed
Egypt	2012, 2014/SAT 2 2012 – 2015**/O, A	May-Jun 2016/ O & Sat 2, March 2016/A, Aug 2016/typing pending	Follow –up needed
Georgia	DISEASE ABSENT	2001/ASIA 1	Follow –up needed
Iran	2012-2014/A, Asia 1 & O 2015**/SEROTYPE NOT REPORTED	July 2016/A & O, 2013/Asia 1	Follow –up needed
Iraq	2012-2013/O,	Dec 2013/A, O	Follow –up needed

	2012-2014/A 2015/ SEROTYPE NOT REPORTED		
Israel	2012-2015**/O	Feb 2017/O	See text Follow –up needed
Jordan	DISEASE ABSENT**	2006/A	Follow –up needed
Kazakhstan	2012/O,2012 –2013/A 2014-2015**/ DISEASE ABSENT	Jun 2013/ A & Aug 2012/O	Follow –up needed
Kuwait	2012/O 2013 – 2014/ DISEASE ABSENT	Jan-Feb 2016/O	Follow –up needed
Kyrgyzstan	2012-2014/O, A 2015/ NO DATA REPORTED	Aug 2014/not typed & Apr 2013 /O, A,	Follow –up needed
Lebanon	DISEASE ABSENT 2015/ NO DATA REPORTED	2010/not typed	Follow –up needed
Libya	NO DATA REPORTED	Oct 2013/O	Follow –up needed
Morocco	DISEASE ABSENT**	Oct 2015/O	
Oman	2012-2014/O 2015/ NO DATA REPORTED	May 2015/SAT 2	Follow –up needed
Pakistan	2012 & 2015/ NO DATA REPORTED 2013-2014/A, ASIA 1 & O	March 2017/A, Asia 1 & O	See text
Palestine	O, 2012-2013/SAT 2	Feb 2017/O, Mar 2013/Sat 2	See text Follow –up needed
Qatar	2012-2015/O	Dec 2013/O	Follow –up needed
Saudi Arabia	2012-2014/O 2015/ NO DATA REPORTED	Oct 2016/A & April 2016/O	See text Follow –up needed
Syrian Arab Republic	DISEASE ABSENT**	2002/ A & O	Follow –up needed
Tajikistan	2012- 2013/NOT TYPED 2014-2015**/DISEASE ABSENT	Nov 2012/ not typed & Nov 2011/Asia 1,	Follow –up needed
Tunisia	2014/O 2015/ DISEASE ABSENT	Oct 2014/O	Follow –up needed
Turkey	Asia 1, A & O, NOT TYPED	Oct 2015/ A May & 2014-2015/ Asia 1 and O	Follow –up needed
Turkmenistan	2012/NO DATA REPORTED 2013-2015/DISEASE ABSENT	Not available	Follow –up needed
United Arab Emirates	2012, 2015/DISEASE ABSENT 2013-2014/O	Feb 2016/O	Follow –up needed

Map 11: FMD distribution by serotype and topotype for West Eurasia and Middle East, 2012 – 2016 (EuFMD) - white script in map refers to new introduction of viral lineage in pool or country of the pool during 2016.

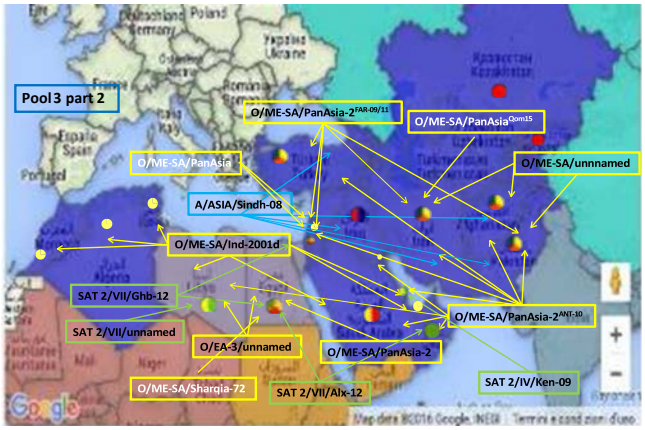
Conjectured circulating FMDV serotype A lineages in Pool 3 per 2016 [2, 17]:

- A/ASIA/Iran-05 (from AFG-07, HER 10, SIS-10/12, SIS-, FAR-09/11 and BAR-08 sub-lineages)
- A/Asia/G-VII (recent incursion from South Asia - detected also in Iran in 2016)
- A/ASIA/Sea-97
- A/ASIA/Sindh-08
- A/AFRICA/G-IV
- Asia-1 (Sindh-08 lineage).



Conjectured circulating FMDV serotype O and SAT 2 lineages in Pool 3 **(cont'd)**

- O/ME-SA/PanAsia-2 (predominantly from ANT-10 and FAR-09/11 sub-lineages)
- O/ME-SA/Ind-2001 (recent incursions per 2013/14 from the Indian sub-continent)
- New detection during 2016 of O/ME-SA/Sharqia-72 in Egypt and of O/ME-SA/PanAsia-2QOM-15 in Iran
- O/EA-3/unnamed in Egypt and Libya
- SAT 2/IV/Ken-09
- SAT 2/VII/Alx-12 and Ghb-12 sublineages



D. POOL 4 – Eastern Africa

Ethiopia [9]

The NAHDIC detected FMDV serotypes A, O and SAT 1 in the 13 of the 25 bovine, tissue (11) and probang (13) samples collected from FMD outbreaks using an antigen detection ELISA.
The laboratory has also shipped 23 samples collected over the past year to the WRLFMD,
The NAHDIC personnel were also involved in the outbreak investigation of these events supporting the field veterinarians and farmers for the choice of vaccine to employ.
Most recent viral lineages identified, belonging to detected serotypes, are relative to samples collected during 2015 and these are respectively A/AFRICA/G-VII and O/EA-3/unnamed and O/EA-4/unnamed and SAT 1/IX/unnamed. VMSD tests conducted on these serotypes did not give good matching results with the vaccines strains employed represented by A22 IRQ, A IRN 05 and A/TUR/20/2006 for serotype A, while for serotype O good vaccine matching results were obtained for O 3039 and 0/TUR/5/2009, but not with O Manisa. VMSD test results are unavailable for field isolates of the country belonging to FMDV serotype SAT 1 that was last reported in 2014.

Kenya [10]

The National FMD Reference Laboratory Embakasi, Kenya reported the detection of FMDV O (1) and SAT 1 (2) in the five bovine samples examined using antigen detection Elisa and Real time PCR.
Other FMD related actions carried out by the laboratory were vaccine potency tests, outbreak investigations and surveillance activities.
Samples last forwarded by the country to the WRLFMD for genotyping was in 2013. The genotypes detected in relation to the serotypes reported this month were A/AFRICA/G-I and SAT 2/IV/unnamed from samples respectively collected in 2013 and 2012.

Table 12: Summary of the history of FMD Pool 4, 2012 – 2016, for geographic distribution see Map 12 below.

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2012 – 2015 **(1st semester)	LAST OUTBREAK REPORTED/SEROTYPE #see pg. 1	Comment
Burundi	DISEASE PRESENT	Aug 2013 / not available	Typing required
Comoros	NO DATA AVAILABLE	2010	Follow –up needed
Congo d. R.	NO DATA AVAILABLE	Jun 2013/not typed	Typing required
Djibouti	DISEASE ABSENT**	Not available	Follow –up needed
Egypt	2012, 2014/SAT 2 2012 – 2015**/O, A	May-Jun 2016/ O & Sat 2, March 2016/A, Aug 2016/typing pending	Follow –up needed
Eritrea	2012/O, 2013/ DISEASE ABSENT 2014/ DISEASE PRESENT 2015/ NO DATA REPORTED	Jan 2012/O	Follow –up needed
Ethiopia	O**, 2012/A, 2012 & 2105/SAT 2, 2015**/SAT 1	March 2017/ A, O & SAT 1 May 2016/SAT 2	See text
Kenya	A, O, SAT1, SAT2, 2012 – 2015 /NOT TYPED	Mar O & SAT 1, Jan 2016/ A, Oct 2015/ SAT 2	See text
Libya	NO DATA REPORTED	Oct 2013/ O, Sat 2/Apr 2012	Follow-up needed
Rwanda	2012-2013/A, O, SAT1, SAT 2	Nov 2012/not typed	Typing required
Somalia	2012-2014/NOT SAMPLED 2013 – 2014/ NO DATA AVAILABLE	2011	Follow –up needed
Sudan	2013/SAT 2, 2012-2014/O & NOT TYPED 2015**/A & NOT SAMPLED	Dec 2013/ O & A, Jan 2014/SAT 2	Follow –up needed
South Sudan	2014/A, O SAT 1, SAT 2, SAT 3, 2012-2013 & 2015/ NO DATA REPORTED	2011	Follow –up needed
Tanzania	2012-2015/A, O, SAT 1, SAT 2	May 2015/O Apr2013/ A, SAT 1, SAT2	Follow –up needed
Uganda	2012/ SAT 1,2012, 2014/O, 2013/NOT TYPED 2015/NO DATA REPORTED	May 2014/O Nov 2014/SAT1, Jan 2015/A and SAT 3, July 2015/ SAT 2 and untyped	Follow –up needed
Yemen	2012/O, 2013 – 2014/ DISEASE PRESENT BUT WITHOUT QUANTITATIVE DATA 2015/NO DATA REPORTED	2009/O	Follow –up needed

Map 12: FMD distribution by serotype and topotype for East Africa. 2011 – 2015 (EUFMD

East Africa is known to be endemic for FMD, but available data is at present limited. Conjectured circulating FMDV lineages in Pool 4 per 2015 2 [2, 17]:

- O (topotypes EA-2 (Kenya, Tanzania), EA-3 (Ethiopia, Eritrea, Kenya & Sudan) and EA-4 (Ethiopia).
- A/AFRICA (genotypes I (Kenya, Tanzania), IV (Sudan) and VII (Ethiopia))
- A/ASIA/Iran-05 BAR-08 sub-lineage (Egypt)
- SAT 1 (topotypes I (Kenya, Tanzania))
- SAT 2 (topotypes IV (Kenya, Tanzania), VII (Sudan, Ethiopia), XII (Ethiopia))
- SAT 3 (only detected in African buffalo in the south of the QENP, Uganda in 1970 & 1997 and recently in 2013)

E. POOL 5 – West / Central Africa

Cameroon [13]

The Laboratoire National Vétérinaire (LANAVET), Garoua detected FMDV using RT- PCR in 142 (38.6%) out of the 368 environmental samples collected from soil and air.

Sheep sera samples (140) were tested using 3ABC non-structural protein antibodies (NSP) ELISA with 22 (15.71%) resulting positive for FMDV antibodies; 14 of these samples were positive for antibodies against serotype O. In addition, 52 bovine sera samples were also tested using the NSP ELISA with 41 resulting positive for FMDV antibodies.

LANAVET has an ongoing collaborative study with the Ohio State University and Plum Island Laboratory, USA.

Most recent genotypes identified in the country were represented by A/AFRICA/G-IV and SAT 2/VII/Lib-12 in samples collected in 2013 for which VMSD tests are not available.

Ghana [14], **Nigeria** [15] **and Senegal** [16]

No FMD outbreaks were reported during March 2017 respectively in the relative countries of the following laboratories: the National Veterinary Research Institute Vom, Nigeria, the ACCRA Veterinary Laboratory, Ghana and the Laboratoire National de l'Elevage et de Recherches Vétérinaires, Senegal, except for the collection of suspect samples by Nigeria.

Table 13: Summary of the history of FMD Pool 5, 2012 – 2016, for geographic distribution see Map 13 below.

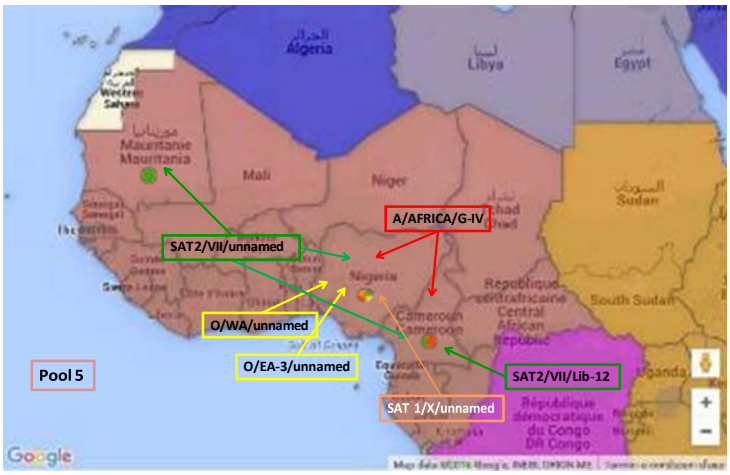
Country	FMD history FMDV serotypes, reported to OIE in 2012 – 2015 **(1st semester)	Last outbreak reported/serotype #see pg. 1	Comment (Genotyping would be useful for this region)
Benin	A, O, SAT 1, SAT 2	Jun 2014/O, A, SAT 1, SAT 2	Follow –up needed
Burkina Faso	DISEASE PRESENT SEROTYPES NOT REPORTED	2013/ not available	Follow –up needed
Cameroon	DISEASE PRESENT SEROTYPES NOT REPORTED	Apr -Dec 2016/serotyping pending, Jun 2014, Jan 2015 and July-Aug 2015/untyped, Nov 2014/O, SAT 2, May 2014/SAT 1, Apr 2014/ A	See text Typing required

Cape Verde	NO DATA AVAILABLE	Not available	Follow –up needed
Central Afr. Rep.	DISEASE PRESENT BUT WITHOUT QUANTITATIVE DATA	Not available	Follow –up needed
Chad	2012 – 2013/SEROTYPES NOT REPORTED	Not available	Follow –up needed
Congo D. R.	2012 – 2015/A, O, SAT 1	Jun 2013/not typed	Typing required
Congo R.	NO DATA AVAILABLE	Jun 2013/not typed	Typing required
Cote D'Ívoire	2012, 2015/A, NOT SAMPLED 2013/ SEROTYPES NOT REPORTED	Jun 2013/not typed	Follow –up needed
Equatorial Guinea	2012 – 2013/DISEASE SUSPECTED 2014 – 2015/ NO DATA AVAILABLE	Not available	Follow –up needed
Gabon	NO DATA AVAILABLE	Not available	
Gambia	NO DATA AVAILABLE	2012/O	Follow –up needed
Ghana	2012 – 2015**/SEROTYPES NOT REPORTED	Dec 2016/ O & SAT 2 2014/not available	See text Follow –up needed
Guinea Biss.	2012-2013/DISEASE ABSENT 2014/ SEROTYPES NOT REPORTED 2015/ Disease suspected	Dec 2016/SAT1 &SAT 2	Follow –up needed
Guinea	2012-2013, 2015/ DISEASE ABSENT 2014/ SEROTYPES NOT REPORTED	2014/not available	Follow –up needed
Liberia	NO DATA AVAILABLE	Not available	Follow –up needed
Mali	2012/ NO DATA AVAILABLE 2013/ SEROTYPES NOT REPORTED 2014-2015/SAT 2 2015/A, SAT 1	2011/2012, no precise data	
Mauritania	2012-2013/NO REPORTED OUTBREAKS 2014-2015**/SAT 2	Dec 2014/SAT 2	Follow –up needed
Niger	2012 – 2014/NOT SAMPLED	2014/not sampled, May 2015/O	Follow –up needed
Nigeria	2014-2015/O	Feb 2017/not typed Sept 2016/ O & SAT 1 Nov 2015/A, Sept 2014/ SAT 2	See text Follow –up needed
Sao Tome Principe	2012/DISEASE ABSENT, 2013/NO DATA AVAILABLE	Not available	Follow –up needed
Senegal	2013/NO DATA AVAILABLE 2012, 2014-2015**/ NOT SAMPLED	2014/ SAT 2, Feb 2015/ A and O	See text Follow –up needed
Sierra Leone	DISEASE ABSENT	Oct 1958	Follow –up needed
Togo	O, SAT 1	2012/O	Follow –up needed

Map 13: FMD distribution by serotype and topotypes for West Africa, 2012 – 2015 (EuFMD) - white script in map refers to new introduction of viral lineage in pool or country of the pool during 2016.

Conjectured circulating FMDV lineages in Pool 5 per 2016 [2, 17]

- Serotype O (topotypes WA, EA-3 (Nigeria))
- Detection of a new viral lineage, SAT 1/X/unnamed in Nigeria
- Serotype A (topotype AFRICA, genotypes IV)
- Serotype SAT 1
- Serotype SAT 2 (topotype VII/Lib-12 and unnamed genotypes)



F. POOL 6 – Southern Africa

Mozambique[1]

FMD outbreaks due to serotype SAT 2, that started in September 2016 in Maputo and Gaza provinces, are still ongoing. The area where the outbreaks are occurring is facing a severe drought, which is causing the uncontrolled movement of cattle that are coming in contact with possible wild infected animals at main watering points. For this, control measures are still in place represented by movement control inside the country, disinfection, traceability, quarantine, surveillance within containment and/or protection zone and vaccination employing Aftovax SAT 1 and SAT 2, in response to outbreaks with the immunization of 2,518 cattle in Gaza and 12,121 cattle in Maputo.

Republic of South Africa [12]

The ARC- Onderstepoort Veterinary Institute serotyped the virus responsible for the outbreak that occurred on the 1st of March 2017 on a cattle farm in Mpumalanga FMDV as SAT2, using virus isolation and typing ELISA. Twenty-one of the 82 samples examined were positive for FMDV. Sequencing PCRs were performed and the genotyping results will shortly be available.

The laboratory also examined 6,297 serum samples using liquid-phase blocking ELISA for the detection of FMDV serotypes SAT 1, SAT 2 and SAT 3 and 647 sera using FMD NSP ELISA. The ARC-Onderstepoort Veterinary Institute is continuing its collaboration with international organizations on research projects.

The FMD research group, led by Dr Francois Maree, is involved in an international research project funded by Ecology and Evolution of Infectious Diseases program of the National Science Foundation, together with researchers from the UK and USA, investigating the ecological and evolutionary mechanisms in FMDV persistence in buffalo. During the reporting period, sampling was performed on buffalo herds (n=64) in the Kruger National Park (KNP) and probang and tonsillar crypt samples (n=560) were subjected to virus isolations.

The laboratory also has collaborations with the WRLFMD, Oregon State University, SANParks and State Veterinary Services, KNP on the ecological and evolutionary mechanisms in foot-and-mouth disease virus persistence in buffalo.

Zimbabwe[1]

Six new outbreaks due to FMDV serotype 2 occurred between the 6th of January and the 22nd of March 2017, on cattle farms of Matabeleland North and Midlands.

The present outbreaks were due to the illegal movement of animals and the infection is continuing its spread in Gokwe South and Nkayi districts, within communal areas where cattle share the same grazing and watering points. Previously, vaccination campaigns were not carried out due to lack of resources to procure FMD vaccine however, they are currently being conducted with the immunization of 1000 heads, with a 28 day booster to follow. The three infected districts are still under quarantine measures to limit the spread of infection. In addition, veterinary check-

points/roadblocks were placed on major roads leading into and out of the infected districts and awareness campaigns are on-going in the area as are also weekly inspections in the infected and neighbouring areas. Summary of the animals involved and location of outbreaks are presented in Table 14 and Map 14.
Control measures adopted are the following: movement control inside the country, traceability, quarantine, surveillance outside containment and/or protection zone, vaccination if available. Vaccination

Table 14: summary of the animals involved in the FMD outbreaks that occurred 6th of January and the 9th of March on cattle farms of Matabeleland North and Midlands, Zimbabwe.

Species	Susceptible	Cases	Deaths	Destroyed	Slaughtered	Apparent morbidity rate	Apparent mortality rate	Apparent case fatality rate	Proportion susceptible animals lost*
Cattle	11,424	194	32	0	0	1.70%	0.28%	16.49%	0.28%

*Removed from the susceptible population through death, destruction and/or slaughter

Map 14: Location of the FMD outbreaks that occurred between January and March 2017 in Matabeleland North and Midlands, Zimbabwe.

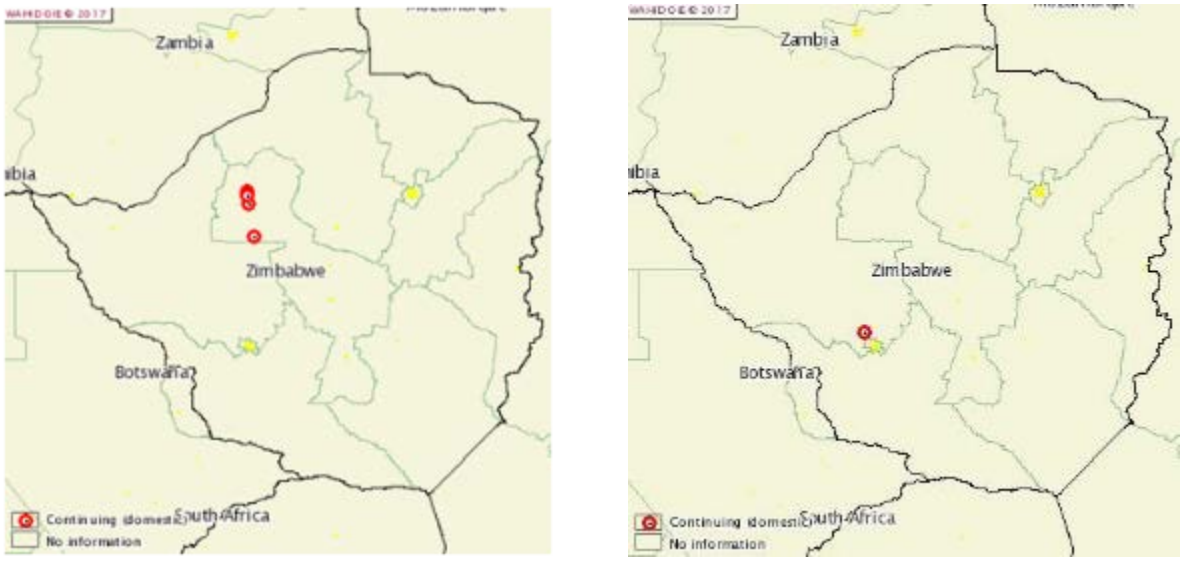


Table 15: Summary of the history of FMD Pool 6, 2012 – 2016, for geographic distribution see Map 15 below.

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2012 – 2015 **(1st semester)	LAST OUTBREAK REPORTED/SEROTYPE #see pg. 1	Comment
Angola	2012/DISEASE SUSPECTED BUT NOT CONFIRMED 2013-2014/ DISEASE ABSENT 2015/ SEROTYPES NOT REPORTED	July 2015/ SAT 2 April 2016/typing pending	Follow –up needed
Botswana	2012-2015/SAT 2 2014-2015/SAT 1	Jun 2015/typing pending July 2015/SAT 2, June 2015/SAT 1	Follow –up needed
Congo D. R.	2012 – 2015/A, O, SAT 1	Jun 2013/not typed	Follow –up needed
Malawi	2012/NO REPORTED OUTBREAKS	Oct 2011,	Follow –up needed

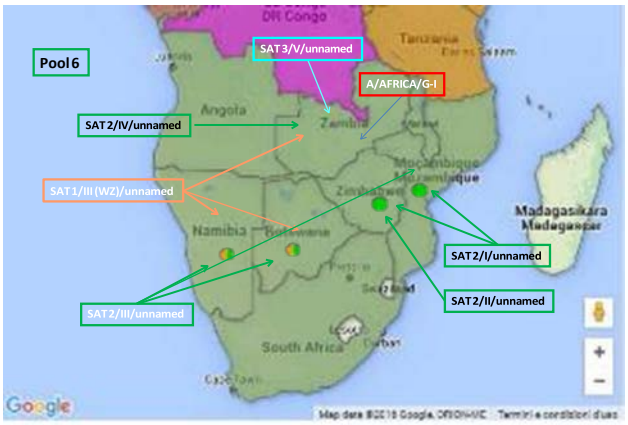
	2013-2015/ NO DATA AVAILABLE	Sep 2015/SAT 1	
Mozambique	2012 -2013/DISEASE ABSENT, 2014/ SEROTYPES NOT REPORTED 2015/ NO DATA AVAILABLE	Dec 2016/SAT 2, Sep 2016/ Typing pending, May 2015/ SAT 1	See text Follow –up needed
Namibia	2012-2014/SAT 1 2014-2015/SAT 2	May 2015/SAT 1, Jun 2015/SAT 2, July/typing pending	Follow –up needed
South Africa	2012-2015/SAT 2 2013/SAT 1 2015/SAT 3	Feb 2017/SAT 2 Dec 2015/SAT 3, Nov 2014/ SAT 2, Aug 2013/SAT 1	See text Follow –up needed
Zambia	2012/SAT 1, SAT 2 2013-2015/ NO DATA AVAILABLE	Jan 2013/SAT 1, SAT 2, Mar 2016/SAT 3	Follow –up needed
Zimbabwe	2012-2015**/SAT 2 2013/SAT 3 2014/SAT 1	Mar 2017/SAT 2, Aug 2015/ SAT 1, Jun 2013/SAT 3	See text Follow –up needed

Map 15: FMD distribution by serotype and topotype for Southern Africa, 2012 – 2015 (EuFMD)

Swaziland and Lesotho are free from FMD without vaccination. There is a zone in both Botswana and Namibia, which has been FMD free without vaccination, since 2010 and 1997 respectively.

Conjectured circulating FMDV lineages in pool 6 per 2015 [2, 17]:

- Serotype SAT 1 (topotypes I(?), I(?)I and III) – new detection of SAT 1/III (WZ)/unnamed in Botswana during 2016
- Serotype SAT 2 (topotypes I, II, III and IV) - new detection of SAT 2/III/unnamed in Namibia
- Serotype SAT 3 (?) (topotypes I, II and III) – new detection of SAT 3/V/unnamed in Zambia during 2016



G. POOL 7 – South America

South America [1, 12]

The OIE FMD status of the countries in South America as reported in May 2016 is presented in Map 16.

Most South American countries are FMD free with vaccination (Uruguay) or without vaccination (Chile, Guyana) or with free zones with vaccination (Argentina, Bolivia, Brazil, Colombia, Peru and continental Ecuador) or without vaccination (Argentina, Bolivia, Brazil, Colombia, Peru) as described by the OIE maps (see: http://www.oie.int/en/animal-health-in-the-world/official-disease-status/fmd/en-fmd-carte/).

Small areas of the continent may still be considered as endemic but clinical cases are rare (Map 16). The FMD history between 2012 –2015 is reported in Table 16. In fact, during the OIE/FAO FMD Laboratory Meeting held in November 2016, PANAFTOSA reported data for historical FMD outbreaks that occurred in Venezuela in 2013, these now represent the most recent confirmed FMD cases in South America.

Map 16: FMD status for South America [1]

Table 16: Summary of the history of FMD Pool 16, 2012 – 2015, for geographic distribution see Map 16 below.

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2012 2015**(1st semester)	LAST OUTBREAK REPORTED/SEROTYPE #see pg. 1	Comment
Paraguay	DISEASE ABSENT	Dec 2011/O	
Venezuela	DISEASE ABSENT**	2011/O, A 2013/ A	National situation needs verification

IV. OTHER NEWS:

[2]The 1st WRLFMD Quarterly Report for the period January – March 2017 published the table below (Table 17) that contains a list of recommended FMDV strains for antigen banks of FMD-Free countries. The discussion of this table is within the report.

The WRLFMD is at present working to adopt a risk-based approach for identifying circulating FMDV lineages and relate these to priority vaccines for use in Europe and other FMD-free settings.

Table 17: Recommendations from WRLFMD® on FMD virus strains to be included in FMDV antigen banks (for FMD-free countries).

Note: Virus strains are NOT listed in order of importance

RECOMMENDATIONS FROM WRLFMD® ON FMD VIRUS STRAINS TO BE INCLUDED IN FMDV ANTIGEN BANKS (FOR FMD-FREE COUNTRIES)

March 2017:

Note: Virus strains are NOT listed in order of importance

High Priority	A/ASIA/G-VII(G-18)* O Manisa O PanAsia-2 *(or equivalent)* Asia 1 Shamir A Iran-05 *(or A TUR 06)* A22 Iraq A24 Cruzeiro O BFS or Campos SAT 2 Saudi Arabia *(or equivalent i.e. SAT 2 Eritrea)*
Medium Priority	A Eritrea-98‡ SAT 2 Zimbabwe SAT 1 South Africa A Malaysia 97 (or Thai equivalent such as A/Sakolnakorn/97) A Argentina 2001 O Taiwan 97 *(pig-adapted strain or Philippine equivalent)*
Low Priority	A Iran '96 A Iran '99 A Iran 87 or A Saudi Arabia 23/86 *(or equivalent)* A15 Bangkok related strain A87 Argentina related strain C Noville SAT 2 Kenya SAT 1 Kenya SAT 3 Zimbabwe

Note: Discussions are currently underway to adopt a risk-based approach for different FMD viral lineages to identify priority vaccines for use in Europe and other FMD-free settings.

*Recent *In vitro* data from WRLFMD for serotype A viruses from Saudi Arabia and Iran highlights an apparent gap in vaccines supplied by international manufacturers for this viral lineage.

‡Antigenic-matching for the A/AFRICA/G-IV isolates collected from the recent field outbreaks in Algeria is currently underway. In the meantime, historical data generated for representative viruses from this lineage indicates that A-Eritrea-98 provides a closer antigenic match - in comparison to other serotype A vaccines such as A22, A-Iran-05 or A-Tur-06.

V. REFERENCES - Superscripts

1. WAHID Interface – OIE World Animal Health Information Database http://web.oie.int/wahis/public.php?page=home
2. World Reference Laboratory for Foot-and-Mouth Disease (WRLFMD), www.wrlfmd.org.
3. Lanzhou Veterinary Research Institute, China (OIE/FAO Reference Laboroatory) - *Dr. Yamin Li*.
4. http://www.ncah.gov.bt/newsdetail.php?ID=309
5. Project Directorate on Foot and Mouth Disease (PD-FMD), Indian Council of Agricultural Research, Mukteswar, India - *Dr. S. Saravanan*.
6. National Foot and Mouth Disease and TADS Laboratory, Nepal - *Dr. Sharmila Chapagain*.
7. Istituto Zooprofilattico Sperimentale della Lombardia ed Emilia Romagna (IZSLER), Brescia, Italy (OIE/FAO FMD Reference Laboratory) – *Dr. Emiliana Brocchi.*
8. Progressive Control of Foot and Mouth Disease in Pakistan, - *Dr. Manzoor Hussain*, National Project Director and *Dr. Muhammad Afzal*, Project Coordinator.
9. National animal health diagnostic and investigation center (NAHDIC), Ethiopia - *Dr. Daniel Gizaw.*
10. National FMD Reference Laboratory, Embakasi, Kenya - *Dr. Abraham Sangula, Dr. Kenneth Ketter*.
11. ARC -Onderstepoort Veterinary Institute, Republic of South Africa - *Dr F. Maree, Dr L. E. Heath/Ms E. Kirkbride*.
12. 44a Reunión Ordinaria de la Comisión Sudamericana para la Lucha contra la Fiebre Aftosa - 6 – 8 March 2017, Rio de Janeiro, Brasil.
13. Laboratoire National Vétérinaire (LANAVET) - Garoua, Cameroon - *Dr. Simon Dickmu Jumbo*.
14. FMD Research Centre, Virology Research Department, National Veterinary Research Institute, Vom, Plateau State, Nigeria - *Dr. Ularamu Hussaini.*
15. ACCRA Veterinary Laboratory, Ghana - *Dr. Joseph Adongo Awuni.*
16. Laboratoire National de l'Elevage et de Recherches Vétérinaires (LNERV, Senegal) – *Miss Mariame Diop and Dr. Moustapha Lô.*
17. OIE/FAO FMD Reference Laboratory Network, Annual Report 2015

Appendix 3
Global FMDV surveillance

Appendix 3

UPDATE ON THE CURRENT GLOBAL SITUATION FOR FMD: WORK OF THE WRLFMD TO DETECT NEW OUTBREAKS AND MONITOR THREATS TO EUROPE

Donald P. King*, and colleagues from WRLFMD,*

on behalf of the OIE/FAO FMD Laboratory Network WRLFMD, Vesicular Disease Reference Laboratory, The Pirbright Institute, Ash Road, Pirbright, GU24 0NF, UK

Key Message

- WRLFMD, Pirbright provides the secretariat of the global Network of OIE and FAO FMD Reference Laboratories, for support to global surveillance of FMD and the global GF-TADS Strategy. Since 2013 it has received financing support under Component 3.3 of the EC/EuFMD Programme that partially funds these global services.
- During the past two years, concerns in Europe have been raised by long-distance movements of different FMD virus lineages that have caused unexpected outbreaks of FMD in North Africa, The Middle East, the Indian Ocean, Southeast Asia and East Asia.
- The re-emergence of South Asia as a major source of infection for international spread requires attention and greater, real-time sharing of viral information. Recent spread to North Africa is a reminder that West, Central and East Africa still represent endemic pools where insufficient sampling occurs for risk assessment and vaccine identification.
- WRLFMD also works to improve the diagnostic capacity in Europe and in FMD endemic countries through training missions, new eLearning modules and proficiency-testing schemes for National Reference Laboratories (NRLs) in the EU (n=27), and with support of EuFMD, other European, neighbourhood NRLs and OIE/FAO reference laboratories (n=35).
- The WRLFMD assists in networking efforts with the regional laboratory and epidemiology networks that support Regional Roadmaps. The potential for uptake of the new e-learning courses in the regions is good and partnership with EuFMD to assist delivery of these over the next 2-4 years is encouraged.

The OIE/FAO FMD Laboratory Network has recently detected and monitored the spread of a number of viral lineages that have emerged from their established endemic pools to cause outbreaks in geographically distant locations. Particular attention has focused on two virus lineages that normally circulate only within the Indian subcontinent (O/ME-SA/Ind-2001d and A/ASIA/G-VII). FMD outbreaks due to the O/ME-SA/Ind-2001d lineage have been detected in the Middle East (UAE, Saudi Arabia, Bahrain and most recently in Jordan), and have spread in a westerly direction across North Africa from Libya into Tunisia, Algeria and Morocco and on the islands of Mauritius in the Indian Ocean. During 2015/16, this viral lineage also spread east into Southeast Asia (Laos, Vietnam, Thailand and Myanmar), and has recently been identified as causing FMD outbreaks in the eastern part of Russia, a Province in western China and in the Republic of Korea. During 2015, another FMD viral lineage (A/ASIA/G-VII) also emerged from the Indian subcontinent to rapidly spread in some countries of the Middle East (Saudi Arabia, Iran, Armenia and Turkey). Importantly, *in vitro* vaccine-matching data indicates that established international and local vaccines that are used in the West Eurasia region might not be adequately matched against this viral lineage.

The upsurge of these FMD cases inevitably raises the threats to Europe. Most recently, the new FMD outbreaks detected in Algeria have been shown to be due to the A/AFRICA/G-IV lineage which is yet another FMD virus lineage that has entered the European neighbourhood. Together, these unexpected events highlight the ease by which FMDV can cross international boundaries and emphasize the importance of the work undertaken by OIE/FAO FMD Laboratory Network to continuously monitor the global epidemiology of FMD.

Appendix 4

The OIE-FAO Global Strategy: progress over the first 5 years

Appendix 4

The GF-TADS Global Strategy: progress over the first five years

B. Tekola (FAO) - M. Stone (OIE)

Key Message

Progress made:

-Regional roadmaps established in West Eurasia, Middle East, South Asia, East Africa, Western Africa. Southern Africa to be included soon. The Americas, South East Asia and North Africa covered by specific programmes.

-Active involvement of regional epidemiology networks and regional laboratory networks, and FAO/OIE regional representations

-Progression along the FMD - progressive control pathway noted in almost all regions. Some countries had their official control programme endorsed by the OIE and one had a zone officially recognized by the OIE as being free from FMD without vaccination.

-Publication of the foot and mouth disease vaccination and post-vaccination monitoring guidelines.

Challenges:

-Lack of political commitment and available resources at national, regional and international level

-Lack of stakeholders engagement

-Risk assessment and management by Veterinary Services

-Access to diagnostic capabilities and material

-Cross-border movement control and timely exchange of information between neighbouring countries.

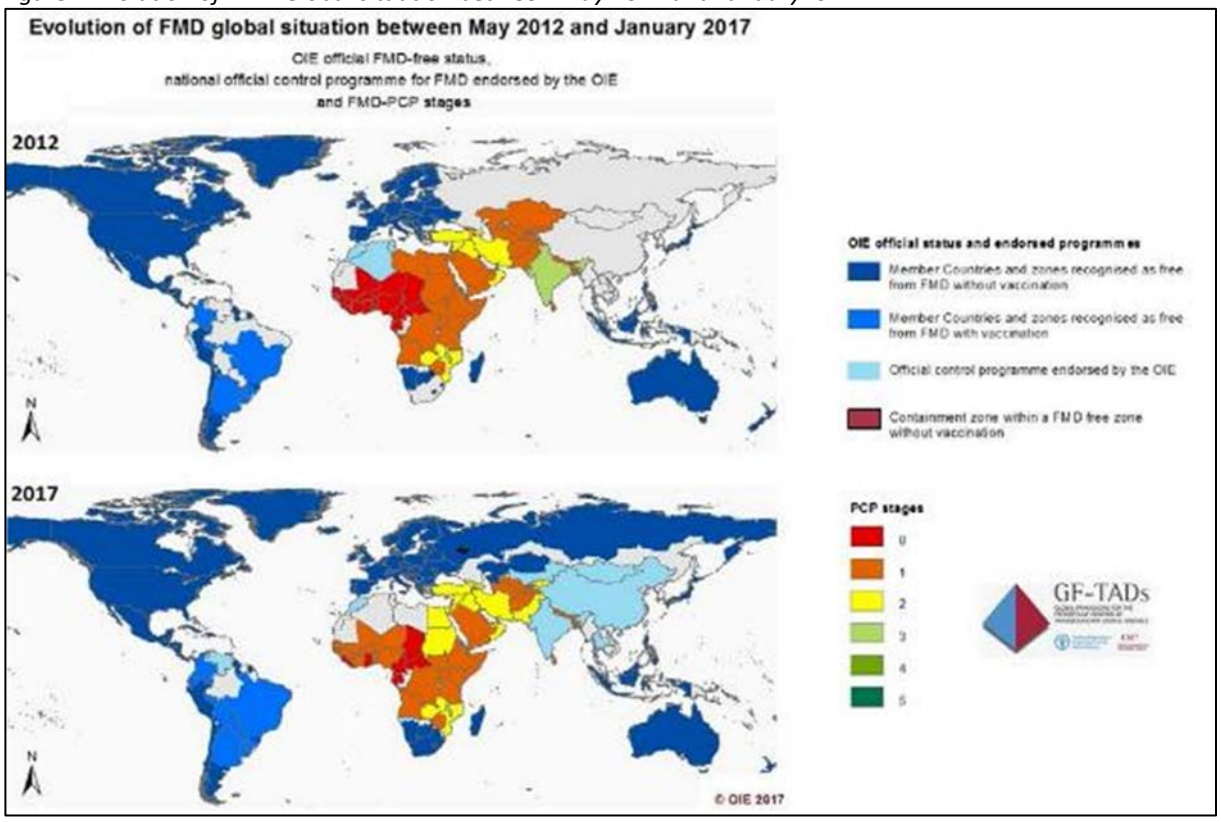
-Collaboration with EuFMD and other partners should be pursued and strengthened

-Urgency to focus on countries at Stage 0 and 1 that maintain a high risk for countries embarked in FMD control.

FAO and the OIE presented the main activities jointly conducted under GF-TADs (Global Framework for the progressive control of Transboundary Animal Diseases) by the FMD Working Group since the adoption of the Global FMD Control Strategy, in 2012 in Bangkok, Thailand, as well as relevant activities conducted under the mandate of each organization.

The main progress made during the past five years were discussed. This included the efforts made to establish regional roadmaps in almost all the regions to implement the Global Strategy at regional levels and to support Member Countries in embarking along FMD control. Roadmaps have been established in West Eurasia, Middle East, South Asia, East Africa and Western Africa, based on the FMD virus pools. It was also announced that a roadmap meeting will be conducted soon in Southern Africa. The Americas, South East Asia and North Africa were not included in the GF-TADs FMD Working Group work plan, as they are respectively covered by the continental Hemispheric Plan for FMD Eradication (PHEFA according to its denomination in Spanish), by the South East Asia and China FMD Campaign and by REMESA. The implementation of regional roadmaps and programmes have supported and monitored the progresses made along the FMD Progressive Control Pathway, as well as on the OIE pathway (OIE endorsement of official control programmes for FMD and OIE recognition of FMD free status), as shown in Figure 1.

Figure 1 Evolution of FMD Global situation between May 2012 and January2017



FAO and the OIE highlighted the recent efforts of the FMD Working Group to increase the involvement of the regional epidemiology networks and regional laboratory networks, as well as FAO and OIE Regional Representations, to support and participate in the regional effort for FMD control.

The FMD Working Group has also published the foot and mouth disease vaccination and post-vaccination monitoring guidelines, and continued to develop or revise guiding documents in close collaboration with EuFMD: template for the risk assessment plan (to support countries to move to PCP Stage 1), template for risk-based strategic plan (to support countries that have completed PCP Stage 1 and are planning the activities to be conducted along Stage 2), version 2 of the PCP guidelines. Attention has also been paid to Components 2 and 3 of the Global Strategy (Strengthening of the veterinary services and prevention and control of other major TADs, respectively).

However, progress along FMD control has been limited due to a number of challenges that are very similar in all regions. Political commitment may be lacking, as well as available resources at national, regional and international levels. Numerous countries lack access to diagnostic capabilities and material. Informal cross-border animal movements and lack of timely exchange of information between neighbouring countries are often quoted by countries participating in roadmap meetings as the most important regional risks. The Working Group also considers that numerous countries may lack understanding of risk assessment and capacities for risk management that would lead to the implementation of appropriate control measures such as an appropriate vaccination strategy; the need to change the mind-set by strengthening the veterinary services was identified at several occasions.

FAO and the OIE highlighted the increased collaboration with EuFMD and emphasized that this should be pursued and strengthened, in particular in terms of training, development of key documents, as well as on support to Member Countries specifically identified by the FMD Working Group (e.g. to provide some guidance in the development of a risk-based strategic plan.

Finally and with reference to the recent double introduction of FMD (serotypes A and SAT1) in Algeria, FAO and the OIE reminded the urgency to focus on those countries still in PCP Stages 0 and 1 and that maintain a risk for countries embarked in FMD control process.

Appendix 5
The ethics of culling

Appendix 5

Towards a framework for resolving ethical conflicts related to measures for disease control

Prof. Dr. Herwig Grimm, Ethics and Human-Animal Studies,
Messerli Research Institute University of Veterinary Medicine,
Medical University, University of Vienna, Veterinaerplatz 1,A

Key message

- For veterinary professionals and the general public, moral convictions regarding animals factor heavily in shaping perceptions of measures for disease control.
- Beyond presenting medical, legal and technical challenges for official veterinarians, disease control scenarios involve conflicts of values and uncertainties in how to communicate as a professional.
- Ethical tools like the *Animal Disease Intervention Matrix* (ADIM) and the *Responsibility Check* (RC) can inform guidance in resolving conflicting values and clarifying professional responsibilities.
-Training of veterinarians relating to understanding and managing conflicts of values and critical thinking on professional responsibilities will become increasingly important for disease for development and delivery of animal health policies;
- Further collaborative studies in the emerging research field of veterinary ethics are encouraged to develop evidence and guidance.

This presentation seeks to elaborate on ethical challenges faced by veterinary professionals, specifically those faced by official veterinarians in the context of FMD control measures. Recent data suggest that moral conflicts and ethical challenges are arising in disease control largely due to three main factors: a growing awareness of the *intrinsic value* of animals, a profound *complexity* in the ethical dimensions involved and, finally, tensions between *professional duties and personal moral convictions*. Official veterinarians evidently negotiate challenges on multiple levels when implementing measures for disease control. In addition to complex medical, legal and technical questions, ethical and communicative issues also present themselves, and they appear to be growing in scope and weight. This presentation proposes workable strategies for dealing with those ethical complexities. Three key sources will be cited: Data gathered in the Netherlands on moral convictions regarding FMD control measures, literature on the ethics of culling animals and the findings of a research project carried out in Vienna with official veterinarians on their professional ethics ("Vethics").

This presentation first introduces recent thinking on normative views of the human-animal relationship among professionals and the general public. Empirical data from the Netherlands on moral stances and convictions regarding animals and disease control indicate that an awareness of respect shown towards animals is growing, and that the general public perception of measures for disease control is shaped by moral convictions regarding animals (cf. Cohen and Stassen 2016). In the case of FMD control, an ethical problem emerges because official veterinarians are not legally bound to *protect* and *cure* animals, but rather maybe required to *cull* healthy as well as infected animals. The normative underpinnings of this problem can be seen in and illustrated by the fact that killing healthy animals in this case—as opposed to mercy killing—does not aim at the animals' (presumed) good, but at someone else's good. Professional responsibility thereby conflicts with the public view on how to treat animals with respect.

Next, strategies for dealing with conflicting values will be outlined and their practicability examined. The *Animal Disease Intervention Matrix* (ADIM) and the *Responsibility Check* (RC) are two practice-oriented tools for systematically thinking through normative issues relative to disease control situations. The ADIM was developed and published by Aerts (2006), an agricultural scientist specialized in applied ethics. At its core, his project structures a comparison between different disease control scenarios on the basis of the ethical dimensions and objectives involved. The ADIM's methodology asks the user to *first* describe in depth the animal epidemic at stake, *second* plot possible scenarios for disease control, *third* evaluate each scenario on the basis of fifteen fixed

objectives, and *fourth* compare the different scenarios. In evaluating their scenarios, users work with an excel sheet covering all fifteen practical objectives: a) protecting the health of control personnel; b) protecting public health; c) protecting animal health; d) ensuring animal welfare; e) respecting the human-animal bond; f) limiting environmental damage; g) limiting psychological impact on the farmer; h) limiting psychological impact on control personnel; i) respecting food; j) limiting disturbance of social life; k) limiting economic losses in agriculture; l) limiting economic losses in non-agricultural sectors; m) ensuring practicability; n) ensuring food security; o) protecting valuable animals (Aerts 2006, 116). Each different scenario is then scored according to the extent to which the various objectives can be met therein (e.g. vaccination vs. eradication).
The "Vethics" project tested and discussed the ADIM with official veterinarians. Among other things, participants noted that the ADIM provides an objectifying tool on the basis of clear and transparent criteria. As a tool, it lets veterinarians systematize the normative issues at play in highly complex situations and concentrate on the potential "hot spots" in different scenarios. And that, in turn, could positively impact prospective disease control planning, as well as internal quality control.
By contrast, the Responsibility Check (RC) is designed to structure important dimensions of *individual responsibility* (for an official veterinarian, in this case) following a series of analytical questions. The idea behind the RC originated with the Philosopher Ropohl (1994), who defined the dimensions of its responsibility concept. The RC method is easy to use in practical contexts. The slim version presented here consists of five core analytical questions, the first asking who has responsibilities: a) who is responsible? (e.g. official veterinarian) Four subsequent questions then guide deliberation: b) what is s/he responsible for? (e.g. actions and consequences, such as disease control in accordance with regulations); c) why does s/he have these responsibilities? (e.g. moral norms, professional code, law, etc.); d) when does s/he have these responsibilities? (e.g. preventive/before, during or after an outbreak); e) to whom does she answer? (e.g. employer, colleagues, conscience, etc.). Working with the RC makes it possible to describe and analyze the tensions that build due to the diverging roles veterinary professionals are called to play.
Regarding measures for disease control, official veterinarians described themselves variously as mediators, experts, psychologists, officials, social workers, etc. in workshops by the "Vethics" project. Trying to fulfil all the concomitant expectations must inevitably lead to problems and conflicts. No wonder official veterinarians regularly described their experiences with terms like "being torn to pieces" or "totally conflicted".
When the RC was tested in "Vethics", for the most part, participants caught on to the method quickly and used it efficiently to systematically identify what does and what does not fall within the scope of one's professional responsibility.

Concluding remarks of the talk explore several implications the foregoing analysis has for veterinary training and communication. Official veterinarians are experts in their field, with all the rights and duties that position entails. People can reasonably expect detailed knowledge and solidly justified judgements of them. However, when it comes to conflicting values, official veterinarians are often less equipped than they are for dealing with medical, legal and technical challenges. Veterinary ethics are a substantial aspect of the veterinary profession, and the ability to deal systematically with conflicts of values is emerging as an increasingly valuable skill. In light of those facts, veterinarians in general and official veterinarians in particular need to be given opportunities to train and work with easy-to-use ethical tools that can guide them in fulfilling their complex professional responsibilities. An e-learning methodology, which would implement that idea for official veterinarians and veterinary students in Austria and stimulate lifelong learning on the subject of veterinary ethics, is in development at this time.

Literature

Aerts, S. (2006): Practice oriented Ethical Models to Bridge Animal Production, Ethics and Society. Leuven 2006.
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Appendix 6

Outcome of questionnaire on the private sector role in FMD emergency prepeardness

Appendix 6

The private sector role in FMD emergency preparedness

Mark Hovari, Keith Sumption
European Commission for the Control of Foot and Mouth Disease

Key message

- More than half (57%) of the Member States (MSs) that responded to the survey indicated that there is no formal representation of the private sector in their emergency preparedness planning and response plans;
-The level of influence of the private sector on decision making and prioritization of eradication efforts in the event of an FMD outbreak shows significant variation among the respondent MSs;
-Only 24% of respondent MSs indicated that their private sector would be highly involved in disease control and eradication measures in case of an FMD outbreak;
-Some private sector organizations have their own emergency management plans for an FMD outbreak and these might provide a useful resource, including a source of informed opinion for consultations on emergency management;
-The private sector was viewed as a good source of information to assist identification of critical issues that must be addressed in the case of an FMD crisis;
-A high proportion (86%) of respondent MSs supported the idea that EuFMD opens up training places for representatives of the private sector in the future, as part of an effort to engage in improved communication on the risks of FMD and promote constructive engagement and collaboration.

In March 2017, the EuFMD circulated a questionnaire to all 38 EuFMD Member States (MSs) to develop a better understanding on the role of the private sector in emergency preparedness, with 21 responses received (55% overall response rate). This paper summarizes responses received to the questionnaire.
More than half (57%) of respondent MSs indicated that there is no formal representation of the Private Sector (PS) in their emergency preparedness planning and response plans. However, the PS does have influence on the content of contingency plans, standard operating procedures as well as on the biosecurity standards used. Where the PS was considered actively engaged, (about half of respondent MSs) the PS is mostly focusing on distributing information on the clinical signs and control measures applied in the event of an FMD outbreak, with less emphasis on the actual training of personnel, as this occurs only in one third of the MSs that have responded. The level of influence on decision making and prioritization of eradication efforts in the event of an FMD outbreak shows significant variation among the MS. Based on survey results, it appears that the PS in Central-Eastern Europe is less engaged overall; with limited influence on emergency preparedness activities in some high income countries in Western Europe. Only 24% of respondent MS indicated that their PS would be highly involved in disease control and eradication measures in the event of an FMD outbreak. A positive finding was that the PS is most of the time involved in simulation exercises carried out by the MS. Also interesting to note is that some PS organizations have their own emergency management plans for an FMD outbreak. These might provide a useful resource, including a source of informed opinion for consultations on emergency management. The majority (86%) of respondent MSs considered the PS a good source of information to assist identification of critical issues that must be addressed in the event of an FMD crisis, including commenting on risk assessments carried out by the veterinary authorities. A high proportion (86%) of respondent MSs supported the idea that EuFMD opens up training places for representatives of the private sector in the future, as part of an effort to engage in improved communication on the risks of FMD and promote constructive engagement and collaboration.
The topics considered most important by the respondent MSs to train representatives from the private sector on were:

- Recognizing clinical signs of FMD and notification of suspicions
- General and on-farm biosecurity
- Procedures applied after confirmation of FMD.

The following topics were also mentioned in the responses: basic epidemiology, disease transmission, education in the economic impact of FMD and crisis communication.

Appendix 7
Confidence in early detection of FMD

Appendix 7

Confidence in the early detection of foot and mouth disease (FMD) – when is passive surveillance sufficient and what are the options for increasing confidence in disease freedom?

Melissa McLaws, Paolo Motta, Keith Sumption
European Commission for the Control of Foot and Mouth Disease

Key message

-Passive surveillance, and particularly farmer reporting, is the most critical surveillance component for early detection of an incursion of FMD in most FMD free countries. However, it may fail if there is lack of awareness or reluctance to report, clinical signs are unapparent in the species affected, animals are not observed regularly or the laboratory fails to confirm infection when is present.
-The elements comprising a passive surveillance system can be evaluated to define those most likely to fail, in order to identify priorities for improvement and the potential impact of interventions. Evaluation methods include analysis of livestock populations and husbandry systems, focus groups, questionnaire surveys, participatory approaches and discrete choice experiments. Modeling studies can be used to understand the effect of reducing the high risk period on scale of an epidemic.
-Veterinary services should apply relevant methods to evaluate their passive surveillance systems. The extent to which VS currently self-assess their systems is unclear, and more attention is needed to share and compare results on this.
-Since the FMD risk is dynamic, improvement of passive surveillance may be needed on an urgent basis and targeted to high-risk populations where initial cases are expected to develop or which have a high consequence of subsequent spread.
-Activities to improve passive surveillance may include maintaining a high level of awareness, developing a clinical decision support system, reducing the stigma associated with reporting suspect cases, better communication of rules and regulations, and/or dedicated communication channels to facilitate reporting.
-The impact of communication or incentives to improve surveillance is unclear. Evidence of the impact of policies and interventions to improve compliance (knowledge, attitudes and practices) of livestock keepers with desired reporting behavior is needed to guide future interventions.
-In some high-risk settings, continuous surveillance to supplement the passive surveillance system (e.g. THRACE programme) may provide additional confidence in detection of infection if it were present. However, even in these settings, the role of disease recognition by livestock attendants will remain paramount for detection of first cases.

FMD-free status is required to establish and maintain access to trade in international markets. To preserve this free status, each year countries must supply documented evidence that surveillance has been implemented to detect FMD, and regulatory measures for the early detection of FMD have been carried out (OIE, 2016). Thus, surveillance is key even in the absence of disease. For FMD-free countries, the two main objectives of surveillance are to demonstrate freedom and to increase the likelihood of early detection of introduction. Early disease detection is crucial to minimize disease spread, optimize the cost-effectiveness of control and eradication measures and re-gain the ability to export animals as quickly as possible.
Most FMD-free countries rely on passive surveillance to detect an incursion of FMD. Passive surveillance is defined as observer-initiated provision of animal health related data (e.g. voluntary notification of suspect disease) or the use of existing data for surveillance. Decisions about whether information is provided, and what information is provided from which animals is made by the data provider (animal owner, practitioner or meat inspector) and not by the veterinary authority (Hoinville, 2011). It is the only type of surveillance that, at least in theory, provides continuous coverage of the entire susceptible population. Furthermore, it is cost effective.

This paper identifies situations in which the existing passive surveillance system may not be sufficient for early detection of FMD, and discusses options to evaluate passive surveillance, and increase confidence in ongoing disease freedom as well as the ability to detect an incursion of disease as quickly as possible.

When might passive surveillance fail to detect disease?

Passive surveillance is a system in series, and disease will not be detected if any component fails (Figure 1). In a study of FMD outbreaks that occurred in non-endemic countries between 1992-2003, delays in initial detection were caused by clinical misdiagnosis (5 outbreaks), mild/subclinical infection of small ruminants (2 outbreaks), deliberate concealment of the disease (2 outbreaks) and failure of the laboratory test (2 outbreaks) (McLaws and Ribble, 2007). Expanding from this, reasons for cases of disease to be missed can be grouped into 5 categories:

1. *Disease does not cause obvious or pathognomonic clinical signs.* For FMD, naïve large ruminants and pigs, infection with FMD virus will usually result in severe and obvious symptoms that can be recognized by experienced farmers and veterinarians. FMD in small ruminants, however, can be very mild and even subclinical. Thus, it follows that passive surveillance should not be relied on to detect FMD in areas with predominantly small ruminant populations.
2. *Animals are not observed regularly.* If animals are not observed regularly and/or closely, the clinical phase of disease can pass by unnoticed. This is of particular concern in extensive production systems, where animals may graze for extended periods and have little or no interaction with humans.
3. *Disease is not recognized and reported due to lack of knowledge.* This is of particular concern in countries that have been free of FMD for many years, as neither famers nor veterinarians will have first-hand experience with recognition and diagnosis. In these countries, other diseases and conditions causing lameness and salivation are likely to come to mind before FMD.
4. *Reluctance to report.* Farmers may fail to report disease promptly, or at all, because of concern about the negative consequences of reporting disease, poor relationship with the veterinary services, and/or apathy towards disease occurrence. There may be a more general lack of trust in public authorities. In some countries, any veterinary visit represents a significant expense to the producer which may also delay or prevent reporting. Finally, there may be uncertainty about the reporting process (Elbers et al., 2010, Palmer et al., 2009).
5. *Failure of the laboratory to confirm the suspicion.* No diagnostic test is perfect, and false negative results can impede the detection of a disease incursion. This can be associated with imperfect sample collection, poor viability through shipping, and inexperience in the laboratory, less than perfect diagnostic test sensitivity or other reasons.

Methods to assess the importance of each of these categories are presented in Table 1. These data can be used to evaluate the overall passive surveillance system using scenario-tree methodologies (Martin *et al*., 2007, Martin *et al*., 2015). The results from the evaluation will provide insights as to what factors most affect the efficacy of surveillance, and thus where to focus efforts for improvement.

Options to improve surveillance for FMD detection

The goal of improved surveillance is twofold: i) to increase the probability of detecting an FMD incursion (maximize detection sensitivity), and ii) to reduce time necessary to detect it (minimize detection delay). There are two general approaches: improving passive surveillance and/or supplementing it with other surveillance activities.

Improving passive surveillance

Approaches to improve passive surveillance follow directly from the identification of the 5 categories of constraints identified above and are summarized in **Table 1**.

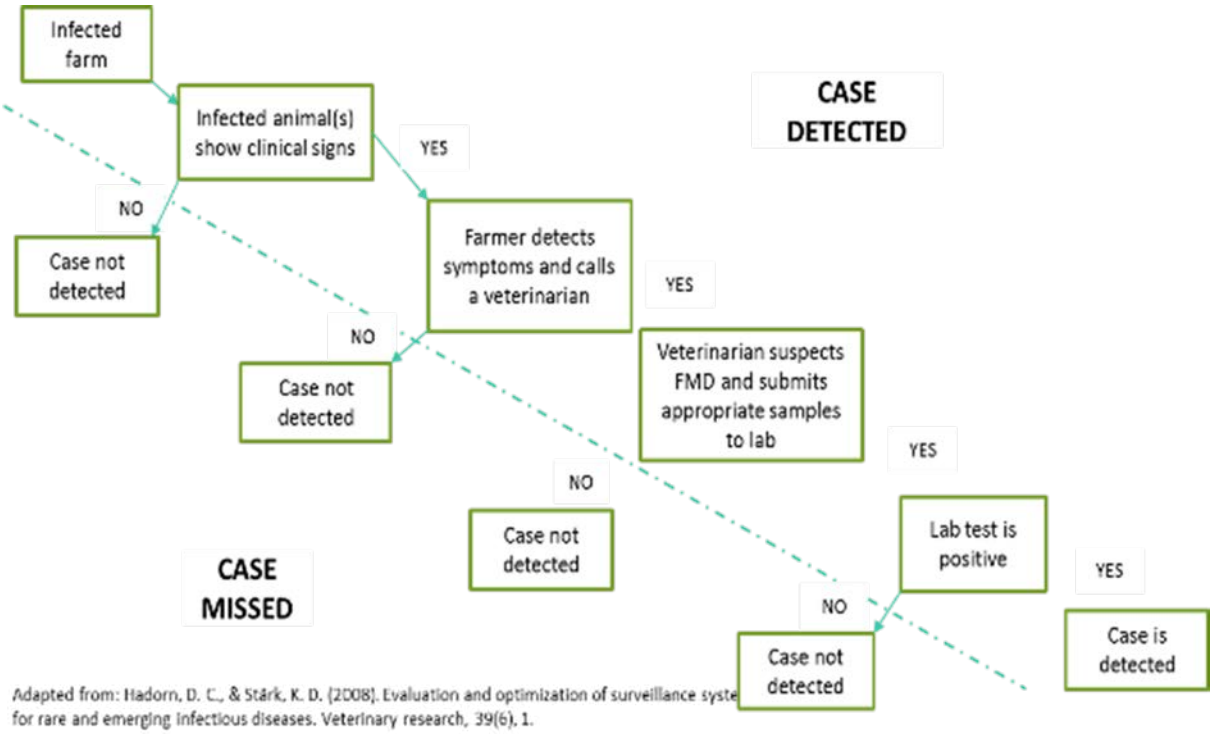

***Figure 1**. Scenario tree for case detection through passive surveillance*

Farmers are best placed to detect an incursion of disease in a timely manner because they observe their animals regularly and are familiar with their usual state of health. Thus, it is sensible to focus on farmers to improve passive surveillance, with activities to increase the awareness about the disease and reduce barriers to reporting as much as possible. Examples of activities that might be appropriate include:

1. Getting and keeping FMD on the radar screen by providing regular information about FMD, its occurrence in the world, and the risk of FMD introduction.
2. Making reporting easier, for example with the use of online tools, the introduction of a reporting category for low-risk suspect cases (e.g. individual animal cases) that do not automatically lead to full package of restrictions whilst awaiting lab analysis.
3. Strengthening communication between farmers and veterinarians, and spreading the message that suspecting FMD does not equate to bad farming practices.

Constraint	**Evaluation at population level**	**Approach to improve**
Disease does not cause obvious or pathognomonic clinical signs	Distribution of small ruminants, especially areas where there is a high ratio of SR:LR	Explore use of sentinel animals, active surveillance
Animals are not observed regularly	Assess typical husbandry practices for different farm types	Observe more regularly, especially at times of high risk (e.g. following movements or new introductions into herd)
Disease is not recognized and reported due to lack of knowledge	Questionnaire survey, focus group, participatory approaches, current reporting of suspect cases, discrete choice experiments (e.g. see Pham *et al*, 2017)	Increase awareness, communication, training of farmers, veterinarians and others involved in production
Reluctance to report		Identify and characterize the specific barriers and concerns, and address them
Failure of the laboratory to confirm the suspicion.	Characterize laboratory test sensitivity, proficiency test results, simulation exercises	Training of field veterinarians and laboratory scientists in sample collection, shipment and testing protocols

***Table 1:** Reasons passive surveillance might fail to detect disease, methods to assess the constraints and approaches to improve*

Supplementing passive surveillance

Passive surveillance can be supplemented with active surveillance components to improve its sensitivity and reduce the time to detection of an incursion. Potential examples include clinical and/or serological surveillance at abattoirs, markets and sentinel premises, as well as screening bulk milk samples. It would be very resource intensive to implement such surveillance activities continuously, and thus active surveillance for early detection of FMD is not cost effective for the general population. However, it may be useful to supplement passive surveillance in high risk populations (see Thrace case study below).

Targeting resources to improve surveillance

All options to improve surveillance require investment and, in a world of limited resources, choices will have to be made about where to invest. Risk-based approaches can be used to identify specific populations to focus efforts to improve or supplement an existing farmer reporting system. However, surveillance that targets only the high-risk population is not suitable for effective early detection, as it is impossible to predict which individual animals will be the first to be infected. Three high-risk populations where surveillance improvements should be targeted are (Cameron, 2016):

1. *Populations with high probability of disease incursion:* For example, livestock populations in close proximity to endemic countries, or in which pigs are fed untreated swill
2. *Populations in which the passive surveillance system is more likely to fail* (discussed above)
3. *Populations with very high consequences of failure to detect the incursion:* For example, infection of a breeder farm that regularly supplies animals to several other farms; or infection of animals that pass through a market.

In sectors or areas with low detection sensitivity and at greater risk of introduction, targeted screening of animals or bulk milk testing may be valuable strategies. However, targeted education programs to those sectors or stakeholders at greater risk of introduction or where current disease reporting is low is likely to be most cost-effective in increasing detection sensitivity and lowering introduction risks (Garner et al., 2016). Resources might also be dedicated to reducing risk through lowering the probability of an introduction and/or decreasing the impact of an introduction (e.g. increase biosecurity at markets, breeding farms, etc.).

Case study: Enhancing surveillance in a high-risk area (Thrace)

The Thrace region of Greece, Bulgaria and Turkey is an example of a high-risk area where passive surveillance might be improved or supplemented. First, it is a high-risk area for the introduction of FMD due to its close proximity to FMD-endemic Anatolia, as well as the presence of susceptible wildlife (including wild boars) known to cross national borders. Secondly, passive surveillance might fail to detect an incursion of FMD because the region has a predominance of small ruminants, in which FMD is typically mild or subclinical (LR:SR ratio of 1:2 in the Thrace region of Bulgaria and Turkey and 1:7 in Greek Thrace). Further, wildlife pose additional challenges for surveillance due to the risk of entering in contact with domestic small ruminants, particularly in the semi-extensive production systems of the region (as shown by the outbreak in the Burgas Region of Bulgaria in 2011). Finally, the absence of the disease in the region for relatively long time has lowered the awareness among the various stakeholders in the livestock sector, including the young generations of veterinarians.

To achieve greater confidence in the FMD-free status of the region and increase the likelihood of early detection of an incursion, passive surveillance has been supplemented with an active risk-based surveillance approach since 2013 (the THRACE Programme). Under this programme, additional surveillance activities (clinical examination, serosurveillance and abattoir surveillance) are undertaken to supplement passive surveillance. Data from all surveillance components are input to a scenario tree model which calculates the progressive probability of freedom from FMD over time, taking into account current and historical surveillance results (Martin *et al.*, 2007). The target is for each country to maintain a 95% or greater probability of freedom from FMD. The sensitivity of the reporting system is an essential component of surveillance in the region, and included as a key input of the model. Ultimately, increasing the sensitivity of the reporting system would enable the current confidence in disease freedom to be maintained and the early detection of potential incursion to be strengthened, even if some of the (resource-intensive) active surveillance activities are reduced. Therefore, work is needed to evaluate the current passive surveillance system in the region, and identify areas for improvement.

The EuFMD is developing a workplan using participatory approaches to identify the high-risk areas and production systems in Thrace and evaluate the current surveillance systems in place, including identifying barriers to reporting. These results will be used to recommend targeted activities to improve passive surveillance, such as campaigns to raise awareness, development of a clinical decision support system for vets/farmers, efforts to reduce the stigma associated with reporting suspect cases, better communication of rules and regulations, and dedicated communication channels to facilitate reporting.

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Appendix 8

Needs based training: identifying priorities for training for Member States, and non-Member States in the European neighbourhood and other regions

Appendix 8

Needs based training: identifying priorities for training for member states, and non-member states in the European neighbourhood and other regions

J. Maud, K. Sumption, N. Rumich, C. Bartels, M. Hovari, M. De la Puente, G. Ismayilova, K. Ouali & W. Chikurunhe
European Commission for the Control of Foot-and-Mouth Disease, FAO, Rome, Italy

Key messages
-Provision of training is a vital component of EuFMD' s activities across the "Three Pillars" of the work programme. A process of training needs assessment has been used to understand audiences and their priorities and strategically target the training developed to the capacity gaps where it can have the greatest impact.
- Training needs assessment is a continuous process which is most effective when it involves a variety of information sources and makes good use of opportunities for direct interaction with audiences and their feedback and evaluation of training courses provided.
-Training priorities have been identified across each of the Three Pillars and new training courses, both face-to-face and online, have been developed and evaluated.
-E-learning has been used increasingly across the work programme and has been successful in reaching new broad target audiences economically, and as a two way communication tool to better understand audiences and regional disease risks. Providing training in local languages and on a country-level basis has been particularly effective.
-The Commission recognizes a great demand for training, particularly from the neighbourhood region and globally. E-learning is a useful tool to strategically address these demands, and particularly to address the currently increased risk situation in the European neighbourhood. Sustained roll-out of e-learning will require the Commission to seek additional funds and regional partners for sustainable delivery of training.

Introduction

Provision of training is a vital and growing component of the European Commission for the Control of Foot-and-Mouth Disease's (EuFMD) activities in improving FMD preparedness amongst its Member States, and in assisting efforts to promote improved progressive control in the European neighbourhood and globally. The 2015-17 work programme of the Commission included a dedicated training component in each of its "Three Pillars". Recognizing the great demand for training, the Commission has undertaken a process of training needs assessment, in order to better understand its audiences and their priorities, and to strategically target training development and delivery to those audiences and capacity gaps where it can have greatest impact on improving FMD preparedness or control.

Methodology

The training needs assessment process has sought to identify:

- Priority **competency gaps** in skills and knowledge required for FMD preparedness or control.
- Priority **personnel groups** whose skills need to be improved.
- **Existing training courses** or resources that may leveraged to address the gaps identified.
- The **training methodologies** likely to be most effective, for instance the languages spoken by the identified target audiences, their access to online technology or preferred learning styles.

Developing a thorough understanding of training needs is a continuous process. Initial prioritization for development of training courses was guided by telephone interviews, surveys sent to veterinary services and consultation with other regional training providers or international organizations. Delivery of face-to-face or online training provides a valuable opportunity to gain additional information and feedback from participants during and as part of the monitoring and evaluation for each course. This information has been valuable in

improving future iterations of the training provided and identifying additional new priorities for training development.

Training needs: EuFMD Member States

The training programme for EuFMD Member States for 2015-17 was built on the experiences of the 2013-15 programme that recognized the differing needs across the Member States and offered a menu of training options from which Member States could choose the most appropriate. A training focal point was appointed by each Member State and these focal points have been valuable for improving two-way communication between EuFMD and the Member States. A series of telephone interviews were conducted with focal points during Summer 2015 and these findings, combined with direction gained during the 2015 EuFMD General Session were used to develop a menu of training available for 2015-17. A questionnaire tool was developed to assist Member States in identifying their country's priority FMD preparedness capacity gaps and which of the training courses developed could best address these gaps.

Focal points self-assessed their country's competency according to 22 criteria. The low-rated competencies across all Member States included the use of epidemiological modelling to assist decision making on FMD control options and organization of emergency vaccination as a control measure for FMD. Awareness of FMD and likelihood of disease recognition and reporting amongst livestock keepers were also rated particularly low.

Table 1. Member States selection of courses from the "Training Menu", under the 2015-17 programme

Course	**Number of trainees expected to complete 2015-17**
Real Time Training in Kenya	37
Online FMD Emergency Preparation Course: English language	308
Online FMD Emergency Preparation Course: Tailored National Course	853
Workshop: "To vaccinate or not to vaccinate: using modelling to evaluate FMD control options"	15
Workshop: "Putting vaccination into practice"	12
Workshop: "Managing a crisis"	16
Workshop: FMD Simulation exercises	13
Laboratory Training Course (Pirbright Institute)	3

Alongside the above training courses, in response to discussions with training focal points EuFMD has sought to improve support provided to in-country training in Member States by development of an online Knowledge Bank, a database of resources including tools and "job aids" for national training. The Real Time Training programme has added increased emphasis on "Cascade Training" requiring those attending to conduct national level training when they return home. A short introductory e-learning course has also been made available as an open access resource on the EuFMD e-Learning website.

Feedback surveys are conducted after each workshop and training course with positive feedback and participants particularly rating interactive elements of both face to face and online training. All four of the training workshops conducted have generated additional findings or capacity gaps which will be used directly to guide future activities of the Commission.
Ongoing consultation with training focal points has occurred during the roll-out of the programme through webinars and newsletters. Two additional consultations held recently suggested additional interest in better involving private sector stakeholders in FMD training initiatives, and in developing additional training on wildlife surveillance for FMD.

Several countries have taken advantage of the "training credits top-up scheme" which allows countries to purchase additional places on EUFMD training courses above their allocation of 10 training credits. To date, this scheme has been used for additional places on Real Time Training courses and also for additional country level e-learning courses. Consultations have also suggested that in some cases it may be possible to share the cost of training workshops, with countries self-funding travel costs for participation, particularly applicable when multiple countries in the same region would like to share the costs of a regional training workshop and local travel can be managed by road.

Training needs: EuFMD neighbourhood

The training needs assessment process for the European neighbourhood region has sought to identify common capacity gaps across the diverse regions of the neighbourhood of Turkey and Georgia (West Eurasia, component 2.1), the neighbourhood of Israel and Cyprus (component 2.2) and the North African members of REMESA (component 2.3). The intention of training development in Pillar II has been to complement the programme of workshops and one-to-one expert support that is provided to numerous Pillar II countries with development of new training resources that can be made available to multiple countries simultaneously.
A survey was sent to the veterinary services to a total of 25 countries in the region, asking them to identify capacity gaps according to the different competencies required to promote progressive control of FMD, across personnel groups from the central veterinary services to livestock owners. The gaps identified by countries where then assessed by EuFMD and FAO experts with experience working in the region in order to prioritize those for which the related training would have most impact in improving regional FMD control. As a result of this process, key capacity gaps identified were:

- FMD diagnosis, sampling, investigation and biosecurity by field level veterinarians and para-veterinarians.
- Socio-economic impact assessment- central veterinary services
- Risk analysis along the value chains- central veterinary services
- Basic Epidemiology- central veterinary services
- Laboratory diagnostic testing
- Biosecurity measures- particularly at field level
- Post-vaccination monitoring.

A series of e-learning courses and resources are proposed (Table 2) to address these needs. In order to address the needs for both breadth and depth, some of these courses, such as the online FMD Investigation Training Course and the online Introduction to the Progressive Control Pathway course are aimed at large and broad audiences across the region. Others, such as the in-depth e-learning courses, target much smaller audiences, those at central level actively planning and implementing FMD control plans, with much more focused and applied training.

Table 2. *Development of online courses for the neighbourhood countries, with expected first delivery in 2017*

	Online Course	Audience
Open access resources available for all	**Introduction to the Progressive Control Pathway**	All interested in the principles of the PCP-FMD
	Progressive Control Practitioners' Network (Pillar III funding)	All involved in working on FMD control through the PCP-FMD
	Epidemiology and biostatistics short modules	All
	Knowledge Bank Resources	All
Field-level disease investiga	**FMD Investigation Training Course**	Veterinarians responsible for diagnosis and field investigation of FMD outbreaks. French, Arabic and Turkish courses planned.
Specialist, in-depth training	**Socio-economic impact assessment for FMD**	Central veterinary services (epidemiologists) responsible for design and implementation of national FMD control strategy. Initial courses in English language, French and Russian. courses to follow.
	FMD Risk analysis along the value chain	
	Post vaccination monitoring for FMD (pillar III funded)	
	FMD Laboratory diagnostics (partnership with the Pirbright Institute, Pillar III funded)	FMD laboratory staff

Roll-out of these training courses is ongoing and the feedback from their implementation will be important in guiding next steps. The training needs assessment highlighted the importance of the availability of training in regional languages and it will be important that the initial phase of in-depth training courses provided in English are repeated in the priority regional languages of French, Arabic and Russian. Partnerships with regional academic institutions or organizations may be a useful tool in the roll-out of local language courses. The outcomes of the initial partnership with the Jordan Institute of Science and Technology will be important in informing future partnerships.

Training needs: Pillar III support for the global FMD strategy

Under the 2015-17 programme the Commission aimed to pilot the use of online training courses developed under the Pillar I and II programmes in areas outside the European neighbourhood, working in partnership with regional organizations. The first region chosen was Southern Africa, working in partnership with the FAO sub-regional office. A veterinarian (Dr Wilmot Chikurunhe) from the region was recruited under the FAO Short Term Placement scheme as the first step in better understanding regional training needs. An adapted version of the training needs survey used for Pillar II countries was then sent to participating countries, and a pilot of the online course "FMD Investigation Training Course" organized with 108 participants nominated for the course and high levels of interaction in the online discussion forum. 98% of respondents rated the course as "good" or "very good" in the post course feedback survey.

Surveys of participants during the online course, and a series of interviews conducted after its closure were combined with the results of the training needs questionnaire. Regional training needs identified include field level awareness and implementation of FMD surveillance and control measures; central level risk analysis, socio-economic impact analysis and monitoring and evaluation of FMD control programme implementation. There was widespread enthusiasm for the modality of e-learning to deliver regional continuing professional development for veterinarians.

Following his time in Rome Dr Chikurunhe travelled to Botswana and South Africa in order to meet with regional stakeholders including OIE, FAO, the Southern Africa Development Community and the African Union. He identified broad support for the further development of e-learning to support animal health training in the region and following a presentation to the meeting of the SADC Livestock Technical Committee (LTC) a resolution was reached as follows, indicating the strong regional support developed:

"The LTC endorses the proposal by FAO for creation of an e-learning hub for capacity building of animal health practitioners on TADs and zoonotic diseases in the SADC region".

A second pilot online training course is currently underway in partnership with the FAO Regional Support Unit for the South Asia Association for Regional Co-operation. Demand for the course has been extremely high with over 180 requests for participants received from across the regions' eight member countries. At the time of writing the online course has just started, with very high levels of participation.
Alongside these regional activities, EuFMD has also established a "Progressive Control Practitioners' Network". This online network aims to connect all those working globally on FMD control through the FAO/EuFMD/OIE Progressive Control Pathway for FMD Control. The network provides informal training covering a different topic each month, with at least two webinars and three online exercises. The training developed through the network is based on the findings of the pillar II and III training needs assessments, with initial topics including outbreak investigation, sero-surveillance and socio-economic analysis. The network is an additional important component of the ongoing training needs assessments, allowing EuFMD to be directly connected to, and communicating with, audiences working directly to improve FMD control. It is hoped that with time, the network will be increasingly led by its participants, who will contribute local experience and expertise to the group.
Due to the similarity of the needs of the target audiences, there is considerable synergy of the training developments under Pillars II and III of the programme. Some places on the in-depth online training courses developed under Pillar II have therefore been made available to veterinarians from non Pillar II countries, with nominations sought by working through FAO and OIE partners. Conversely, the Progressive Control Practitioners' Network, while funded under Pillar II, is also available and used by veterinarians from Pillar II neighbourhood countries.

Table 3. *Online courses made available to global audiences under Pillar III.*

	Online Course	Audience
Open access resources available for all	**Introduction to the Progressive Control Pathway**	All interested in the principles of the PCP-FMD
	Progressive Control Practitioners' Network	All involved in working on FMD control through the PCP-FMD
	Epidemiology and biostatistics short modules	All
	Knowledge Bank Resources	All
Field level disease investigation	**FMD Investigation Training Course**	Course conducted in Southern Africa (100+ nominated) and currently underway in South Asia (150+ nominated).
Specialist, in depth training	**Socio-economic impact assessment for FMD (Pillar II funded)**	At least 20 places on each of these courses made available to global audience (non Pillar II countries)
	FMD Risk analysis along the value chain (Pillar II funded)	
	Post vaccination monitoring for FMD (Pillar III funded)	
	FMD Laboratory diagnostics (partnership with the Pirbright Institute, Pillar III funded)	FMD laboratory staff

Conclusions and next steps

The relationships developed with the network of training focal points across the EuFMD Member States, together with the ongoing feedback from training courses conducted will be key in the ongoing evolution of the Pillar I training programme. Our consultations to date suggest that the system of the training menu and training credits

scheme is functioning well, with the next two year programme aiming to further increase support to national training, support improve private sector collaboration and additionally explore shared funding models for more cost effective training delivery.
E-learning has been used increasingly across the work programme and has been successful in reaching new, broader, target audiences economically, and as a two way communication tool to better understand audiences and regional disease risks. Providing e-learning in local languages and on an individual country-level basis has been particularly effective. However, the Commission continues to additionally recognize the value of interactive and applied face-to-face training to allow training in greater depth, allowing more sustained interactions and building of new relationships. A blended learning programme, using both face-to-face and online training to their respective advantages will continue to be the preferred.

The Commission recognizes a great demand for training from the neighbourhood region and globally. E-learning may be a useful tool to strategically address these demands, and particularly to address the currently increased risk situation in the European neighbourhood. The Commission recognizes the need to reach regions not currently involved heavily in the training programme, but identified as strategically important to the neighbourhood risk situation, particularly Francophone North and West Africa. Increasing the roll-out of e-learning to meet the identified needs will require the Commission to seek additional funds from outside the currently funded programme. Regional partners, both in international organizations and academic institutions will therefore be important for sustainable delivery of training in local languages.

Appendix 9

National cascade training – Italy
FMD outbreak management
and biosecurity

Appendix 9

Learning project for national cascade training on FMD preparedness in a EuFMD Member Country

Francesca Calvetti and Pasquale Simonetti,
Ministry of Health- Rome

Key message

- Training activities provided by EuFMD should be further developed and spread at national level through cascade training programmes. Indeed, the scope is that the EuFMD trainees act as trainers translating into national trainings the knowledge and skills acquired (so called *'train the trainer'* approach).
- A learning 'pilot' project has been established, in cooperation with EuFMD, to address national training needs to reach official veterinarians to improve early detection and rapid control of FMD on the field. The idea is also to promote further training at local level for private veterinarians and farmers.

The project focuses mainly on practical aspects with problem solving technique, videos, exercises, operational actions (simulation of biosecurity and outbreak management).

This presentation first introduces the learning 'pilot' project developed in Italy, in cooperation with EuFMD, concerning national cascade training on FMD preparedness. The training approach focuses on the interaction between trainer and trainees, aimed at stimulating the active participation of both parties to the learning process. It is based on the singling out of the operational functions required by the trainee, on converting these functions into educational goals and on the evaluation of whether these goals are met or not.

This therefore means that the course not only draws upon the knowledge of the "expert" but also upon the experience of the trainees thus assigning them an active role in the training process. The course aims at providing Italian Public Veterinary Officers belonging to the National Competent Authority, the Regional Veterinary Services, and Istituti Zooprofilattici Sperimentali (IZSs) with the necessary tools to recognize, detect, diagnose and control Foot and Mouth Disease. Furthermore, there is the intention to promote further training initiatives at local level to deliver basic knowledge and provide preparedness to manage FMD to private veterinarians and relevant stakeholders such as farmers, traders and transporters by involving their associations. The improvement of such skills will be enhanced through the achievement of the following learning objectives:

– disease characteristics in terms of aetiology, pathogenesis, epidemiology, symptomatology, pathology, diagnosis and control,

– early detection of FMD clinical signs, management of suspect cases, diagnosis and implementation of appropriate measures to prevent the disease or to control in case of confirmation,

– outbreak / crisis management, reporting and risk communication.

The training is structured in a way that EuFMD trainees are the trainers at national level within the cascade training:

1. EuFMD courses (RTCs – FEPC – Modelling) (**2009-2017**)
   a. Trainees nominated by the national focal point
2. FMD national course (**1st cascade**) (2 x 2 days events Rome and Brescia - 30 participants each)(**2016**)
   a. Trainers (EuFMD trainees)
   b. Trainees (Official Vets from IZSs, Regions and LVUs/AH head)
3. FMD regional course (**2nd cascade**) (10 x 2 days events IZSs HQs – 30 participants each) (**2017-2018**)
   a. Trainers (EuFMD + national course trainees)

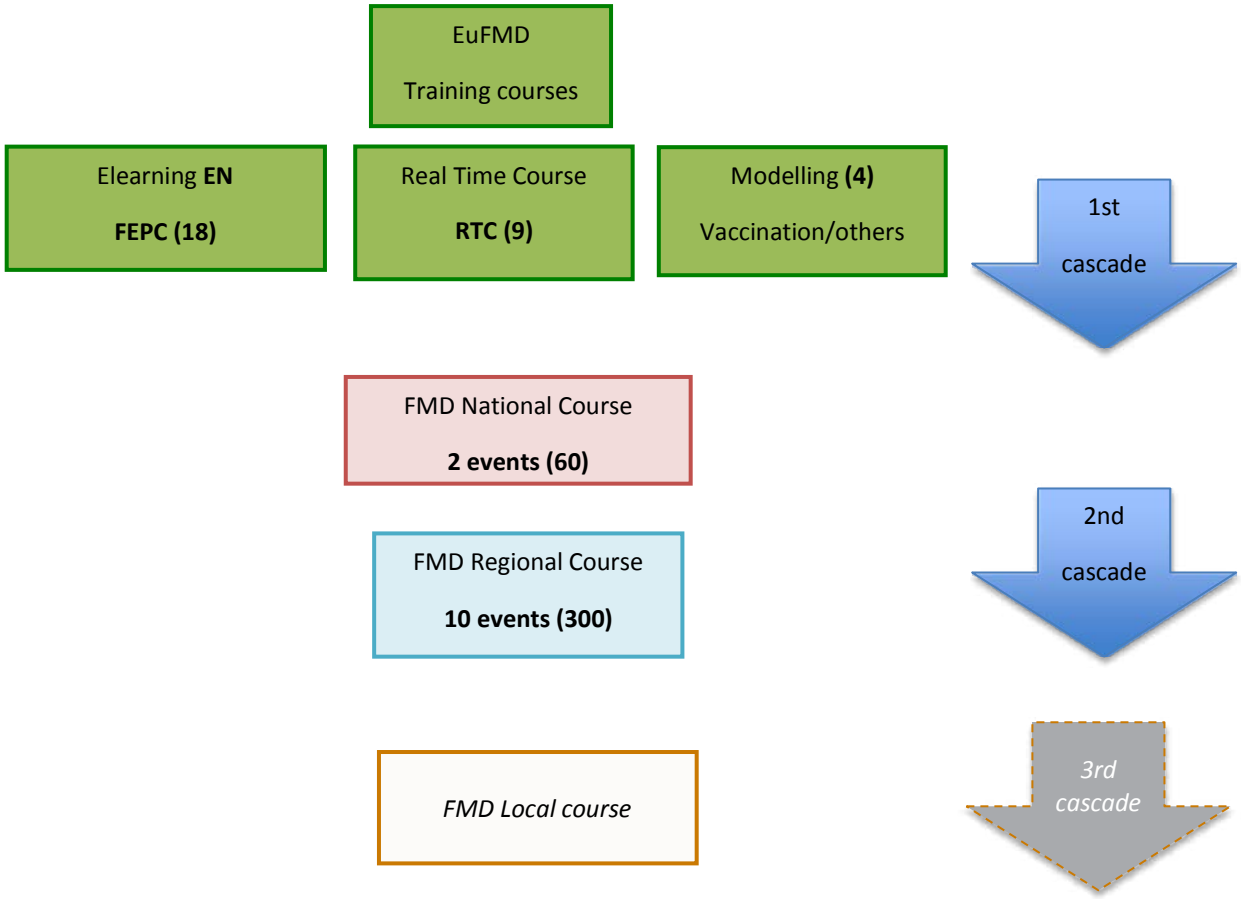
b. Trainees (Official Vets LVUs).

To be planned

*4. FMD local course (**3rd cascade**) (regional-local initiative)*
a. Trainers (national/regional course trainees)
b. Trainees (private veterinarians – farmer associations)

In 2016 the first cascade was concluded. The second one started in March, in Sardinia, and will continue through 2017 and 2018.
The events were highly valued, especially the simulation of biosecurity and the scenarios. Below is the diagramthat summarizes the project.

SUMMARY OF THE TRAINING ACTIVITIES



Appendix 10

Report of the Executive Committee on the actions since the 41st General Session

Appendix 10

Report of the Executive Committee on the Actions since the 41st General Session April 2015

Executive Summary

The work programme in the past two years has been among the most intense ever for the Commission, reflecting the ambition of the Strategic Plan with its Three Pillars and the expansion after GS41 to a 16 Component Workplan, and the subsequent agreement and implementation of this with the EC. No outbreaks of Foot and Mouth Disease have occurred within the free countries of the Member States (MS) in this period, despite the evident and high and dynamic risk from the neighborhood. Further long-distance "jumps" of FMD into the near-east and North Africa have occurred, involving strain from South Asia (probably India) and sub-Saharan Africa are a new and worrying development, especially given the political insecurity and difficulty for veterinary services in the Middle-East and North Africa. This has not been a time for complacency.

The strong support of the EU member States and the EC has been continued to be a vital base that underpins the delivery of activities in all three Pillars. During the past two years, the **Phase III** (24 months) programme was successfully concluded and a new four-year **Phase IV** support negotiated with DG-SANTE. In the new agreement, the training programme has been significantly expanded, in all three Pillars, with a greater use of e-learning and assistance to Member States to "cascade training" to national staff. The partnership with FAO and OIE has developed well, ensuring actions are coordinated and supportive to Gf-TADS and the Pillar III actions are now driven by the requests from the GF-TADS FMD Working Group, ensuring the EuFMD is recognized as supporting the Global Strategy and providing its expertise to the international efforts.
Thanks to experts in our MS and a multilingual team, the Commission has delivered e-learning courses in Spanish, Russian, French, Serbian, Croatian, Estonian and English. In the past year alone, over 1300 persons from over 50 countries have participated in tutored e-learning courses. Approximately 4500 participants are now registered with the EuFMD e-learning online platform, taking part in open-access courses, discussing in our online networks or accessing the knowledge bank resources and over 40 webinar recordings.
Training needs assessments have been carried out though consultation with over 50 countries, all 38 member states and at least 15 neighbourhood and 15 additional non neighbourhood countries. It is clear, from the needs identified, that there are number of needs common, whether FMD free or non-free. There are also common language options particularly in the neighborhood countries and at global level. While the new e-learning courses have been popular, we also realize how much personal interaction is valued for changing management policy and practice on FMD in neighbourhood regions, demanding in-depth interactions to maintain progress, relatively costly but essential.

The decline in European FMD research remains alarming and, though the new EuFMD-Fund for Research (EuFMD-FAR) is filling a vital gap, the Standing Technical Committee (STC) has made it clear we need to learn from management approaches and research undertaken outside Europe. The work on Emergency Preparedness, in the Balkans and with the Contingency Planning network of the MS, has been a driver for development of the "**GET Prepared**" guide to simulation exercise planning and associated training, which fills a gap for veterinary services that may be useful well beyond FMD. We have heard the cry from European contingency planners for arguments to assist them and it is hoped that the **GET Prepared Guide** may also assist development of a national pathway to better preparedness.

The Secretariat recognizes the role of the Officers of the Commission, particularly the President, Jean-Luc Angot, in this period, who have strongly supported the necessary decisions on direction and oversaw important developments with the Trans-Caucasus countries and North Africa, and assisted development of the partnerships with FAO and OIE. On behalf of the members, the EuFMD wishes to thank them for their commitment to achieving long term FMD security for the member states and more effective contribution to global efforts.

Report of the 41st General Session

1. The 41st General Session was held in April 2015 and elected the following as Chairpersons and Members:

Position	Elected	Members:	Elected
Chairman	JL Angot (France)	Member	S. Doudounakis (Gr)
		Member	M. Blake (Ire)
Vice-Chairman	C. Bruschke (NL)	Member	N Pakdil (Tur)
Vice-Chairman	U. Herzog (Austria)	Member	L. Bognar (Hu)
		Member	G Pridotkas (Lit)
		Member	B. Plavsic (Ser)

2.These attended or sent alternates in their place to each of the four Executive Committee Sessions held in the interim (Monza, Italy, September 2015; The Hague, NL (March 2016); Maisons Alfort, Paris, September 2016; Mödling, Austria March 2017). All the Session Reports are online.

3. The **Standing Technical Committee (STC)** was elected at the 41st Session, and has met mainly by teleconference in the intervening period. They have helped enormously with the processes of the EuFMD Fund for Applied Research, and guided the programme for **very successful Open Session** held in Cascais, Portugal, in October 2016, which had over 270 participants on site and over 350 registered for the online Conference which was streamed in parallel. Those elected and served the Commission were Dr Eoin RYAN, Ireland; Dr Dietrich RASSOUW (Germany; after change of his position this was filled by Dr SCHWABENBAUER), Dr Stephan ZIENTARA, France and Dr Yanko IVANOV, Bulgaria.

4. The **Special Committee for Research and Programme Development** (SCRPD) was also elected at the 41st Session (**Table 1**) and met in Cascais in October 2016. They have been very active in reviewing the submissions to the EuFMD-FAR fund, as experts in the Real-Time Training courses and other courses, and in providing expert opinion on topics requested by the STC, and almost all presented work at the Open Session.
In addition to the names below, representatives of the three FAO Reference Centers for FMD which are located in the EuFMD Member States are invited to each Session as follows: K. de Clercq (FAO FMD Reference Centre, VAR), E. Brocchi (FAO FMD Reference Centre, IZSLER) and D. King (FAO-WRL FMD, Pirbright).

***Table 1**. Special Committee on Research and Programme Development (SCRPD).*

Name	Expertise
Aldo Dekker (NL)	FMD research, vaccine evaluation
Tsviatko Alexandrov (BG)	Contingency planning, wildlife surveillance
German Caceres (SP)	Surveillance, risk management
Sten Mortensen (DK)	Crisis management, contingency planning; epidemiology PhD
Labib Bakkali (Fr)	FMD surveillance in REMESA, RESOLAB, European neighbourhood risk
Marius Masiulis (LT)	FMD/ASF/CSF surveillance in Eastern Europe
Michel Bellaiche (Is)	FMD surveillance and management, Israel/Mid-East
Naci Bulut (TUR)	FMD surveillance in West Eurasia, vaccine quality and production
Jean Francois Valarcher (Swe)	FMD virology, vaccine QA, surveillance, epidemiology, global
Ron Bergevoet (NL)	Veterinary economist/FMD
Katharina Stark (Swi)	Veterinary epidemiology, surveillance, management; FMD field research wide international experience
Stephan Zientara (Fr)	Epidemiology, surveillance systems, Europe/Africa/REMESA/West Eurasia
Nick Lyons (UK)	FMD epidemiology and vaccination effectiveness, Africa/Egypt

Implementation of the Strategic Plan after the 41st General Session

5. Completion of the EC Funded Phase III Programme (30th September 2015)
The first six months after the 41st Session were spent completing the agreed workplan under the 24 month, Phase III agreement, which was operationally closed on 30th September 2015; and at the same time, developing and negotiating a new agreement (Phase IV) based on decisions taken at the 41st Session. The achievements of Phase III programme were reported to the September 2015 Session of the Executive and in the Final Narrative Report presented to the funding partner, the EC. Despite a short time frame, substantial progress was achieved on the majority, but not all components, and of the quantitative indicators agreed with the EC in the funding agreement, there was a high level of achievement, with remarkable progress in a number of areas and a very positive feedback on the working modalities and engagement with member state focal points and beneficiaries. The Full Phase III Report is found online, *(http://www.fao.org/ag/againfo/commissions/eufmd/commissions/eufmd-home/reports/en/)*.

Progress can be summarized as follows:
- 6 of the 7 Component objectives in Pillar I were largely or fully achieved;
- 2 of the 3 Component objectives in Pillar II were largely achieved;
- 2 of the 3 Component objectives in Pillar III were largely achieved.

A report on achievement on Component level objectives, and on the (38 final outputs, of the 40 originally proposed) Outputs (Expected Results defined in the Workplans) which together contributed to the meeting these (**Annex 2**).
- 14 of the 18 expected results (Outputs) in Pillar I were achieved;
- 5 of the 11 expected results (Outputs) in Pillar II were achieved;
- 5 of the 9 expected results (Outputs) in Pillar III were largely achieved;
- Overall only one Component did not result in significant outputs, and the issues with delivery of this Component were known to the Executive and did not affect the overall outcomes.

The Agreement also had quantitative targets, and **achievement was largely met or exceeded** (**Annex 3**). Inevitably, there were major challenges in implementing the Phase III programme, which represented a new model for programme delivery and was undertaken with mainly a fresh and changing set of professionals (with a significant proportion of short term placement (STP) officers) from the member states.

6. Negotiation and implementation of Phase IV funding agreement with the EC
The recommendations of the 41st Session included a number of additional changes, adding three new Components of work, on risk assessment, given the dynamic global situation, and a significant development of training programme, particularly expanded to meet the needs of the neighborhood countries and to support the GF-TADS Global Strategy. Development of the workplans in detail began in June 2015 and were agreed with the Executive Committee in September, and cleared the (heavy) FAO internal project cycle quality assurance processes. The financing agreement with EC took a significantly longer time and was finally cleared in April 2016, with retrospective start date agreed as 1st October 2015. In effect, the EuFMD Commission covered the expenses of the Phase IV workplan for around seven months so that a programme of activities was ongoing without interregnum. This was financially and administratively an enormous additional burden to provide ”bridging” arrangements but largely achieved without noticeable interruption of core services. Priorities were given to essential surveillance and risk management actions in areas where FMD might gain entry into the neighbourhood, but delayed start to some more costly Components was inevitable.
The Executive Secretary was responsible for the overall management of the programme, superbly assisted by the EuFMD Administrative Team led by Cecile Carraz. In order to meet the challenge of delivery of the expanded programme, an Emergency Preparedness Officer (Marius Masiulis, Lithuania) was recruited to technical team from September 2015 to August 2016, with Mark Hovari (Hungary) covering this role from September 2016. The other main roles were taken by the Communications and Networks Officer (Nadia Rumich), and Training Programmes Manager (Jenny Maud). A dynamic team of Short Term Placements (STPs) and longer term consultants together managed the 16 components under supervision of the foregoing.

The progress has been reported at each subsequent Executive Committee, and a summary (Newsletter format) of the progress report on the EC funded actions between October 2015 and March 2017 is given in **Item 8.1**. There has been substantial achievement of the quantitative indicators (milestones), despite a complex and wide- ranging programme.

7. Significant developments to the **Pillar I** programme

For more information please refer to:
- The Summary of Final Report of Phase III (**Annex 1 to 3**);
- Summary of progress in Phase IV (**Item 8.1**).

Relationship of Pillar I activities - the intention in the design is that:
- **Change in events/risk levels detected** in the neighborhood and global scale are communicated in the Monthly Reports (Pillar II informing Component 1.8, Risk Communication);
- These **feed into the surveillance planning in the** THRACE project, relating to south-east Europe, and to the Balkans (Component 1.4);
- The work on risk based surveillance and **improved emergency preparedness** in Balkans also **drives development of guidance and training** on simulation exercises, self-assessment tools of use across the 38 MS'
- The emergency preparedness **networking assists to provide new options and test ideas**, and communicate new developments (1.2);
- The **training menu** (component 1.1) **utilizes the experience** gained across the region, and also develops new content where needed for across the MS.

➢ *New courses, greatly expanded roll-out of e-learning across Europe*

The pilot phase of the "training menu and training credits" system for demand-driven training (under Phase III) was considered a great success. There was a difficulty of some countries to "spend their last single credits" which drove the offering of e-learning (as a low cost option) for tailored national level training, which was a popular option. At the start of Phase IV, an extensive consultation was completed to review the menu of courses, their costs and appropriate training credit "pricing"; the selection by MS of their options has kept the training team extremely busy, with several new courses being run. Of the 370 training credits, over 300 have been used or allocated, the programme is on track to deliver on the selected courses.

In **Phase IV** alone, over 1000 veterinarians have been trained in Europe by the tutored online courses, and national tailor made FMD Emergency Preparation Courses were held for five countries; Spain; France; United Kingdom; Estonia; and Serbia.

New courses (new to the Menu) and rolled-out or planned include:
- ✓ Managing a Crisis (Budapest, Sept 2016);
- ✓ Simulation Exercises (Bulgaria, Feb 2017);
- ✓ Putting vaccination into practice (Grange, March 2017);
- ✓ Risk Based FMD Surveillance (to run June 2017).

➢ *Launch of the "FMD knowledge bank" as a resources tool box for FMD risk managers and national trainers*

To assist all concerned with FMD to find reliable and useful resources, training materials and "job aids", the Knowledge Bank was developed in 2016 as a searchable, categorized library of training resources, references, tools and job aids related to FMD. It already has several hundred resources and content added constantly from every course, webinar run by EuFMD or proposed by users.

➢ *Greater diversity in e-learning options; In-depth tutored courses to on demand, open access courses*

The EuFMD e-learning platform is probably now the world's most active FMD training platform, with over 4500 registered users who have are updated by e-mail with the offerings on training and webinars to ensure they are reminded to keep up to date. The offerings include webinars at an average of one a week.
Two new "**Open access courses**" have been developed to assist those that need a rapid introduction (and useful for national level advocacy): "Introduction to FMD"; "Introduction to the PCP-FMD".

- *Modelling and Contingency Planning*.

This component aims to better network and support those in the MS involved in emergency preparedness, with several active networks which have webinars and online meetings. A major development coming from the cross-over of this component with work in the Balkans is the development for Guidelines for exercises and training for emergency preparedness ("**GET Prepared**" Guidelines). These provide guidance for selection and planning of exercises to test preparedness, and have been used in draft form in the Balkans (Component 1.4). Together with a self-assessment tool for the state of contingency planning, they may provide the framework to assist MS to gain internal support for exercise and training plans appropriate to their risk and resources.

- *Surveillance for FMD and other infections under the co-ordination programme in Thrace*

The undertaking of surveillance activities including sero-surveillance for FMD, in the three countries in compliance with quarterly targets for surveillance, substantially comprised the body of evidence for disease freedom in the three bordering zones over the past two years. The feedback (confidence in DF based on negative surveillance findings) was provided quarterly to national focal points and reported to the Executive Committee every six months. If DF was seen to drop (delayed surveillance activities in one location) then feedback was immediate to the national focal point. The system established in place in 2013 was operational over the entire period to 2017 and confidence in FMD freedom was maintained at higher than 95% throughout this period in all three countries.

Under Phase III, the need to assist preparedness for Lumpy Skin Disease became paramount. In Phase IV, after LSD spread into the EU, the main activities have returned to continuous surveillance for FMD and at the same time to ensure exotic PPR and SGP are detected if present by clinical or other tests. The level of threat has varied in the period with incursions into Anatolia of new FMD topotypes. With the development of a Progressive Control Pathway (PCP) Stage 3 Control Zone in Western Turkey, this should reduce the risk to Thrace and at the same time creates a new paradigm for disease investigations in Western Turkey that will assist to build the capacity for investigation and control in Thrace, should cases occur. Assistance to Turkey (Thrace and Anatolia) will thus be increasingly coordinated and synergistic for reducing risk.

- *Improved management capacity for FMD in the Balkan Region (Component 1.4)*

This substantially delivered the expected results and, by undertaking two major multi-country simulation exercises, demonstrated the need for completion and testing of national Contingency Plans to countries. This Component delivered a series of regional workshops and desk top simulation exercises leading to two, simultaneous multi-country simulation exercises that tested capacity to manage the national and local responses, in three exercise-countries (Bulgaria, Serbia, The Former Yugoslav Republic of Macedonia) but which involved all participating countries taking roles. Participating veterinary services (10) of Bulgaria, Greece, Serbia, Croatia, Montenegro, Bosnia and Herzegovina, Albania, The Former Yugoslav Republic of Macedonia, Kosovo and Moldova were involved in all regional workshops and as observers to the exercises.

A substantial simulation exercise for laboratory preparedness was undertaken which tested also the feasibility of emergency supply to NRLs in the region.

- *Research Fund - development of new knowledge and tools to resolve policy issues*

Seven projects were commissioned after calls for proposals and two-stage review process. Each were successfully completed, and reported. Evidence of tangible use of new knowledge and tools has been received. At least three of these have been taken further by partners. A Global Survey of FMD Research has been completed and published, enabling better identification of gaps and priorities and this has been used by major research funders. The forth call for proposals in 2017 resulted in 12 applications.

A promising development in this area is public –private arrangements to support studies to improve surveillance tools, whereby private sector parties support elements of research directly, reducing the need for support from the Fund.

- *Risk communication, development of the PRAGMATIST tool to gather and process FMD risk information*

The EuFMD produces a monthly, global report based on active gathering of information from a network of informant laboratories across the globe, and supporting regular webinars with lab-epi networks to better share information in two directions. The PRAGMATIST tool has been developed to better channel the information into risk assessment, with outputs in the form of scores for priority setting on vaccine antigens for use in European

banks. It has potential also for application at regional or national levels. Constraints remain in the very limited data on virus lineage prevalence, largely filled by expert opinion, and where the potential to provide data or opinion from the regional lab and epi networks is strong but building these networks for Eastern Africa and West Eurasia has been a heavier work than anticipated in Phase IV.

8. Significant developments under **Pillar II**

➢ *West Eurasia/South-East Europe*

Under Phase III, strengthening of national FMD policy and risk management practice was evident in Turkey and certain neighbours, recognized by Turkey, Armenia and Azerbaijan fulfilling GF-TADS processes for PCP Stage 2. The disease situation has remained volatile and challenging with successive waves of epidemics with a notable change in source more from mid-east (probably via Iraq/Syria) than Iran/Pakistan.

The most notable changes relate to:

- Assisting Turkey to train > 150 veterinarians in FMD investigation and control, as required to meet the need of the new PCP 3 control ("eradication") zone in Western and Central Anatolia, in 2017;
- The Statement of Intentions between Countries in the Caucasus (May 2016) in regard to surveillance and management of FMD and other diseases, signed by representatives of Turkey, Armenia, Azerbaijan, Georgia and Iran, and followed up by EuFMD organizing simulation exercises and joint surveillance planning, and monthly sharing of information on disease situation (since September 2016).

➢ *Mid-East and REMESA*

In this region, strenuous efforts have been placed with evidence of progress in Palestine, Egypt and Jordan, for PCP stage progression and better risk management at national level through the PCP processes. The Veterinary Services of Israel, West Bank and Gaza Strip have been brought together for joint planning meetings, under the Component 2.1. The situation with Egypt remains challenging, with African origin FMD strains still circulating and a variable, chaotic implementation of vaccination programmes largely with locally produced vaccines. Interest and commitment to better improve control through analysis of the field situation has been evident with > 100 trained in FMD outbreak investigation in 2017, in a program funded by US funds but coordinated by EuFMD specialists. The situation in Libya has also been difficult in 2015-17, which resulted in suspension of EuFMD support until February 2017, at which point planning meetings and support for lab diagnosis could resume. The work with REMESA has been coordinated well with OIE and FAO Offices in Tunis, Egypt and Beirut. Surveillance support to Tunisia, Algeria and Morocco has been provided but national implementation has lagged behind the desired for demonstration of the FMD presence or absence. PCP stage progress has been gradual with Mauritania, where the situation is connected to that of Senegal/Mali, and regional lab networking has been positively taken up and assisted with risk information. The region will continue to need significant effort for progress in 2017-19.

➢ *Development and evaluation of training programmes for national staff* (Component 2.4). This Component involved a need-assessment for the entire neighborhood region, conducted in Russian/English/French, in 2016, followed by course development in several e-learning and taught online courses which are being rolled out in English, French and Arabic from April 2017. The major development is working with regional academic partners to deliver in Arabic and French, but it is too early to say if this is an advantage over direct delivery (from EuFMD, Rome).

9. Significant developments under **Pillar III,** Support to the Global Strategy

➢ *Improving regional roll-out and uptake of the Progressive Control Pathway (PCP) for FMD*

Under Phase III, the EuFMD support to the development of PCP –associated tools, guidelines and knowledge transfer was substantial. Under Phase IV, this has been rolled out to through the FAO and OIE regional or sub-regional offices in a very encouraging way:

– through the first online FMD training course for 15 Southern African countries (2016), and for eight South Asian countries (India and neighbors, SAARC) in April 2017;

– Through launch of a **PCP Practitioners Network,** in January 2017, with monthly programme of training for practitioners across the world;

– Through development of online tutored courses for PCP-FMD (socio-economics, post vaccination monitoring, and risk assessment) with sequential roll-out planned from April to December 2017.

Support has been provided through to GF-TADS Working Group, in regional roadmap meetings and country specific missions.

- *Global FMD Surveillance and Reference Centre capacity to support the Global Strategy (Component 3.3).*

This component has again proved vital to providing the information base for regional roadmaps and risk assessment; the targets of the contract with Pirbright (2013-15, and 2015-17) have been largely met and detailed in the final WRLFMD report (Phase III) and 3, 6 and 12-month report on surveillance. The objective of increased level and quality of surveillance information from the OIE/FAO Lab Network, with progress towards the targets required for regional roadmap vaccine priority setting in at least the three priority virus pools (Africa and West Eurasia), has been substantially achieved. Targets were not reached in Pool 5 (West Africa), and new risk regions (South Asia) have become more important to prioritize, given the multiple incursions from this Pool (2) into the mid-East and North Africa. The EC support to this Component, and thus to the OIE/FAO FMD Lab network, has played a crucial role in recognizing these new threats. Increased efficiency of the network has resulted from changes introduced through this Component. Additionally, capacity building was realized in Regional Support Labs (RSLs) in Pool 4 (Embakasi FMD laboratory, Nairobi, Kenya) through provision of reagents, kits and equipment and training and trouble-shooting for immunodiagnostic and molecular assays.

10. Training Contract with Australia and New Zealand

The programme for Real Time Training courses in Nepal for participants from Australia was established in 2012, and was subsequently extended to include the participation of New Zealand, who participate as part of the contract arranged with Australia. To date a total of 21 Real Time Training Courses have been organized in Nepal, for a total contribution of 1,012,533 USD received from the Government of Australia. Under the programme over 230 participants from Australia and New Zealand have been trained, alongside 105 Nepalese veterinarians. 100 Australian veterinarians also took part in a national online FMD Emergency Preparation Course. The partnership with the Department of Livestock Services, Nepal, has included a programme of capacity building workshops and expert support to improve FMD control in Nepal. This has led to ministerial approval of the FMD control plan developed and which is now being implemented. There have also been diagnostic improvements in the laboratory which now regularly submits samples from Nepal to the World Reference Laboratory, providing important risk information from this strategically important region. **Central to the agreement is that it brings direct benefit to the Member States,** and importantly, the funding available through this programme has allowed considerable improvements to EuFMD's "infrastructure for training", funding the initial development of the EuFMD e-Learning website and the FMD Emergency Preparation Course, alongside financial support for the positions of the Training Support Officer and training administrator positions within the team.
An extension of the contract with the Government of Australia has recently been agreed, following the approval of the Executive Committee. This extension is for a duration of three years and covers the provision of an additional 12 Real Time Training courses and three online FMD Emergency Preparation Courses for a total contribution of 907,262 Australian dollars. The funding, which is on a full cost recovery basis will additionally support further improvements to EuFMD's training infrastructure, contributing financially to the positions of Training Programme Manager and Training Administrator, as well as contributing to ongoing development of the e-learning platform.
The Secretariat therefore proposes to extend the "not-to-exceed" (NTE) date of the EMERGENCY AND TRAINING FUND (004) to **31st December 2019** to cover the provision of these training courses.

11. Training contributions from Member States and Non-Member States

The fund also receives contributions from Member States under the "training credits top-up scheme" and from non-Member States who have purchased individual places on training courses on a full cost recovery basis. Over the past three years *circa* $210,000 have been received into the fund in this manner.

Activities funded have included:

- Two back to back Real Time Training courses organized for 22 participants from Germany, including e-learning induction, field visits in Kenya, pre- and post -course workshops in Germany.
- A national e-learning course organized for 120 participants from Spain

- An online course organized for participants from China under the "LinkTADS" programme
- Organization of bespoke webinars for FAO partners
- Individual places on EuFMD training courses, simulation exercises and workshops on specifics topics (example, Real Time Training, Vaccination into practice, Modelling).

All contributions received to this fund contribute directly to cover the full administrative costs of the organization of the training involved and additionally provide support to the recruitment of human resources to the training team, and additional developments to the EuFMD e-learning platform and of new training resources, again **directly benefitting Member States by building vital infrastructure and developing new training resources which can provide benefit across the EuFMD training programme.**

11. . Staffing and EuFMD Program Management Responsibilities
The **Secretariat staff** is listed below (as of April 2017, with indications of change since 2015)

Executive Secretary	Keith Sumption
Deputy	Fabrizio Rosso (2015), Marius Masiulis (2015-16)
Contingency Planning	Mark Hovari (9/2016 to present - Pillar I supervisor)
Training Programmes manager	Jenny Maud
Networks and Training support	Nadia Rumich
Global Monthly Report manager	Maria Teresa Scicluna
Consultants (Component Managers)	M. McLaws, C. Bartels, K. Van Maanen, Paolo Motta, Hendrik Camphor, Gunel Ismailova
Work Program Coordinator	Cecile Carraz
E-learning and Training support	Chiara Addari
HR, Travel and Training Supervisor	Erica Tomat
Operations and meetings	Maurizio Licastro/Emanuela Pirrello

12. The Executive Secretary, the Deputies, two STPs and 20% of the costs of the position of Ms Rumich are funded from the Administrative fund (MUL011). Essentially, the technical programme is underpinned by this support, which equates to 20% of the overall annual administrative and work programme budget.

13. The management responsibilities for the EuFMD program are shown in **Table 3**. Managers have thus been funded mainly by the MS through the Administrative Fund with the exception of those which are EC funded and the E-learning and Training Support Officer (by Australia). The Short Term Placements (STPs) assist with management in areas of their competence.

14. Short Term Placements (STPs): the STP programme has been well taken up and the series of excellent STPs have strongly assisted the EuFMD with their in-depth knowledge of European contexts and veterinary service roles and responsibilities. Each STP commits to at least three months and usually not more than six. **Table 4** indicates the STPs in the past three years.

15. Linkage of funding to positions under EC funded Phase IV
Under the GAF submitted to the EC, after signature of the new agreement the responsibilities for

a. **Supervision and management** of each Output is summarized below.

Consultants 1-4 refer to those whose Terms of Reference were submitted to FAO for clearance, and would provide longer term (11 month contract) support.

b. **Operational support**: the GAF was cleared by FAO based on five-operation support positions, of which four would be supported under the EC and one by the MUL/11.

Table 1 BOLD script indicates positions funded under the EC programme, and *italics those funded by EuFMD under MTF/INT/011/MUL.*

Component (Output)	*Output Supervisor*	*Output Manager*	*Lead - Network and training support*
1.1	*TPM (P3 EQUIV)*	**STP 1**	P2 (80:20 EC AND MUL/11)
1.2	*ExSec (EXSEC (P5)*	CPO (P3 EQUIV)	P2 (80:20 EC AND MUL/11)
1.3	*CPO (P3 EQUIV)*	*STP 2*	
1.4	*CPO (P3 EQUIV)*	*STP 2*	
1.5	*EXSEC (P5)*	**Consultant-2**	P2 (80:20 EC AND MUL/11)
1.6	*EXSEC (P5)*		
1.7	*EXSEC (P5)*	Consultant2	
1.8	*EXSEC (P5)*	CPO (P3 EQUIV)	
2.1	*EXSEC (P5)*	**Consultant-3**	
2.2	**Consultant-1**	**Consultant-3**	
2.3	**Consultant-1**	**STP3**	
2.4	*TPM (P3 EQUIV)*	**Consultant-4**	P2 (80:20 EC AND MUL/11)
3.1	*EXSEC (P5)*	**Consultant**	
3.2	*EXSEC (P5)*	**Consultant-4**	
3.3	*EXSEC (P5)*	**Consultant-2**	
3.4	*TPM (P3 EQUIV)*	**STP4 Consultant-4**	P2 (80:20 EC AND MUL/11)

Key: EXSEC (P5 Animal Health Office, Executive Secretary) P2 (Network and Training Support Officer); TPM (Training Programmes Manager, consultant with experience /terms equivalent to P3); CPO (Contingency Planning Officer, consultant with experience/terms equivalent to P3)

Table 2 – Management Responsibility: Pillar and Component Managers 2015 - *EuFMD /EC Action 2015-19 (Phase IV)* BOLD= Continuity. italics= change. TSO: Training Support Officer. STP: Short term professionals.

Pillar	Comp	**Comp.**	Output Supervisor	Component (Output) Manager	2016 Prev.period (6 months)	October 2016-March 2017
I	1.1	**Training-RT**	M.Hovari	STP	M. Grant (SWE)	*M.de la Puente*
	1.2	**Contingency Planning**	K.Sumption	CPO: M. Hovari	M. Masiulis	*M.Hovari*
	1.3	**THRACE**	M.Hovari	STP	M.Casey	*N.Antovska*
	1.4	**Balkans**	M.McLaws	STP	M.Casey	*P. Motta*
	1.5	**Res Fund**	K.Sumption		K Sumption	K Sumption
	1.6	**Crisis**	K.Sumption			
	1.7	**PTS**	K.Sumption	Home-based Cons	K.V.Maanen	K.V.Maanen
	1.8	**Surveillance Rep**	K.Sumption	TBD	Teresa	Teresa
II	2.1	**Turkey/GEO**	K.Sumption	HQ based Cons	G.Ismayilova	G. Ismayilova
	2.2	**Israel/Cyprus**	K.Sumption	Home-based Cons	K.V.Maanen	K.V.Maanen
	2.3	**REMESA**	K.Sumption	Part-time officer	F.Rosso	*Karima Ouali*
	2.4	**P2 Training**	J. Maud	STP	**K.Ouali**	Karima Ouali
III	3.1	**Monitoring**	K.Sumption	TBD	Not filled	
	3.2	**PCP**	K.Sumption	Home-based consultant	C.Bartels	C.Bartels
	3.3	**Global Lab**	K.Sumption	Home-based cons	K.V.Maanen	K.V.Maanen
	3.4	**P3- Training**	J. Maud	STP	**TBD**	*W.Chikurunhe*

Table 3. Short Term Professionals Programme – STPs since April 2012

Name	Country	Start Date	End Date
Wilson, Elizabeth	United Kingdom	3-Apr-12	3-Sep-12
Knight-Jones, Theo	United Kingdom	27-Apr-12	31-Oct-12
Dilaveris,Dimitrios	Greece	1-Nov-12	25-Apr-13
Alexandrov, Tsviatko	Bulgaria	1-Nov-12	13-Apr-13
Milicevic, Vesna	Serbia	1-Nov-12	26-Mar-13
Torres Gregorio	Spain	1-Feb-13	10-Oct-13
Potocnik, Marko	Slovenia	1-May-13	31-Oct-13
Polihronova, Ms Lilyana	Bulgaria	30-Jun-13	29-Oct-13
Bouma, Annemarie	Netherlands	31-Aug-13	30-Dec-13
Taylor Wild, Clare	United Kingdom	20-Sep-13	31-Jan-14
Van Maanen, Cornelis	Netherlands	12-Sep-13	30-Jul-14
Turiac, Iulia	Romania	31-Oct-13	31-May-14
Rosso Fabrizio	Malta	5-Dec-13	15-Jun-14
Grigoryan, Grigori	Armenia	25-Feb-14	30-Aug-14
Scicluna Maria Teresa	Italy	23-May-14	27-Feb-15
Maud,Jenny Louise	United Kingdom	1-Sep-14	31-May-15
Negro Calduch, Elsa	Spain	15-Sep-14	31-Jan-15
Ismayilova, Gunel	Azerbaijan	6-Oct-14	7-Jul-15
Gutierrez Boada, Isabel	Spain	13-Oct-14	13-Apr-15
Pandurovic, Milan	Serbia	23-Feb-15	31-May-15
Sikala, Elma	Zimbabwe	23-Feb-15	23-Jun-15
Scicluna, Maria Teresa	Italy	28-Feb-15	31-Aug-15
Hóvári, Márk Harald	Hungary	1-Jul-14	31-Jan-15
Eldaghayes, Ibrahim	Libya	20-Oct-14	30-Jun-15
Dayhum, Abdunaser	Libya	20-Oct-14	30-Jun-15
Hickey, Katherine	UK	2-Feb-15	1-Aug-15
Nova Chavez, Rodrigo	Chile	28-Apr-15	31-Jul-15
Skrypnyk, Artem	Ukraine	17-Sep-15	16-Apr-16
Kudu, Ays egul	Turkey	8-Oct-15	31-Dec-15
Gajdzinska, Magdalena	Poland	12-Oct-15	15-Apr-16
Zdravkova, Anna	Bulgaria	18-Jan-16	1-Aug-16
Khayli, Mounir	Morocco	18-Feb-16	27-Aug-16
Ouali, Karima	Algeria	17-Mar-16	30-Apr-17
Casey, Miriam	Ireland	8-Apr-16	7-Oct-16
Grant, Malin	Sweden	14-Apr-16	13-Oct-16
Chikurunhe, Wilmot	Zimbabwe	24-Jul-16	31-Mar-17
De La Puente Maria	Spain	25-Sep-16	24-Jun-17
Antovska, Natasha	fYR of Macedonia	1-Oct-16	31-Mar-17

16. Financial position

The Secretariat manages three Trust Funds, for the Administration of the Secretariat (MTF/INT/011/MUL, contributions from the Member States), EC Program (MTF/INT/003/EEC) and an Emergencies and Training Fund into which additional contributions have been received for provision of training (MTF/INT/004/MUL). The position of these funds will be reported under **Item 14 Financial Report**

Annex 1

PHASE III

Indicators of achievement – the 13 Components of the Phase III Agreement (Report of Phase III, October 2015)

	Indicators of achievement – The 13 Components of the Phase III Agreement (Report of Phase III, October 2015).	
Component	**Objective**	***To what extent has the overall objective been achieved?***
1.1	*MS announce capacity for FMD recognition, response training enhanced and FMD expertise network established.*	***Fully achieved***
1.2	*Decision support tools (DST) for FMD risk managers available and used in contingency planning (CP) by an increased proportion of MS.*	***Significant achievement made***
1.3	*To establish a system which provides **continuous confidence in disease freedom** and which improves the chances of detecting an outbreak at an early stage.*	***Largely achieved***
1.4	*To support the development of FMD emergency management capacity in the Balkan region.*	***Most outputs achieved, overall objective only partially achieved***
1.5	*Delivering new knowledge or tools relevant to resolving the priority technical issues faced by MS, including those in the European neighbourhood not free of FMD.*	***Achieved***
1.6	*Maintenance of a capacity to provide advice, technical support and assistance to EUFMD MS and countries in the European neighbourhood in the event of an FMD outbreak, or other exotic diseases.*	***Fully Achieved***
1.7	*To provide services of the Proficiency Test Services to the NON-EU members of the EuFMD to enable them to participate to the same extent as the NRLSs of the Eu28 under the scheme implemented through the EURL at The Pirbright Institute.*	***Largely achieved***
2.1	*The objective is to reduce the impact of FMD in Turkey and Georgia (EuFMD MS) and to reduce the risk posed by FMD in the region to all EuFMD MS.*	***Largely achieved***
2.2	*To improve the capacity of countries in the region to manage FMD through the framework of PCP activities, to support regional coordination of activities and to improve the information available to risk managers about FMD threats by supporting surveillance information gathering from livestock trade related parts of North East Africa.*	***Partially achieved***
2.3	*Assist national FMD risk management as part of the **REMESA** action plan*	***Largely achieved***
3.1	*To collate, analyze and disseminate relevant information on regional FMD control programmes worldwide; support for workshops to coordinate this process.*	***Limited achievement***
3.2	*The objective is to enhance the international capacity for the application of the EuFMD/FAO/OIE PCP-FMD through development of tools, guidelines and knowledge transfer.*	***Substantial achievement***
3.3	*The objective of this Component is to support the FAO/OIE global FMD laboratory network as part of the global FMD control strategy.*	***Largely achieved***

Annex 2

PHASE III

Achievements of the Phase III Action Reporting against the 13 Component Objectives and 40 Expected Results

	Result#	Expected Result	Achievement
1	1.1.1	System in place whereby MS use a **training credit system** to ensure training needs are addressed through a demand-driven training program	*Fully achieved*
2	1.1.2	Improved MS capacity to recognize, respond to and manage FMD through provision of **training programs** on clinical recognition, outbreak management and CP, and improved use of models/DST to support managers	*Fully achieved*
3	1.1.3	Infrastructure for **learning and knowledge transfer** in place, including e-learning, training resources and staff support.	*Fully achieved*
4	1.2.1	Output 1: A European modelling network composed of policy makers and model users from all interested MS with direct access to FMD models and model developers linked to other international modelling groups.	*Fully Achieved*
5	1.2.2	Resources for training on disease modelling and economic analysis in decision-making and simulation exercise design	*Significant achievement*
6	1.2.3	A network of managers in contingency planning and simulation exercise design	*Significant achievement*
7	1.3.1	Establishing a co-ordination framework for the activities required to maintain confidence in DF amongst the three countries	*Fully Achieved*
8	1.3.2	Established system for real-time data entry to support management of national surveillance activities aimed at maintaining DF confidence	*Fully Achieved*
9	1.3.3	Achieving two years of risk based surveillance results through activities implemented in each country for FMD (and other diseases as decided by Coordination Framework)	*Achieved for FMD, partially for other TADS*
10	1.4.1	Coordination framework for western Balkan countries for emergency planning on FMD, including an FMD laboratory sub-network	*Fully Achieved*
11	1.4.2	Improved contingency plans through participation of countries in two multi-country simulation exercises with pre and post exercise training and evaluation on specific themes or chapters of the contingency plans	*Largely achieved*
12	1.4.3	Integration of national FMD reference centres (laboratories) in the national CPs and improved regional diagnostic capacity for FMD challenge	*Significant achievement*
13	1.5.1	Produce Special Committee for Research reports, including Biorisk Management	*Fully Achieved. 2reports published, from Closed and Open Sessions (2013, 2014)*
14	1.5.2	Outputs of the Funded Research projects	*Significant achievement from 7commissioned projects*
15	1.6.1	Emergency Procurement–vaccines/diagnostics	*Fully Achieved*
16	1.6.2	Emergency Missions	*Fully Achieved*
17	1.7.1	Participation of 20 non-EU EuFMD member states and neighbourhood countries in annual PTS	*Significant achievement (37/40)*
18	1.7.2	Management and participation in annual EU reference	*Fully Achieved*
19	2.1.1	FMD Risk Based Strategic plan for FMD Control in Anatolia	*Achieved, but implemented by*

			GDPC in ways that significantly differed
20	2.1.2	RBSP developed and adopted in Georgia	*Fully Achieved, and implemented at national level*
21	2.1.3	Improved information system for regional risk managers which supports the West Eurasia Roadmap countries	*Significant achievement*
22	2.2.1	Risk Based Strategic Plans (RBSP) adopted and PCP progress achieved (Palestine and Egypt)	*Largely achieved for Egypt and Palestine*
23	2.2.2	System established to improve confidence in disease detection and/or freedom (as applicable) in neighbourhood of Israel (Palestine initially; Egypt and others according to national demand)	*Partially achieved*
24	2.2.3	Coordination framework in place to oversee and assist activity implementation nationally and regionally	*Partially achieved*
25	2.2.4	System in place to provide improved disease risk information to managers in Israel and Cyprus re: current threats from sub-Saharan East Africa	*Partially achieved*
26	2.3.1	Risk based control programme (PCP Pathway) adopted and implemented in Libya and Mauritania	*Partially achieved: Mauritania. Initial progress, unable to be continued: Libya*
27	2.3.2	Improved regional co-ordination (REMESA)	*Fully Achieved: this co-ordination has been critical*
28	2.3.3	Regular information flow on FMD circulation in Mauritania/Western Sahel countries available to risk managers	*Partially achieved*
29	2.3.4	System established in the REMESA high risk area for FMD spread (Libya, Algeria, Tunisia, Morocco) to provide continuous confidence in FMD freedom/early detection capability.	*Objective changed, with activities (and output) put on hold since epidemic FMD intervened*
30	2.3.5	Regional strategy for risk-based surveillance and vaccination programme and strategy to establish a local/regional vaccine-bank	*Largely achieved*
31	3.1.1	Technical Development of Monitoring system (with SCRPD involvement)	*Output dropped from development.*
32	3.1.2	Systematic collation and analysis (by Short Term Professionals)	*Significant effort to collate information control programmes.*
33	3.1.3	Assist FAO: Working Group to produce an annual Global FMD report.	*No output possible*
34	3.2.1	PCP toolbox developed for PCP-FMD user community, including guiding documents developed for joint FAO/OIE application;	*Fully achieved*
35	3.2.2	System for training PCP-FMD experts well established and supported by resources.	*Partially achieved*
36	3.2.3	Representation in regional roadmap meetings, FAO/OIE FMD working group and EuFMD executive meeting	*Fully achieved*
37	3.3.1	Creation of a framework for coordination of laboratory support activities within the FAO/OIE global laboratory network	*Largely achieved*
38	3.3.2	System in place for supporting diagnostic activities to be carried out by WRL	*Fully achieved*
39	3.3.3	System in place for supporting the collection of samples from outbreaks in pools 4 and 5	*Partially achieved*
40	3.3.4	Support for a global proficiency test scheme, to include 12 laboratories in the global network	*Significant achievement*

Annex 3

PHASE III

Indicators of achievement - results in relation to the indicators given in Annex 1 of the EC Action (Phase III Agreement)

These are provided below, as the contracting authority may wish evidence of achievement in relation to those given in **Annex 1** at project signature. It must be noted that **Annex 1 to the Action (Agreement)** listed a set of indicators and targets, some of which were modified in the set of final workplans as agreed with the Project Steering Committee (Executive Committee/EC).

PILLAR- Comp Oct'13-Sept'15		***Activity***	***Indicator***	***Target***	***Results***
1.1	**Capacity for FMD response**	RealTime training-Kenya	Number of courses run	3 vets trained per MS: 111 in total	• 90 vets trained • Ten courses run • **81 % target reached** *(Note: this relates to Real-Time Courses only, when all courses offered are included, target was reached)*
	FMD	E-learning	Number of MS with staff accessing e-learning	37 MS with vets using e-learning	• 520 vets enrolled in e-learning courses, • **Target exceeded**
1.2	**Contingency planning**	Decision Support Epi. Exp. Tailored courses - training	Number of workshops run; e-learning courses completed; meetings for Epidemiology; courses run	60 vets attending workshops and/or e-learning courses Annual meeting attended by at least 25 EuFMD MS 6 courses run in response to specific MS demands	• **Target exceeded** • Training point nominated in each EuFMD Member State and four webinars and newsletters produced to update focal points on training opportunities. • 3 physical workshops: 20 participants • 2 webinars: 30-100 participants per webinar • Bespoke epidemiology training for 1 MS (Turkey): 21 participants • Online "contingency planning knowledge bank "established with average of 4100 user interactions with webpage per month. • Modelling network meeting held at EuFMD Open Session, subsequently five network webinars organized • Contingency planning network established and two webinars held • Vaccination network established and one webinar held • Prototype economic impact calculator designed and demonstrated to MS

PILLAR- Comp Oct'13-Sept'15		*Activity*	*Indicator*	*Target*	*Results*
1.3	**Thrace**	Surveillance activities	Surveillance data made available	Analysis based on data from G/B/T every 3 months	• 8 reports available • **Target achieved**
		Training (wkshop/ training) Coord. activities	Wshops/meetings held; Coord. Meetings held	12 meetings/ wkshops	• 12 workshops/meetings held • **Target achieved**
1.4	**Balkan**	CVO meeting Lab training Pts; reagents/ equipment PEPc (epi, modeling, cont….)	Training workshops; Participation in annual WRL PTS; Supply of reagents and equipment to Balkan countries;	6 wkshop/ training events; All Balkan countries participate in annual PTS Each Balkan country to have FMD screening &confirmatory capacity	• 11 Workshop/training • 183 Participants/trained • WRL PTS: 2 in 2013; 4 in 2014 • Reagents and equipment: Achieved – supply 2015 • **Target exceeded**
	Balkan	Simulation Exercise	Cross-border international simulation exercise held	One cross-border simulation exercise held	• 286 People trained in workshops and simulation exercise • **Target exceeded**
1.5	**Research**	*Commission research projects*	Letters of agreement signed with recipient organizations	8 research projects funded	• LOAS signed with Friedrich Loeffler Institut; ANSES: Coda Cerva; Royal Veterinary College; The Pirbright Institute; FVST; DEMA • **Target achieved**
	Research	Collate progress, M&E	Reports on progress provided to ExCom, STC and Special Committee	4 status reports provided, one per ExCom meeting	• 5 reports provided (Excom 86 October 2013; Excom 87 April 2014; Excom 88 Oct 2014; Excom 89 Feb2015; Excom 90 Sep 2015) • **Target exceeded**
	Research	Closed SC / Open STC meeting	Meetings held	Two closed meetings held; One Open meeting held	• One closed meeting held (Croatia, Oct 2013) • **50% target achieved** • One open meeting held October 2013 Croatia • **Target achieved**
	Research	STC Res Fund meeting	STC meetings held	4 meetings held	• 1 physical meeting January 2013 Rome; 3 online • **Target achieved**
1.6	**Emergencies**	Emergencies		Retain funds for use in major crisis (e.g. Thrace)assumed once per 4 years	• Emergency reserve was maintained while response actions were also mounted • **Target achieved**
1.7	**NRL Proficiency Test Service**	Contract with WRL for non-EU MS	Letter of agreement signed.	Two Rounds PTS. More than 10 territories participate annually	• 10 territories 2013; 12 territories 2014 • **Target exceeded**

PILLAR- Comp Oct'13-Sept'15		*Activity*	*Indicator*	*Target*	*Results*
2.1	**Turkey neighbour hood FMD control**	Value chain (Kick off); VACCINE strategy wkshop; WELNET network meeting; Participatory epidemiology; Contingency planning workshop		6 reports	• 6 reports delivered • 143 people trained/met • **Target exceeded**
2.1	**Turkey neighbour-hood FMD control**	Roadmap meetings	EuFMD experts attend annual meetings	2 EuFMD experts attend	• 61 participants and 13 countries attended • **Target achieved**
2.2	**South -east med. FMD**	Annual Co-ordination Meeting	meeting report	2 reports available	• 13 Reports available • **Target exceeded**
2.2 **South -east med.FMD**		PEPc Course-develop arabic Real-Time Training (in Turkey)	PEPc training material and report report from course	Decision taken to Train in a more cost-effective way, by in-country training workshops. Training in Turkey also occurred (Real time training June 2014 ; 15 participants) **Target achieved**	
2.2	**South -east med. FMD**	Egypt - National PCP progress			• Mission report 31 March 2014 • Consultative workshop on PCP-FMD, Cairo – Egypt
2.2	**South -east med. FMD**	EARLN-FMD support (request from FAO) meeting	meeting report	2	• Physical meeting - **Target not achieved.** • Virtual (online) meetings held instead
2.3	**North Africa FMD**	Real Time training course	report from course	1	• Ntc18- august2014 • **Target achieved**
2.3	**North Africa FMD**	Risk based surv. Epi network Lab network Surveillance NC PEPc Free-surv. training FMD Lab. Contingency E-learning	4 wshops/ 2 network meetings; PePc report from course; Report - lab results; Training material developed and made available	8 reports from courses/wshops Participation in the monthly reporting (3 countries)	• 10 reports delivered • **Target exceeded**
2.4	**Surveillance networks**	Support sample submission from neighbourhood risk regions	report of lab results from target countries	Routine (monthly) reporting from 3 surveillance networks and 4 NRLs per network	This Component, its target and indicators were omitted from the final Action, became part of the Component 3.3 and individual Components 2.1, 2.2 and 2.3. Targets largely met by monthly reports from each network, forming part of the Global Monthly Report.
3.1	**Monitoring FMD prog progress**	**STP and FMD WG SUPPORT**	Report on Global FMD control prog status and progress indicators	Report covering at least 3 African and 2 Asian pools	No Global Report issued by decision of GF-TADS Working Group.

PILLAR- Comp Oct'13-Sept'15		*Activity*	*Indicator*	*Target*	*Results*
			every six months		
3.1	**Monitoring FMD program progress**	**WORKSHOPS**	Technical expert wkshops	Two technical reports	• Mission to London 3-4 February 2014 • E-training for PCP, RBSP, epidemiology and PEPC • **Target achieved**
3.2	**Develop pcp tools and application**	**PCP expert consultation meetings**	System established for expert consultations and review	Updated PCP Guidelines	• Expert panel meeting on socio-economic impact for FMD (FAO and OIE) April 2015 • PCP guidelines under review • PCP training July 2015 fao HQ • PCP training Nakuru august 2014 • **Target achieved**
3.2	**Develop PCP tools and application**	**Training**	Training Materials developed, reviewed, online	Online training tool	• **Target achieved**
3.3	**Global FMD ref lab services**	**CONTRACT IAH**	Contract implemented for 2014 and 2015	Targets reached for submission/typing in FMD pools 3, 4 and 5, annual meeting	**Target achieved** for annual meetings, proficiency tests, overall numbers of samples tested, genotyped and vaccine matched. **Specific targets achieved** for pool 3, **70% achieved f**or pool 4, **not achieved** for pool 5.

Appendix 11

Proposed updating to the strategic plan and work programme for the biennium (to the 43rd session in 2019)

Appendix 11

Proposed updating to the strategic plan and work programme for the biennium *(to the 43rd session in 2019)*

For Decision of the 42nd General Session

1. To endorse the proposed updating of the Strategic Plan, for the period to the 43rd Session in 2019, as proposed by the Executive Committee following the review at its most recent Session.
2. To maintain the balance in effort and funding between Pillars I, II and III, but with minor re-distribution within each Pillar of the funding between components to allow change in emphasis changes in the areas proposed.
3. That the Executive and Secretariat seek support from DG-SANTE for those parts of the programme it is able to support and to leverage support from the member states and other states and agencies that could compliment or support parts of the programme.
4. To endorse the efforts of the Secretariat in respect of finding additional funding for
   a. the Research Fund, including studies relating to laboratory Biorisk management, and development of a European animal disease spread model remains a priority;
   b. Sustaining the roll-out of FMD training in the Pillar III regions, where "e-learning hubs" at regional level could be a successful model but there is limited capacity at present in FAO, OIE and the regional economic body secretariats to achieve this.
5. To recognize the scope for potential application of the EuFMD training resources and system for e-learning as part of the response to FMD risks from the European neighbourhood, but the need for additional funding to safeguard work in Pillar II, to ensure a significant presence at national level to sustain institutional change in risk management.
6. To take note of the imbalance between the level of insecurity and disease risk in the European neighbourhood and the declining level (since 2006) of overall funds and emergency reserve allocations for major FMD events or interventions in the region.

Background

1. In 2005, the Commission adopted its first four-year Strategic Plan and funding for the actions was thereafter agreed with the EC for the same period. Revision of the four-year Plans occurred in 2009 and 2013. Although the 42nd General Session in 2017 comes at the end of the four-year planning cycle, there are reasons to not undertake a major review at this point since the four-year Phase IV Funding agreement with the EC runs until September 2019, and has been agreed on the basis of the Strategic Plan after the 41st Session in 2015. It is therefore proposed to undertake a major review ahead of the 43rd Session, to develop the Strategy for the four years from 2019-2023, at which point the membership needs and funding situation (from the EC and other partners) may have changed considerably.

2. The Strategic Plan adopted in 2015 (**Annex 1**), and its associated work-programme have been funded largely by two sources, the EC (DG-SANTE, about 75%) and the member states (25%) through their contributions. The latter cover the professional staff that manage the programme and provide higher level technical inputs. From 2015, there has been growth in demand for training services which have been operated on a cost-recovery basis, and this is expected to grow further in the next two years (this will be covered under **Item 14, Budget**). Since the EC funding is not expected to increase in the next two years, increased demand can only be met by additional funding from other sources. There are good strategic reasons to develop joint work with partners such as the regional programmes of OIE and FAO, which build on the base of training and other resources generated under the EC programme.

3. The Executive Committee, at its' 93rd Session in March 2017, reviewed the progress of the Strategic Plan and came to the overall conclusions, as follows:

The current EuFMD Strategic Plan, with its three Pillars and balance between geographic-based and membership- wide activities, has been an important basis for the workplan and its communication to member states and partners. Considering also the mid-point of the Phase IV agreement with the EC on funding, no major changes to this structure should be proposed.

Minor revisions to the Strategic Plan adopted in 2015 are recommended to the 42nd Session. If they are endorsed, they should be followed up both with a revision to the work programme of the EC funded Phase IV programme to cover the period until September 2019, and through new activities initiated with funding partners that will bring forward achievement of the outcomes expected under the Strategic Plan.

4. The 2015 Strategic Plan had 16 components under the three Pillars, and four-year agreement on funding from the EC was set in the order of 3.844m€ for Pillar I, 1.975m€ for Pillar II and 1.656m€ for Pillar III. Each of the 16 components had a budget and further, each of the expected results (Outputs) had their own allocated budget. Therefore, the Executive and EC were able to decide if the "value" of inputs/resources for every output expected were appropriate. The agreement with the EC allows for revision of the budget, and a proposal to do so, with a revised workplan, will be made after the 42nd General Session, with expected implementation of the changes as soon as funding agreement is reached.

5. Given the need for close engagement with veterinary services in the beneficiary states, which is particularly vital given the limited resources available, each Component has in its design a **co-ordination** element to ensure that there is both a national demand and a harmonization with the neighbours under the programme. The Co-ordination was often the least cost element since existing GF-TADS forums or virtual networking was used. This strategy has certainly shown benefits and worked well, particularly where FMD is endemic and where the countries experience problems in planning and implementation of their control programmes. It is also clear that in some regions (such as the Western Balkans) where FMD has not recently occurred, other issues have higher priority and greater effort will be needed to ensure progress. Recent consultations with the countries have given valuable feedback on how this may be achieved.

6. The Executive Committee held the view that the three Pillars approach and Results based management, are providing good evidence of progress but at this mid-point of the Phase IV programme, must be continued for at least the next two years. The Updating to the Strategic Plan reflects lessons learnt in this period and is presented below.

Summary of the changes in emphasis

The Executive Committee, having considered the self-assessment of Pillar workplans (**Annexes 2 to 4)** and progress since 2015, suggested some changes in emphasis and effort, but without an overall change in the expected Pillar outcome or Component Objectives. These were:

Pillar I:

1. To continue to build the range of language options in the EuFMD e-learning programme and associated Knowledge Bank of resources;
2. To provide "Training Credit Incentives" for enhancing sub-regional collaboration of the MS and for more national buy-in (self-funded places on face to face training);
3. The roll-out of the "GET Prepared" Guidance manual, to emphasize the development of national training and exercises roadmaps;
4. More strategic use of the webinars as cross-cutting communication tools and as means to build the range and depth of materials in the EuFMD Knowledge Bank;
5. THRACE: to develop common activities between Thrace region and Western Anatolia Control Zone (which proposed to become PCP3) of Turkey considering the current and future needs for emergency preparedness planning and continuous surveillance;
6. To explore how MS can better achieve engagement of the private sector in emergency preparedness, both at national and regional level, including through opportunities to participate in EuFMD events, and provide guidance to MS on this area;

7. To explore how passive surveillance for FMD can be assessed by MS and share experience on efforts to address weaknesses; to complete a pilot study on tools and incentives for passive reporting;
8. Balkans: to operate support in ways that will increase ownership and cooperation with Western Balkan non-EU counties through high and mid-level meetings, increasing the number of local experts and expertise available within the region and to continue to support emergency preparedness activities;
9. Establish the Special Committee on Biorisk Management and support the workplan for updating of standards and training;
10. Resource the risk assessment component (1.8) to an adequate level with greater emphasis on communicating the outputs of the PRAGMATIST tool, and complete pilot on livestock price monitoring to inform animal and product movement risk.

Pillar II

1. Revive the West Eurasia laboratory and epidemiology networking, to better support the Roadmap countries as well as provide essential risk information, de-emphasize national activities unless strong commitment, and gain better regularity of information from Iran, Afghanistan and Pakistan;
2. In REMESA, place greater emphasis on national activities to promote control in Libya, Egypt, as high risk countries for the region; while using regional, tutored online training courses given through partners to increase preparedness in Arabic and francophone countries, including online training for Iraq, Syria, as well as REMESA countries;
3. Greater level of adaptation of e-learning courses for delivery in Arabic, Turkish, Russian and French for the Pillar II region.

Pillar III

1. Increase provision of expert support and resources for guidance to national and regional PCP initiatives, working with a more strategic (a 24 month plan with OIE and FAO);
2. Support implementation of "regional networking and e-learning for progressive control", with priorities of South Asia (SAARC) and francophone Africa in 2017-18, working through the FAO and/or OIE regional offices and with emphasis on technical and economic community partnerships for sustainability of the approach in each region;
3. Promote development of international expertise for progressive control, through supporting the online Progressive Control Practitioners network (PCP Network) and the linkage of this expertise capacity to the needs of the regions and regional initiatives;
4. Working with the FAO-WRL at The Pirbright Institute, to further adapt (languages) and implement roll-out the e-learning courses on FMD laboratory Investigation, to assist networking and capacity building within the Roadmap regions and improve the access and uptake of reference laboratory services.

Resource mobilization

The programme proposed is based on a continuation of the current levels of support from MS (Membership Contributions), from DG-SANTE (Phase IV) and from additional contributions (received under MTF/INT/004/MUL e.g. Australian/New Zealand contract), according to commitments (EC, and AUS/NZ) already received.The updated work programme can be accommodated if some redistribution occurs. It is assumed that the move to online training (in all Pillars) in 2015-17 has reached its limit in terms of cost-savings over face to face training, and additional funding will be needed from external resources for greater human resource to be provided to extend the training programmes further.The scope for potential application of the EuFMD training resources and system for e-learning as part of the response to FMD risks from the European neighbourhood is self-evident, but there is need for additional funding to safeguard in country advocacy work in Pillar II, to ensure a significant presence at national level to sustain institutional change in risk management.

It must also be noted that there is an imbalance between the current level of insecurity and disease risk in the European neighbourhood and the declining level (since 2006) of overall funds and emergency reserve allocations for major FMD events or interventions in the region. Resources are very thin for responding to the scale of the current risks.

EuFMD - UPDATED STRATEGIC PLAN FOR 2017 -2019 Annex 1

Underlined are proposed Updated elements as a result of the 93rd Session of the Executive Committee

OVERALL OBJECTIVES

The overall objectives consist of **three strategic goals** as follows:

1. To **Improve** readiness for FMD crisis management by Members;
2. To **Reduce** risk to Members from the FMD situation in the European neighbourhood (progressive control in neighbouring regions);
3. To **Promote** the global strategy of progressive control of FMD.

The operational objective of maintaining a mechanism for emergency response to an FMD crisis in the European neighbourhood will underpin the first two objectives.

Beneficiaries

In general, beneficiaries will be the 38 countries which are members of the European Commission for the Control of Foot-and-Mouth Disease (EuFMD)[1], hereinafter called "Members", and other neighbouring countries where the situation of foot-and-mouth disease (FMD) creates a direct or indirect threat of introduction of the disease into one or more of the member countries of EuFMD.

Strategic goal 1 – Improve readiness for FMD crisis management by Members

Progress towards the Strategic Goal may also be assisted by joint activities with non-member states of EuFMD where there is a mutual advantage recognized by the EuFMD Executive Committee.

In 2015-17, more emphasis was placed upon national ownership of actions under each component, continuing the trend towards demand-driven training, towards joint decision on training development through regular interactions (webinars/online meetings) with MS representatives and Executive Committee advisors (1.3, 1.4).

In 2017-19, greater involvement of livestock industry actors and pan-European livestock sector representatives in training will be encouraged, towards a better public/private sector interactions on contingency planning issues. The development of the knowledge bank will be continued, to provide national training focal points for more training aids/assistance to them to engage /train their national vet personnel.
The newly developed "Guide to Exercises and Training for emergency preparedness" (GET Prepared Guide) will be rolled out to assist MS to plan their exercises on a progressive basis, under multiple components.

Outputs and Activities

1.1 Develop European expertise in FMD crisis management and assist national FMD preparedness training programmes.

Update:

This component will continue to include all training activities under the training credits system; to build on the channel of communication with the 38 MS training network, and provide e-learning courses in national languages; supporting focal points to "cascade" training to national level, "Equipping National Trainers In

[1] Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Georgia, Greece, Hungary, Ireland, Israel, Italy, Latvia, Lithuania, Luxembourg, Malta, Norway, Poland, Portugal, Romania, Serbia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, The former Yugoslav Republic of Macedonia, The Netherlands, Turkey, the United Kingdom; (Position of Iceland to be clarified).Relevant Expertise", and with additional courses to be offered on demand. The potential for training courses to be recognized

(accredited) as modules will be explored to enable our FMD training to be part of accredited courses for training the "next generation of TADS managers". The inclusion of training credits as incentives for 'sub-regional courses where the trainers are provided by EuFMD but participants supported by the member states will be evaluated as a cost-effective means to maintain face to face courses for topics where European sub regions also need to work closely together.

This Component will continue to include development of the FMD training resources infrastructure which provides the knowledge base to MS for cascade training, and include development of applicable knowledge products (job aids) to clinical disease recognition, sampling for diagnosis, local area epidemiological investigations, risk factor analysis, simulation exercise planning, crisis management, decision making and practical application of vaccination, practical application of biosecurity principles, laboratory diagnosis and other aspects of preparedness and response planning.

1.2 Support contingency planning of Members and at European level – Developing decision support tools for managers.

In 2015-17, following strong demand, this component continued the FMD modelling network, contingency planning (CP) knowledge bank and CP/simulation exercise manager networks. This component included a Vaccine Banks/Vaccination issues Working Group or Network, and work to develop common resources strategy for sharing human resources as well as critical capacity (vaccines, diagnostic bank).

In 2017-19 this component should continue the above but ensure some development of support tools for MS also, e.g. the FMD impacts calculator. Additional funding will be required beyond the Phase IV programme for a common joint project (e.g. European livestock movements modelling project) and a more specific support project (e.g. regional project for MS wishing to establish modelling for decision making, could be a group of countries at similar stage of capacity).

The training and providing support for Members to use disease simulation models and decision support tools to assist contingency planning will be offered under the Training Menu (**Component 1**).

1.3 Thrace region: programme for early warning surveillance in Greece/Bulgaria/Turkey.

This component is of proven value and support is demanded from the three countries for continuation in 2017-19, with focus on the threats relating to FMD but also the surveillance and proof of freedom from PPR and Sheep and Goat pox (in Turkish Thrace). The component will extend further the development and testing of contingency plans in event of introduction of exotic diseases into Turkish Thrace. The extent of support to national activities in surveillance will be dependent on DG-SANTE decisions relating to responsibility of the member states, and the actions funded for management of infection after establishment in the MS (e.g. Lumpy Skin Disease).

In 2017-19, the programme expects to continue collation and analysis of existing surveillance data, development of risk-based surveillance methods, to assess and assist improvement of passive surveillance, the tripartite coordination of activities, integration of decision support tools and risk analysis into policy evaluation and development, and management of support to surveillance activities.

1.4 Improved emergency management capacity for FMD in the Balkan and Moldova/Ukraine regions

This component is of proven value and importance, and will continue on basis of the preferences of the Western Balkan countries for support towards self-governance and ownership of preparedness planning through regular meetings and joint exercises.

In 2017-19 this component will include UKRAINE as an FMD free country that has similarities to the Western Balkans in its proximity to FMD risk and need for potential emergency support. Following progress in laboratory exercises, the component will continue to give attention to the issues affecting national reference laboratory capacity for FMD confirmation and surveillance.

1.5 5 Research activities relevant to resolve policy issues

This will continue as support for research projects which have been endorsed by the Standing Technical Committee of the EuFMD as being of benefit to EuFMD objectives; activities to translate research into tools,

Outputs and Activities

2.1 South-East Europe: promote better management in Turkey and neighbours.

This will continue to include supporting the collation, analysis and application of epidemiological data, including spatial data, from the area (but analyzed under Component 1.8); providing training in the practical application of epidemiology to control FMD and advance along the FAO/EuFMD/OIE Progressive Control Pathway (PCP); engaging with national veterinary services to support them in the detection, management, and control of FMD, and identification of circulating viruses. This also includes support for the West Eurasia roadmap for progressive control of FMD, in coordination with other stakeholder bodies, as regards the European neighbourhood.

This component also includes baseline support to the TransCacausus countries (TCC) to continue to share information on surveillance and control programmes, as per the Statement of Intentions agreed between the 6 parties in Paris in May 2016.

This component also includes, to the extent budget allows, support to specific countries in line with the PCP, designed to improve national capacity to manage and control FMD and assist progress in cooperation with regionally coordinated Gf-TADs programs and roadmaps.

2.2 South-East Mediterranean: support better management in the neighbourhood of Cyprus and Israel.

This will continue thanks to the success of work in Palestine, Egypt and Jordan, but using the training component, and given the recent epidemic movements across the borders in this region will extend the e-learning to neighbouring Arabic –speaking countries in line with the GF-TADS Middle-East Roadmap. It may include support to develop laboratory capacity in those countries; and support to regional coordination of FMD control strategies. This component also includes targeted support to specific country projects in line as part of regionally coordinated Gf-TADs programs and roadmaps.

2.3 North Africa: technical support to REMESA[3] actions.

This will continue to include, at the request of those Members participating in REMESA, actions in line with the decisions of the REMESA JPC to support activities carried out by France, Spain, Italy, Malta, Greece Cyprus and Portugal aiming at strengthening and regionally coordinating laboratory diagnosis, contingency planning, vaccination strategy development, risk based surveillance and other associated actions in Mediterranean countries of North Africa which pose a risk of FMD virus incursion into the REMESA area.

Greater emphasis will be given to reduce the risk posed by insecurity and exotic FMD strains in Libya and Egypt from spread to the west and east, and will support the francophone FMD network to improve risk communication, surveillance and preparedness, in both francophone parts of REMESA and the neighbouring regions in West /Central Africa.

2.4 Training Component

The progress made to develop a range of translatable training courses, in 2015-17, will be followed up by greater emphasis on roll-out of the new courses in Arabic, English, French, Russian and Turkish under components 2.1 to 2.3. The training component will use the implementation of the regional roll-out to build up the capacity of regional experts in both development of new course content appropriate to the region but also to deliver face to face and online support to countries in the neighbourhood, covering the major technical disciplines involved in PCP stages 1 to 3. This component is regional (serving the Pillar II subregions) with Individual country training being conducted under Components 2.1 to 2.3, as needed to achieve the component outputs and national planning targets.

Strategic goal 3 – Promote the global strategy of progressive control of FMD

The 2015 update of the Strategy placed emphasis on improving the linkage of epidemiologists to the "regional lab networks", so becoming FMD technical networks underpinning regional Roadmaps and national programmes. The development of online, tutored PCP-FMD and FMD investigation courses has seen a successful

3 **RE**seau **ME**diterranéen de **S**anté **A**nimale – REMESA: http://www.remesanetwork.org/

uptake in Southern Africa and South Asia, and the 2017-19 strategy aims to establish sustainability of the networks through the regional economic communities (RECs) working with OIE and FAO.

The 2017-19 strategy places emphasis on

- sustaining the GF-TADS work with South and East Asia, through support to regional e-learning/online networking on FMD;
- continuation of the PCP practitioners network, as a source of in depth training of the regional and national PCP experts needed for national programmes, and a generator of new knowledge and teaching aids for regional use;
- roll-out of online laboratory training courses, in partnership with the FAO-WRL (Pirbright), to multiple regions;
- the continuation and development of the francophone network, to improve the surveillance development of control programmes in West/Central and North Africa;
- a common workplan agreed with the FMD-WG of GF-TADS, with emphasis on quality of national control programmes and the capacity of countries to develop, monitor and report progress.

Outputs and Activities

3.1 Support FAO FMD Unit in collating information for review of progress of regional programmes on FMD control.

This will continue to include collation, analysis and dissemination of relevant information on regional FMD control programmes worldwide; support for workshops to coordinate this process; and other associated actions.

3.2 Technical support to develop the OIE/FAO FMD Progressive Control Pathway (PCP) methods and guidelines.

This will continue to include engaging with the on-going development of the PCP, providing training in the application of the PCP to FAO and OIE nominated experts and to international agencies; supporting the development of associated tools and activities to integrate relevant fields with PCP applications; and support for the development of regional PCP roadmaps.

3.3 Support the global system for improved FMD reference lab services (World Reference Laboratory Contract, supporting FAO/OIE Strategy and Gf-TADs).

This will continue to include supporting the FAO FMD World Reference Laboratory to provide services to the European neighbourhood and globally, including diagnostic service, vaccine matching, molecular epidemiological analysis of worldwide and regional FMD patterns, and provision of laboratory proficiency test (PTS) ring trials to FMD laboratories in non-EU states[4] and internationally; and to continue as Secretariat of the OIE/FAO FMD lab network. It will continue to support a limited set of RSLs in pools 4 and 5 to screen samples from their regions as part of the need to achieve Pool level surveillance targets.

In 2017-19, there will be a roll-out of the new e-learning courses for laboratory investigation (FLITc) course operated in partnership with the FAO-WRL Pirbright and as an entry vehicle for greater laboratory networking.

In this period, the emphasis in use of these courses is expected to re-inforce the regional networks (in Eastern and Southern Africa, and South Asia, and translation to French and Arabic versions for the francophone network and Mid-East/REMESA is foreseen.

3.4 Pillar III Training Component

Update:

This component will build on success of pilot courses in Southern Africa (14 countries) and South Asia (8) countries in use of the tutored e-learning courses (FITc).

4 EU Member States are included in the PTS funded under the EU-CRL activities.

The 3 new courses developed (in 2015-17) aimed to develop in-depth understanding of developing and monitoring FMD control programmes, will be provided on a regional or global level, annually or twice a year according to demand, with a cycle that focusses on sustaining expertise development in South Asia (2017-18) and West/Central Africa (2017-18), and extended to other regions in 2018 (such as Eastern Africa, East Asia) according to priorities agreed with the FMD-WG of of FAO and /or OIE. It is expected that FAO and OIE or regional economic communities (RECs) will find support for any in country application.

To build in depth expertise in countries applying the PCP, the PC Practitioners' Network will be given greater emphasis and support, to include support to achieve the same goals through the francophone network (which to a major extent will assist to build expertise in West and Central Africa).

Appendix 12
Reports from Turkey, Israel and Algeria

DISEASE SITUATION IN TURKEY

42nd General Session of EuFMD
20-21th March 2017, Rome,Italy

A.Naci BULUT
Şap Institute, Ankara,Turkey

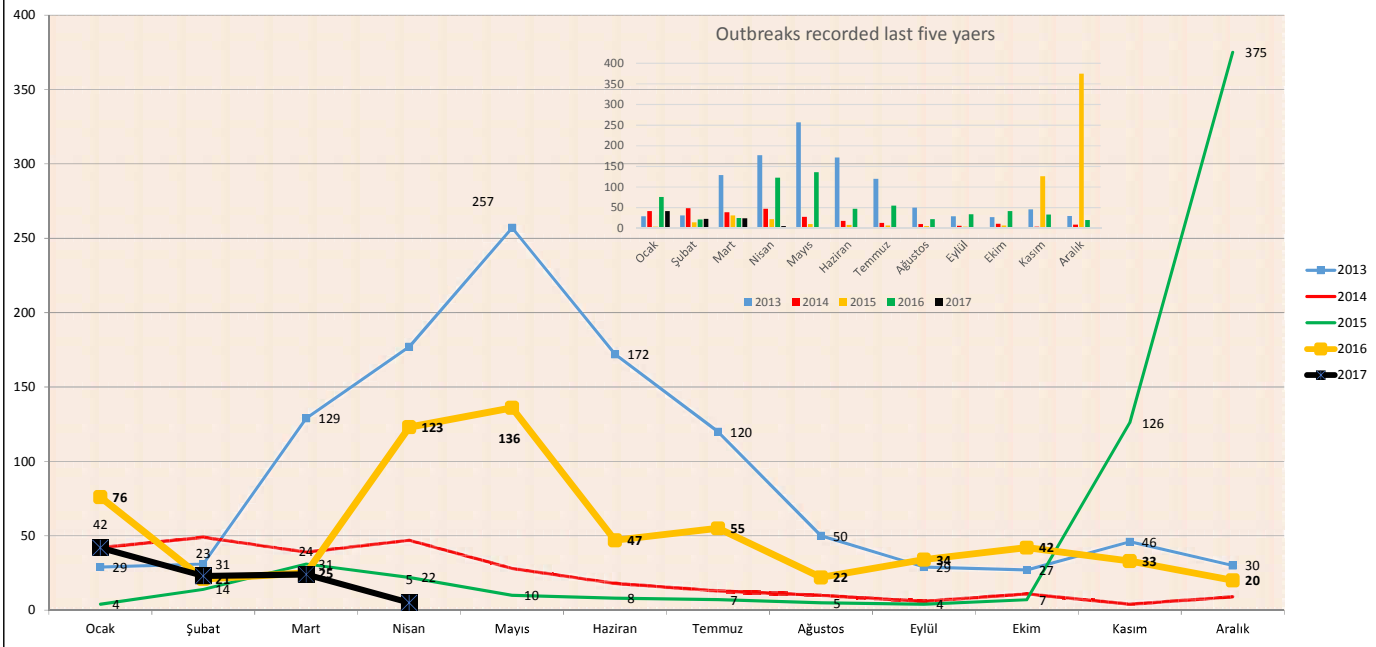
On behalf of
Dr. Nihat Pakdil, CVO
Deputy Secretary of Ministry
The Ministry of Food, Agriculture and Livestock (MoFAL)

CIRCULATING STRAIN

- FMD is endemic in Anatolia region in Turkey
- Current Circulating virus strains:
  - Serotype O (O PanAsiaII/Qom),
  - A (Asia/GVII)* and A (Asia/GVII)/Sam16
  - (Asia1 has been not recorded since July 2015)
    - Latest sirculated one was Asia-1(Asia1/SINDH08)
- Thrace region has been free of FMD with vaccination since May 2010.

EuFMD 93rd Executive Committee Meeting, 21-22th March2017

Outbreaks for Last Five Years (till 17th April of 2017)

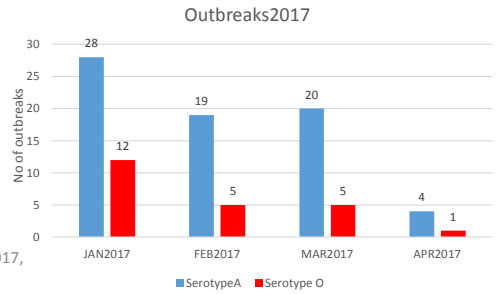


CURRENT TREND OF FMD SPREAD DINAMICS

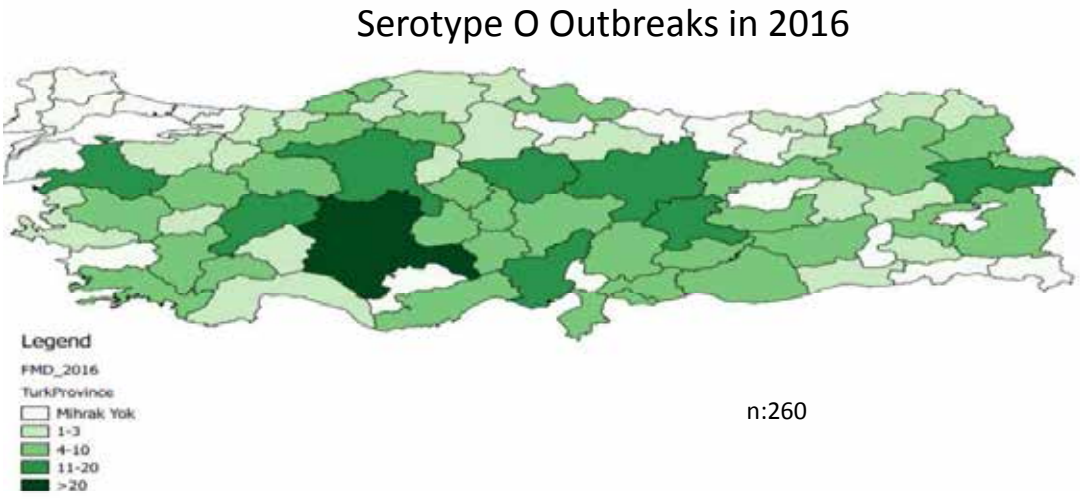
- There has been recorded currently decline number of outbreaks
- Mainly outbreaks caused due to FMDV serotype A
- Although there has been detected a new genetic sub group of GVII, SAM16, and identified antigenically distinct from vaccine strain of GVII, there has not been recorded any a new outbreak wave like GVII
- Affected animals in current outbreaks are limited in small portion of susceptible population.
- Therefore, it has been detected very low incidence in all outbreaks and also affected farms

Map distribution for outbreaks in 2017

n: O;22/A;67
Total(n):89

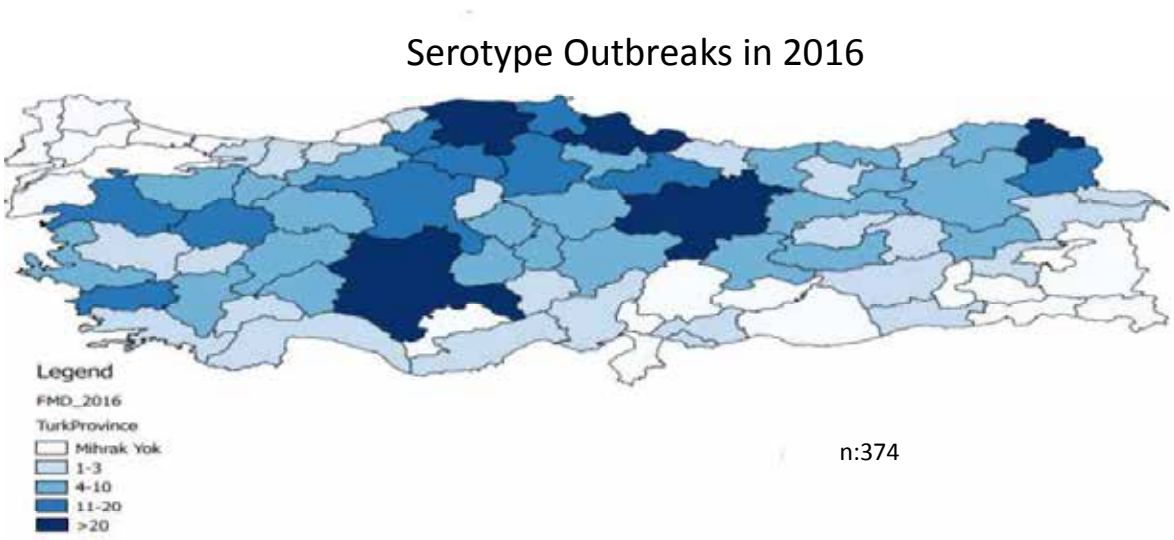


Map distribution of serotype O outbreaks in 2016



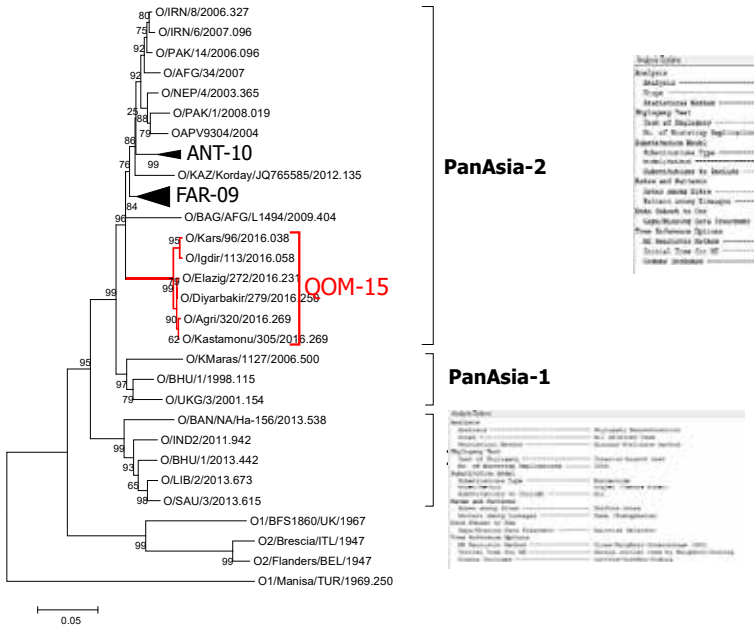
n:260

Map distribution of serotype A outbreaks in 2016

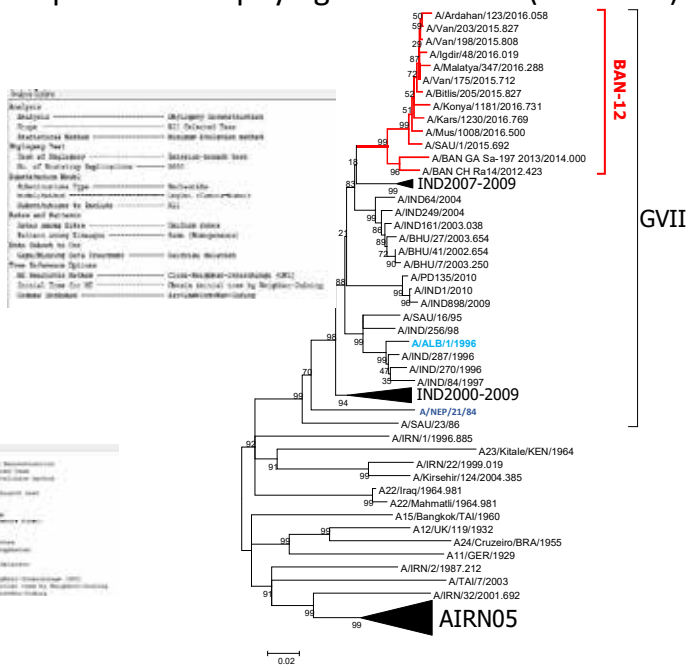


Evaluation spread Dynamics and monitoring vaccine suitability by Genetic Analysis

Representative phylogenetic tree: O



Representative phylogenetic tree: A (GVII^{BAN-12})



Summary of vaccine matching (antigenic characterisation by VNT):

	Vaccine strain		
	As1 Shamir	Asia1 TUR11	Asia1 TUR 14
As1 Sindh 08 (2015 isolate)	N	N	M

	Vaccine strain		
	O1 Manisa	OTUR07	OTUR14
O QOM-(2015 isolate)	N	M	N
O QOM-(2015 isolate)	N	M	N

	Vaccine strain
	GVII
A05 (2006 isolate)	N
A05 (SIS10 / 2011 isolate)	N
A05 (SIS10 / 2015 isolate)	N
GVII (BAN-12 / 2016 isolate)	M

New Aproach on National RBSP

National RBSP has been updated by new regionalization approach

GOAL OF THE STRATEGY

- To contribute to the development of the livestock sector by achieving OIE status of FMD free with vaccination by 2025
  - By regional progressive disease control approach, the strategy is consist of 30 component objectives

TURKEY -
RISK-BASED STRATEGIC PLAN
FOR
CONTROL OF FOOT-AND-MOUTH DISEASE

ACTIVITIES AND TACTICS

- To reduce/eliminate risk and gaps for each identified risk and gaps:
  - Initiated implementing of control activities

42nd General Session of EuFMD 20-21th March 2

RISK BASED CONTROL PROGRAM FOR WEST ANATOLIA

- **GOAL**: Reach PCP Stage 4 in 2019; and OIE FMD Free Status with vaccination in 2021
- ***MAIN COMPONENTS OF CONTROL PROGRAM:***
  - Continuing vaccination by risk assessment approach
    - Including booster vaccination for primo vaccinators
  - Risk based surveillance program
  - Monitoring movement: vaccination requirement (2X/6 m)/Check point
  - Regulation of animal movement form the other regions compliance with OIE Terrestrial Code: Quar./NSP testing ect.
  - Effective outbreak management/Biosecurity
  - Stamping out for DC
  - Enhance awareness for stakeholders
  - Increasing technical capacity
  - Effective monitoring and improvement of infrastructure

Accomplishment on RBSP

- *Central Epidemiology and Monitoring Unit (CEMU) actively started activities*
- Vaccination coverage improved; ranged with 93-99%
- Vaccination implemented based on risk assessment:
  - Preventive campaign vaccination :In Anatolia; twice a year for LR; In Thrace: : Twice a year for LR/once for SR
    - Early Spring: population assured protection before releasing grazing time
    - Late Summer: population assured protection before Kurban festival
  - Ring Vaccination to response outbreak in Surveillance zone of outbreak
  - Targeting vaccination for identified "Hotspot»
  - Small ruminant veccination where risk identified
  - Booster vaccination introduced in country wide
- Declining number of outbreaks with low incidence rate in per outbreak unit
- **Reconstructed TURKVET** with more functional and features
  - Animal Registration System
    - LR/SR registered into the system with ear-tag; initiated replacement of electronic ear-tag
    - Animal movement managed and monitored by the system
      - Regular movement report by province
  - Veterinary Information System (VIS)
    - Outbreak Management
    - Entering outbreak data all notifiable disease
    - Vaccination data
    - Sample Management System
- Improved outbreak management and biosecurity
- Animal movement control implemented with a new arroach

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Foot & Mouth Disease in Israel 2017

Tamir Goshen
Israeli Veterinary Field Services Director

Food and Agriculture Organization of the United Nations

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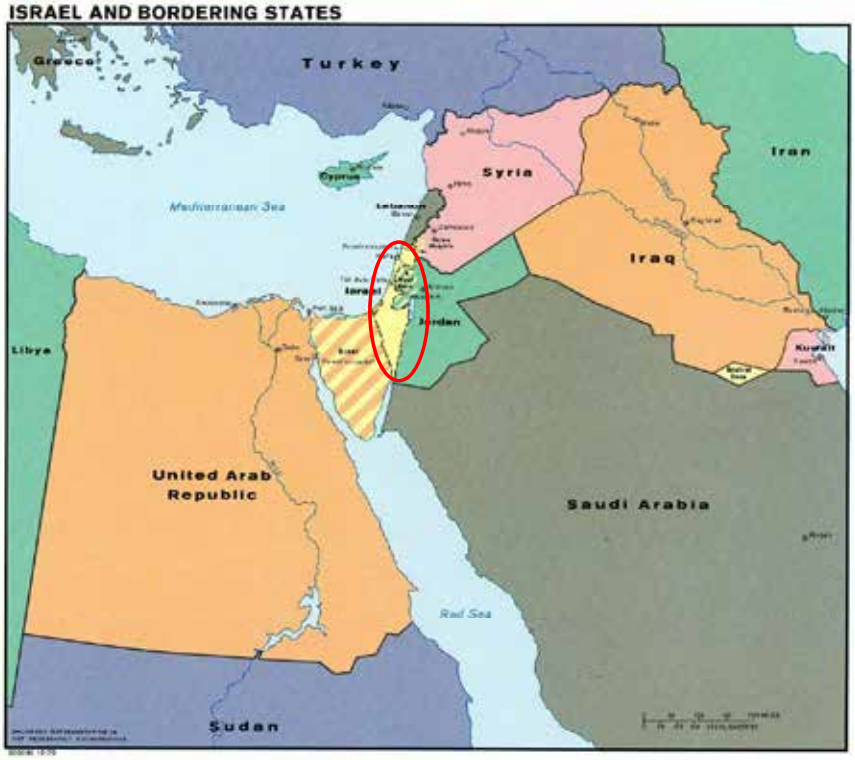
European Commission

ISRAEL AND BORDERING STATES



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Susceptible Livestock Population

- Dairy Cattle – 200,000 (cows + replacement)
- Beef- Pasture – 50,000 (cows)
- Beef – Feedlot – 300,000 (steers)
- Sheep – 500,000 (ewes)
- Goats – 100,000 (does)
- Pigs - 20,000 (sows)

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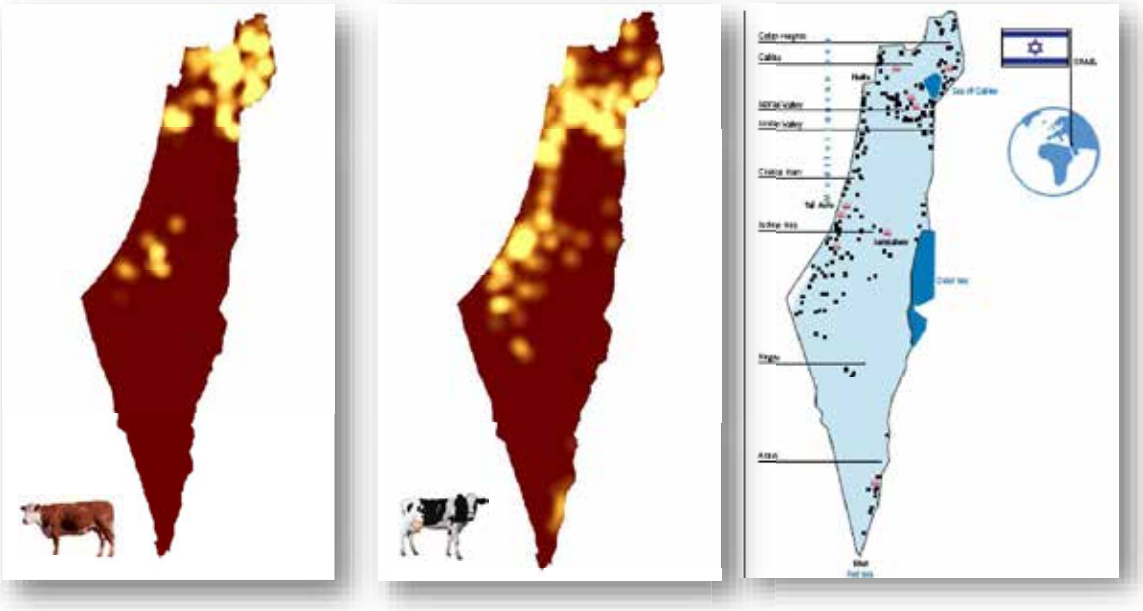
Livestock densities



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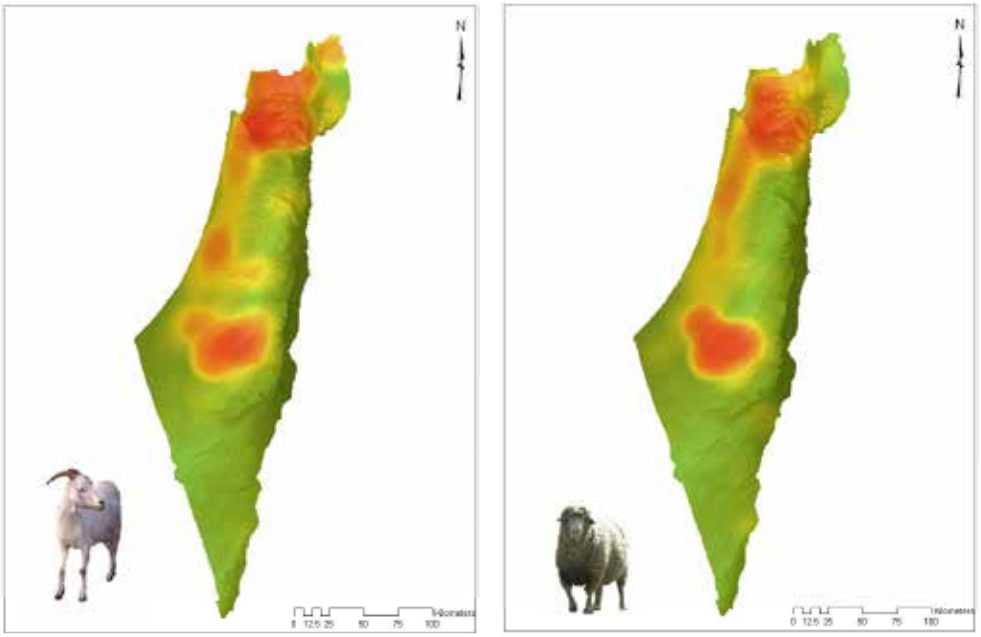
Livestock densities



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FMD Control

- Vaccine strains (Pool 3):
  - Type **O** contains antigens: Manisa, Geshur 85 (O4625), O–3039, O Panasia 2.
  - Type **A** contains antigens: A- 4165 + A Iran 2005.
  - Type **Asia1** contains antigen: Asia 1 Shamir. (cattle only)

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FMD control 2014-6

Animal	annual vaccination (average)
Cattle	707,158
Sheep & Goats	953,415

- Over all ~ 98.5% of registered herd were vaccinated in 2016.
- FMD vaccination is mandatory and done by the IVS.

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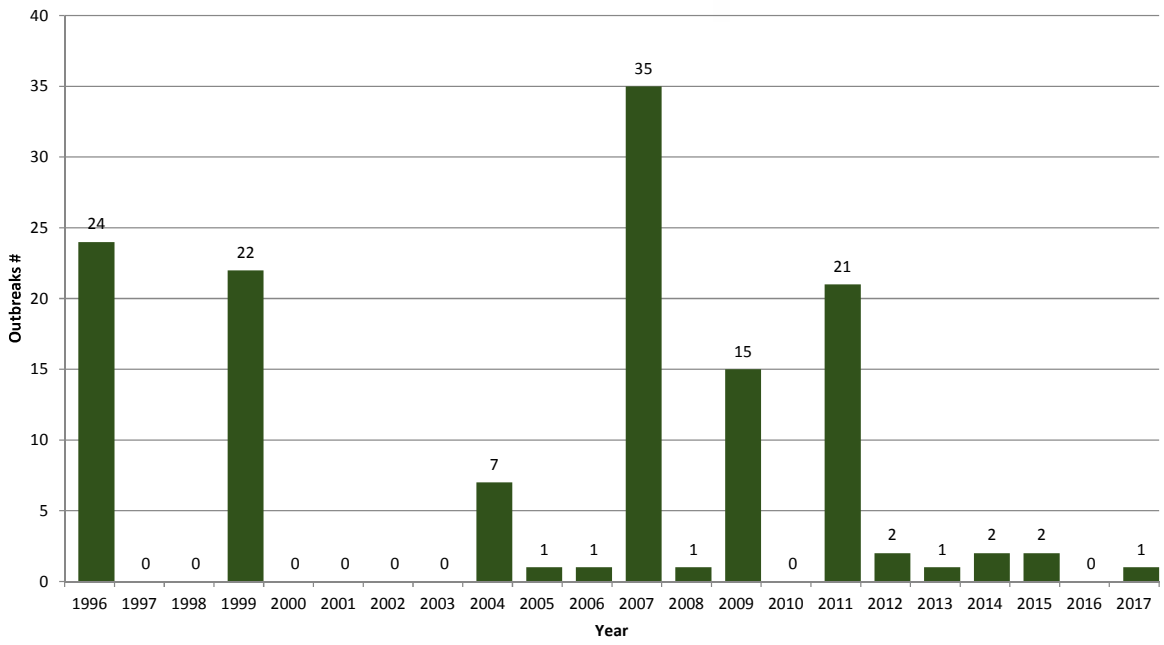
Outbreaks (1996-17)



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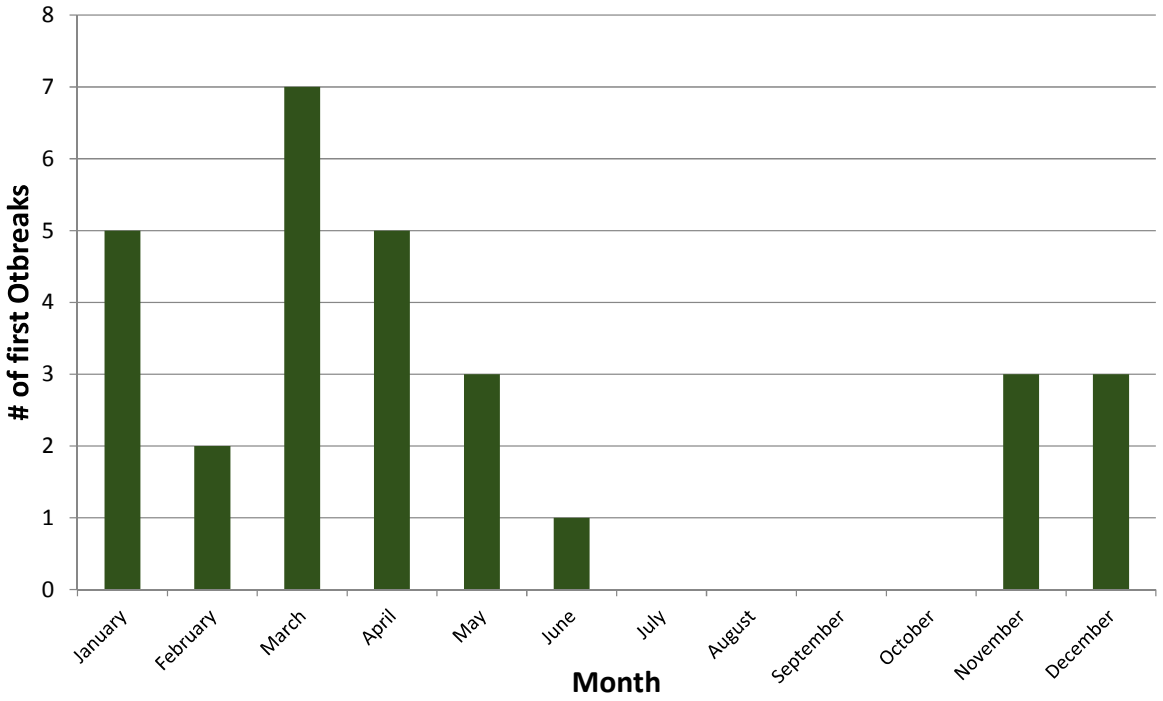
Outbreak by Index case Month (1974-2017)



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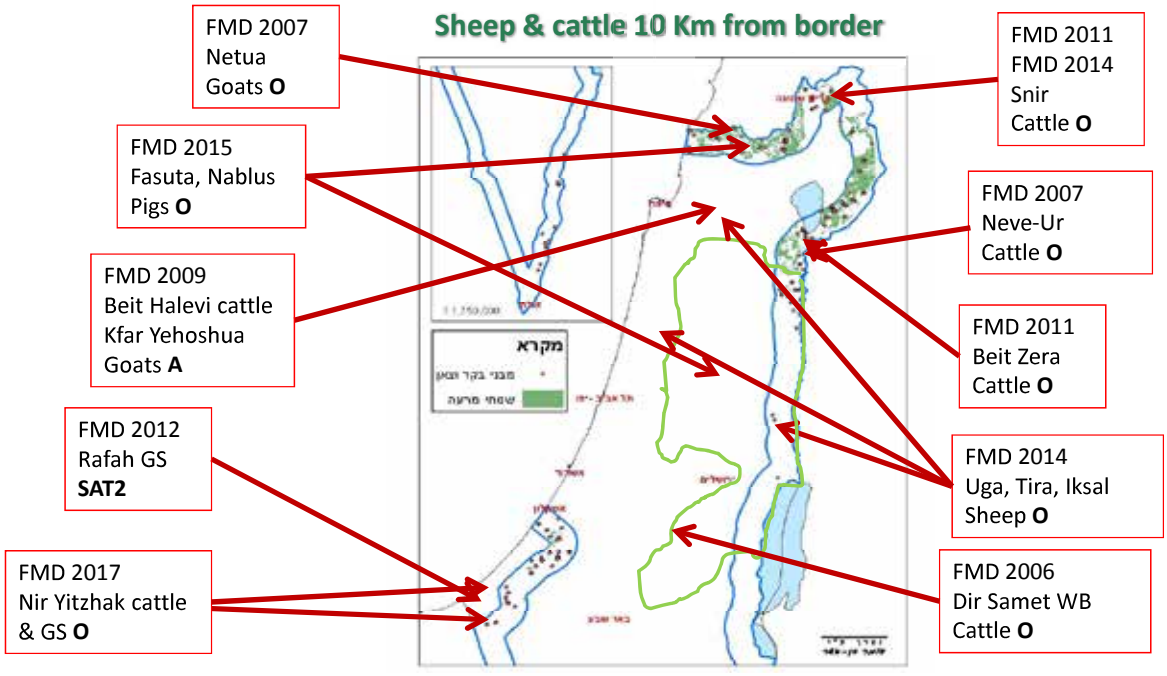
Historical Israeli FMD Outbreaks



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FMD Outbreak in Dairy Farm – Nir Yitzhak

- First major outbreak in a dairy farm in years.
- Israeli farms are vaccinated annually from October, young stock is vaccinated 3-5 m with booster 3 m later.

Nir Yitzhak:

- 775 cows & heifers.
- The cows were vaccinated 1 year beafore.
- Replacement heifers – at 2-4 m and boostered 3 m later.

Food and Agriculture Organization of the United Nations | eufmd | European Commission

Outbreak area

Farms in 10 km radius:

Holit – dairy farm.

Nir Oz- Cattle Feedlot.

Magen – Replacement dairy heifers .

Nave – sheep farm.

Pri Gan - sheep farm.

Talmei Yosef - sheep farm.

Eshcolot - sheep farm.

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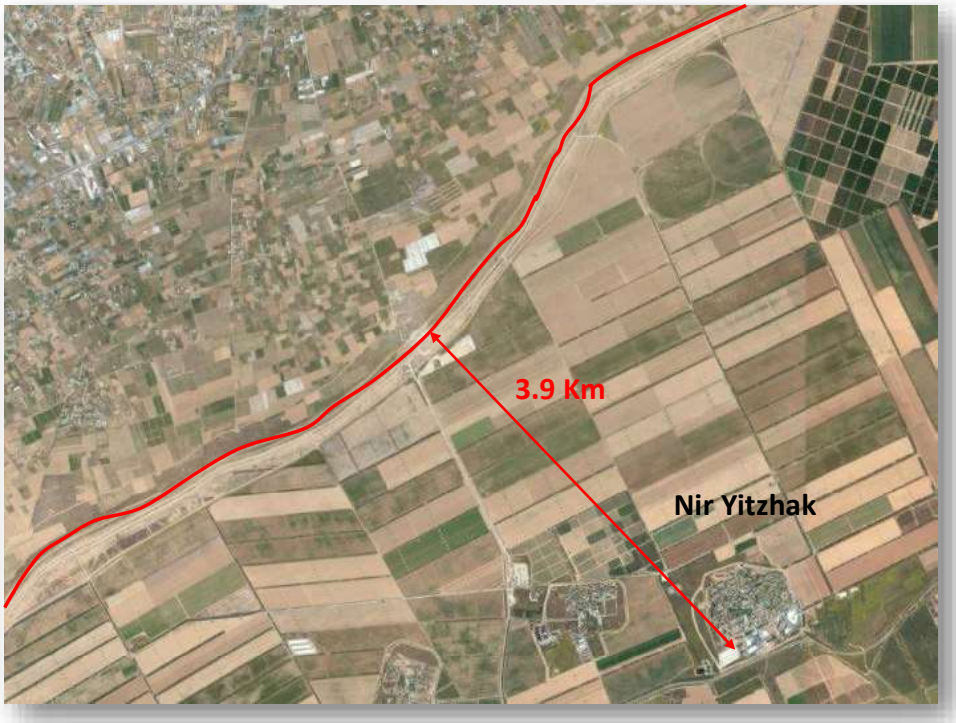
Nir Yitzhak



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Nir Yitzhak Dairy farm

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Nir Yitzhak Dairy farm

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Possible Incursion

- Air born.
- Nearby road (232).
- IDF border patrols.
- Other – wild animals; animal traders ect.

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Morbidity by group

Group	Age	# animals	# cases	Morbidity Rate
Hutches	0 – 2 m	41	4	9.8%
weaning	2 – 4 m	40	20	50%
Replacement	4 – 18 m	80	6	7.5%
Pregnant Heifers	18 m +	103	41	39.8%
1st Calf Heifers	2 years +	96	59	61.5%
2nd Lactation	3 years +	93	31	33.3%
3rd + lactation (B)	4 years +	90	34	37.8%
3rd + lactation (C)	4 years +	103	28	27.2%
Low producers (D)	mixed	44	18	40.9%
Dry cows	3 years +	45	1	2.2%
Close up	3 years +	40	11	27.5%
Overall		**775**	**253**	**32.6%**

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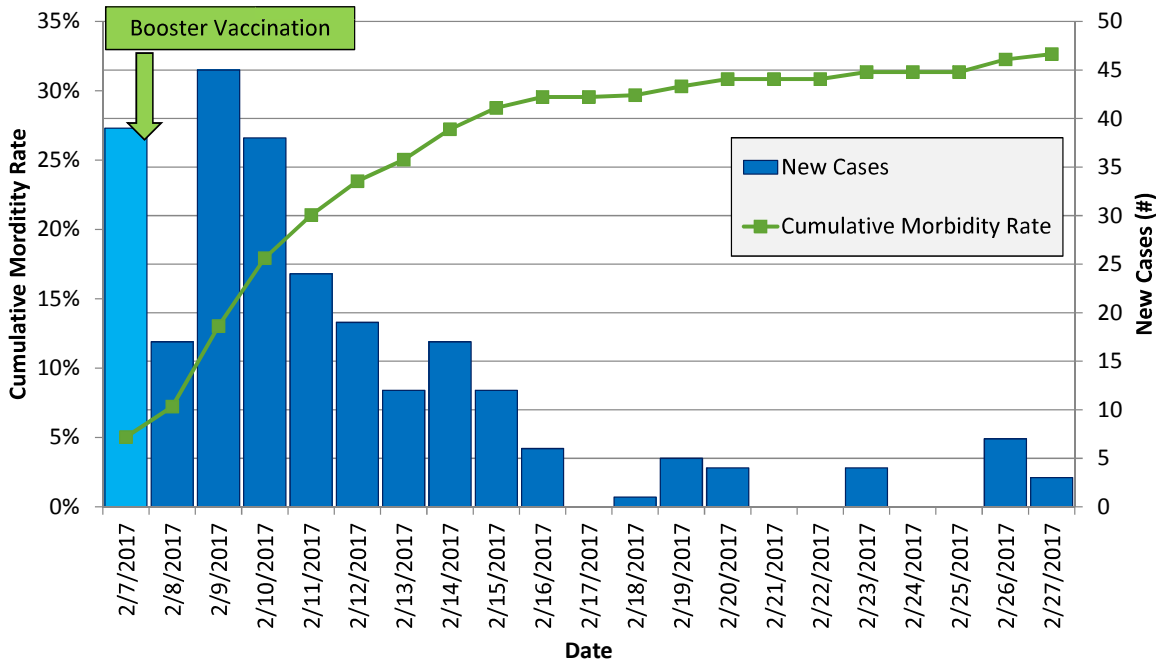
Epidemiological Curve



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Mortality

- 8 cows & 1 pregnant heifer.
- Deaths due to secondary infections, mainly mastitis and septic arthritis.
- No mortality in young calves or heifers.



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Indirect losses

- Milk production loss.
- Inability to sell cows and bull calves.
- Crowding.
- Diseased cows that healed and did not return to milk (w/o secondary infections; ~ 10 cows)

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KVI Virus typing

Outbreak Location	ELISA	RT-PCR	Vp1 Sequancing	Vaccine matching
Nir Yitzhak	Serotype O	Serotype O	Serotype O O/EA -3 Topotype ~90% identity to recent isolates in Egypt and Sudan	Unavailable
Gaza Strip	Serotype O	Serotype O	Serotype O O/EA -3 Topotype ~90% identity to recent isolates in Egypt and Sudan	Unavailable

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Pirbright genotyping

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Pirbright genotyping

Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/Gaza/PAT/2017* (KVI)	PAT17-AA	538	537	0	99.81	0.19	EA-3	unnamed
2	O/SUD/4/2013	SUD13-04	564	546	0	96.81	3.19	EA-3	unnamed
3	O/EGY/10/2016	EGY16-10	564	538	0	95.39	4.61	EA-3	unnamed
4	O/EGY/13/2015	EGY15-13	564	538	0	95.39	4.61	EA-3	unnamed
5	O/EGY/14/2016	EGY16-14	564	538	0	95.39	4.61	EA-3	unnamed
6	O/EGY/9/2016	EGY16-09	564	538	0	95.39	4.61	EA-3	unnamed
7	O/Giza 2/Egy/2016 (KX447132)	EGY16-AL	564	538	0	95.39	4.61	EA-3	unnamed
8	O/Ismailia 11/Egy/2016 (KX447138)	EGY16-AR	564	538	0	95.39	4.61	EA-3	unnamed
9	O/EGY/11/2016	EGY16-11	564	537	0	95.21	4.79	EA-3	unnamed
10	O/EGY/14/2015	EGY15-14	564	537	0	95.21	4.79	EA-3	unnamed

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Conclusions

- Prioritization of Vaccination order (October-November):
  - 10 Km from border.
  - 10 km from exporting dairy factories.
- Exportation of cattle vaccinated twice to the GS.
- Vaccine efficacy - poor matching but efficient vaccinaton?

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Collaboration with the PA

- Periodical meetings and coordination.
- Information exchange.
- Diagnosis in the KVI.
- FAO visits and workshops.

Future challenges

- Continued collaboration with the PA in the current format:
  - Joined workshops.
  - Active surveillance.

- Local, regional importance.
- Importance to the EU.

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The FMD situation in Algeria

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Before the FMD outbreak

- **Since the last outbreaks enregistred in Algeria, two annual vaccination were done;**
- **Some problems were registered in the prevention and control program due to the lack of vaccine and the vaccination planned in the second half of 2016 was postponed to 2017. The laboratories did not bid for absence of bivalent vaccine available;**
- **Vaccin available monovalent O;**
- **costs of the vaccination are under the fonds FPZPP;**
- **A field study on "vaccine effectiveness", proposed in July 2016 to Algeria, Morocco, and Tunisia in order to produce relevant information for improving the level of FMD control and preparedness against any reoccurrence of outbreaks was ongoing.**
- **A new simultaneous sero-surveillance was planned to assess whether there has been ongoing transmission of FMD virus in the small ruminant population in Algeria Morocco and Tunisia.**

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First Serotype A outbreak in Algeria

- Starting on the 24th of March, 7 cattle were infected on a herd of 12 animals;
- Immediately measures were applied in order to control this new outbreak in the country and vaccination against O.
- Serotype A was detected by Central Veterinary Laboratory in the collected samples with ELISA RT/PCR.
- OIE was notified on 31/03/2017

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Measures in place

- The information was given to the 48 Wilaya of the country;
- The Emergency team in place;
- Mobilisation of all the veterinarian staff and private vets ;
- Reporting of any suspicion by the most rapid means and immediate application of the measures laid down by the inter-ministerial decree on foot-and-mouth disease;
- Suspension of al the import of animals and animal Product to Algeria;
- Implication of the security services to stop any animal movement
- Movement control of animal in place and reglemented to only the slaughter houses and authorized only with sanitary certificate ;
- Press release addressed to local populations and livestock breeders;
- Use of the media for communication.

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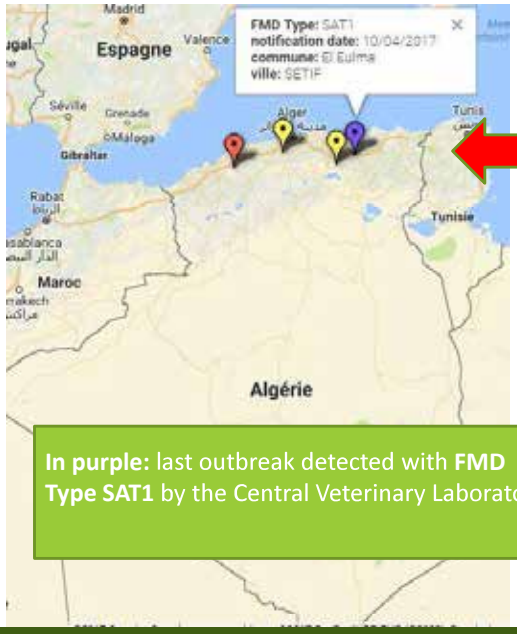

In purple: last outbreak detected with **FMD Type SAT1** by the Central Veterinary Laboratory

In yellow: two outbreak detected with **FMD Type A** both notified on 06/04/2017

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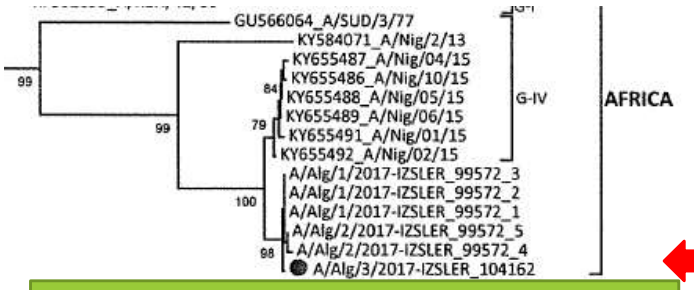
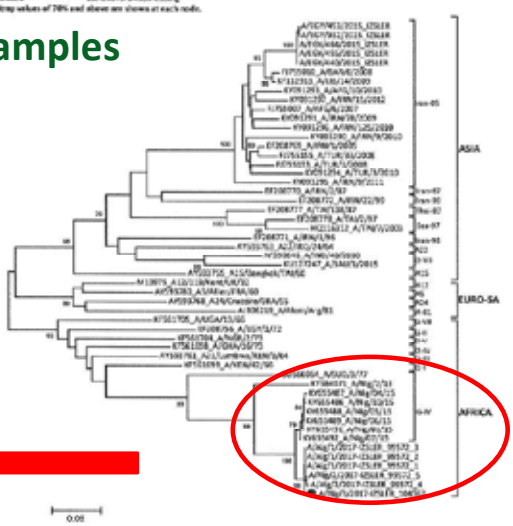
Results FMDV detection and serotyping samples by IZSLER





These results reported samples as negative for SAT1, and positive for **serotype A** genotype IV at the Istituto Zooprofilattico Sperimentale of Brescia

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We thank the laboratory for their speed and precision in the results transmitted

ISTITUTO ZOOPROFILATTICO SPERIMENTALE
DELLA LOMBARDIA E DELL'EMILIA ROMAGNA
Via Bianchi 9 - 25124 Brescia

CENTRO NAZIONALE DI REFERENZA PER LE MALATTIE VESCICOLARI (CERVES)
Tel. 030-2290310 Fax 030-2290369

OIE/ FAO REFERENCE LABORATORY FOR FOOT-AND-MOUTH DISEASE AND FOR SWINE VESICULAR DISEASE

Brescia, 13/04/2017

FMD Detection and serotyping report
FMD Genotyping report

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We thank EuFMD

Knowledge Bank, Job Aids

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- Actually these are the outbreak registered in the country, but the risk is :
- The unknown origin of the incursion;
- The unclear situation in the neighboring countries;
- Lack of the vaccine in Algeria.

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Conclusion

- The Measures are being applied in order to control this new serotype (A) in the country since an effective vaccines for this serotype is not available in the country yet, while a vaccination campaign against serotype O is already ongoing.
- Launch of an emergency procedure for the acquisition of vaccine;
- Algeria needs to access the vaccine as soon as possible to control the disease.

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Appendix 13
Vaccine and Antigen Bank holdings

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Report on the status of FMD antigen and vaccine banks in the European Neighbourhood

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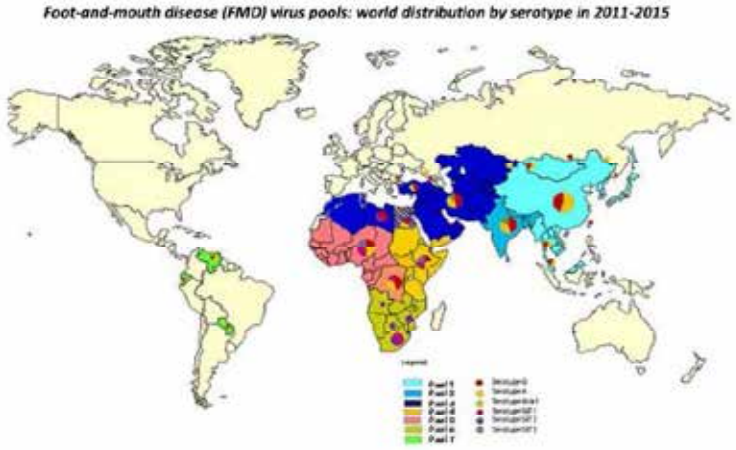
PRAGMATIST: PRioritisation of AntiGen MAnagemenT with International Surveillance Tool

- EuFMD and WRL collaboration
- Assist risk managers make decisions about the FMD vaccines that they purchase/maintain, based on *current risks* to countries covered by the bank



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PRAGMATIST: Antigen Priority tool

- Excel spreadsheet
- 2 distinct considerations:
  1. "Antigen risk score": which strains pose greatest threat of incursion (left side) and
  2. "Coverage score": effectiveness of available vaccines to protect against each virus strain (right side)

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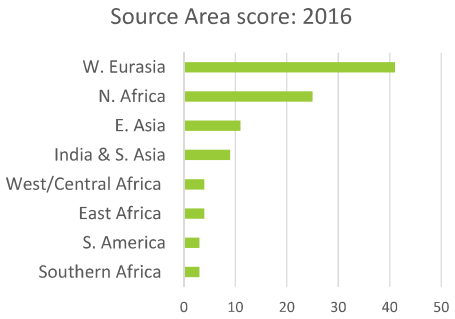
Antigen risk score

Which source areas pose greatest risk?

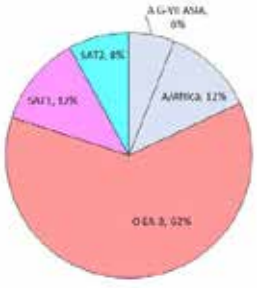
➢ Expert opinion:



Which virus strains are circulating in the source areas?

- strains found if 100 animals infected in the previous year were randomly selected

West Eurasia



North Africa

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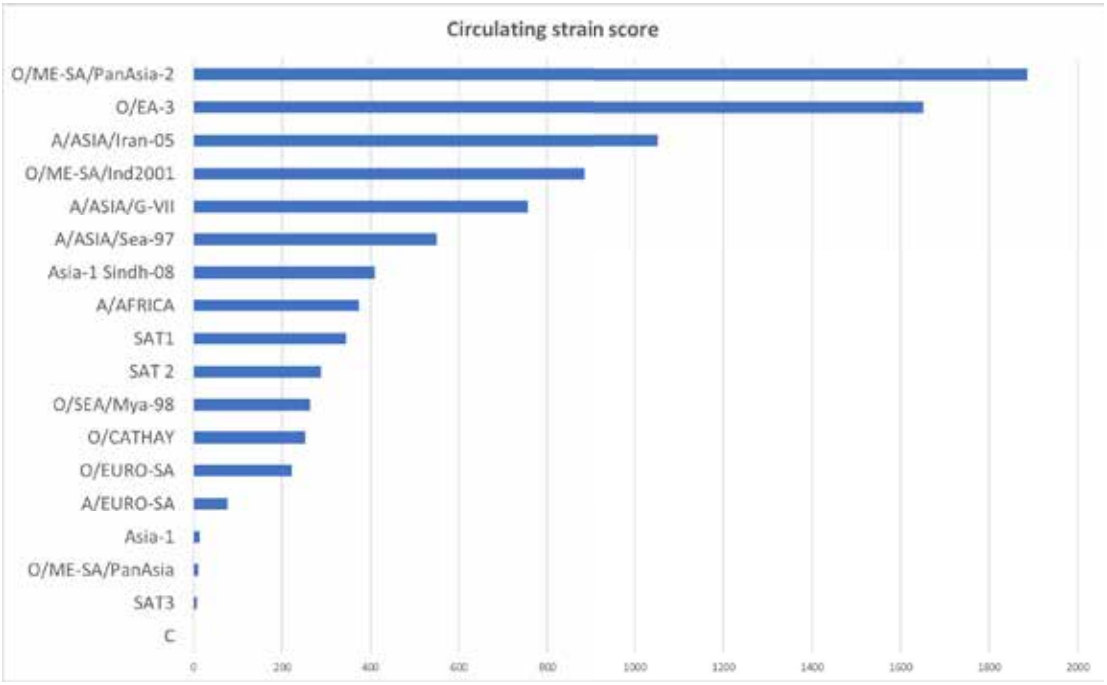
Circulating strain risk score



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Coverage score

Percentage of isolates of that particular strain that match the vaccine in question (WRL data: 2011-2016)

SEROTYPE O

Circulating Strain	Highest match score	O1-Campos	O1-Manisa	O-3039	O-BFS/1860	O-SKR 2010	O-SKR/7/2010	O-TAW/98	O-TUR/5/2009
O/ME-SA/PanAsia-2	1	1	0.6	1			1	1	1
O/ME-SA/PanAsia	1	0.8	0.4	1			1	1	1
O/SEA/Mya-98	1	0.4	0.2	0.8			1	0.6	1
O/ME-SA/Ind2001	1		0.4	1			1	0.8	1
O/EA-3	1	0.6	0.4	0.6					1
O/EURO-SA	1	1							
O/CATHAY	0.6	0.4	0.2	0.6			0	0.6	0.4

Vaccine Antigen coverage	
	no information
0	no matching isolates
0.2	*1-20% isolates match*
0.4	*21-40% isolates match*
0.6	*41-60% isolates match*
0.8	*61-80% isolates match*
1	*81-100% isolates match*

In vivo data suggests at least a partial match

Field data suggests that there is potential protection

Fewer than 5 samples available for vaccine matching

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Coverage score

Percentage of isolates of that particular strain that match the vaccine in question (WRL data: 2011-2016)

Vaccine Antigen coverage	
	no information
0	no matching isolates
0.2	*1-20% isolates match*
0.4	*21-40% isolates match*
0.6	*41-60% isolates match*
0.8	*61-80% isolates match*
1	*81-100% isolates match*

In vivo data suggests at least a partial match

Field data suggests that there is potential protection

Fewer than 5 samples available for vaccine matching

SEROTYPE A

Circulating Strain	Highest match score	A22 Iraq	A-Iran-05	A-Malaysai 97	A-SAU 95	A-TUR/2006
A/ASIA/Sea-97	**0.6**	0.6	0.6	0.4		0.4
A/ASIA/Iran-05	**0.6**	0.4	0.4	0.2		0.6
A/ASIA/G-VII	**0**	0	0	0	0	0
A/AFRICA	**0.6**	0.4	0.4			0.6
A/EURO-SA	**0**					

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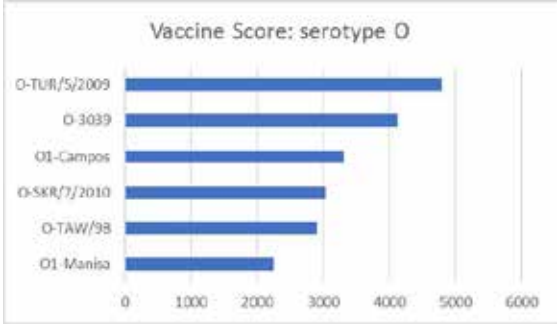
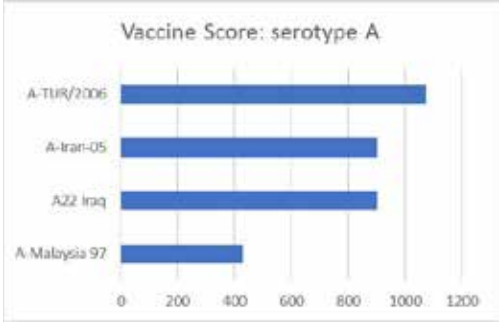
Putting it all together: vaccine score

High scores for vaccines that cover well against :

- Strains circulating in many areas *and/or*
- Strains in most important 'risky' areas *and/or*
- Several different strains: *need to consider serotypes separately*





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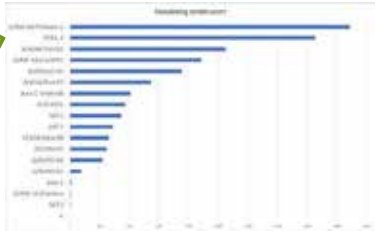
PRAGMATIST: APPLICATION

	Strain	Vaccine	Coverage score
1	O/PanAsia-2	**O-TUR/5/2009,** O-SKR/7/2010, O-TAW/98, O1-Campos	1
2	O/EA-3	O-TUR/5/2009	1
3	A/Iran-05	A-TUR/2006	0.6
4	O/Ind2001	**O-TUR/5/2009** O-SKR/7/2010, O-3039	1
5	A/G-VII	N/A	0
6	A/Sea-97	A22 Iraq, A-Iran-05	0.6
7	Asia-1 Sindh-08	Asia-1 Shamir	0.2
8	A/Africa	A-TUR/2006	0.6
9	SAT1	SAT-105 Rho 12/78	0.8
10	SAT2	SAT2 Eritrea 3218	0.8



Vaccines for top 10 strains

1. O-TUR/5/2009
2. A-TUR/2006
3. A22 Iraq/A-Iran05
4. Asia-1 Shamir
5. SAT-105 Rho 12/78
6. SAT2 Eritrea 3218

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PRAGMATIST: APPLICATION

Top vaccines by serotype

1. **O**: O-TUR/5/2009
2. **A**: A-TUR/2006
3. **Asia1**: Shamir
4. **SAT1**: 105 Rho 12/78
5. **SAT2**: Eritrea 3218
6. **SAT3**: Zim 2/83

Vaccines for top 10 strains

1. O-TUR/5/2009
2. A-TUR/2006
3. A22 Iraq/A-Iran05
4. Asia-1 Shamir
5. SAT-105 Rho 12/78
6. SAT2 Eritrea 3218

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PRAGMATIST: APPLICATION

- Transparent, evidence based
- Framework to assess relevant information
- Intended as decision-support tool, in conjunction with other considerations/sources of information
  - Breadth of coverage
  - Emerging risks
  - Virus characteristics

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Commission

PRAGMATIST: APPLICATION

- Data gaps
  - Filled with assumptions, expert opinion
  - Framework for surveillance to engage international FMD lab/epi networks → inclusion of antigen prevalence data in global monthly report
- Highlight important antigens that do not have a good vaccine available
- Future:
  - Identify optimal vaccine combinations
  - Encourage/facilitate application use

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Summary of findings

- All 38 EuFMD MS and 3 North African countries surveyed – 59% overall response rate
- All WRL-FMD **high priority strains** (2016) held in one or more banks
- Approximately **37, 890, 000 doses** across **6 serotypes** and **18 antigens** are held (**NB:** Excluding EU bank)
- No significant change in the cumulative total of antigen stocks held since 2015.
- **91%** of respondent countries **include emergency vaccination** in their FMD contingency plans

Who holds FMD antigen?

- **8 EuFMD Member States** (5 EU MS; 3 non-EU MS) indicated that they have:
- A national antigen bank (n=7) – **Belgium, France, Germany, Georgia, Hungary, Israel, Switzerland; OR**
- Another arrangement (e.g. commercial contract with a third party supplier) (n=6) – **Belgium, France, Germany, Hungary, Netherlands, Switzerland; OR**
- Both (n=5) – **Belgium, France, Germany, Hungary, Switzerland**

Access to FMD antigen for emergency use	EuFMD MS		Total
	EU MS	Non-EU MS	
National Antigen Bank	4	3	7
Commercial arrangement	5	1	6
Both	4	1	5

WRL-FMD HIGH PRIORITY strains held by EuFMD MS

Antigen:	Total held:
A Iran 05	5.75 million
A11 Iraq	1.5 million
A24 Cruzeiro	3.2 million
A/ASIA/G-VII	200 K
ASIA 1 Shamir	4.85 million
O-3039	2.6 million
O Panasia 2	1.8 million
O1 Manisa	5.59 million
O1 BFS 1860	1.7 million
SAT2 Eritrea / SAT2 Saudi Arabia	5.35 million

Strains held by EuFMD MS (contd.).

Antigen:	Total held:
A22 Iraq	2.55 million
A Malaysia 97	1.5 million
A Saudi Arabia 23/86	600 K
A Iran 87	100 K
A Iran 96	100 K
SAT 1 S.Africa	100 K
SAT 2 E.Africa	100 K
SAT 2 Zimbabwe	100 K

How do current EuFMD MS holdings compare with PRAGMATIST results?

Vaccines for top 10 high risk strains:	Total number of doses held by EuFMD MS
O-TUR/5/2009	0
A-TUR/2006	0
A22 Iraq/A-Iran05	8.3 million
Asia-1 Shamir	4.85 million
SAT1 S. Africa	100 K
SAT2 Eritrea 3218	5.35 million

How do current EuFMD MS holdings compare with PRAGMATIST results?

Top vaccines by serotype	Total number of doses held by EuFMD MS
O: O-TUR/5/2009	0
A: A-TUR/2006	0
Asia1: Shamir	4.85 million
SAT1 S.Africa	100 K
SAT2: Eritrea 3218	5.35 million
SAT3: Zim 2/83	0

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Most significant **constraints on operational capacity** to rapidly implement an emergency vaccination plan:

1. Sourcing a **suitable human resource pool**
2. **Management of vaccinated animals**, including post-vaccination monitoring and surveillance
3. Appropriate **training** and where required, legislative appointment of **vaccinators**.

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Vaccination Discussion Network

- **86%** of respondent countries indicated continued interest in, or joining **vaccination network.**
- **Priority discussion topics include:**

1. **Decision making** on vaccination strategies
2. **Vaccinated animal management** policies
3. **Risk-based selection of priority antigens** (including, e.g. implementation of the Prioritization of antigen management with international surveillance [**PRAGMATIST**] tool)

Conclusions

- Investment in antigen banks in Europe remain significant: **37, 890, 000 doses, 6 serotypes, 18 antigens**
- The **PRAGMATIST tool** developed by EuFMD provides a transparent, evidence-based framework to evaluate available vaccine antigens that can be adapted according to the region at risk.
- **Contingency plans** and **operational capacity** to implement **emergency vaccination** is a critical component of FMD emergency preparedness.

Conclusions

- Participation in vaccination network will benefit EuFMD MS and countries in the European neighbourhood
- Practical & economic benefit to improved collaboration between vaccine banks, including for inter-regional co-operation on emergency antigen/vaccine stock supply
- Shared responsibility / global coordination for non-circulating, medium/low risk serotypes/strains
- Greater European involvement in International Vaccine Strategic Reserves Network?

Appendix 14
Report of the Standing Technical Committee

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Report of the Standing Technical Committee and its working groups

Eoin Ryan
Chair, Standing Technical Committee

Central Veterinary Research Laboratory, Ireland

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The STC: how does it help EuFMD CVOs?

- Identify issues of strategic concern
- Explore options to solve problems
- Allocate research funds for developing applied, real-world solutions through the EuFMD Fund for Applied Research
- Support experts in specific areas to work together through networks and working groups
- Goal: help EuFMD CVOs through improved understanding of problems and tools to address them

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Vaccination to live working group

- Sub-committee on vaccination to live met in Paris, 8th June 2016
- Following on from the work of Paton et al. presented at Cavtat Open Session 2014
- Sub-committee: *Stephan Zientara (Chair), Donald King, Labib Bakkali Kassimi, Emiliana Brocchi (not pictured), Eoin Ryan, Kris de Clercq*

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Key points

Important to tease out the constraints impeding the adoption of vaccination to live as a strategy and address them where possible

Can we make the decision process easier for CVOs?

A 3 month waiting period with a high level of surveillance and vaccination implementation may be as good (or better!) than a six month waiting period

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Outputs of working group

- Position paper presented to ExCom
- Presentation at Cascais OS
- Basis for workshop on implementation of vaccination to live policies, held in Ireland March 2017 (led by M Hovari, Secretariat)
- Workshop led to draft guidelines on developing an emergency vaccination operational plan (H Camphor & M De La Puente, Secretariat)

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Diagnostic bank working group

- Followed discussions at last GS
- Position paper presented to ExCom
- Developed with Dr Herzog; now part of workplan for Balkan area

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SCRPD and STC closed session meeting, Cascais Oct 2017

- Discussion themes:
  - ➢ Review of FMD research priorities
  - ➢ Development of EuFMD work programme

Outputs presented to ExCom

- ➢ Discussions informed the basis of the 4th call for projects under the fund for applied research
- ➢ Lack of dedicated research funds for FMD, other than EuFMD FAR
- ➢ Partnership arrangements involving public and private bodies working to a common goal may hold promise (e.g. between Nigerian Vom FMD lab, CODA-CERVA Belgium and MSD)
- ➢ Risk to Europe posed by A/Asia/GVII lineage highlighted
- ➢ Issues with lack of transparency for disease information relevant to PCP country assessents
- ➢ Value of network-based training as per EuFMD workplan recognised

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Open Session, Cascais Portugal, October 2016

- 269 registrations
- 139 abstracts
- Online conference: 320 participants registered (in addition to 269 above); presentations made available, discussion forums on each session
- GFRA parallel session
- Innovation clusters on day 3: networking/discussion sessions, each with a practical theme and a focus on interactivity

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Presentation recordings available on e-learning site: used as a reference resource for many other EuFMD online courses

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Some key messages from the Open Session

- Role which private sector can play in emergency preparedness and business continuity planning
- Allocations of costs and responsibilities for disease prevention & control
- Constraints to vaccination implementation: logistics, decision support for antigen selection, diagnostic support capacity, key decision points
- Advances in understanding of endemic virus circulation through WGS
- Risk based approaches to early disease detection
- Stakeholder attitudes to adopting disease control measures in endemic areas
- Strategies for vaccination and post-vaccination monitoring in endemic settings
- Innovations in diagnostics and vaccine development
- Knowledge exchange and training strategies for aiding global FMD control

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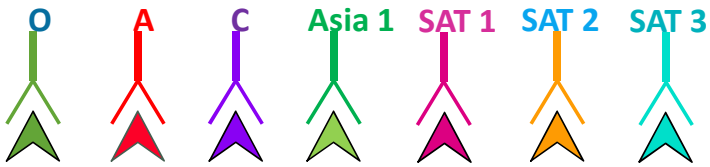
FMD Research: an area of strategic concern

- No dedicated research fund for FMD – other than the EuFMD Fund for Applied Research
- Impact on fundamental/basic FMD research

- Best use of limited FAR funds is to support development of applied research and tools to address specific needs facing EuFMD members
- Field testing of new diagnostics can be facilitated through links with EuFMD field work



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Issue: how to maximise the effectiveness of our limited funds for research?

- FAR receives more high quality grant applications than can be funded
- Awareness of other funding programmes: Keith Sumption is FAO coordination point for STAR-IDAZ research funding consortium

- Key issues identified by STC and SCRPD may also be of concern to other funders
- EuFMD field activities can offer a cost-effective way to test new technology or epidemiological hypotheses in endemic settings

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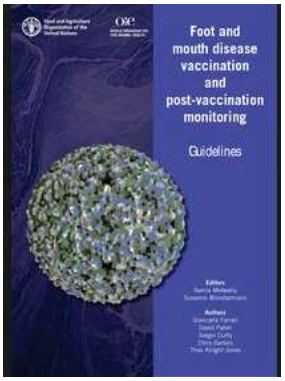
Project on methods for evaluating vaccine effectiveness

- How to evaluate the effectiveness of vaccines: a concern for EuFMD activities and for global FMD control
- Substantial work done by FAO/OIE working group
- USA (via Institute for Infectious Diseases, Texas A&M) funding a study design to evaluate the field efficacy of novel FMD vaccine; led by Dr Nick Lyons (Pirbright and EuFMD) and Prof Eyal Klement (Koret School of Veterinary Medicine, Israel); expert consultation workshop to be held in FAO HQ in June
- Example of how EuFMD can support research into critical areas for policy makers through a cooperative approach



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Making the best use of opportunities in the field

- EuFMD field activities present an opportunity for new technologies to be tested in real-world outbreak settings

- Real-time training in particular allows the findings from new technologies to be linked to the local disease investigations carried out by the team

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Preclinical detection of FMDV

funded by Department for Environment Food & Rural Affairs

- During transmission experiments at Pirbright we can detect FMDV in:
  - nasal and oral swabs
  - environmental samples
  - air samples

- Advantages of these samples:
  - non-invasive
  - quick and easy to collect
  - can be positive before clinical signs appear

Testing the methods in the field

funded by Department for Environment Food & Rural Affairs

- Moving environmental sampling work from the lab to the field

- Visit to Nepal in November 2016
  - collaboration with EuFMD
  - in association with Australia/New Zealand-funded real-time training courses

Environmental sampling

funded by Department for Environment Food & Rural Affairs

- During visit went to 12 farms:
  - also one milk collection point and Kathmandu goat market
- Positive environmental samples taken from:
  - all clinically-affected farms
  - one (out of two) preclinical farms
  - milk collection point
  - goat market

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Fund for Applied Research – third round successes

- FMD impact calculator (J Rushton, RVC)
- Improved quality assurance of FMD vaccines (Seago/Harmsen, Pirbright and Lelystad)

Investigating the integrity of stock FMD vaccine being considered for use in Algeria

Eva Perez[1], Nicholas Lyons[1,2], Karima Ouali[3], Mohamed Slama[3], Valeria Mioulet[1], Michiel Harmsen[4], Bryan Charleston[1], Keith Sumption[2] and Julian Seago[1,*]

Introduction

Foot-and-mouth disease virus (FMDV) is highly contagious and infects cloven-hoofed domestic livestock causing foot-and-mouth disease (FMD) and severe economic impact. Current FMD vaccines are made from chemically inactivated virus and need to contain intact viral capsids for maximum efficacy. FMDV exists as seven distinct serotypes with numerous subtypes within each serotype dictating the requirement to match vaccine strains to those circulating in the field. In addition FMDV, particularly the O and South African Territories (SAT) serotypes, are thermally unstable and the viral capsid readily dissociates into non-immunogenic pentameric subunits which can compromise the effectiveness of FMD vaccines.

FMDV-susceptible livestock in Algeria mainly concerns sheep, goats and cattle; in 2005 their respective numbers were 18.7, 3.2 and 1.16 million (FAO, 2006). Cattle are generally limited to the north of the country, whilst sheep and goat are predominantly raised in the steppe region. This study investigated the integrity of a stock sample of FMD vaccine, with an expired shelf life, that was being considered for use in Algeria. The work described was performed in collaboration between the European Commission for the Control of Foot-and-Mouth Disease (EUFMD), The Pirbright Institute and the Algerian Veterinary Services.

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FAR funded project success:

Lateral Flow Devices: a game changer for sample transport?

The problem: transporting FMD samples from endemic countries to reference labs is expensive and complex.

The opportunity: Work by ANSES (funded by the EuFMD FAR) and by Pirbright has shown that viral genome can be recovered from used LFDs, while any infectious virus can be inactivated.

Could this be a way to transport inactivated samples cheaply & safely to obtain vital information to aid FMD control and risk management?

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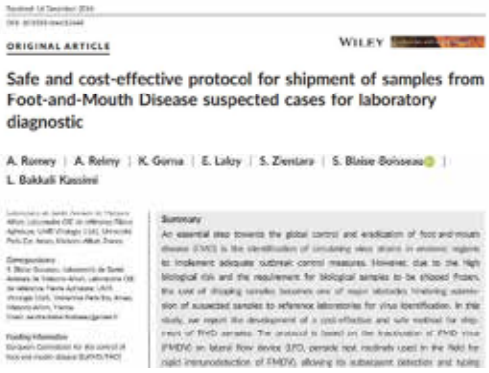
Outcomes of this FAR-funded project

- Facilitate detailed analysis of far more samples from areas where FMD poses a threat to EuFMD states
- More disease risk intelligence
- Cheaper
- Logistically easier



ORIGINAL ARTICLE

WILEY

Safe and cost-effective protocol for shipment of samples from Foot-and-Mouth Disease suspected cases for laboratory diagnostic

A. Romey | A. Relmy | K. Gorna | E. Lelay | S. Zientara | S. Blaise-Boisseau | L. Bakkali Kassimi

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Fund for Applied Research 4th call for projects

- Call themes based on STC discussions and outcomes of Open Session innovation cluster discussions
- Six themes across the three pillars
- Call issued on 18th February

- 12 applications received; deadline March 17th
- Intention is to have decision on funding made shortly

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FAR 4th call: themes

Theme 1: Tools to assist modelling: focus on estimating confidence in disease freedom using post-outbreak surveillance in vaccinated populations

Theme 2: Impact calculators: extending these to estimate impacts of vaccination-to-live scenarios and business continuity planning

Theme 3: Tools to manage FMD in wildlife: issues highlighted by the requirement to prove freedom from disease of wildlife

Theme 4: Methodologies for rapid evaluation of vaccine stability.

Theme 5: Optimising the use of bulk tank milk for FMD surveillance

Theme 6: Testing of biosafe transport methods for transport of FMDV RNA to international reference centres

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Areas of strategic concern identified by STC

- Risks posed by long-range spread of FMDV (discussed by Dr King of WRL Pirbright)
- Need for pan-European disease spread modelling
- Benefits of coordination on contingency planning
- Need for bio-risk management expertise to revise laboratory standards, assist biorisk managers and assess new sample testing and transport methods

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Launch of the Bio Risk Management Network

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EuFMD BRM Network

- Launched at the Open Session as part of the dedicated BRM innovation cluster session
- First webinar held on 24th January; very impressive level of participation from those involved in BRM in labs across Europe
- Many issues identified for follow up discussions, high level of interest
- Intention is to hold regular webinars, supported by discussion forum and specific training where needs are identified

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Thank you – any questions?

The Standing Technical Committee 2015-17:

Stephan Zientara

Yanko Ivanov

Karin Schwabenbauer

Eoin Ryan

Thanks to Keith, Nadia, Mark, Jenny and the EuFMD team

Thanks also to the working group members and BRM group members especially Kathrin Summermatter

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Appendix 15
Update on the status of PCP-FMD guidelines

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Progressive Control Pathway for FMD Guideline Update

EuFMD

The EuFMD Constitution (2015):
ARTICLE II Obligations of Members. For Members not recognised by the OIE as having the status of freedom from foot-and-mouth disease, except where the status has been temporarily suspended, there should be in place a **national plan for the progressive control of the disease**

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Background

- First proposed at the EuFMD Vienna ExCom in December 2008 (Sumption, Ferrari, Lubroth, Potzsch)
- Endorsed and adopted by the EuFMD in General Session 2009
- 1st Revision jointly developed 2010, adopted and published at General Session EuFMD (2011)
  - 1st Jointly agreed Guidelines have been in use since 2010
  - Key tool of FAO-OIE Global FMD Control Strategy

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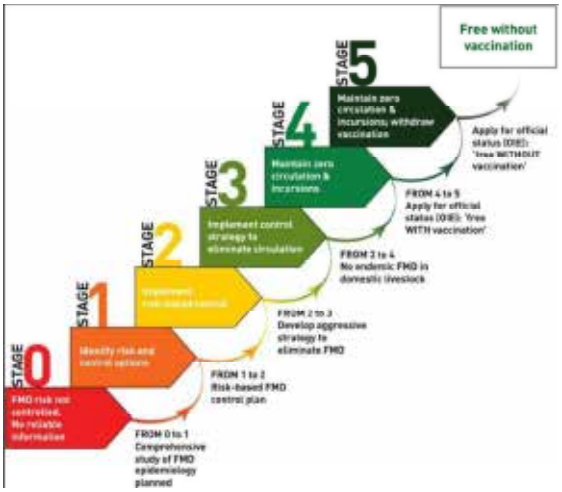
Background

- EuFMD experts have assisted OIE and FAO in the revisions of the Guidelines
- Updated version planned to be released in 2017



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Key changes:

- Greater integration and alignment with OIE TAHC, ""One Pathway""

1. Gateway to Stage 4: *OIE endorsement of Control programme*
2. Removal of PCP Stage 5

- Rationale:
  - This stage prepared for DF countries to withdraw vaccination
  - Removes expectation/obligation to move through DF with vaccination stage
  - PCP Stage 1 to 3 assessments principally regional, whereas DF is an OIE process with global recognition

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Key changes:

1. Removal of PCP Stage 5
2. Elaboration of process for stage Acceptance
   - Evidence-based, transparent
   - Regional Advisory Group

RAG meeting, Almaty 2015

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Key changes:

1. Removal of PCP Stage 5
2. Elaboration of process for Stage Acceptance
3. Outline "fast-track" procedure
   - Advance by more than 1 Stage at a time

*"For a country wishing to fast-track, it must have fulfilled **all of the key outcomes from the previous Stage(s),** plus have met the **minimum requirements for inclusion in the Stage they are applying to enter**. "*

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Key changes:

1. Removal of PCP Stage 5
2. Elaboration of process for Stage Acceptance
3. Outline "fast-track" procedure
4. Criteria to withdraw Stage Acceptance
   - According to RAG assessment, at least every 3 years

Minimum requirements to remain in the Stage *(failure to comply will lead to acceptance in a lower Stage*):

Stage 2- Risk-based control measures implemented and monitored

Stage 3- Rapid detection and response to all FMD outbreaks

Stage 4- No endemic circulation of FMD virus in susceptible livestock

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Key changes:

1. Removal of PCP Stage 5
2. Elaboration of process for Stage Acceptance
3. Outline "fast-track" procedure
4. Criteria to withdraw stage Acceptance
5. Explicit inclusion of OIE PVS critical competencies
   - "enabling environment"

Critical competencies relevant to PCP-FMD	Level of Advancement required			
	PCP Stage 1	PCP Stage 2	PCP Stage 3	PCP
I.2.A. Professional competencies of veterinarians	3	3	3	3
I.2.B. Competencies of veterinary para-professionals	1	3	3	3
I.3. Continuing education	3	3	3	3
I.6.A. Internal coordination (chain of command)	1	2	3	3
I.6.B. External coordination	3	3*	3	3
I.11. Management of resources and operations	1	2	3	3
II.3 Risk analysis	3	3*	3*	3*
II.11 Emerging issues	1	2	3	3
III.1 Communications	4	4*	4*	4*
III.2 Consultation with stakeholders	3	3	3	3
III.3 Official representation	2	3	3	3
III.4 Accreditation / authorisation / delegation	1	2	3/4	3/4
III.5.A. Veterinary Statutory Body authority	1	2	3/4	3/4
III.5.B. Veterinary Statutory Body capacity	1	2	3	3*
III.6 Participation of producers and stakeholders in joint	2	3	3	3*
IV.1 Preparation of legislation and regulations	3	3*	3*	3*
IV.2 Implementation of legislation & stakeholder compliance	1	3	3	3
II.5.A. Passive epidemiological surveillance	1	3	3	3
II.5.B. Active epidemiological surveillance	3	3*	3	3/4
II.6 Early detection and emergency response	1	1	3	3
II.7 Disease prevention, control and eradication	1	2	3	3
II.8 Ante and post mortem inspection	1	2	3	3
II.1 Veterinary laboratory diagnosis	2	2/3	2/3	2/3
II.2. Laboratory quality assurance	2	3	3	3
II.4 Quarantine and border security	1	2	3	3/4
II.13.A. Animal identification and movement control	1	2	3	3
IV.6 Transparency	2	3	3	3
IV.7 Zoning	1	2	2	3
I.1.A. Veterinarians and other professionals	2	3	3	3
I.1.B. Veterinary para-professionals and other technical staff	2	3	3	3
I.7. Physical resources	2	2	3	3
I.8. Operational funding	1	2/3	4/5	4/5
I.9. Emergency funding	1	1	3	4/5

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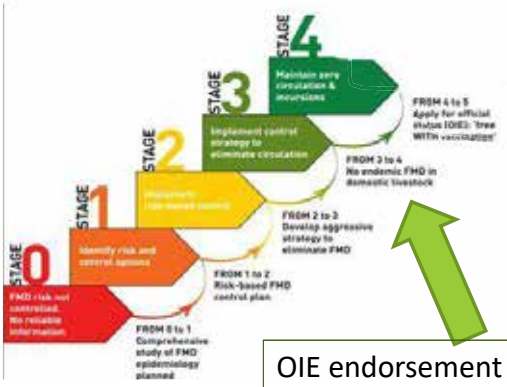
Key changes:

1. Removal of PCP Stage 5
2. Elaboration of process for Stage Acceptance
3. Outline "fast-track" procedure
4. Criteria to withdraw Stage Acceptance
5. PVS critical competencies
6. OIE Endorsement of National Control Plan requirement to enter Stage 4
   - Previously in Stage 3



OIE endorsement of National Control Programme

Indicator outcome to enter:

Stage 1- Assessment Plan

Stage 2- Risk-Based Strategic Plan

Stage 3- Virus Elimination Plan

Stage 4- OIE endorsement of National Control Programme

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Implications for the EuFMD membership and neighbourhood

- Greater clarity on zoning and transitions
  - countries can have zones at multiple Stages including OIE recognised zones (Turkey)
- One Pathway
  - potential re-entry to PCP stages if compliance with TAHC conditions for ""official control programmes""
- Potentially greater incentives to demonstrate competence in control (PCP3) before application for ""official recognition of CPs""

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Implications for the EuFMD membership & neighbourhood

- Stage Acceptance:
  - WE RAG : European members of FAO/OIE that are not -free
    - Georgia and Turkey have developed progressive control plans

ME RAG : Palestine

The EuFMD Constitution (2015):

ARTICLE II Obligations of Members:... For Members not recognised by the OIE as having the status of freedom from foot-and-mouth disease, except where the status has been temporarily suspended, there should be in place a **national plan for the progressive control of the disease.**

Appendix 16
Technical Committees and their functions in the upcoming biennium

Appendix 16

EuFMD Commission
On the Standing Technical and Special Committees

Proposal to the 42nd Session

To endorse the proposal of the Executive Committee to establish a **Special Committee for Biorisk Management**, with the Terms of Reference as agreed by the 93rd Session of the Executive.

Legal basis

The EuFMD Constitution, in full accord with the Basic Texts of FAO, makes clear that *every Session of the Commission is empowered to establish Committees* which may be considered **Standing Committees** if there is the expectation of the need throughout their term of office on a range of issues, or **Special Committees**, relating to specific items, or **Temporary ones**, where further need beyond the immediate is not expected. The members of the Committees are approved at the regular Sessions and are usually elected on basis of their individual expertise. The Committees elect their own Chairperson.

Current position

Since 2013, the EuFMD has

- A Standing Technical Committee (four persons);
- A Special Committee for Research and Programme Development (SCRPD), of 13 persons plus a place each for the FAO/OIE Reference Centers on FMD located in EuFMD MS[5] .

The second is arguably too costly in terms of the numbers involved in regular meetings and diversity of expertise. The SCRPD however, undoubtedly assists in other ways, through provision of expertise for EuFMD activities and training of the member states.

Concerns to be addressed

1. Relating to FMD Biorisk management:

a. *"The maintenance and promotion of appropriate biocontainment standards, and training in these, for handling of materials containing foot-and-mouth disease virus by Members*": is a Special Function of the Commission (Art V, para 2.4) and thus requires a process and capacity to be in place;

b. The need of the Executive Committee and Member States, to receive specific guidance on technical issues in FMD Biorisk management, particularly relating to laboratory biocontainment of FMD virus;

c. The need of the Standing Technical Committee and the Secretariat to receive guidance on the revision of the normative texts relating to the *Minimum Standards for Laboratory Containment of Foot-and-Mouth Disease virus;*

d. The need for a sufficient cadre of expertise in the member states in the laboratory containment and Biorisk management of FMD virus, able to provide such expertise to the member states and to DG-SANTE in order to support the application and maintenance of the containment standards and assist to communicate best practices in Biorisk management.

[5] Currently four Reference Centers, being WRL-FMD (Pirbright), CODA-CERVA-VAR (Belgium), ANSES (Maisons Alfort), France; IZSLER, Brescia, Italy.

2. Relating to the networking of (EuFMD "Tier D") laboratories handling FMDV in Europe, for diagnostic, research and vaccine production, and those "Tier C" laboratories expected to manage diagnostic capacity for FMD confirmation:

a. The need for training relating to Biorisk management;

b. The need for maintaining awareness of FMD risks relevant to diagnosis;

c. The need for network capacity to provide "crisis support" arrangements in case of temporary over demand or loss of critical facilities.

3. There is a need to advise member states upon appropriate Biorisk management for laboratories based in non-FMD free zones in Europe. Considering that Georgia, Israel and Turkey are not yet official recognized as free of FMD in two of their territories, and that the Minimum Standards provisions differentiate the requirements based on the official status of the zone of the country in which the laboratory is located, with Biorisk management Tiers A and B being those reserved for non-FMD free zones, expertise is needed to revise the standards for such Tiers, keeping in mind that FMD control programmes involving vaccination and other measures are in place in the surrounding areas.

4. The need to ensure the future EU27 laboratories and the future NRLs in non-EU countries maintain a close working relationship on the above.

Proposal for change in 2017 to the Special Committees of the EuFMD

1. The 40th General Session in 2013 agreed the Terms of Reference for the Special Committee for Research and Programme Development (SCRPD), which included *development of specific guidance relating scientific and technical issues suggested by the Executive, Standing Committee or others.* ***A specific reference was made to guidance upon the biocontainment standards and other technical guidance****.*

2. Since 2009, several ad hoc group meetings have been held under the Standing Technical Committee, relating to the laboratory Biorisk management standards. The Chair of this group was Dr Bernd Haas, and since his passing, the Executive Committee at the 92nd Session agreed upon the need to strengthen the provision of laboratory Biorisk management guidance and to place a programme of work in this area into the regular programme of the Commission.

3. In 2016, the EuFMD Biorisk management group have met by online meetings and with an evident high participation by experts from laboratories handling live FMDV in the member states. These meetings confirmed the need for such experts for regular opportunity to discuss technical and organizational Biorisk management of FMDV.

4. A **Special Committee for Biorisk Management** is therefore proposed, to be given its own dedicated support in the biennium workplan, with TOR as follows:

To:

a) Provide guidance to the Executive Committee and Commission on the revision and further development of guidance documents, including the Minimum Standards, for laboratory biocontainment of foot-and-mouth disease virus.

b) Develop guidance, on request of member states, the Executive or Standing Technical Committee, on technical issues relating to the application of the guidance documents, including the Minimum Standards

c) Provide guidance on training and support needs of the FMD Biorisk management community and provide assistance to training initiatives of the Commission in this field.

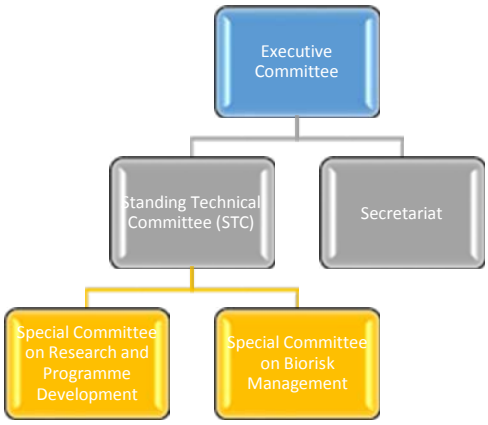
d) Maintain an overview of development in biocontainment and improve the communication of relevant developments to the experts in the member states who have FMDV Biorisk management responsibilities.

e) In keeping with Art VII (of the Constitution), the Chairperson of the Committee would be elected by the members of the Committee, and the Rules of Procedure of the EuFMD (as revised at the 41st Session) would apply to its Sessions.

f) The programme of work of the Special Committee will be proposed at the 42nd General Session, and thereafter at the regular biennial Sessions. Additional items may be proposed on request of the Executive or the Standing Technical Committees, and undertaken subject to resources being made available.

g) A summary of the relationships proposed are shown below; the Executive Chairpersons would work mainly with the STC and Secretariat; the Special Committees would be supported by the Secretariat and provide reports on its meetings or positions to the ExCom through the STC.

h) The number of members of the Special Committee should be decided on the principle of the required competences to advise upon changes to the containment standards, having a sufficient understanding of the technical options and impact of change upon performance of the standards by the high containment laboratories and a knowledge of the management processes by which they would be implemented. On this basis, at least five from the Tier D laboratories plus three others (with competences to cover the situation for Tiers A to C laboratories) are proposed.



Implementation and Reporting Relationships

1. The Secretariat is responsible for implementing the biennial work programme agreed at Regular Sessions and the decisions of the Executive at their six-monthly meetings.
2. The attendance of the Chairs of the STC and Special Committees at the ExCom Sessions will be subject to the decision of the Chairman of the ExCom. By practice the Chair of the STC is invited to attend and report at every Session.
3. Meetings of the STC and Special Committee or their subgroups would be supported by the Secretariat, and the latter will provide information and progress reports for the Committees and their working groups.
4. It needs to be decided if the Chair of the Special Committee manages the reporting by the subgroups, or the Secretariat. The Secretariat eventually is responsible for ensuring that Reports are appropriately prepared in relation to the impact of their findings or recommendations.
5. The Secretariat remains responsible for managing and publishing the reports from the Committee meetings.
6. Given the complexity and breadth of the activities of the Commission, the Special Committee should comprise experts who are “practitioners” in their technical fields, thus able to review the activities and reports and provide advice to guide development. The STC, in terms of technical seniority and experience in FMD policy issues concerning MS, should retain the role of providing guidance to the Executive and the commissioning of research relevant to Biorisk management issues.
7. The STC should receive all reports of the Special Committee and give guidance to the Executive on the need

and priorities for decisions.

Programme of Work and Budget

1. The priorities for the programme of work will be presented by the Chairperson of the Standing Technical Committee at the 42nd Session.
2. The expenses foreseen in undertaking the work are foreseen as costs of physical meetings, assumed to be one full meeting per year; and one smaller subgroup meeting; and cost of studies identified where additional results or review requiring additional time and input beyond that possible from the committee members.
3. The budget to be found to cover the above is circa 15,000 USD per annum for the two meetings plus an additional 20,000- 40,000 USD for the technical reviews or additional studies. The funding of both parts could be under the Component 1,5 of the EC Phase IV agreement, which has budget lines for activities that include the Special Committee activities relating to Biorisk management.
4. The technical studies would be some extent compete with other technical priorities for funding under the FAR, Fund for Applied Research. Competition (for contracts) and conflicts of interest would be managed through the two stage review process of the FAR Fund, and operate under FAO procurement rules. It must be recognized that few institutions are equipped to undertake the work required, and tenders for research may not add value or cost-effectiveness.

List of laboratories authorized to handle foot-and mouth virus for research and diagnosis

(Part A of Annex XI of Council Directive 2003/85/EC)

These facilities are required to comply with Tier D of the EuFMD Minimum Standards for Biocontainment

	Member State where laboratory is located	**Laboratory**
1	Austria	Österreichische Agentur für Gesundheit und Ernährungssicherheit Veterinärmedizinische Untersuchungen Mödling
2	Belgium	Veterinary and Agrochemical Research Centre CODA-CERVA-VAR, Uccle
3	Czech Republic	Státní veterinární ústav Praha- Praha
4	Germany	Friedrich-Loeffler-Institut Bundesforschungsinstitut für Tiergesundheit, Greifswald; Insel Riems
5	Denmark	Danmarks Tekniske Universitet, Veterinærinstituttet, Afdeling for Virologi, Lindholm Danish Technical University, Veterinary Institute, Department of Virology, Lindholm
6	Greece	, , , , (Veterinary Center of Athens, Department of Molecular Diagnostics, foot and mouth disease, virology and Exotic Diseases, Agia Paraskevi)
7	Spain	Laboratorio Central de Sanidad Animal, Algete, Madrid
8	Spain	Centro de Investigación en Sanidad Animal (CISA), Valdeolmos, Madrid
9	France	Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail (ANSES), Laboratoire de santé animale de Maisons-Alfort
10	Hungary	Nemzeti Élelmiszerlánc-biztonsági Hivatal, Állategészségügyi Diagnosztikai Igazgatóság (NÉBIH- ÁDI), Budapest
11	Italy	Istituto zooprofilattico sperimentale della Lombardia e dell'Emilia-Romagna, Brescia
12	Netherlands	Centraal Veterinair Instituut, Lelystad (CVILelystad)
13	Poland	Zak ad Pryszczycy Pa stwowego Instytutu eterynaryjnego — Pa stwowego Instytutu Badawczego, Zdu ska ola
14	Romania	Institutul de Diagnostic i S n tate Animal , Bucure ti
	United Kingdom	The Pirbright Institute

List of laboratories authorized to handle foot-and mouth virus for manufacturing of vaccines (Part B of Annex XI of Council Directive 2003/85/EC)

These facilities are required to comply with Tier D of the EuFMD Minimum Standards

	Member State where laboratory is located	Laboratory
15	Germany	Intervet International GmbH/MSD Animal Health, Köln
16	Netherlands	Merial S.A.S., Lelystad Laboratory, Lelystad
17	United Kingdom	Merial, S.A.S., Pirbright Laboratory, Pirbright

Laboratories in non-FMD free member states that may handle foot-and mouth virus in Georgia, Israel and Turkey for one or more of the following purposes: National diagnostic reference laboratory/Research/Vaccine production

The *EuFMD Minimum Standards for Biocontainment, Tiers C and D are required in free countries, but in those not free of FMD, compliance is advisory but not required. The development of appropriate standards for laboratories in non-free countries (Tiers A and B) were foreseen and indicated as under development in the text of the current Minimum Standards.*

Member State where laboratory is located	Laboratory
Israel	**Kimron Veterinary Institute FMD Unit** P.O.B. 12, Bet Dagan, Israel
Tukey	**ap nstit s** ukurambar Mahallesi, Eski ehir Yolu Yanyolu, 06510 Çankaya/Ankara, Turkey
Georgia	**Laboratory of Ministry of Agriculture of Georgia – LMA** Godziashvilis Str. 49, 0159/Tbilisi, Georgia

Appendix 17
Financial report

Appendix 17

Paper on the Financial Position and Budget Administrative (011) and Emergency and Training Funds (004) Biennium 2018-19
2018 and 2019 budgets (US$) for approval by the 42nd General Session

For decision

1. On the proposal to leave the annual contributions unchanged, as per the 41st General Session in 2015 at which an increase was adopted and which came into force for contributions in 2016 and 2017.
2. On the proposal for the budget (expenditure) from the Administrative Fund in 2017, 2018 and 2019;
3. To waive the membership contributions of Iceland for the period during which they had been considered to have withdrawn from membership, a period in which they did not add to the costs of the Commission activities;
4. On the proposal for the budget (expenditure) from the Emergency and Training Fund (004), on the basis of the expected income (voluntary contributions from Member States and Others);
5. To extend the "not-to-exceed" (NTE) date of the EMERGENCY AND TRAINING FUND (004) to 31st December 2019.

Administrative Fund – MTF/INT/011/MUL

Categorization of Member States for Budget Contribution

1. The current scale of contributions was adopted at the 41st General Session in 2015, with five categories, based on a classification that used two equal criteria, a) the FAO contribution and b) livestock population (formula – 1 for cattle, 0.5 for pigs, 0.2 for sheep and goats). The data used in the assessment is given in Table 3 in this paper.

2. The Executive, at its 93rd. Session in Vienna (March 2017), considered the questions arising from the 41st General Session on categorization and recommended no change be proposed for the current biennium but that the issue be reconsidered by the Executive before the 43rd. Session.

Budget Contributions proposed: 2018-19

3. The 41st General Session agreed an overall budget of 606,997 USD in contributions, and based on the tight control of expenditure in 2015 and 2016, the Administrative Budget has remained very close to the income, enabling the balance in the Fund to be maintained.

4. This situation avoids the need to request an increase the level of contributions in 2017, and some greater flexibility in the use of the reserve in the Fund to ensure administrative matters are sufficiently assured in the form of the composition of the administrative and technical team.

5. Previous Sessions have recommended a reserve of circa USD 200,000 be kept given the volatility of currency rates (which recently have swung by about 25%) and other contingencies in the biennium between Sessions.

6. The year-end position of MTF/INT/011/MUL was at **USD 356,695, which is better than was predicted (USD 212,164)**.

7. The income in 2015-16 was also assisted by the payment of arrears from MS of circa 75,000 USD in 2015 and 87,000 in 2016. As of 15th March, the outstanding arrears are circa 50,000 USD.

8. The outstanding contributions at 15th March 2017 comprised:
Year 2016 USD 36,898 (Bulgaria -Luxembourg-Malta-Poland in process)

Year 2015 USD 12,786 (Bulgaria);
Outstanding contributions 2015-16 **USD 49,684** (at 15-03-2017)

MS Contributions 2017	USD 606,997
Contributions **outstanding** *at 15-03-2017 related years* (2015-2016)	USD 49,684
MS Contributions **owed** 2015-2016-2017	USD 666,654
Received up to 15-03--2017	USD 87,125
MS with outstanding contributions greater than two times annual contribution:	
Bulgaria *(2015- 12'786 & 2016 4'504)*	USD 17'290.00

9. The Executive Committee considered the above financial position and the proposal of the Secretariat in respect of composition of staffing of the administrative and technical team, taking into account the agreement with the EC relating to their maximum level of support for project operations.

10. They endorsed the following positions for funding under the Administrative Fund:

- **Professional positions**, as follows:

- The position of Executive Secretary (P5), on an unchanged basis;
- To support 20% of the position of Communications and Networks Officer (P2), with expectation the remainder would be supported under the EC (003) programme as per agreement with EC;
- A new position of Chief Operations and Finance Officer, at a P1 level to manage the operational delivery and financial planning, as a new position, partly funded by savings after the departure of the Finance Officer who had resigned with effect from 17th March 2017.

- **Consultant contracts** three veterinary officers and two short term placements:

- Training Programmes Manager (TPM), on an 11 month, consultant position basis, with potential for renewal; with responsibilities to supervise or directly manage the learning infrastructure and e-learning across the programme, and the development of new courses, and their quality of implementation, for training offered in Pillars II and III;
- Contingency Planning Officer (CPO), on same basis, with responsibilities to supervise or directly manage the components relating to Greece, Turkey, Bulgaria, the Western Balkans and Moldova/Ukraine, and the development and delivery of training on contingency planning in all three Pillars;
- FMD Risk Management Support Officer (RMSO), on a 6-11 month basis, with potential for renewal; considered as a position with senior level responsibilities who can supervise the other part of the Pillar I relating to the Networking for Emergency Management (Component 1.2), work towards sharing of critical resources at European level, manage the FAR Fund and support Biorisk Management Committee, and supervise the work in risk assessment and communication component, and support activities in Pillars II and III that assist in risk assessment.

- **Two Short Term Placements (STP), on the same basis of secondments of three to six months** to the Secretariat, of junior-mid level veterinary officer from member states, on same basis as operated in 2013-17. The focus of the work of these STPs is on Pillar I components, supporting the training programme and work in South-East Europe.

11. On the above basis, and income from contributions of 606,000 USD per year in 2017, 2018 and 2019, the expenditure budget was proposed as follows:

Table 1 *– Proposed Budgets for 2018 and 2019*

PROPOSED budgets for MTF/INT/011/MUL	**2017**	**2018**	**2019**
	Proposed 42nd	**Proposed**	**Proposed**

Salaries (P Officers)	304,210	373,620	392,801
Three Consultants (TPM, CPO, RMSO) and two Short Term Placements (STPs)	254,564	268,317	282,115
Contracts			
Travel	10,000	10,000	10,000
Training			
Expendable equipment			
Hospitality			
Gen Operation Expenses			
Total	**568,774**	**651,937**	**684,916**
Income from MS Contributions	**606,997**	**606,997**	**606,997**

12. Note that

- In the upcoming period, all other administrative costs apart from staff costs and travel of the Secretariat (to EuFMD Sessions) would be charged to the programmes relating to the EC (where eligible) or Emergency and Training activities.
- The increase in Professional Salaries in 2018 relates to
    i. The inclusion of a P1 officer in the budget, who would not be expected to be in position until mid-late 2017 thus only a part year salary is charged to 2017.
    ii. The relative undercharging to the 011 Fund of the P2 officer in 2017, since the months when the 20% is applied fall unevenly across the two-year period and are mainly in 2018.

13. The proposed level of expenditure would result in a reduction of circa USD 80,000 in the balance, being the expenditure over income for the three-year period. However, the balance is expected to stay above USD 200,000 throughout the period. The deficit could be offset by finding an additional 80,000 from income from other sources, for example charged against additional training activities. It is reasonable, based on history, to assume this amount can be found from other income.

14. **Table 2 i**ndicates the Level of Contributions per category and for each MS, for 2018-19. This is unchanged from the biennium 2016-17 and would achieve the required income of over USD 600,000 per annum, which will avoid depleting the fund below that indicated.

EMERGENCY AND TRAINING FUNDS –MTF/INT/004/MUL

15. In addition to the Administrative Fund, the Commission has managed additional Trust Funds through which funds have been received from member states and others, and disbursed for activities which are agreed with the Commission at its General Sessions or Executive Committee. The Fund current known as MTF/INT/004/MUL started in the first years of the Commission and in particular was important in the management of contributions for the fight against FMD in Thrace, before a specific fund was established with the EEC to relieve the burden on the EEC/EU members.

16. Since 2012, contributions to cover the costs of additional training courses requested by member states and others have been received and disbursed through MTF/INT/004/MUL and the use of funds will be reported to the Session, together with a projection of the committed and predicted contributions in 2017-19 and the outgoing expenditure expected.

17. On the basis of commitments to support the management of future training courses, for the Governments of Australia and New Zealand and others, and the benefits these courses provide in terms of cross-subsidizing the training support for the Member States, and on the basis that the Fund is not predicted to be overspent as a result of the activities, the Secretariat proposes to extend the “not-to-exceed” (NTE) date of the EMERGENCY AND TRAINING FUND (004) to 31st December 2019. The Full Paper for the Session will include Annexes with certified expenditures, and projected contributions and outgoing expenses until 2019.

Table 2 indicates the proposed Level of Contributions per category and for each MS

Member Country	1997 Rank	2015 Rank	1997 cat. level	2010-11 contrib.	2012-13 contrib.	2015-15 (40GS) contrib.	2016-17 contrib.	2015 cat.level	2017	2017-18 (42ndGS) PROPOSED Contribution
				38th GS	39th GS	40th GS	41st GS	Cat		Proposed
GERMANY	1	1	1	42,374	42,374	42,374	46611	1	1	46611
FRANCE	2	2	1	42,374	42,374	42,374	46611	1	1	46611
U.K	3	3	1	42,374	42,374	42,374	46611	1	1	46611
ITALY	4	4	1	42,374	42,374	42,374	46611	1	1	46611
SPAIN	5	5	2	21,260	21,260	21,260	23386	2	2	23386
TURKEY	6	6	2	21,260	21,260	21,260	23386	2	2	23386
NETHER.	7	7	2	21,260	21,260	21,260	23386	2	2	23386
POLAND	8	8	2	21,260	21,260	21,260	23386	2	2	23386
BELGIUM	9	9	2	21,260	21,260	21,260	23386	2	2	23386
DENMARK	10	10	2	21,260	21,260	21,260	23386	2	2	23386
SWEDEN	11	14	2	21,260	21,260	21,260	23386	2	2	23386
SWITZ	13	12	2	21,260	21,260	21,260	23386	2	2	23386
ROMANIA	12	16	2	21,260	21,260	21,260	15,650	3	3	15,650
AUSTRIA	14	13	3	12,786	12,786	12,786	15,650	3	3	15,650
IRELAND	15	11	3	12,786	12,786	12,786	15,650	3	3	15,650
GREECE	16	15	3	12,786	12,786	12,786	15,650	3	3	15,650
NORWAY	19	17	3	12,786	12,786	12,786	15,650	3	3	15,650
FINLAND	17	19	3	12,786	12,786	12,786	13,809	4	4	13,809
CZECH REPUBLIC	18	20	3	12,786	12,786	12,786	13,809	4	4	13,809
SERBIA	20	23	3	12,786	12,786	12,786	13,809	4	4	13,809
PORTUGAL	21	18	3	12,786	12,786	12,786	13,809	4	4	13,809

HUNGARY	22	21	3	12,786	12,786	12,786	13,809	4	4	13,809
SLOVAK R.	*24*	*24*	*3*	12,786	12,786	12,786	13,809	4	4	13,809
ISRAEL	26	22	4	4170	4170	4170	13,809	4	4	13,809
BULGARIA	23	29	3	12,786	12,786	12,786	4,504	5	5	4,504
LITHUANIA	25	25	4	4170	4170	4170	4,504	5	5	4,504
ALBANIA	27	30	4	4170	4170	4170	4,504	5	5	4,504
CROATIA	28	26	4	4170	4170	4170	4,504	5	5	4,504
LATVIA	29	32	4	4170	4170	4170	4,504	5	5	4,504
SLOVENIA	30	28	4	4170	4170	4170	4,504	5	5	4,504
ESTONIA	31	34	4	4170	4170	4170	4,504	5	5	4,504
FYROM	32	36	4	4170	4170	4170	4,504	5	5	4,504
LUXEMBOURG	33	33	4	4170	4170	4170	4,504	5	5	4,504
CYPRUS	34	35	4	4170	4170	4170	4,504	5	5	4,504
BOSNIA-H	35	31			*4170*	*4170*	4,504	5	5	4,504
ICELAND (withdrew from MS)	36		4	4170[2]					5	4,504
MALTA	37	37	4	4170	4170	4170	4,504	5	5	4,504
GEORGIA	Not ranked	27	4			4170	4,504	5	5	4,504
TOTALs as agreed by Session				**547,352[3]**	**543, 182**	**551,522**	**606,997**			**611,501 (Assuming Iceland re-commits)**

Table 3. Livestock Populations (2013), Converted to Total Units (TU) by 1997 formula, % Contribution of the countries to UN system and position in the European scale based on an average of both (final column)

Area Code	Region	Area Name	Cattle2013 (Heads)	Goats 2013	Sheep 2013	Pigs 2013	Buffalo2013	Total Units (1997 formula)	%TU in Europe (A)	UN Contrib 2015	%European Cont FAO (B)	(A plus B)/2
125	E	Liechtenstein	6,350	368	4,000	1,800	-	8,124	0.00	0	-	0.00
64	E	Faroe Islands	2,300	-	70,000	-	-	16,300	0.01	0	-	0.00
134	E	Malta	15,220	4,598	10,930	49,450	-	43,051	0.01	0.016	0.04	0.03
273	E	Montenegro	84,000	-	207,000	18,000	-	134,400	0.04	0.005	.01	0.03
99	E	Iceland	68,014	877	463,807	26,033	-	173,967	0.06	0.027	0.06	0.06
154	E	The former Yugoslav Rep.of Macedonia	238,333	75,028	731,828	167,492	640	483,450	0.16	0.008	0.02	0.09
146	E	Republic of Moldova	191,200	128,900	695,100	410,400	-	561,200	0.18	0.003	0.01	0.10
50	E	Cyprus	57,000	243,130	347,000	357,900	-	353,976	0.12	0.047	0.11	0.11
63	E	Estonia	261,400	4,900	81,900	358,700	-	458,110	0.15	0.04	0.10	0.12
256	E	Luxembourg	193,623	4,456	8,582	87,518	-	239,990	0.08	0.082	0.20	0.14
1	E	Armenia	661,003	29,020	645,711	145,044	531	868,471	0.28	0.007	0.02	0.15
119	E	Latvia	393,000	13,300	83,600	355,200	-	589,980	0.19	0.047	0.11	0.15
80	E	Bosnia and Herzegovina	446,893	69,369	1,019,782	529,644	-	929,545	0.30	0.017	0.04	0.17
3	E	Albania	498,000	810,000	1,808,000	158,000	120	1,100,600	0.36	0.01	0.02	0.19
27	E	Bulgaria	526,112	293,639	1,361,545	30,945	9,212	1,122,621	0.37	0.017	0.04	0.20
198	E	Slovenia	460,063	26,351	114,152	296,097	-	636,212	0.21	0.101	0.24	0.23
73	E	Georgia	1,128,800	54,400	688,200	204,300	18,000	1,379,470	0.45	0.007	0.02	0.23
98	E	Croatia	442,000	69,000	620,000	1,110,000	-	1,134,800	0.37	0.047	0.11	0.24
126	E	Lithuania	729,200	13,600	82,800	807,500	-	1,152,230	0.38	0.074	0.18	0.28

199	E	Slovakia	471,091	34,823	409,570	631,464	-	875,702	0.29	0.172	0.41	0.35
113	E	Kyrgyzstan	1,404,168	960,391	4,680,823	51,777	-	2,558,299	0.84	0.002	0.00	0.42
208	E	Tajikistan	2,043,725	1,772,982	2,959,495	662	15,000	2,990,551	0.98	0.003	0.01	0.49
272	E	Serbia	913,144	225,073	1,616,000	3,144,215	-	2,853,466	0.93	0.04	0.10	0.51
105	E	Israel	465,000	100,000	540,000	176,900	-	681,450	0.22	0.398	0.96	0.59
52	E	Azerbaijan	2,444,500	651,115	7,979,424	6,495	260,889	4,173,855	1.36	0.04	0.10	0.73
97	E	Hungary	760,000	89,000	1,185,000	2,989,000	-	2,509,300	0.82	0.268	0.64	0.73
167	E	Czech Republic	1,352,822	24,042	220,521	1,586,627	-	2,195,048	0.72	0.388	0.93	0.82
67	E	Finland	911,847	4,509	135,546	1,300,385	-	1,590,051	0.52	0.522	1.25	0.89
213	E	Turkmenistan	2,250,000	2,290,000	14,000,000	29,000	-	5,522,500	1.80	0.019	0.05	0.92
174	E	Portugal	1,471,000	398,000	2,073,000	2,014,000	-	2,972,200	0.97	0.477	1.14	1.06
57	E	Belarus	4,367,000	73,200	59,900	4,242,900	-	6,515,070	2.13	0.056	0.13	1.13
162	E	Norway	849,984	62,800	223,661	848,063	-	1,731,308	0.57	0.856	2.05	1.31
183	E	Romania	2,009,135	1,265,676	8,833,830	5,234,313	-	6,646,193	2.17	0.227	0.54	1.36
84	E	Greece	679,000	4,250,000	9,520,000	1,077,000	1,750	3,971,500	1.30	0.642	1.54	1.42
210	E	Sweden	1,496,526	-	576,769	1,398,875	-	2,311,317	0.76	0.965	2.32	1.54
11	E	Austria	1,955,618	73,212	364,645	2,983,158	-	3,534,768	1.15	0.802	1.92	1.54
230	E	Ukraine	4,645,900	664,800	1,073,400	7,576,700	-	8,781,890	2.87	0.1	0.24	1.55
211	E	Switzerland	1,563,214	90,000	410,000	1,487,704	-	2,407,066	0.79	1.053	2.53	1.66
108	E	Kazakhstan	5,851,227	2,362,824	15,197,780	922,296	10,000	9,824,496	3.21	0.122	0.29	1.75
104	E	Ireland	6,902,600	8,700	5,110,600	1,552,000	-	8,702,460	2.84	0.42	1.01	1.93
54	E	Denmark	1,614,644	-	151,300	12,075,750	-	7,682,779	2.51	0.679	1.63	2.07
255	E	Belgium	2,454,704	40,473	114,407	6,592,978	-	5,782,169	1.89	1.004	2.41	2.15
235	E	Uzbekistan	9,966,600	2,681,500	14,077,500	94,500	-	13,365,650	4.37	0.015	0.04	2.20
173	E	Poland	5,859,541	81,727	249,481	11,162,472	-	11,507,019	3.76	0.926	2.22	2.99
150	E	Netherlands	3,999,220	412,550	1,033,570	12,212,300	-	10,394,594	3.40	1.663	3.99	3.69
223	E	Turkey	13,916,924	8,357,286	27,425,233	2,986	107,435	21,074,921	6.88	1.335	3.20	5.04
203	E	Spain	5,696,910	2,609,990	16,118,590	25,494,720	-	22,189,986	7.25	2.989	7.17	7.21

106	E	Italy	6,091,500	891,604	7,015,700	8,661,500	402,659	12,003,711	3.92	4.472	10.73	7.33
185	E	Russian Federation	19,930,354	2,118,697	22,061,282	18,816,357	6,002	34,174,528	11.16	2.451	5.88	8.52
229	E	United Kingdom	9,844,000	98,000	32,856,000	4,885,000	-	18,877,300	6.17	5.207	12.50	9.33
68	E	France	19,095,797	1,291,028	7,233,720	13,487,588	-	27,544,541	9.00	5.623	13.49	11.25
79	E	Germany	12,587,020	165,000	1,641,000	27,690,100	5,000	26,793,270	8.75	7.18	17.23	12.99
		TOTALs	**162,267,226**	**35,989,938**	**218,191,684**	**186,043,808**	**837,238**	**306,125,454**	**100.00**	**41.67**	**100.00**	**100.00**

Member States Contributions

TRUST FUND No. 9042.00-MTF/INT/011/MUL-Inter-Regional-European Commission for the Control of Foot-and-Mouth Disease				
Status of MS Contributions as at 31 March 2017 (expressed in USD)				
Member Governments	Outstanding 31-12-2016	Contribution Due for 2017	Received up to 31-03-2017	Outstanding at 31-03-2017
ALBANIA	16,570.00	4,504.00	16,570.00	4,504.00
AUSTRIA	0.00	15,650.00		15,650.00
BELGIUM	23,386.00	23,386.00	23,386.00	23,386.00
BOSNIA	0.00	4,504.00		4,504.00
BULGARIA	17,290.00	4,504.00		21,794.00
CYPRUS	0.00	4,504.00		4,504.00
CROATIA	0.00	4,504.00		4,504.00
CZECH REPUBLIC	0.00	13,809.00	13,809.00	0.00
DENMARK	0.00	23,386.00		23,386.00
ESTONIA	0.00	4,504.00		4,504.00
FINLAND	0.00	13,809.00		13,809.00
FRANCE	0.00	46,611.00		46,611.00
GEORGIA	0.00	4,504.00		4,504.00
GERMANY	0.00	46,611.00		46,611.00
GREECE	0.00	15,650.00		15,650.00
HUNGARY	0.00	13,809.00		13,809.00
IRELAND	0.00	15,650.00		15,650.00
ISRAEL	0.00	13,809.00		13,809.00
ITALY	0.00	46,611.00		46,611.00
LATVIA	0.00	4,504.00		4,504.00
LITHUANIA	0.00	4,504.00		4,504.00
LUXEMBOURG	4,504.00	4,504.00		9,008.00
FYR of MACEDONIA	29,524.00	4,504.00	33,360.00	668.00
MALTA	4,504.00	4,504.00	4,504.00	4,504.00
NETHERLANDS	0.00	23,386.00		23,386.00
NORWAY	0.00	15,650.00		15,650.00
POLAND	23,386.00	23,386.00		46,772.00
PORTUGAL	13,809.00	13,809.00	13,809.00	13,809.00
ROMANIA	0.00	15,650.00		15,650.00
SERBIA	0.00	13,809.00	2,967.03	10,841.97
SLOVAK REPUBLIC	0.00	13,809.00	30.00	13,779.00
SLOVENIA	0.00	4,504.00		4,504.00
SPAIN	0.00	23,386.00		23,386.00
SWEDEN	0.00	23,386.00		23,386.00
SWITZERLAND	0.00	23,386.00		23,386.00
TURKEY	0.00	23,386.00		23,386.00
UNITED KINGDOM	0.00	46,611.00		46,611.00
TOTALS	*132,973.00*	*606,997.00*	*108,435.03*	*631,534.97*
*Serbia in 2016 overpaid by USD 2,967.03, amount has been credited to their 2017 invoice				

Appendix 18
Statement of intentions between the Veterinary Services of territories within the southeast Balkans

Appendix 18

STATEMENT OF INTENTIONS BETWEEN THE VETERINARY SERVICES OF *TERRITORIES WITHIN THE SOUTH-EAST BALKANS*

Concerning Co-operation in the control of Foot-and-Mouth disease (FMD) and other major epizootic transboundary diseases

Under the Framework of THRACE Programme of the Executive Committee of the EuFMD, the representatives of the official veterinary services of countries in this region agree the following:

Scope

To establish a network between Bulgaria, Greece and Turkey for the implementation of a risk- based surveillance for FMD and other exotic diseases to be regularly performed, including collection, analysis and sharing of information. This Tripartite coordination of surveillance and management activities is intended to integrate decision support and risk analysis tools for the maintenance of FMD freedom in the Thrace region.

Summary of intentions

1. To include the livestock populations in the region (Section **B.1**) in a specific action of co- operation for the control of transboundary diseases;
2. To undertake surveillance for FMD and other TADs (Section **B.1**) and share regularly information on planning and outcomes of surveillance activities and control programmes;
3. To participate at the level of the OIE delegate, Chief Veterinary Officer or Head of the Animal Health Service, in Tripartite Meetings to be held on yearly basis; and of National Focal points in Management Meetings every six months;
4. To undertake training activities and participate in joint exercises, including cross-border simulation exercises.

A. To undertake these intentions, the parties intend the following:

1. **To include the livestock populations present in the <u>following territories</u>** in a **specific ACTION of co-operation** for improving the confidence in the FMD-free status, and the likelihood of early detection of an incursion of **FMD** and other transboundary diseases (TADs), specifically **Sheep and Goat Pox (SGP)** and **Peste des petits ruminants (PPR):**

Greece (Regional unit of Evros), Bulgaria (Oblasti/Provinces of Burgas, Yambol and Haskovo), The Republic of Turkey (Provinces: Istanbul, Çanakkale - European part, Edirne, Kirklareli and Tekirdağ).

2. **To undertake surveillance for FMD and other TADs (SGP and PPR)**, including timely and regular data entry on a common online database/platform, to support management of national surveillance activities aimed at maintaining confidence at all times in disease free status. **To share on a regular basis information on surveillance activities and control programmes for FMD, SGP, PPR and Lumpy Skin Disease (LSD)**,

including via the use of the OIE World Animal Health Information System (WAHIS).

To achieve this, the parties agree to:

a) maintain and improve the established system for timely and regular data entry and development of outputs easy to understand;
b) improve the system for regular reporting of presence and absence of FMD and other TADs;
c) perform a regular analysis of the epidemiological data generated by the active surveillance for FMD and other TADs and produce reports of such activities to be shared between countries and institutions;

3. provide regular support for field and laboratory activities (consumables and trainings) on FMD and other TADs. **To participate at the level of the OIE delegate, Chief Veterinary Officer or Head of the Animal Health Service, in Joint Planning Committee (JPC) meetings** that will report on progress of surveillance activities and jointly agree the planned actions to be undertaken, to prevent the stated diseases in the territories mentioned in paragraph 1.

4. **To participate in training and joint exercises** to improve the confidence and preparedness to manage incursions of diseases listed in Section B.1, and co-operation to harmonize regional response in the case of common threats to the animal health of the territories.

List of Representatives of the Veterinary Services and International Organizations present at the Meeting

Turkey: _____
Greece: _____
Bulgaria: _____

World Organisation for Animal Health (OIE): _____
Food-and-Agriculture Organization of the UN (FAO): _____
European Commission (DG-SANTE): _____
European Commission for the Control of FMD (EuFMD): _____

On Behalf of Turkey, ……., signed: …….
On Behalf of Greece, ……., signed: …….
On Behalf of Bulgaria, ……., signed: …….
Witnessed by the Representatives of:
World Organisation for Animal Health (OIE): signed: …….
Food-and-Agriculture Organization of the UN (FAO): signed: …….
European Commission (DG-SANTE): signed: …….

Agreed by consensus on the …… 2017 at ……, …….

Chairpersons of the European Commission for the Control of FMD 1954-2017

1	Dr J.C. Nagle	Ireland	1954-1957
2	Dr J.M. Van den Born	Netherlands	1958-1959
3	Sir John Ritchie	United Kingdom	1960-1964
4	Dr R. Gaier	Austria	1965-1966
5	Dr C. Werdelin	Denmark	1967-1970
6	Dr A.G. Beynon	UK	1971-1972
7	Dr A. Nabholz	Switzerland	1973-1975
8	Dr A. Brown	UK	1977-1980
9	Dr H. Van den Berg	Netherlands	1981-1982
10	Prof. Dr. A. Rojahn	Germany	1983-1987
11	Dr W.H.G. Rees	UK	1987-1988
12	Prof. P. Gafner	Switzerland	1989-1990
13	Dr Erik Stougaard	Denmark	1991-1992
14	Dr K.C. Meldrum	UK	1993-1996
15	Dr R. Marabelli	Italy	1997-2000
16	Dr Ignacio Sánchez	Spain	2001-2002
17	Dr Leos Celeda	Czech Republic	2002-2003
18	Dr Karin Schwabenbauer	Germany	2003-2006
19	Dr Peter De Leeuw	Netherlands	2006-2009
20	Dr Ulrich Herzog	Austria	2009-2015
21	Dr JeanLuc Angot	France	2015-2017

Executive Secretaries of the European Commission for the Control of FMD 1954 -2017

1	Sir Thomas Dalling (*a.i)*	UK	1954-1958
2	Dr. E. Fogedby	Denmark	1958-1962
3	Dr. G.M. Boldrini	Italy	1962-1978
4	Dr. P. Stouraitis	Greece	1978-1993
5	Dr. Yves Leforban	France	1994-2001
6	Dr Keith Sumption	UK	2001-present

COUNTRIES ADHERING TO THE EUROPEAN COMMISSION FOR THE CONTROL OF FOOT-AND-MOUTH DISEASE

Country	Date of Acceptance
Norway	11 December 1953
Yugoslavia	15 December 1953
Ireland	16 December 1953
United Kingdom	21 December 1953
Denmark	29 January 1954
Netherlands	12 June 1954
Iceland	17 January 1955
Italy	27 September 1955
Turkey	27 September 1955
Portugal	6 October 1955
Austria	1 December 1955
Greece	23 March 1959
Luxembourg	1 June 1959
Belgium	24 September 1959
Switzerland	23 February 1961
Sweden	13 December 1963
Finland	5 March 1970
Malta	13 March 1970
Hungary	7 April 1970
Cyprus	11 January 1971
Bulgaria	2 November 1971
Germany, Fed. Rep.	26 March 1973
Spain	20 December 1978
Polish People's Rep.	4 January 1984
France	28 February 1984
Czechoslovakia	1 January 1986
Albania	25 November 1986
Israel	4 September 1990
Romania	4 February 1993
Lithuania	27 May 1993
Croatia	17 January 1995
Slovenia	25 July 1995
fYR of Macedonia	24 February 1997
Slovak Republic	21 April 2006
Latvia	28 February 2008
Estonia	22 April 2010
BosniaHerzegovina	6 December 2011
Georgia	22 April 2013

www.fao.org/eufmd.html