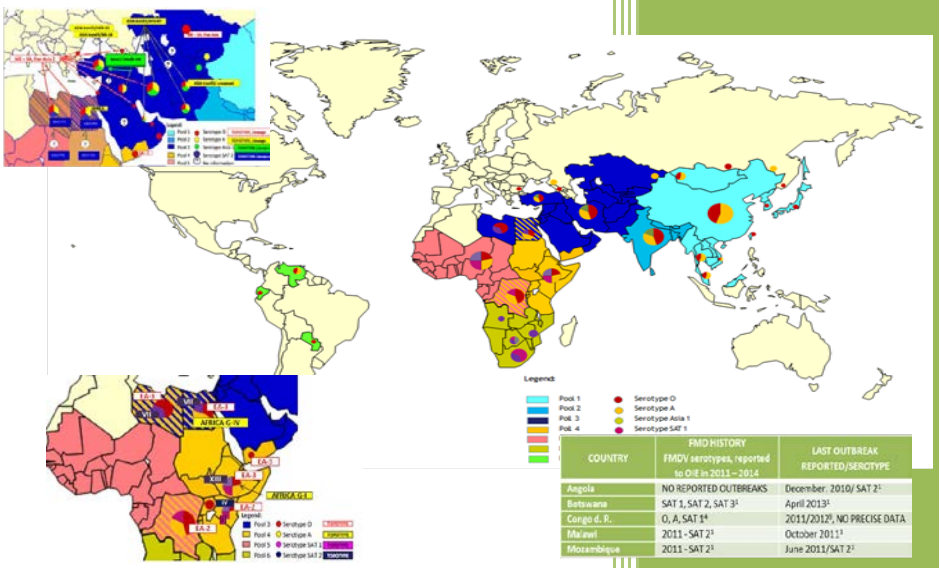
2014

Foot-and-Mouth Disease Situation
Monthly Report JULY 2014



COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2011 – 2014	LAST OUTBREAK REPORTED/SEROTYPE
Angola	NO REPORTED OUTBREAKS	December. 2010/ SAT 2[1]
Botswana	SAT 1, SAT 2, SAT 3[1]	April 2013[1]
Congo d. R.	O, A, SAT 1[4]	2011/2012[9], NO PRECISE DATA
Malawi	2011 - SAT 2[3]	October 2011[1]
Mozambique	2011 - SAT 2[3]	June 2011/SAT 2[1]

EuFMD

eufmd
european commission for the control of foot-and-mouth disease

Foot-and-Mouth Disease Situation
Food and Agriculture Organization of the United Nations
Monthly Report

July 2014

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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.

Contents

Guest Editor's Overview:

It is an honor to have been asked to be the guest editor for the July 2014 issue of the Foot-and-Mouth Disease Situation Report. This report provides timely and relevant information for helping understand the circulation and movement of FMD strains on a global level. Data included in each of these reports are obtained from authoritative databases, laboratory diagnosticians, field staff, and veterinary services within the reporting countries. Each report not only contains specific information on circulating strains but also contains valuable information on the control measures being applied, ongoing epidemiological investigations, vaccine matching results, and post-vaccination monitoring campaigns. Information integrated within each of these reports provides the reader the most up-to-date global information on FMD and the EuFMD secretariat should be commended for its efforts to not only collect the data, but also to summarize it and report it out to the broader global community in a consumable friendly report.

As noted by previous guest editors, tremendous progress has been made in diagnosing, genotyping, and to some extent, controlling the spread/movement of this disease. However, FMD is still endemic in extensive areas of the world and continues to cause tremendous production losses, economic devastation, and livestock losses to both subsistence and commercial livestock farmers across the globe.

One of the key components to controlling the spread of FMDV is a comprehensive surveillance, risk analysis, and risk management plan. The Progressive Control Pathway for FMD (PCP-FMD) (adopted by the FAO, EuFMD and OIE) provides countries a pathway for progressively reducing the amount of FMDV circulation in their country. A robust surveillance program, supported by a well trained veterinary diagnostic laboratory and field force is the foundation through which a country can effectively utilize the PCP pathway to reduce circulating FMDV. An effective surveillance program will ultimately lead to a greater understanding of the epidemiology of FMDV, inform risks analysis studies and lead to the development of a robust risk management plan.

The increased use of mobile technologies for field data collection, combined with novel technologies for not only consuming data, but also providing information back to the end-user, has the potential to revolutionize animal health surveillance. Incentivising the livestock producer and local farmer to report animal health information to authorities affords the global health community a unique and timely method by which to combat economically devastating diseases like FMDV and other emerging and zoonotic diseases. Incentives to utilize these real-time or near real-time reporting technologies can present in many forms to include but not be limited to: 1) educational information provided to the livestock farmer via the mobile device; 2) visits/treatments from the local animal health technician and/or veterinarian; and 3) diagnostic testing and diagnosis of reported animal health issues.

As the globe continues to struggle with controlling the spread of FMDV and other devastating emerging and zoonotic diseases, the global animal health community should take advantage of technological advances that can revolutionize the speed and accuracy with which we are able to detect, respond to, and control diseases such as FMDV. Taking advantage of novel technologies, continued capacity building, and strenthening of our veterinary services will allow the global community to continue to make significant advances toward controlling this economically devastating disease.

I. GENERAL OVERVIEW

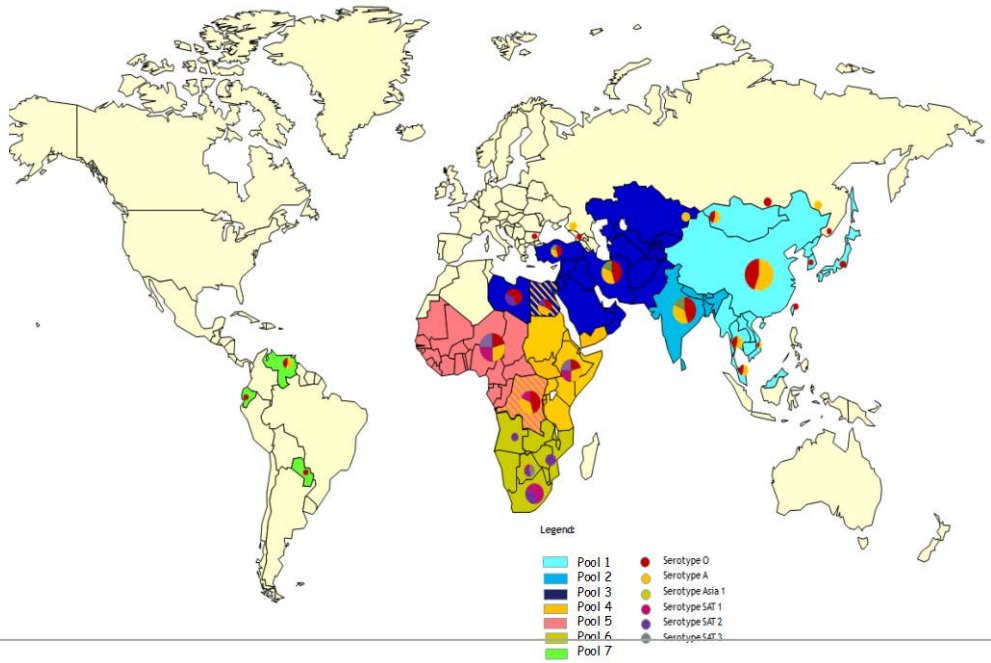
Pools represent independently circulating and evolving FMDV genotypes; within the pools, cycles of emergence and spread occur that usually affect multiple countries in the region. In the absence of specific reports, it should be assumed that the serotypes indicated below are continuously circulating 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 2010 – 2014

POOL	REGION/COUNTRIES – colour pools as in figure	SEROTYPES
1	**CENTRAL/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, Asia 1**
2	**SOUTH ASIA** Bangladesh, Bhutan, India, Nepal, Sri Lanka	**O, A, Asia 1**
3	**WEST EURASIA & MIDDLE EAST** Afghanistan, Algeria, Armenia, Azerbaijan, Bahrain, Bulgaria, **Egypt**, Georgia, Iran, Iraq, Israel, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, **Libya**, Oman, Pakistan, Palestine Autonomous Territories, Qatar, Saudi Arabia, Syrian Arab Republic, Tajikistan, Tunisia, Turkey, Turkmenistan, Uzbekistan	**O, A, 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**
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, SAT 2**
6	**SOUTHERN AFRICA** Angola, Botswana, Congo D. R., Malawi, Mozambique, Namibia, South Africa, Zambia, Zimbabwe	**{O, A}*, SAT 1, SAT 2, SAT 3**
7	**SOUTH AMERICA** Ecuador, Paraguay, Venezuela	**O, A**

Egypt and **Libya** (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

Foot-and-mouth disease (FMD) virus pools: world distribution by serotype in 2011-2013 *(Map 1)*



II. HEADLINE NEWS

POOL 1

Cambodia [1, 2] **–** Sixteen new outbreaks of FMDV serotype O were reported in Cambodia, in June, 2014. During July, 2014, a total of 145 outbreaks are still active. The World Reference Laboratory for Foot-and-Mouth Disease (WRLFMD), Pirbright, UK, confirmed the presence of FMDV serotype O in bovine samples collected in Cambodia, during 2013. Field samples collected from cattle, in 2013, were confirmed by WRLFMD as FMDV serotype O, topotype ME-SA, Genotype/strain PanAsia.

China (Hong Kong, Sar) [2] **–** A pig sample collected in May, 2014, at Sheung Shui, New Territories, Hong Kong was confirmed by WRLFMD as FMDV serotype O, topotype CATHAY.

Korea (Rep. of) [2,3] **–** A FMD outbreak was detected on the 23rd of July, 2014, on a pig farm in Bian-myeon, Uiseong-gun, GYEONGSANGBUK-DO. The WRLFMD confirmed it as FMDV serotype O, topotype SEA, Genotype/strain, Mya-98.

Laos PDR [2]**-** The WRLFMD confirmed the presence of FMDV serotypes O and A in bovine samples collected in Laos PDR, during 2013-2014. Field samples collected from cattle, in 2013, were confirmed by WRLFMD as FMDV serotype O, topotype SEA, Genotype/strain Mya-98.

Malaysia [1] **–** Two new outbreaks of FMDV serotype O were reported in Malaysia, in June, 2014. During July, 2014, a total of 56 outbreaks are reported as active.

Myanmar [1] **–** No new outbreaks of FMDV were reported in July, 2014, while 3 outbreaks are reported as active.

Thailand [1,2] **-** No new outbreaks of FMDV were reported in July, 2014, while 4 outbreaks are reported as active. FMDV serotypes A and O were identified by the WRLFMD, in 21 samples collected from cattle in Thailand, between 2013 and 2014. Field samples collected from cattle, in 2013, were confirmed by WRLFMD as FMDV serotype O, topotype SEA, Genotype/strain Mya-98.

Viet Nam [1] **-** No new outbreaks of FMDV were reported in July, 2014, while 16 outbreaks are reported as active.

POOL 2

India [4] - The Project Directorate on Foot and Mouth Disease (PDFMD), Mukteswar, INDIA reported FMDV serotype O in clinical samples received by the regional laboratory.

POOL 3

Algeria [3] **-** A FMD outbreak was detected on the 23rd of July, 2014 in El ouldja, Bir El Arch, SETIF**.** The total number of outbreaks reported on the 7th of August, 2014 was 44. Diagnosis was carried out by the Veterinary Laboratory, Algeria, (National laboratory) using Non-structural protein ELISA. Positive samples were forwarded to Lombardy and Emilia Romagna Experimental Zooprophylactic Institute (IZSLER), Brescia (OIE Reference Laboratory) and isolated virus was identified as O/ME-SA/Ind-2001 lineage with a 99% homology with isolates from Libya 2013 (FMD detection and serotyping preliminary report – IZSLER).

Pakistan [2,5] **–** Predominant FMDV serotypes reported during July, 2014, were O and A with A mainly in the South and O in the North and Punjab. Genotyping of isolates from samples of bovines and water buffaloes, collected in

Pakistan between 2012 and 2014 were identified by WRLFMD as A/ASIA/Iran-05^{SIS-12}, A/ASIA/Iran-05^{FAR-09}, Asia 1/ASIA/Sindh-08 and O/ME-SA/PanAsia-2^{ANT-10}.

Tunisia [3,6] **–** During the month of July, 2014, 7 new outbreaks were reported in domestic sheep, goats and cattle, in 4 different administrative units.

Turkey [7] **-** For the month of July, the Şap Institute, detected FMDV serotypes A, Asia 1 and O in samples received from outbreaks occurring in Anatolia.

POOL 4

Kenya [8]**-** The National FMD Reference Laboratory, Embakasi, Kenya detected FMDV serotypes O, A, SAT 2 in field samples.

Uganda [3, 6] **-** Information reported to WAHID/OIE on the 27th of July, 2014, is provided about the FMD outbreaks caused by serotype O, detected on the 13th of May, 2014, in Uganda.

POOL 5

Nigeria [2,9]

During July 2014, the National Veterinary Research Institute detected FMDV serotypes O and A. Genotyping of isolates from bovine samples, collected in Nigeria between 2011 and 2014 were identified by WRLFMD as belonging to A/Africa/G-IV, O/EA-3/genotype unnamed, O/WA/genotype unnamed and SAT 2/VII/genotype unnamed. Vaccine matching tests were conducted by the WRLFMD on FMDV serotype O, A and SAT 2 field isolates collected between 2011 and 2014.

POOL 6

Botswana [3]**-** The FMD outbreak reported on the 19th of June involving 51 of a total of 1500 regularly vaccinated domestic cattle in the province of NGAMILAND was caused by serotype SAT 1.

POOL 7

No outbreaks reported [3]

COUNTER

****** 31 MONTHS SINCE THE LAST OUTBREAK IN SOUTH AMERICA WAS REPORTED***
****** 118 MONTHS SINCE THE LAST SEROTYPE C OUTBREAK WAS REPORTED***

III. DETAILED POOL ANALYSIS

A. POOL 1 – Central /East Asia

Cambodia [1, 2]

Sixteen new outbreaks of FMDV serotype O in Cambodia were reported in June, 2014. A total of 145 other outbreaks are on going during July, 2014. Location is represented in Map 2.
The Regional Reference Laboratory for FMD in South East Asia, Pakchang, Nakhon, Thailand sent bovine samples collected in Cambodia, during 2013 to the WRLFMD in which FMDV serotype O was detected.
Summary of genotyping results conducted by WRLFMD of field samples collected from cattle, in 2013, are reported in Table 2.

Table 2: Summary of genotyping results by WRLFMD for bovine samples collected in Cambodia during 2013.

N° of samples	species	date of collection	location	serotype	topotype	genotype/ strain
1	Cattle	19/09/2013	Kampong Speu Province,	O	ME-SA	PanAsia
2			Svay Rieng Province,			
3						

Map 2 Location of FMD outbreaks active in Cambodia during July, 2014 (SEAFMD).

China (Hong Kong, SAR of PRC) [2]

A pig sample collected in May, 2014, at Sheung Shui, New Territories, Hong Kong by the Tai Lung Veterinary Lab of Hong Kong was identified by WRLFMD as FMDV serotype O, topotype CATHAY, the genotype not defined.

Guest Editor's Comment:
The first outbreak of FMD virus since 2011 was detected in Korea (Rep. of). The typing by the WRL indicated that this strain (FMDV serotype O/SEA/Mya-98) is identical to the strain isolated in Russia in May 2014 (O/Primorskiy/RUS/2014). Vaccine matching performed by the Regional Reference Laboratory for FMD (ARRIAH, Russia) indicates a close match with O Manisa and O SEA (see below).

Korea (Rep. of) [2,3]

A first FMD outbreak was detected on the 23rd of July, 2014, on a pig farm in Bian-myeon, Uiseong-gun, GYEONGSANGBUK-DO. A second outbreak was reported on an other pig farm on the 27th of July, 2014, in the locality of Koryung.

Summary of the animal species and number involved in both outbreaks is reported in Table 3 and location of the 1st outbreak is represented in Map 3. Last previous outbreak of FMD reported was in April, 2011. Source of the outbreaks or origin of infection is unknown or inconclusive. Currently, an epidemiological survey is being conducted and the following control measures were adopted; control of wildlife reservoirs, quarantine, movement control inside the country, screening, zoning, vaccination in response to the outbreaks, disinfection of infected premises/establishments and stamping out. Affected animals are not being treated.

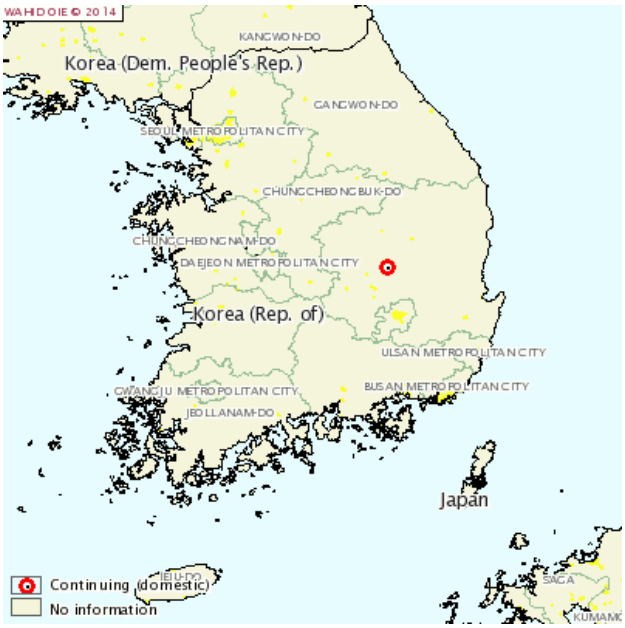
The Animal and Plant Quarantine Agency (National laboratory) of Korea (Rep. of) has employed ELISA and reverse transcriptase polymerase chain reaction (RT-PCR) identifying the FMDV as serotype O.

Samples collected in the outbreak on the 23rd of July 2014 were sent by Kwang-Nyeong Lee, FMD Division, Korea (Rep. of) to WRLFMD that confirmed the presence of FMD serotypes O in one of the 10 pig samples collected in the country during 2014, while virus genome was detected in all of the samples received. The field isolate was confirmed by WRLFMD as FMDV serotype O, topotype SEA, Genotype/strain, Mya-98 (the most closely related strain – 96.87% homology for VP1 sequence – is the Russian strain of O/Primorskiy/RUS/2014 (ARRIAH).

Table 3: Details of outbreaks of FMDV type O in July 2014, in Republic of Korea

Country	Admin1	Locality Name	Observation Date	Reporting Date	Status	Serotypes	Species Description	Sum At Risk	Sum Cases	Sum Deaths	Sum Destroyed	Sum Slaughtered
Republic of Korea	Kyongsangbuk-do	Koryung	27/07/2014	28/07/2014	Confirmed	O	domestic, swine	2015	6			
Republic of Korea	Kyongsangbuk-do	Uiseong County	23/07/2014	24/07/2014	Confirmed	O	domestic, swine	1500	3	0	0	4

Map 3: Location (red dot) of 1st FMD outbreak in July, 2014, in GYEONGSANGBUK-DO, Korea (Rep. of) (WAHID-OIE).



Laos PDR [2]

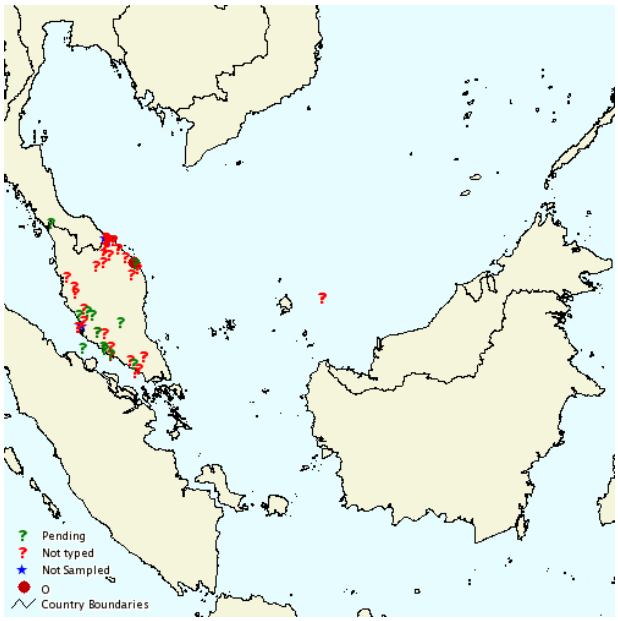
The WRLFMD confirmed the presence of FMDV serotype O (3 samples) and serotype A (3 samples) from a total of 6 bovine samples collected in Laos PDR, during 2013-2014, sent by Regional Reference Laboratory for FMD in South East Asia, Pakchang, Nakhon, Thailand. Summary of genotyping results conducted by WRLFMD of field samples collected from cattle, in 2013, are reported in Table 4.

Table 4: Summary of genotyping results by WRLFMD for bovine samples collected in Laos during 2013.

N° of samples	species	date of collection	location	serotype	topotype	genotype/ strain
1	Cattle	19/07/2013	Luang Namtha Province,	O	SEA	Mya-98
2						
3			Sainyabuli Province (Xayaboury),			

Malaysia [1] **–** Two new outbreaks of FMDV serotype O in Malaysia were reported in June, 2014, while 56 outbreaks are reported as on-going during July, 2014. Location of outbreaks is shown in Map 4.

Map 4: Location of FMD outbreaks active in Malaysia during July, 2014 (SEAFMD).



Myanmar [1]

No new outbreaks of FMDV were reported in July, 2014, while 3 outbreaks are reported as active. Location of outbreaks is shown in Map 5.

Map 5: Location of FMD outbreaks active in Myanmar during July, 2014 (SEAFMD).

Russian Federation [10]

The Regional Reference Laboratory for FMD (ARRIAH, Russia) reported post vaccination monitoring for the same country on 2632 sera and also for Kyrgyzstan on 735 sera.

Vaccine matching strain differentiation tests carried out by the same laboratory are reported in the following table:

Epidemic isolates	Type O FMD virus strains			
	O Manisa	O Sea	Pan Asia	O Pan Asia 2
O /Primorsky/2014	**M**	**M**	**N**	**N**

M – match – indicates a close relationship between field isolate and vaccine strain.
N – no match - indicates that the field isolate is so different from the vaccine strain protection is unlikely.

Thailand [1,2]

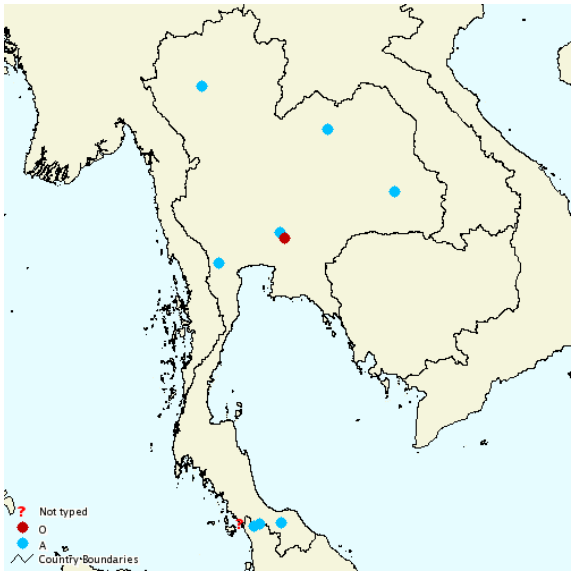
No new outbreaks of FMDV were reported in July, 2014, while 4 outbreaks are reported as continuing. Location of outbreaks is shown in Map 6.

WRLFMD identified FMDV serotype A in 19 samples and serotype O in 2 samples from a total of 21 bovine samples collected in Thailand, between 2013 and 2014 sent by Regional Reference Laboratory for FMD in South East Asia, Pakchang, Nakhon, Thailand. Summary of genotyping results conducted by WRLFMD of field samples collected from cattle, in 2013, are reported in Table 5.

Table 5: Summary of genotyping results by WRLFMD for bovine samples collected in Thailand during 2013.

N° of samples	species	date of collection	location	serotype	topotype	genotype/ strain
1	Cattle	01/10/2013	Ratchaburi Province,	O	SEA	Mya-98
2		09/10/2013	Nakhon Pathom Province,			

Map 6: Location of FMD outbreaks active in Thailand during July, 2014 (SEAFMD).



Viet Nam [1] - No new outbreaks of FMDV were reported in July, 2014, while 16 outbreaks are reported as on going. Location of outbreaks is shown in Map 7.

Map 7: Location of FMD outbreaks active in Viet Nam during July, 2014 (SEAFMD).

A map of the FMD situation for July, 2014, in South East Asia area is included for a general view (Map8).

Map 8: Location of FMD outbreaks active South East Asia during July, 2014 (SEAFMD).

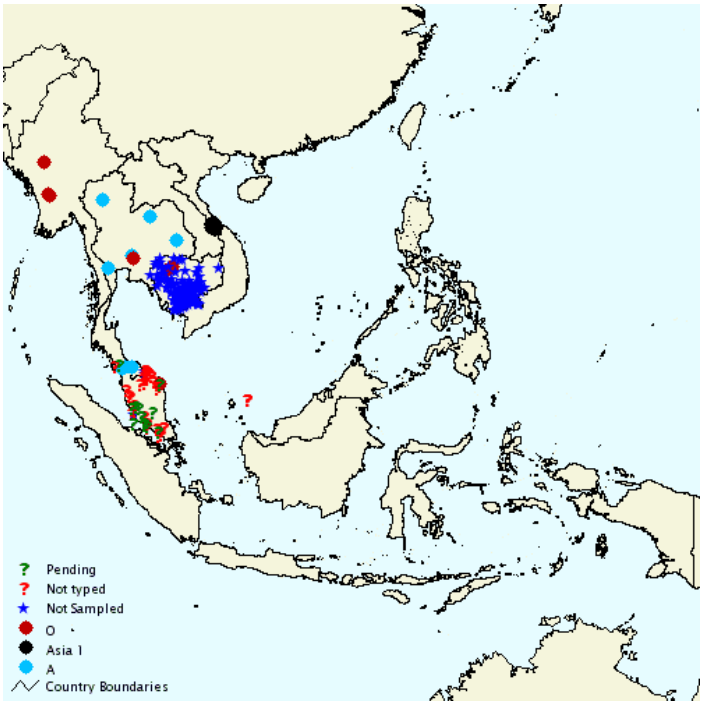


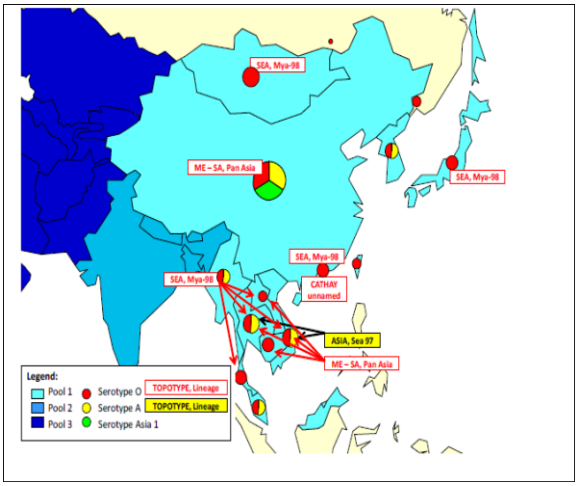
Table 6: Summary of the history of FMD Pool 1, 2011 – 2014, for geographic distribution see Map 9 below.

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2011 – 2014	LAST OUTBREAK REPORTED/SEROTYPE	Comment
Cambodia	2014 - O	Jun 2014/O	See text
China (People's Rep. of)	A, O	Jun 2014/A, Apr2014/O	Genotyping needed (LVRI to comment)
China (Hong Kong, Sar)	O	May 2014/O	See text
China (Taiwan Province)	O	June 2013/O	
Japan	FMD-free without vaccination	Jul 2010/O	
Korea (DPR)	2014 – O	Mar 2014/O May 2014/not confirmed	Genotyping needed
Korea (Rep. of)	2011 – O	July 2011/O	See text
Laos PDR	O	Mar 2013/O	See text
Malaysia	O, A 2013 - NOT TYPED	Jan 2013/not typed Jun 2014/O	Genotyping needed - see text
Mongolia	2012 – O 2013 – A	Sep 2013/A, Apr2014/O	Genotyping needed for April isolates
Myanmar	2011 - O	Jun 2014/O	See text
Russian Federation	2011 – 2012, 2014 - O 2014 - A	Feb 2014/A June 2014/O	See text
Thailand	O, A	Jun 2014 /A, Oct 2012/O	See text
Vietnam	2011 - O 2012 - A, O 2013 - A	Apr 2013/A Jun 2014/O	See text

Map 9: FMD distribution by serotype and topotype in South East Asia, 2010 – 2013 (EuFMD).

Conjectured circulating FMD viral lineages in pool 1 during 2013 [13]:

- Serotype O: O/SEA/Mya-98, O/ME-SA/PanAsia, O/CATHAY
- Serotype A: A/ASIA/Sea-97
- Serotype Asia-1 (not detected in the region since 2005 (Myanmar) and 2006 (Vietnam, P.R. China)



B. POOL 2 – South Asia

India [4]

PDFMD, Mukteswar, INDIA reported that 14 clinical samples were tested for FMDV antigen and/or RNA detection and FMDV serotype O was detected. The same laboratory carried out genotyping for serotype O on 11 clinical

samples. 405 serum samples were tested for FMDV antibodies for epidemiological studies. The diagnostic kits employed are those developed at PDFMD, Mukteswar.
The Laboratory was involved in providing expert advice to Government services national/local authorities or other. PDFMD has reported on going research on FMD and active collaborations with International Organizations.

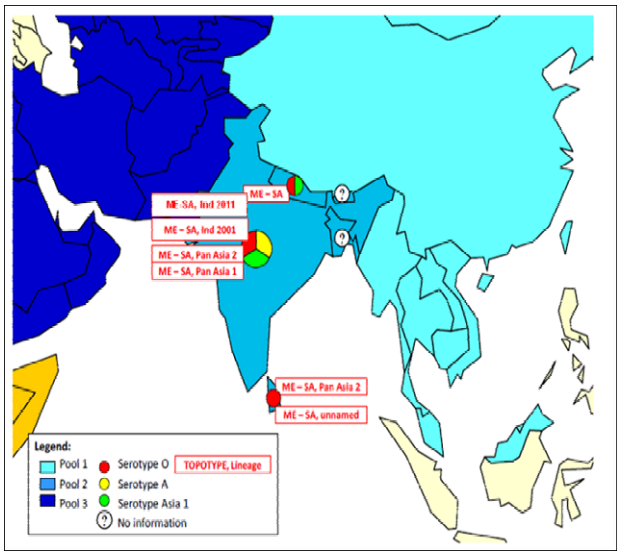
Table 7: Summary of the history of FMD Pool 2, 2011 – 2014, for geographic distribution see Map 10 below.

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2011 – 2013	LAST OUTBREAK REPORTED/SEROTYPE	Comment
Bangladesh	2011 - O, A, Asia 1	Not available	Follow –up needed – national situation unclear
Bhutan	2011, 2012 – O	Nov 2012/O	
India	O, A, Asia 1	Sep 2013/ Asia 1, July 2014/ O	Genotyping needed – current type O samples – see text
Nepal	O, A, Asia 1	Apr 2014/O	Genotyping results available (O Ind2001d)
Sri Lanka	O	2012/O	

Map 10: FMD distribution by serotype and topotype in South Asia, 2011 – 2013 (EuFMD).

Conjectured circulating FMDV lineages in pool 2 during 2013 [13]:

- O/ME-SA/Ind-2001 (the O/ME-SA/Ind-2011 lineage that emerged during 2011 has not been recognized during 2012-13)
- O/ME-SA/PanAsia-2 (last detected in 2011 in Sri Lanka)
- A/ASIA/IND (genotype 18)
- Asia-1 (lineage C subdivided into Eastern and Western clusters)



C. POOL 3 – West Eurasia & Middle East

Guest Editor's Comment:
In the December 2013 issue of the FMD Situation Report, the guest editor advised readers to closely monitor the movement of the O/ME-SA/Ind-2001 lineage during 2014. Typically, this lineage had been restricted to the Indian sub-continent but late in 2013 had moved into Libya and Saudi Arabia. The spread of this lineage into West EurAsia and North Africa in the early part of 2014 and has continued where it was recently isolated from livestock in Algeria (previously FMD free with vaccination).

Algeria [3]

A FMD outbreak was detected on the 23rd of July, 2014, El ouldja, Bir El Arch, SETIF**.** The last previous outbreak of FMD was in 1999. On the 7th of August, 2014,the total number of outbreaks reported was 44. The disease was initially suspected on a clinical basis, but has been confirmed by the Central Veterinary Laboratory that obtained positive results on the 28th of July, 2014 for FMDV serotype O in cattle samples examined by Non-structural protein (NSP) ELISA and Real- time RT-PCR.

A summary of the species and number of animals involved is reported in Table 8 and location of outbreaks is represented in Maps 11 and 12.

The first outbreak occurred on a fattening cattle farm, in El ouldja, El ouldja, Bir El Arch, SETIF. The source of the outbreak was due to the illegal introduction of animals from Tunisia. Clinical signs of the disease included fever, blisters, lameness and mammary lesions.

The following control measures have been applied: closing of livestock markets in the affected wilayahs (provinces) and the neighbouring wilayahs, ban on movement of animals within the infected wilayah, movement control in the neighbouring wilayahs and increased investigation activities. Treatment of animals is not being carried out. The outbreaks are occurring in an area of high concentration of cattle, in a 20-km² area; the area has a high concentration of fattening cattle. Further control measures are; stamping out, movement control inside the country, screening, vaccination in response to the outbreaks, disinfection of infected premises/establishments.

Four bovine samples were forwarded to Lombardy and Emilia Romagna Experimental Zooprophylactic Institute (IZSLER), Brescia (OIE's Reference Laboratory) and the virus isolated in three of the samples was identified as O/ME-SA/Ind-2001 lineage with a 99% homology with isolates from Libya 2013 (FMD detection and serotyping preliminary report – IZSLER).

Table 8: Outbreak summary for Algeria reported between the 23rd of July and 7th of August, 2014 (WAHID-OIE)

Species	Susceptible	Cases	Deaths	Destroyed	Slaughtered
Cattle	1660	338	79	0	1581
Sheep	183	0	0	0	183
Goats	10	0	0	0	10
Total	1853	338	79	0	1774

Map 11: Location of first outbreak reported on the 23rd of July, 2014 in Algeria (WAHID-OIE).

Map 12: Location of outbreaks reported between the 23rd of July and 7th of August, 2014in Algeria, (WAHID-OIE).

Pakistan [5]

Within the on going project GCP/PAK/123/USA, in Pakistan, the following activities are being conducted: a total of 51 FMD outbreaks were attended throughout Pakistan. The field veterinarians carried out free treatment of sick animals and ring vaccination during FMD outbreaks in 775 animals at risk. These activities have improved reporting of the disease in the country.

Landhi Cattle Colony (LCC) remains the hottest spot in the country where 29 out of 51 outbreaks were reported. Predominant FMDV serotypes during last month were A (mainly in the South) and O (inthe North and in Punjab).

The FMD vaccines were employed according to the SOPs developed by the Project andhave provided protection to animals against the disease convincing and encouraging a large number of farmers to undertake vaccination (even on cost share basis), particularly against FMD.

Animals are being constantly vaccinating at selected farms in different production systems including dairy colony production system, market oriented rural dairy production system, desert farming system and animals being raised in summer pastures.

A total of 8080 animals have been vaccinated, of which 2380 animals in dairy colony production system (including 951 newly arrived animals) and 5700 (including 65 newly animals) in market oriented rural smallholders. According to an Agreement (on cost sharing basis) with Farmer's Association at LCC, 508 animals at 26 farms were ear tagged and administered primary vaccination, 765 animals at 38 farms were given booster doses and 559 animals at 6 farms were vaccinated, six months after primary dose. At Nagori Dairy Farmers Cooperative Society, on cost sharing basis, 316 animals at 2 farms were given booster doses.

At Government Livestock Experimental Stations (LEC) in Punjab, 824 animals and in Khyber Pakhtunkhawa, 125 animals were vaccinated. No clinical case of the disease was reported in vaccinated animals anywhere in the country.

Eight diagnostic labs are providing diagnostic and serotyping facilities in all provinces/regions of the country and Scientists from the National University of Sciences and Technology, Pakistan (NUST), visiting the ELISA laboratory at Livestock Dairy Development & Poultry Department, Gilgit Baltistan, gave a detailed overview of the application of Laboratory Information Management System (LIMS) and reviewed lab's working and integration of LIMS in lab's operations. The discussions were focused on how the system can be effectively used in that environment and the configuration of the application accordingly.

Backstopping for the proper analysis of samples was provided to all ELISA labs. ELISA kits and other expendables were regularly provided for smooth running of activities at the laboratories.

The 8th TAD officer meeting, with the project technical staff, was held on 16 July 2014 at Islamabad. The Project progress was reviewed and issues being faced were discussed as also the implementation of various activities and their possible solutions were discussed.

A summary of the genotyping results carried out by the WRLFMD, of isolates from samples of bovines and water buffaloes, collected in Pakistan between 2012 and 2014 is reported in Table 9. In brief the isolates were identified by WRLFMD as belonging to A/ASIA/Iran-05^{SIS-12}, A/ASIA/Iran-05^{FAR-09}, Asia 1/ASIA/Sindh-08 and O/ME-SA/PanAsia-2^{ANT-10}.

Table 9: summary of genotyping results by WRLFMD for bovine and water buffalo samples collected in Pakistan between 2012 and 2014.

Sample N°	Species	Date of collection	Location	Serotype	Topotype	Genotype/strain
1	Cattle	21/11/2012	Mirpur	A	ASIA	Iran-05^{SIS-12}
2	Water Buffalo	15/01/2014	Sialkot			Iran-05^{FAR-09}
3	Cattle	17/01/2014	Islamabad			
4	Cattle	20/02/2014	Sargodha			
5	Cattle	20/02/2014	Sargodha			
6	Cattle	09/04/2014	Lower Dir			
7	Water Buffalo	10/04/2014	Lahore			
1	Water Buffalo	08/05/2012	Rahim Yar Khan	Asia 1	ASIA	Sindh-08
2	Cattle	22/01/2014	Multan			
3	Water Buffalo	24/03/2014	Multan			
4	Cattle	15/04/2014	Lahore			
1	Cattle	24/07/2012	Islamabad	O	ME-SA	PanAsia-2^{ANT-10}
2	Water Buffalo	16/10/2012	Hafizabad			
3	Cattle	05/12/2013	Lasbella			
4	Water Buffalo	17/12/2013	Khanewal			
5	Cattle	03/01/2014	Quetta			
6	Water Buffalo	04/01/2014	Bhimber			
7	Cattle	04/01/2014	Mirpur			
8	Water Buffalo	09/01/2014	Multan			
9	Cattle	10/03/2014	Kotli			
10	Cattle	12/01/2014	Gilgit			
11	Cattle	12/01/2014	Gilgit			
12	Water Buffalo	15/01/2014	Quetta			
13	Cattle	30/01/2014	Multan			
14	Cattle	11/02/2014	Rahim Yar Khan			
15	Cattle	11/02/2014	Attock			
16	Cattle	20/02/2014	Sargodha			
17	Cattle	06/03/2014	Karachi			
18	Water Buffalo	10/03/2014	Lahore			
19	Water Buffalo	17/03/2014	Sialkot			
20	Water Buffalo	20/03/2014	Karachi			
21	Cattle	02/04/2014	Karachi			
22	Water Buffalo	10/04/2014	Lahore			
23	Cattle	14/04/2014	Karachi			

Tunisia [3,6]

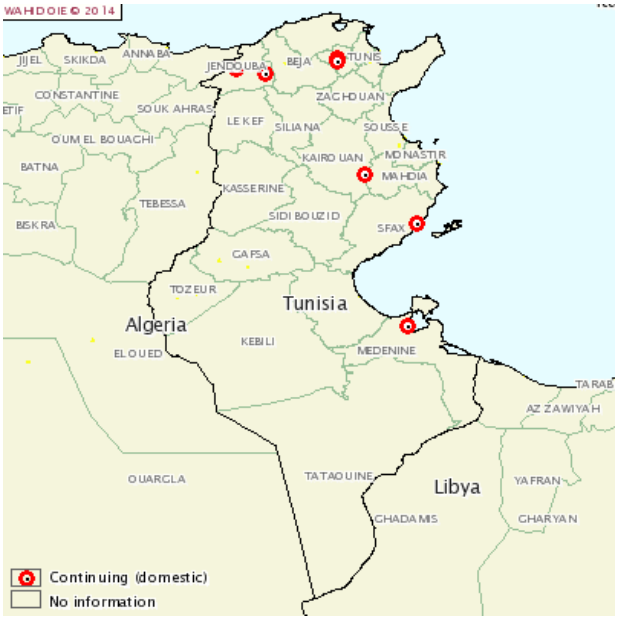
During the month of July, 2014, 7 new outbreaks were reported in domestic sheep, goats and cattle, in 4 different administrative units. Details of these are presented in Table 10 and location is reported in Map 13. Although the event is continuing, fewer outbreaks were reported probably coinciding to Ramadan occurring between 27th of June and 26th of July as in this period there could be a change in field activities possible.

The following control measures are being adopted: quarantine, movement control inside the country, vaccination in response to the outbreaks, disinfection of infected premises/establishments and modified stamping out.

Table11: Details of outbreaks of FMDV type O in July, 2014 in TUNISIA (FAO EMPRES/WAHID-OIE)

Admininistrative unit	Locality Name	Observation Date	Reporting Date	Serotypes	Species Description	Sum At Risk	Sum Cases	Sum Deaths	Sum Destroyed	Sum Slaughtered
Manouba	Borj toumi Elbattan	14/07/2014	21/07/2014	O	domestic, cattle	4	2	0	0	4
Medenine	Boughrara Medenine sud	07/11/2014	21/07/2014	O	domestic, cattle	6	1	0	0	4
Manouba	Zouitina Elbattan	07/11/2014	21/07/2014	O	domestic, cattle, domestic, sheep	156	2	0	0	4
Kairouan	Ouled Lahjallah Bouhajla	07/07/2014	21/07/2014	O	domestic, cattle	70	1	0	0	4
Jendouba	Mguassim Boussalem	07/04/2014	21/07/2014	O	domestic, cattle	21	21	0	0	4
Jendouba	Rabiaa Fernana	07/01/2014	21/07/2014	O	domestic, cattle	8	8	0	0	4
Manouba	Tebourba	07/01/2014	07/07/2014	O	domestic, cattle, domestic, goats, domestic, sheep	29	1	0	0	4
					Totals	294	36	0	0	28

Map 14: Location of outbreaks in July, 2014 in Tunisia (WAHID-OIE).



Turkey [7]

For the month of July, 2014, the Şap Institute examined 14 samples by Multiplex Real-time RT-PCR and Antigen detection ELISA. Samples were received from 13 outbreaks that occurred in Anatolia. FMDV serotypes were detected as reported in the following table:

Serotypes	N° of samples
O	4
A	5
Asia 1	1
Unidentified	3

FMDV serotypes A and O isolates were genotyped by Şap Institute.

A total of 2206 sera sample were tested by different antibody detection ELISAs within the following activites:

- 99 sera by NSP ELISA for Risk based Thrace Surveillance Program
- 7 sera by NSP ELISA from outbreaks
- 597 sera in NSP ELISA for screening disease free animal for transportation
- 7 sera for serotyping by solid phase competition ELISA (SPCE)
- 747 sera for vaccine potency trial by SPCE
- 749 sera for routine vaccine monitoring.

Other activities carried out by the Institute were outbreak investigations and expert advice provided to the General Directorate related to the FMD Risk based national Strategy.

In the framework of Research and Development on vaccine production and monitoring, some research activities are continuing.

Table 12: Summary of the history of FMD Pool 3, 2011 – 2014, for geographic distribution see Map 15 below.

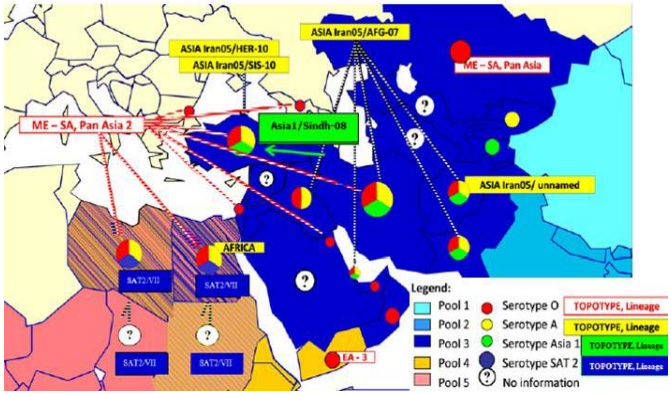
COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2011 – 2013	LAST OUTBREAK REPORTED/SEROTYPE	Comment (Genotyping or vaccine matching tests needed for this pool)
Afghanistan	2011 - O, A, Asia 1	Dec 2011	
Algeria	NO REPORTED OUTBREAKS	July 2014/O	See text
Armenia	NO REPORTED OUTBREAKS	Not available	Follow –up needed – national situation unclear
Azerbaijan	NO REPORTED OUTBREAKS	Jun 2001	
Bahrain	2011 - O, A, Asia 1 2012 - O	Mar 2012/O	
Bulgaria	2011 - O	Apr 2011/O	
Egypt	2012 - O, A	May 2014/O, A, SAT2	
Georgia	NO REPORTED OUTBREAKS	2002	
Iran	O, A, Asia 1	Jun 2013/Asia 1, Apr 2014/O, A	Vaccine matching tests needed
Iraq	O,A	2012/A	
Israel	O	Nov 2013/Mar 2012/O	
Jordan	NO REPORTED OUTBREAKS	2006	
Kazakhstan	O, A	Jun 2013/ A	
Kuwait	O	Feb 2012/O	
Kyrgyzstan	2011 - O, A	Nov 2011/O, A	
Lebanon	NO REPORTED OUTBREAKS	03/2010	
Libya	2011 - O; 2012 - O, SAT 2	Oct 2013/O	
Oman	NO DATA AVAILABLE	Dec 2011	
Pakistan	O, A, Asia 1	Apr 2014 / A, O, Asia 1, Jun2014/(not typed)	See text
Autonomous Territories Palestine	2011 - O, A, Asia 1 2012 - SAT 2; 2013 - A	Mar 2013/A Nov 2013/O	
Qatar, 2011	NO DATA AVAILABLE	Not available	Follow –up needed – national situation unclear
Saudi Arabia	O	Nov 2013/O	

Syrian Arab Republic, 2011	NO REPORTED OUTBREAKS	Mar/2002	
Tajikistan, 2011	2011 - Asia 1	Nov 2011/Asia 1	
Tunisia	2014	Jun 2014/O	Vaccine matching tests needed - see text
Turkey	Asia 1, A, O	July 2014/O, A, Asia 1	See text
Turkmenistan	NO DATA AVAILABLE	Not available	Follow –up needed – national situation unclear
Uzbekistan	NO DATA AVAILABLE	Not available	

Map 15: FMD distribution by serotype and topotype for West Eurasia and Middle East, 2011 – 2013 (EuFMD).

Conjectured circulating FMDV lineages in pool 3 during 2013 [13]:

- O/ME-SA/PanAsia-2 (predominantly from ANT-10 and FAR-09 sub-lineages)
- O/ME-SA/Ind-2001 (recent incursion during 2013 from the Indian sub-continent)
- A/ASIA/Iran-05 (from SIS-12, SIS-10, FAR-11 and BAR-08 sub-lineages) Asia-1 (Sindh-08 lineage).



D. POOL 4 – Eastern Africa

Ethiopia [11]

In July, 2014, the National Animal Health Diagnostic and Investigation Center (NAHDIC) tested 40 sera samples from imported animals. Fourteen veterinary professionals from different regional veterinary laboratories were trained for one week on FMD, Rift Valley Fever and brucellosis.

The laboratory continues to collaborate with the WRLFMD on referral of laboratory special services and proficiency test samples provision.

Kenya [8]

The National FMD Reference Laboratory, Embakasi detected FMDV serotype O in 4 samples, A in 1 sample, SAT 2 in 3 samples and no virus was detected in 7 samples. The laboratory has on going activities on vaccine potency assays and post vaccination monitoring.

Uganda [3, 6]

Following is information reported to WAHID/OIE on the 27th of July, 2014, on the outbreaks detected on the 13th of May 2014. Details of these outbreaks are reported in Table 13 and location is represented in Map 16. Source of the outbreaks or origin of infection are unknown or inconclusive and may be due to: introduction of new live animals, legal or illegal movement of animals or contact with infected animal(s) at grazing/watering.

The observed change in pattern and epidemiology of the FMD disease virus has coincided with increased cattle movement and climatic stress that has resulted in scarcity of pastures. Treatment is being carried out with antibiotics for secondary bacterial infections. Control measures applied are the following: quarantine, movement control inside the country, vaccination in response to the outbreaks and administrative division. 31,000 cattle were vaccinated with a trivalent vaccine containing serotypes SAT 1, SAT 2 and O. The National Animal Disease Diagnostics and Epidemiology Center (NADDEC), has employed an antigen (Ag) detection ELISA on cattle samples on the 7th of July that resulted positive for FMDV serotype O.

Table 13: Outbreak summary for Uganda detected on the 27th of July, 2014 (WAHID-OIE)

Administrative unit	Observation Date	Reporting Date	Species Description	Sum At Risk	Sum Cases
Moroto	27/07/2014	25/07/2014	domestic, cattle	2015	6
Kaabong	27/07/2014	25/07/2014	domestic, cattle	2015	6
Kumi	27/07/2014	25/07/2014	domestic, cattle	2015	6

Map 16: Location of outbreaks (red dots) in May, 2014 in Uganda (FAO EMPRES).

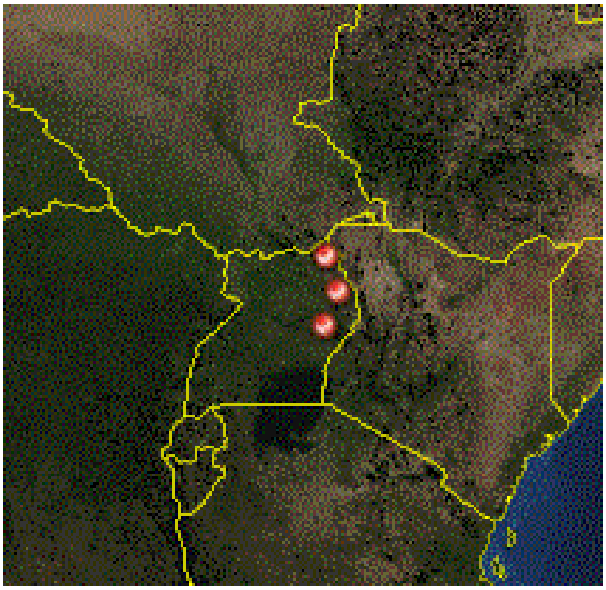
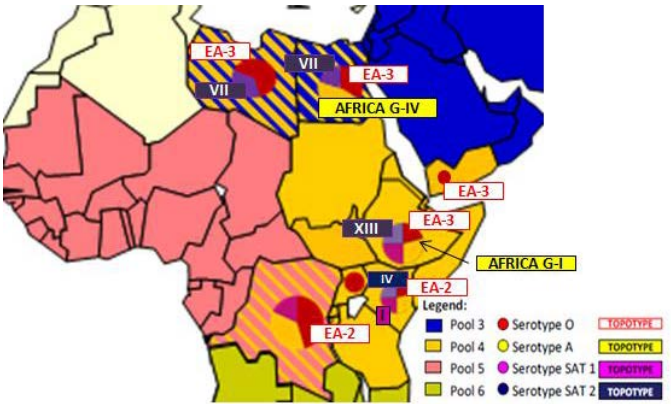


Table 14: Summary of the history of FMD Pool 4, 2011 – 2014, for geographic distribution see Map 17 below.

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2011 - 2013	LAST OUTBREAK REPORTED/SEROTYPE	Comment
Burundi	O, A, SAT 1, SAT 2	Aug 2013 / not available	Identification required
Comoros	NO DATA AVAILABLE	2010	
Congo d. R.	O, A, SAT 1	Jun 2013/not typed	Genotyping needed
Djibouti	NO DATA AVAILABLE	Not available	Follow –up needed – national situation unclear
Egypt	2011 - A, O 2012 - A, O SAT 2	Jun 2012/SAT 2	
Eritrea	O	Dec 2011/O	
Ethiopia	A, SAT 1, 2012/O	Jun 2014/A, SAT 2, O	See text
Kenya	2011 - O, A, SAT 1, 2013/SAT 2	Oct 2013/SAT 1July 2014/A, July 2014/SAT2, July 2014/O	
Libya	2011 - O 2012 - O, SAT 2	Oct 2013/ O, Sat 2/Apr 2012	Follow up needed
Rwanda	ABSENTNOT TYPED	Nov 2012/not typed	Genotyping needed
Somalia	NO DATA AVAILABLE	2011	Follow –up needed –

			national situation unclear
Sudan	A, O	2013/O, SAT2	
South Sudan	O, SAT 1, SAT 2, A	2011	
Tanzania	2011 - SAT 1(buffalo), SAT 2 (cattle), O, SAT3 2012 - A, O, SAT 1, SAT 2	Mar 2013/O Apr2013/ A, SAT 1, SAT2	
Uganda	O, A, SAT 1, SAT 2, SAT3	2013/A, SAT2, May 2014/O	Genotyping needed
Yemen	NO DATA AVAILABLE	Not available	Follow –up needed – national situation unclear

Map17: FMD distribution by serotype and topotype for East Africa. 2011 – 2013 (EUFMD)



East Africa is known to be endemic for FMD, but current data are limited.

Conjectured circulating FMDV lineages in pool 4 during 2013 [13]:

- O/ME-SA/Sharqia-72 (detected in samples collected in Egypt in 2009)
- A/AFRICA (genotypes I (Kenya, Tanzania, D.R. Congo), IV (Sudan, Eritrea, Egypt) and VII (Ethiopia, Egypt))
- A/ASIA/Iran-05 BAR-08 sub-lineage (Egypt)
- SAT 1 (topotypes I (Kenya, Tanzania)
- SAT 2 (topotypes IV (Kenya, Tanzania), VII (Sudan, Egypt), XIII (Ethiopia, Sudan))
- SAT 3 (only detected in African buffalo in the south of the QENP, Uganda in 1970 & 1997)
- O (topotypes EA-2 (Kenya, Tanzania, DR Congo, Uganda), EA-3 (Ethiopia, Eritrea, Sudan, Egypt) and EA-4 (Ethiopia, Kenya, Uganda).

E. POOL 5 – West / Central Africa

Cameroon [12]

LANAVET- Garoua employed kits provided by FAO to carry out pre- and post-vaccinal sampling to monitor seroconversion. The Laboratory is collaborating on research activities with the Ohio state University and Plum Island Animal Disease Center –USA and has an ongoing FAO project (MTF/034/STF).

Nigeria [2, 9]

During June 2014, the National Veterinary Research Institute detected FMDV serotypes O and A in field samples. The Laboratory also carried out activities for the testing of samples for FMDV antibodies using kits provided by FAO. The Laboratory was involved in the investigation of FMD outbreaks in the field and providing expert advice to Government services national/local authorities or other). The Laboratory has on going collaborations with international Organisations.

A summary of the genotyping results carried out by the WRLFMD of isolates from bovine samples collected in Nigeria, between 2011 and 2014 is reported in Table 15. In brief, the isolates were identified by WRLFMD as belonging to A/Africa/G-IV, O/EA-3/genotype unnamed, O/WA/genotype unnamed and SAT 2/VII/genotype unnamed.

A summary of the vaccine matching results carried out by the WRLFMD is reported in Table 16.

Table 15: summary of genotyping results by WRLFMD for samples collected in Nigeria between 2011 and 2014.

Sample N°	Species	Date of collection	Location	Serotype	Topotype	Genotype/ strain
1	Bovine	26/06/2011	Kogi State	A	AFRICA	G-IV
2		06/11/2012	Barakin Ladi, Plateau State			
3						
4						
5		13/11/2012	Kaura, Kaduna State			
6		17/09/2013	Barakin Ladi, Plateau State			
7		21/11/2013	Toro, Bauchi State			
8						
9						
1		11/06/2011	Makurdi, Benue State	O	EA-3	unnamed
2		26/06/2011	Oke Buku, Kogi State		WA	
3		22/07/2011	Kachia, Kaduna State		EA-3	
4		02/08/2011	Jos South, Plateau State			
5		03/08/2012	Madagali, Adamawa State		WA	unnamed
6		03/08/2012	Shuwa, Adamawa State			
7		03/01/2014	Kara, Plateau State,			
8						
9						
10		14/01/2014				
1*		20/07/2011	Dengi, Plateau State	SAT2	VII	unnamed
2*						
3^		22/07/2011	Kachia, Kaduna State,			
4^						
5^		02/08/2011	Jos South, Plateau State			
6^						
7^		06/08/2011	Mickan, Plateau State			
8^						
9*		03/11/2011	Bokkos, Plateau State			
10*						
11^		22/06/2012	Igbo, Oyo State			
12^						
13^						

* strains forming a nearly unique cluster, most closey related to Lib-03
^strains forming a nearly unique cluster, most closely related to Lib-12

Table 16: summary of the vaccine matching results carried out by the WRLFMD on field isolates from Nigeria
M – match – indicates a close relationship between field isolate and vaccine strain.
N – no match - indicates that the field isolate is so different from the vaccine strain protection is unlikely.

Field isolate identification	Vaccine strain identification			
	A Eri98	A Iran 2005	A22 Irq	A Tur06
A Nig 03/13	M	N	N	M
A Nig 07/13	M	N	N	N
	O 3939	O Manisia	O Tur 5/09	
O Nig 03/14	M	N	M	
O Nig 04/14	M	N	M	
	Sat2 Eri	Sat2 Zim		
Sat2 Nig 03/12	M	M		
Sat2 Nig 17/11	M	N		

Table 17: Summary of the history of FMD Pool 5, 2011 – 2014, for geographic distribution see Map 18 below.

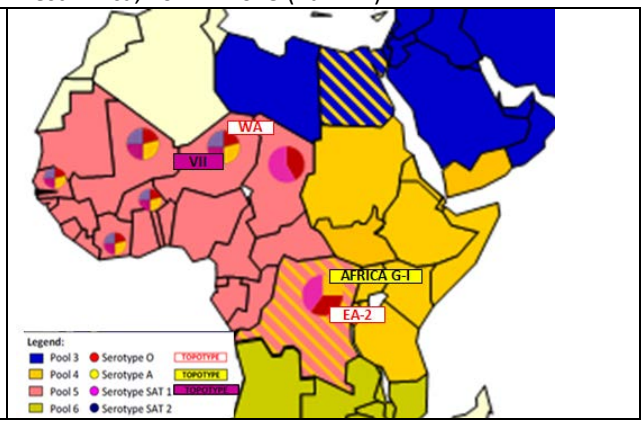
Country	FMD history FMDV serotypes, reported to OIE in 2011 – 2013	Last outbreak reported/serotype	Comment (Genotyping would be useful for this region)
Benin	2011 - A, O, SAT 1, SAT 2	Dec 2011/O, A, SAT 1, SAT 2	
Burkina Faso	O, A, SAT 2	2013/ not available	Follow –up needed – national situation unclear
Cameroon	2011 - O, A, SAT 2	2013/O, SAT 2; Apr2014/O, A, SAT 2, May 2014/SAT 1, Jun 2014	Genotyping needed
Cape Verde	No data available	Not available	Follow –up needed – national situation unclear
Central Afr. Rep.	No data available	Not available	
Chad	2011, 2012 - A, SAT 1	Not available	
Congo D. R.	2011, 2012 O, A, SAT 1	Jun 2013/not typed	Genotyping needed
Congo R.	No data available	Not available	Follow –up needed – national situation unclear
Cote D'Ívoire	2011 - SAT 1, A, O, SAT 2	2011	
Equatorial Guinea	No data available	Not available	Follow –up needed – national situation unclear
Gabon	No data available	Not available	
Gambia	O, A, SAT 2	2012/O	
Ghana	O, A, SAT 1, SAT 2	2013/not available	Genotyping needed
Guinea Biss.	No data available	No data available	Follow –up needed – national situation unclear
Guinea	No data available	No data available	
Liberia	A, SAT 2	2011/2012, no precise data	Genotyping needed
Mali	O, A, SAT 1, SAT 2	2011/2012, no precise data	Follow –up needed – national situation unclear
Mauritania	No data available	Not available	
Niger	O, A, SAT 1, SAT 2	2013/not available	Genotyping needed
Nigeria	O, A, SAT 1; SAT 2	2013/SAT 1, SAT 2, July 2014/O, A,	See text
Sao Tome Principe	No data available	Not available	Follow –up needed – national situation unclear
Senegal	O, A, SAT 1, SAT 2	2012/O, A, SAT 1	
Sierra Leone	No data available	Oct 1958	
Togo	O, SAT 1	2012/O	

Map 18: FMD distribution by serotype and topotypes for West Africa, 2011 – 2013 (EuFMD)

FMD is endemic in West Africa.

Conjectured circulating FMDV lineages in pool 5 during 2013 [13]:

- Serotype O (topotypes WA and EA-3 (Nigeria))
- Serotype A (topotype AFRICA, genotypes IV and VI)
- Serotype SAT 1
- Serotype SAT 2 (topotype VII)



F. POOL 6 – SOUTHERN AFRICA

Botswana [3]

The FMD outbreak reported on the 19th of June involving 51 of a total of 1500 regularly vaccinated domestic cattle in the province of NGAMILAND was caused by serotype SAT 1. Ring vaccination around the outbreak is continuing with 3862 cattle vaccinated with a trivalent SAT 1,2,3 conventional vaccine. Epidemiological investigations of this event are continuing and control measures in place are: control of wildlife reservoirs, quarantine, movement control inside the country and dipping and spraying. The diagnostic tests were carried out by Botswana Vaccine Institute (OIE's Reference Laboratory) by virus isolation.

Table 18: Summary of the history of FMD Pool 6, 2011 – 2014, for geographic distribution see Map 19 below

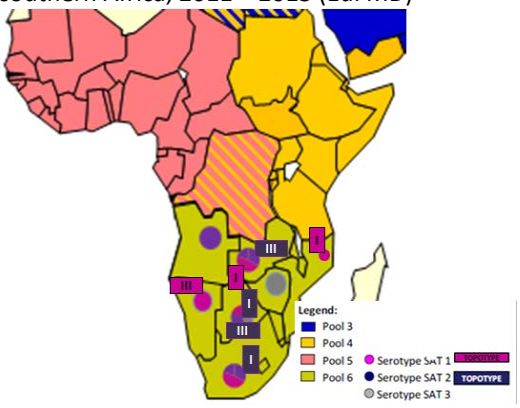
COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2011 – 2013	LAST OUTBREAK REPORTED/SEROTYPE	Comment
Angola	NO REPORTED OUTBREAKS	Dec 2010/ SAT 2	
Botswana	SAT 1, SAT 2, SAT 3	Jun 2014/Sat 1	See text
Congo D. R.	O, A, SAT 1	2011/2012, NO PRECISE DATA	Follow –up needed – national situation unclear
Malawi	2011 - SAT 2	Oct 2011	
Mozambique	2011 - SAT 2	Jun 2011/SAT 2	
Namibia	SAT 1	Aug 2013/ NOT AVAILABLE	Genotyping needed
South Africa	SAT 1, SAT 2	Aug 2013/SAT 1; Mar2014 SAT 2	
Zambia	SAT 1, SAT 2	Jan 2013/SAT 1, SAT 2	
Zimbabwe	SAT 1, SAT 3	Jun 2013/SAT 3, Jun 2014/SAT 1,	

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 during 2013 [13]:

- Serotype SAT 1 (topotypes I, II and III)
- Serotype SAT 2 (topotypes I, II and III)
- Serotype SAT 3 (topotypes I, II and III)

Map 19: FMD distribution by serotype and topotype for southern Africa, 2011 – 2013 (EuFMD)



G. POOL 7 – South America

South America [3]

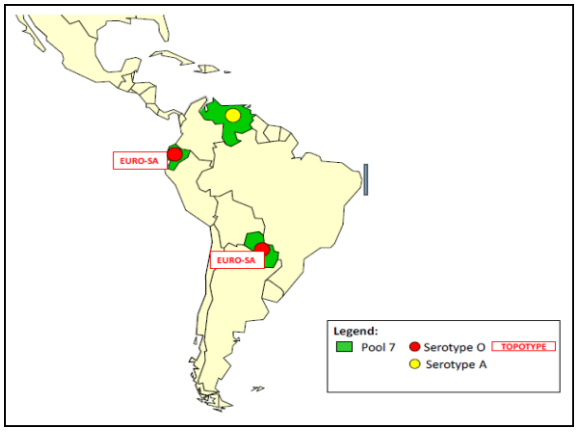
No new outbreaks have been reported for this period of time.

Most South American countries are FMD free with (Uruguay) or without (Chile, Guyana) vaccination or with free zones with vaccination (Argentina, Bolivia, Brazil, Colombia, Peru) or without vaccination (Argentina, Bolivia, Brazil, Colombia, Peru). Small areas of the continent are considered as endemic but clinical cases are rare (Table 19 and Map 20). The FMD history between 2011 –2013 is given in Table19.

Table 19: Summary of the history of FMD Pool 7, 2011 – 2014, for geographic distribution see Map 20 below

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2011 2013	LAST OUTBREAK REPORTED/SEROTYPE	Comment
Ecuador	O	Aug 2011/O	National situation needs verification
Paraguay	O	Dec 2011/O	
Venezuela	O, A	2011/O, A	National situation needs verification

Map 20: FMD distribution by serotype and topotype for South America, 2011 – 2013 [13] (EuFMD)



IV. OTHER NEWS:

No other news to report

V. REFERENCES - Superscripts

1. SEAFMD, http://www.arahis.oie.int/reports.php?site=seafmd
2. World Reference Laboratory for Foot-and-Mouth Disease (WRLFMD), www.wrlfmd.org
3. WAHID Interface – OIE World Animal Health Information Database http://web.oie.int/wahis/public.php?page=home
4. Project Directorate on Foot and Mouth Disease (PD-FMD), Indian Council of Agricultural Research, Mukteswar, India (*Dr B. B. Dash*)
5. Progressive Control of Foot and Mouth Disease in Pakistan, GCP/PAK/123/USA - (*Dr. Manzoor Hussain*, National Project Director and *Dr. Muhammad Afzal*, Project Coordinator)
6. FAO EMPRES-AH, http://www.fao.org/ag/againfo/programmes/en/empres/home.asp
7. WELLNET Laboratory, Sap Institute, Turkey (*Dr. Naci Bulut*)
8. National FMD Reference Laboratory, Embakasi, Kenya (*Dr. Abraham Sangula*)
9. FMD Research Centre, Virology Research Department, National Veterinary Research Institute, Vom, Plateau State, Nigeria (*Dr. Ularamu Hussaini*)
10. Regional Reference Laboratory for FMD (ARRIAH, Russia) - (*Dr. Svetlana Fomina*)
11. National animal health diagnostic and investigation center (NAHDIC), Ethiopia (*Dr. Daniel Gizaw*)
12. LANAVET-Garoua, Cameroon (*Dr. Simon Dickmu Jumbo*)
13. OIE/FAO FMD Reference Laboratory Network, Annual Report 2013