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MONTHLY REPORT
FOOT-AND-MOUTH DISEASE SITUATION



Food and Agriculture
Organization of the
United Nations



European
Commission

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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

February 2018

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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.

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Guest Editor's comments:

It is a great honour and pleasure for me to be invited as guest editor for this month's FMD report. From the very beginning of my work experiences as field veterinarian, I observed that FMD was one of the most frequently occurring infections in livestock population. Relative to other transboundary animal diseases endemic in the area, livestock producer give great attention to FMD because of its high morbidity and great loss in milk production and draft animal power. Since 2007, I have been working for National Animal Health Diagnostic and Investigation center (NAHDIC), where FMD is priority disease among those most investigated and tested for certification of export of live animals.

NAHDIC mission is to enhance its capacity on FMD diagnosis and surveillance implementing OIE-FMD Twinning Project with the FMD World Reference Laboratory (WRLFMD) of The Pirbright Institute, UK. Through this twining project, NAHDIC and WRLFMD play their role to bring together the East African Regional Laboratory Network (EARLN) in December 2017 at NAHDIC to discuss FMD situation in the region and future collaboration. The participants were from FMD laboratories of seven East African countries as well as from WRLFMD, the Ethiopian Ministry of Livestock and Fishery, the European Commission for the Control of FMD (EuFMD), the Ethiopian National Veterinary Institute (NVI), the Ethiopian Agricultural Transformation Agency (ATA) and the Pan African Veterinary Vaccine Centre (AU-PANVAC).

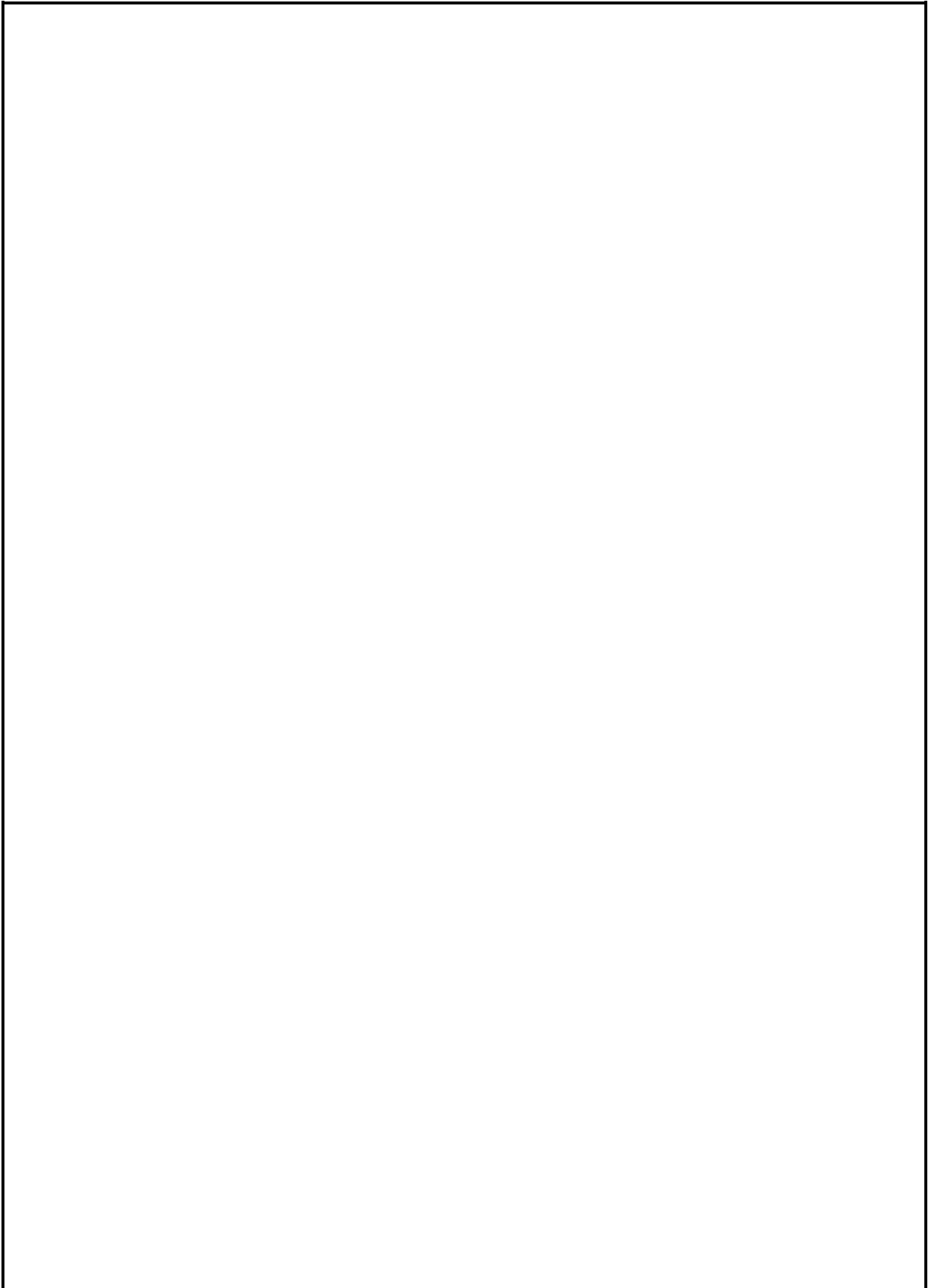


Information of this report compiled from the OIE, FAO World Reference Laboratory for FMD sources, Reports such as the "Global Monthly FMD Situation Report" plays a great role in the distribution of information on FMD activity and changes in regional virus profiles. FMD viral movements, as described in previous reports continue to be a feature of the evolution of FMD. February 2018, in pool 1, serotype O from cattle and small ruminant were detected in Mongolia. Serotype O was also reported from Russian Federation in ZABAJKAL'SKIJ KRAY in first week of February 2018 from different species of farm animals. This virus was belonging to the O/PanAsia lineage. In Pool 2, Indian Council of Agricultural Research - Directorate of Foot and Mouth Disease (ICAR-PDFMD) detected FMDV serotype O as continues to occur in February 2018 in bovine species. In Nepal, FMD virus Asia 1/Asia and O/ME-SA/Ind2001d were also genotyped during 2017. In pool 3 – FMDV serotypes A and O were detected in cattle samples in **Israel**. FMDV serotype O was detected in **Palestine** in sheep and cattle samples. **Pakistan** reported FMD outbreaks due to serotypes A, Asia1, O and untyped. There is limited data available for pool 4 while serotypes O, A and SAT1, SAT2 and SAT3 are believed to be endemic in the region. **Ethiopia** and **Kenya** reported outbreaks of serotype O and SAT 1 in cattle species in February 2018. Furthermore, as region is the so vast FMD virus epidemiology is very complex. There is only limited up to date information on strain circulated. For this month no changes are reported in Pool 5 (west/Central Africa). In pool 6, FMD SAT 1 was reported during February 2018 by **South Africa** as having occurred in cattle at **Limpopo** during October 2017. FMD outbreaks were also reported in **Zimbabwe** in cattle in January 2018 in **Mashonaland East**. No new FMD outbreak was reported from Pool 7 (**South America**) this month, with the last detection being in Colombia in July 2017.

FMDV remain a dynamic virus that is widespread, so strengthening of the collaboration within the region and worldwide is of fundamental importance as is the sample collection, testing and characterisation from representative field cases of FMD, as well as the initiatives of the OIE/FAO FMD Laboratory Network to share and distribute this information to the interested community. Strengthening this laboratory network in Africa has paramount importance for FMD control in general.

Daniel Gizaw, NAHDIC, Ethiopia

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I. GENERAL OVERVIEW

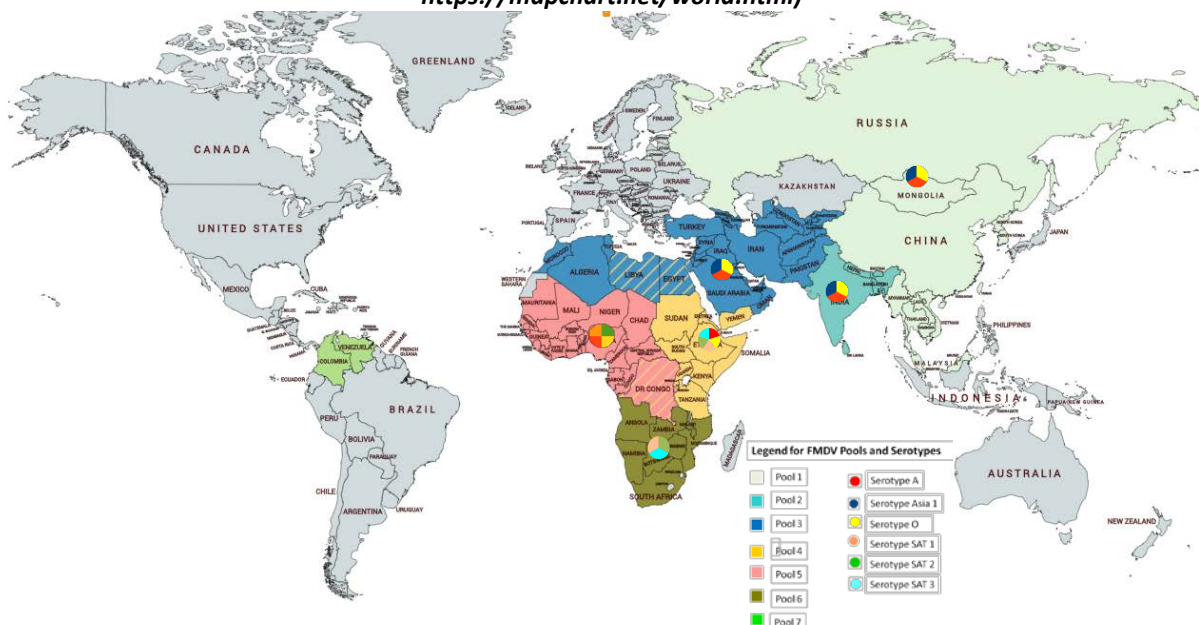
Pools represent independently circulating and evolving foot-and-mouth disease virus (FMDV) genotypes; within the pools, cycles of emergence and spread occur that usually affect multiple countries in the region. In the absence of specific reports, it should be assumed that the serotypes indicated below 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 2013 – 2017 (source EuFMD)

POOL	REGION/COUNTRIES – colour pools as in Map	SEROTYPES
1	<u>SOUTHEAST ASIA/CENTRAL ASIA/EAST ASIA</u> Cambodia, China, China (Hong Kong, SAR), Taiwan Province of China, Democratic People's Republic of Korea, Republic of Korea, Laos People's Democratic Republic, Malaysia, Mongolia, Myanmar, Russian Federation, Thailand, Viet Nam	A, Asia 1 and O
2	<u>SOUTH ASIA</u> Bangladesh, Bhutan, India, Mauritius, Nepal, Sri Lanka	A, Asia 1 and O
3	<u>WEST EURASIA & MIDDLE EAST</u> Afghanistan, Algeria, Armenia, Azerbaijan, Bahrain, Egypt , Georgia, Iran (Islamic Republic of), 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	A, Asia 1 and O
4	<u>EASTERN AFRICA</u> Burundi, Comoros, Democratic Republic of Congo , Djibouti, Egypt , Eritrea, Ethiopia, Kenya, Libya , Rwanda, Somalia, Sudan, South Sudan, United Republic of Tanzania, Uganda, Yemen	O, A, SAT 1, SAT 2 and SAT 3
5	<u>WEST/CENTRAL AFRICA</u> Benin, Burkina Faso, Cameroon, Cabo Verde, Central Afr. Rep., Chad, Democratic Republic of Congo , Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea-Bissau, Guinea, Liberia, Mali, Mauritania, Niger, Nigeria, Sao Tome Principe, Senegal, Sierra Leone, Togo	O, A, SAT 1 and SAT 2
6	<u>SOUTHERN AFRICA</u> Angola, Botswana, Congo D. R. , Malawi, Mozambique, Namibia, South Africa, Zambia*, Zimbabwe	{O, A}*, SAT 1, SAT 2 and SAT 3
7	<u>SOUTH AMERICA</u> Colombia, Venezuela (Bolivarian Republic of)	O and A

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

MAP 1: Foot-and-mouth disease (FMD) virus pools: world distribution by serotype in 2013-2017 (source EuFMD, <https://mapchart.net/world.html>)



II. HEADLINE NEWS

POOL 1- SOUTHEAST ASIA/CENTRAL ASIA/EAST ASIA

Mongolia¹ Seven FMD outbreaks caused by serotype O involving cattle and small ruminant farms were notified during January 2018 in different parts of the country.

Russian Federation^{1,2} – Four FMD outbreaks caused by serotype O were reported during the first week of February 2018 in ZABAJKAL'SKIJ KRAY, on mixed animal species farms with cases in just cattle.

POOL 2 - SOUTH ASIA

India³ – FMDV O continues to be the serotype exclusively detected even during February 2018 in the bovine samples examined by the Indian Council of Agricultural Research - Directorate of Foot and Mouth Disease (ICAR-PDFMD).

Nepal⁴ – Field viruses detected during 2017 were respectively genotyped as FMDV Asia 1/Asia and O/ME-SA/Ind2001d.

POOL 3 - WEST EURASIA & MIDDLE EAST

Israel⁵ – FMDV serotypes A and O were detected in cattle samples collected during 2017.

Palestine⁵ – FMDV serotype O was detected in sheep and cattle samples collected during 2017.

Pakistan⁶ – Sixty-six FMD outbreaks due to serotypes A, Asia 1 and O and untyped were reported in two provinces of the country conducting surveillance activities.

POOL 4 - EASTERN AFRICA

Ethiopia⁷ – The National Animal Health Diagnostic and Investigation Center (NAHDIC), Ethiopia detected during the reporting month FMDV serotypes O and SAT 1 in the cattle samples tested.

Kenya⁸ – Even the FMD National Reference Laboratory, Embakasi, Kenya detected FMDV serotypes O and SAT 1 in the cattle samples tested during February 2018.

The field isolates of 2017 obtained good matching results in the vaccine matching strain differentiation (VMSD) tests.

POOL 5 - WEST/CENTRAL AFRICA

^{8, 9, 10, 11} No FMD outbreaks were notified in this region during February 2018.

POOL 6 - SOUTHERN AFRICA

South Africa¹ – Three FMD outbreaks caused by SAT 1 were notified during February 2018 as having occurred in cattle at Limpopo during October 2017.

Zimbabwe¹ – Three FMD outbreaks occurred in cattle during January 2018 in Mashonaland East.

POOL 7 - SOUTH AMERICA^{2, 13, 14}

No FMD notifications were reported for this pool during the reporting month.

FMD in Latin America was last detected in Colombia in July 2017 with outbreaks due to FMDV serotype O, while historical outbreaks occurred in Venezuela in 2013 due to serotype A for which PANAFTOSA reported also the sequence data.

COUNTER

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

III. DETAILED POOL ANALYSIS

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

Mongolia¹

Further to the fifteen outbreaks due to serotype O that were reported in cattle and small ruminants between September and November 2017 respectively in Dornod, Sukhbaatar, Khentii and Dornogovi, seven FMD outbreaks still caused by serotype O were notified during January 2018. The new episodes occurred between January 1st and 15th 2018 in Dornogovi and in Dundgovi.

Clinical cases were observed in large and small ruminants and Table 2 and Map 2 respectively represent a summary of the animals involved and location of the outbreaks.

The source of the outbreaks is unknown and the control measures implemented are movement control inside the country, screening, quarantine, stamping out, zoning, disinfection and no treatment of affected animals. Vaccination was carried out in response to the outbreaks as shown in Table 3, however details of the serotypes included in the vaccine were not provided.

Table 2: summary of the animals involved in the FMD outbreaks that occurred between January 1st and 15th 2018 in Dornogovi and in Dundgovi (Source – WAHIS)

Species	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Apparent morbidity rate	Apparent mortality rate	Apparent case fatality rate	Proportion susceptible animals lost*
Cattle	/	482	0	482	0	**	**	0.00%	**
Goats	/	403	0	403	0	**	**	0.00%	**
Sheep	/	463	0	463	0	**	**	0.00%	**
Total		1348	0	1348	0				

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

**Not calculated because of missing information

Table 3: summary of the vaccination carried out in the different administrative divisions in Mongolia following the FMD episodes that occurred in January 2018. (Source – WAHIS)

Administrative division	Species	Total Vaccinated
DORNOD	Cattle	166526
	Goats	290011
	Sheep	478584
KHENTII	Cattle	177056
	Goats	483809
	Sheep	764176
SUKHBAATAR	Cattle	206012
	Goats	973009
	Sheep	1523375
		5062558

Map 2: location of the FMD outbreaks that occurred between January 1st and 15th 2018 in Dornogovi and in Dundgovi (Source – WAHIS)



Russian Federation^{1,2}

Four FMD outbreaks caused by serotype O were reported between February 1st and 8th 2018 at Zabajkal'Skij Kray, in cattle and sheep/goat farms causing cases in the former species.

Diagnosis was carried out by the All-Russian Research Institute for Animal Health (FGBI-ARRIAH) (OIE Reference Laboratory) on February 12th 2018 using reverse transcription - polymerase chain reaction (RT-PCR).

The laboratory has genotyped the virus as belonging to the O/PanAsia lineage, and is conducting vaccine matching studies for the same virus. Furthermore, the laboratory examined 1,916 serum blood samples for the detection of FMDV antibodies relative to post-vaccination immunity monitoring activities,

Even in the episodes described above, the source of the outbreaks is unknown. The control measures put in place are movement control inside the country, surveillance outside and within containment and/or protection zone, quarantine, official destruction of animal products, zoning, disinfection, vaccination permitted, if a vaccine exists. No treatment of affected animals was provided

Table 4 and Map 3 respectively represent a summary of the animals involved and location of the outbreaks.

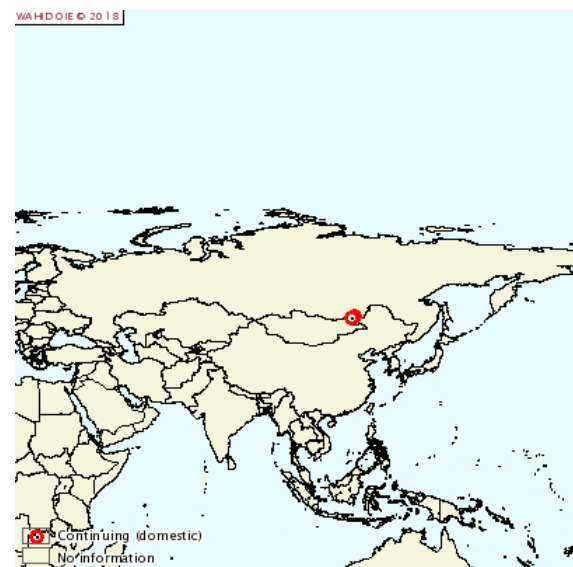
Table 4: summary of the animals involved in the FMD outbreaks that occurred between February 1st and 8th 2018 at Zabajkal'Skij Kray. (Source – WAHIS)

Species	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Apparent morbidity rate	Apparent mortality rate	Apparent case fatality rate	Proportion susceptible animals lost*
Cattle	358	339	/	/	/	94.69%	**	**	**
Sheep / goats	150	**	/	/	/	**	**	**	**

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

**Not calculated because of missing information

Maps 3: location of the FMD outbreaks that occurred between February 1st and 8th 2018 at Zabajkal'Skij Kray. (Source – WAHIS)

**SEACFMD**¹⁵

No outbreaks in the area were reported to date relative to February 2018 and ongoing outbreaks are as those listed in Table 5. Although, Asia 1 is reported as still circulating in Viet Nam, further confirmation of this is required as last detection reports of the serotype in the country are those relative 2007. Distribution of the single serotypes in the individual countries is reported in Maps 4, 5 and 6.

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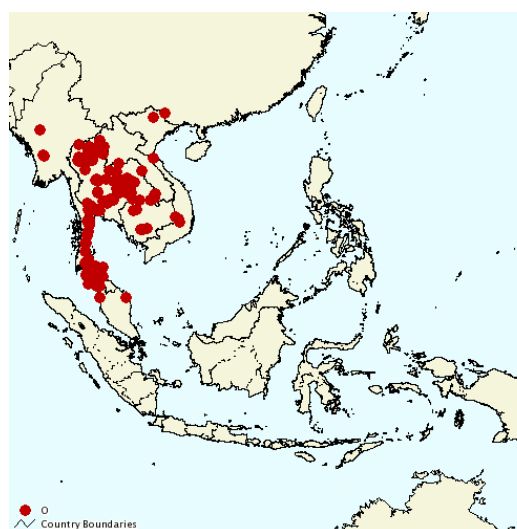
Map 4: location of the ongoing FMD outbreaks occurring during February 2018 due to serotype A in the countries reported in Table 5. (Source – SEAFMD Campaign)



Map 5: location of the ongoing FMD outbreaks occurring during February 2018 due to serotype Asia 1 in the countries reported in Table 6. (Source – SEAFMD Campaign)



Map 6: location of the ongoing FMD outbreaks occurring during February 2018 due to serotype O in the countries reported in Table 6. (Source – SEAFMD Campaign)



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Table 5: number FMD outbreaks caused by the various circulating serotypes reported as ongoing during February 2018, in the relative countries of the Southeast Asia Region are listed below. (Source – SEAFMD Campaign)

Country	Number of ongoing outbreaks	Serotypes responsible of outbreaks					
		A	ASIA 1	O	Not sampled	Not typed	Pending
Cambodia	114	/	/	6	107	/	1
Laos	10	/	/	/	10	/	/
Malaysia	48	1	/	2	2	31	12
Myanmar	3	/	/	3	/	/	/
Thailand	266	15	/	125	25	19	/
Viet Nam	29	/	15	3	11	/	82
Total	470	16	15	139	155	50	95

Table 6: Summary of the history of FMD Pool 1 between 2012 – 2018. For geographic distribution of circulating FMDVs between 2013 -2017 see Map 7 below. (Source – Wahis, EuFMD Global Monthly Report)

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE between 2012 – 2016 **(1 st semester 2016)	LAST OUTBREAK REPORTED/SEROTYPE # see pg. 1	Comment
Cambodia	PENDING/2013-2016 O, A/2016, NOT SAMPLED, (ASIA /2016)	Dec 2016/ A & O	See text
China	Data up to 1 st semester 2015 2013 & 2015/A, 2012-2013/O, 2012 -2014/NOT TYPED	Nov 2017/O, May 2017/A	Follow-up needed
China, Hong Kong, SAR	O	Sep 2017/O	Follow-up needed
Democratic People's Republic of Korea	O/2016 2012-2013/DISEASE ABSENT 2014 & 2015/ NO DATA REPORTED	May 2014/not confirmed, July 2014/O	Follow-up needed
Lao People's Democratic Republic	Data up to 1 st semester 2015) A, O/2015 2012/DISEASE PRESENT WITH QUANTITATIVE DATA BUT WITH AN UNKNOWN NUMBER OF OUTBREAKS	Jan 2017/O Mar 2015/A,	See text
Malaysia	A/2016, 2012 –2016/O, 2013 & 2015/NOT TYPED	August 2016/A & O	See text
Mongolia	Disease Absent /2016**, 2014 & 2015/O, 2013/A & NOT TYPED	Jan 2018/O, Sept 2016/A	See text
Myanmar	2012-2016/O, 2015/A & NOT TYPED	Dec 2017/O, April 2017/Asia 1, July 2016/ not typed, Oct 2015/A	See text

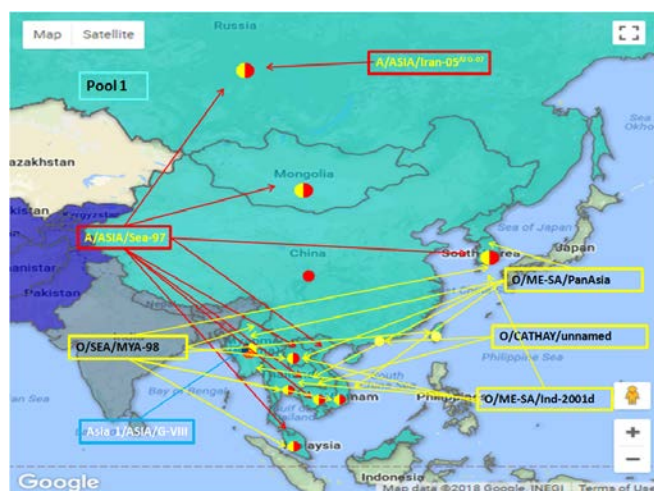
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Republic of Korea	Data up to 1 st semester 2015 2014 -2015/O, 2012-2013/DISEASE ABSENT	Feb 2017/O & A	Follow-up needed
Russian Federation	2013 – 2016**/A, 2012, 2014 & 2015/O	Feb 2018/O, Oct 2016/Asia 1, Jan 2016/ A	See text
Taiwan Province of China	2016/NO DISEASE PRESENT A/2015, 2012-2013/O	Jun 2015/A	Follow-up needed
Thailand	O, A NOT SAMPLED & NOT TYPED	Feb 2017 /A, Jan 2017/O June – July 2016/not typed	See text
Viet Nam	O, NOT SAMPLED, NOT TYPED 2013-2016/A	November 2016/A, Oct 2016/O and not typed	See text

Map 7: FMD distribution between 2013 – 2017 by serotype and toptype in South East Asia – red boxes and circles refer to serotype A genotypes, yellow to serotype O genotypes and white script refers to new introduction of viral lineage in pool or country of the pool during 2017. (Source – Google Fusion Maps, WRLFMD).

Conjectured circulating FMD viral lineages in Pool 1^{1, 13}:

- Serotype O: O/SEA/Mya-98, O/CATHAY, O/ME-SA/PanAsia, O/ME-SA/Ind-2001d (new detection in Myanmar and Thailand during 2016)
- Serotype A: A/ASIA/Sea-97 and Iran-05^{SIS10} sublineage, only in the Russian Federation
- Serotype Asia-1 – reappearance of this serotype in 2016 in Russia and in 2017 in Myanmar – previous detection in the region was in 2006 in Vietnam and in China (People's Rep. of).



B. POOL 2 – South Asia

India³

FMDV O continues to be the only serotype detected in India even during February 2018 in the bovine samples examined by the Indian Council of Agricultural Research - Directorate of Foot and Mouth Disease (ICAR-PDFMD).

The laboratory submitted four field isolates belonging to serotype O for genotyping and five isolates for vaccine matching tests. The laboratory examined 1,954 sera collected during epidemiological studies for the detection of FMD antibodies. The FMD diagnostics kits employed are those developed at ICAR-PDFMD.

The laboratory is 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 has ongoing research studies and collaborations with international organisations.

Nepal^{4, 15}

The National Foot and Mouth Disease and TADS Laboratory reported the circulation of FMDV serotype O for the reporting month.

The FMDVs that were detected among the eighteen bovine samples collected between November and December 2017 were respectively genotyped as FMDV Asia 1/Asia and O/ME-SA/Ind2001d.

A summary of the results is represented in Table 7 and location of the outbreaks in Map 8.

Table 7: summary of the results of the lineages detected in the bovine samples collected between November and December 2017. Source - WRLFMD

Sample Identification	Location origin of sample	Host species	Date of collection	Genotype	Most Closely Related Viruses not belonging to the country - Seq id %	Host species
NEP/37/2017	Kaski	cattle	19/12/2017	Asia 1/ASIA	IND 12/07 (91.4 - 91.7)	cattle
NEP/38/2017						
NEP/39/2017						
NEP/42/2017						
NEP/43/2017	Chitwan		27/12/2017	O/ME-SA/Ind 2001d	IND/166/2012 (94.6)	cattle
NEP/44/2017						
NEP/45/2017						
NEP/46/2017						
NEP/33/2017	not reported		16/11/2017	O/ME-SA/Ind 2001d	IND/166/2012 (94.6)	sheep
NEP/34/2017						cattle
NEP/35/2017	Bhaktapur		12/12/2017			

Map 8: location of the lineages detected in the bovine samples collected between November and December 2017. (Source – WRLFMD-Google Fusion Maps)



Table 8: Summary of the history of FMD Pool 2 between 2012– 2018. For geographic distribution of circulating FMDVs between 2013 -2017, see Map 9 below. (Source – WAHIS, EuFMD Global Monthly Report)

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE between 2012 – 2016 **(1 st semester)	LAST OUTBREAK REPORTED/SEROTYPE # see pg. 1	Comment
Bangladesh	NO DATA AVAILABLE/2016, DISEASE PRESENT BUT WITHOUT QUANTITATIVE DATA	Dec 2016/A, ASIA 1 and O	Follow-up needed
Bhutan	2013-2016/O, NOT TYPED or NOT REPORTED 2013 & 2014/NOT SAMPLED	Sep 2017/untyped, July 2017/O, April 2017/A	Follow-up needed

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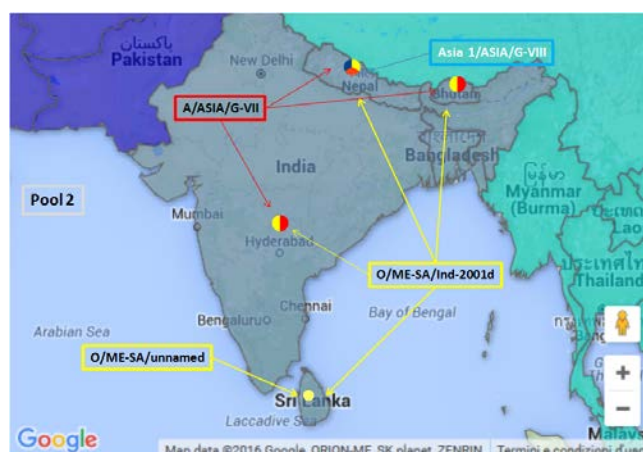
India	NO DATA AVAILABLE/2016, O, A, NOT SAMPLED 2012-2014/Asia 1 2013/NOT TYPED	Feb 2018/O, Apr 2015/A Asia 1	See text
Mauritius	DISEASE ABSENT	Sep 2016/O	Follow-up needed
Nepal	O, 2012-2103/Asia 1	Feb 2018/O & Asia 1, April 2017/A	See text
Sri Lanka	2015 -16/NO DATA REPORTED, 2012 – 2014/O	Sep 2017/O	Follow-up needed

Map 9: FMD distribution between 2013 – 2017 by serotype and toptype in South Asia - red boxes and circles refer to serotype A genotypes, yellow to serotype O genotypes and white script refers to new introduction of viral lineage in pool or country of the pool during 2017.

(Source – Google Fusion Maps, WRLFMD)

Conjectured circulating FMDV lineages in Pool 2^{1, 13}.

- O/ME-SA/Ind-2001d predominates (the O/ME-SA/Ind-2011 lineage that emerged during 2011 has not been detected during 2012-17), outbreaks of this serotype detected also in Mauritius during 2016 (not reported in Map)
- A/ASIA/G-VII (genotype 18)
- Asia-1 (lineage C subdivided into Eastern and Western clusters) – not reported in map – reappearance in 2017 in Nepal.



C. POOL 3 – West Eurasia & Middle East

Israel⁵

FMDV A/ASIA/G-VII and O/EA-3/unnamed were detected in ten bovine samples collected between May and June 2017. Further details on these viruses will be provided in the forthcoming issue of this report.

Palestine⁵

FMDV serotype O/EA-3/unnamed was detected in the eleven sheep and cattle samples collected between May and December 2017. Further details will be provided in the forthcoming issue of this report.

The two FMD outbreaks that occurred on December 18th and 20th 2017 in cattle and small ruminants at Biet Ommar and Qalqas Hebron, West Bank for which serotyping was pending were confirmed as caused by serotype O.

Control measures still in force are movement control inside the country surveillance outside containment and/or protection zone surveillance within containment and/or protection zone screening traceability quarantine control of wildlife reservoirs zoning and disinfection.

Pakistan⁶

The FMD control project is currently operated only Punjab and information relative to other areas of the country is provided on voluntarily basis.

Sixty-six FMD outbreaks due to serotypes A, Asia 1 and O and untyped were reported for February 2018 in two provinces of the country conducting surveillance activities.

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A summary of the distribution of the outbreaks relative to location and serotypes are represented in Table 9 and Map 10.

Emergency and preventive vaccinations were also carried out in Punjab with 765 doses administered in the first case while a summary of the activities carried out in the second case are represented in Table 10.

Table 9: summary of the FMD outbreaks reported in Pakistan during February 2018. (Source – Progressive Control of Foot and Mouth Disease in Pakistan, *Dr. Muhammad Afzal*, Project Coordinator)

Province	District	Number Outbreaks	Number of Outbreaks due to FMD Virus Serotype(s)				
			'O'	'A'	'Asia-1'	'Mixed'	Un-Typed
Azad Kashmir	Mirpur	4	--	--	--	--	4
Punjab	Gujrat	1	--	1	--	--	--
	Chakwal	10	6	--	--	--	4
	Gujranwala	4	2	1	--	--	1
	Jhang	14	2	8	--	1	3
	Hafizabad	3	--	2	1	--	--
	Kasur	1	--	1	--	--	--
	Muzaffar Garh	12	3	5	--	--	4
	Pak Pattan	2	--	--	--	--	2
	Sialkot	1	--	--	--	--	1
	Sheikhupura	1	--	1	--	--	--
	Rawalpindi	3	1	2	--	--	--
	Attock	4	1	3	--	--	--
	Bhakkar	1	1	--	--	--	--
	Sargodha	3	1	2	--	--	--
	Faisalabad	1	--	1	--	--	--
	Mianwali	1	1	--	--	--	--
Total		66	18	27	1	1	15

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Map 10: location of the FMD outbreaks reported in Pakistan during February 2018. (Source – Google Fusion Maps, Progressive Control of Foot and Mouth Disease in Pakistan, Dr. Muhammad Afzal, Project Coordinator)



Table 10: summary of the preventive vaccination activities conducted in the province of Punjab, Pakistan during February 2018. (Source – Progressive Control of Foot and Mouth Disease in Pakistan, Dr. Muhammad Afzal, Project Coordinator)

District	No. of Households	Animals Vaccinated (6 Monthly Dose)		
		Cattles	Buffaloes	Total
Sahiwal	28,515	131,253	191,412	322,665
Sheikhupura	5,542	30,515	39,799	70,314
Bahawalpur	7,230	57,041	30,731	87,772
Rahim Yar Khan	42,326	244,285	207,159	446,144
Cholistan	1,583	45,747	1,023	46,770
Total				
Punjab	85,196	508,841	508,841	1,017,682

Table 11: Summary of the history of FMD Pool 3 between 2012 – 2018. For geographic distribution of circulating FMDVs between 2012 -2016, see Map 11 below. (Source – Wahis, EuFMD Global Monthly Report)

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2012 – 2016 **(1 st semester)	LAST OUTBREAK REPORTED/SEROTYPE # see pg. 1	Comment
Afghanistan	2013-2016**/O, A, Asia 1, NOT TYPED 2012/SEROTYPE NOT REPORTED	Nov 2017/A & O, Aug 2017/Asia 1	Follow –up needed
Algeria	Data available up to 1 st semester 2015 2014 -2015/O	Apr 2017/A, Apr 2015/O	Follow –up needed
Armenia	2015 -2016**/A , 2012-2014/DISEASE ABSENT	Dec 2015/A	Follow –up needed
Azerbaijan	DISEASE ABSENT	2007/O	Follow –up needed
Bahrain	DISEASE ABSENT/2016, 2012, 2014 & 2015 /O	Mar 2015/O	Follow –up needed
Egypt	2012, 2014, 2016**/SAT 2 2012 – 2016**/O, A	April 2017/O, Nov 2016/A May-Jun 2016/Sat 2, Aug 2016/typing pending	Follow –up needed

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Georgia	DISEASE ABSENT	2001/ASIA 1	Follow –up needed
Iran (Islamic Republic of)	2012-2016/A, Asia 1 & O	Feb 2017/A & O, 2013/Asia 1	Follow –up needed
Iraq	2015-16/O, 2012-2016/A 2015/ SEROTYPE NOT REPORTED, 2012-13	Dec 2013/A, ASIA 1	Follow –up needed
Israel	2012-2015**/O	May- June2017/A & O	See text
Jordan	DISEASE ABSENT	Mar 2017/O, 2006/A	Follow –up needed
Kazakhstan	2014-2016**/ DISEASE ABSENT, 2012/O,2012 –2013/A	Jun 2013/ A & Aug 2012/O	Follow –up needed
Kuwait	O/2016 2013 – 2014/ DISEASE ABSENT, 2012/O	April 2016/O	Follow –up needed
Kyrgyzstan	2015 -16/ DISEASE ABSENT, 2012-2014/O, A	Aug 2014/not typed & Apr 2013 /O, A,	Follow –up needed
Lebanon	DISEASE ABSENT/2016**, 2015/ NO DATA REPORTED	2010/not typed	Follow –up needed
Libya	NO DATA REPORTED	Oct 2013/O	Follow –up needed
Morocco	2012-14,2016**/DISEASE ABSENT, O/2015	Oct 2015/O	Follow –up needed
Oman	2016/ NO DATA REPORTED, 2012-2015/O	May 2015/SAT 2	Follow –up needed
Pakistan	2012 & 2015-16/ NO DATA REPORTED 2013-2014/A, ASIA 1 & O	Feb 2018/ A, Asia 1 & O	See text
Palestine	O, 2012-2013/SAT 2	Dec 2017/O, untyped Mar 2013/Sat 2	See text
Qatar	NO DATA AVAILABLE/2016 2012-2015/O	Dec 2013/O	Follow –up needed
Saudi Arabia	2012-2014, 2016**/O A/2015	Oct 2016/A & April 2016/O	See text Follow –up needed
Syrian Arab Republic	DISEASE ABSENT**	2002/ A & O	Follow –up needed
Tajikistan	2016/ NO DATA REPORTED 2014-2015**/DISEASE ABSENT 2012- 2013/NOT TYPED	Nov 2012/ not typed & Nov 2011/Asia 1,	Follow –up needed
Tunisia	2015-16**/ DISEASE ABSENT, 2014/O	April 2017/A, Oct 2014/O	Follow –up needed
Turkey	A & O, NOT TYPED Asia 1/2012-15	Oct 2015/ A May, 2014- 2015/ Asia 1 and O	Follow –up needed
Turkmenistan	2013-2016**/DISEASE ABSENT, 2012/NO DATA REPORTED	Not available	Follow –up needed
United Arab Emirates	O/2016 2012, 2015/DISEASE ABSENT 2013-2014/O	Sep 2016/O	Follow –up needed
Uzbekistan	2012,2013 & 2015/NO DATA REPORTED 2014/DISEASE ABSENT	Not available	Follow –up needed

Map 11. FMD distribution between 2013 – 2017 by serotype and toptype for West Eurasia and Middle East– red boxes and circles refer to serotype A genotypes, yellow to serotype O genotypes, green to serotype SAT 2 genotypes and white script to new introduction of viral lineage in pool or country of the pool during 2017.

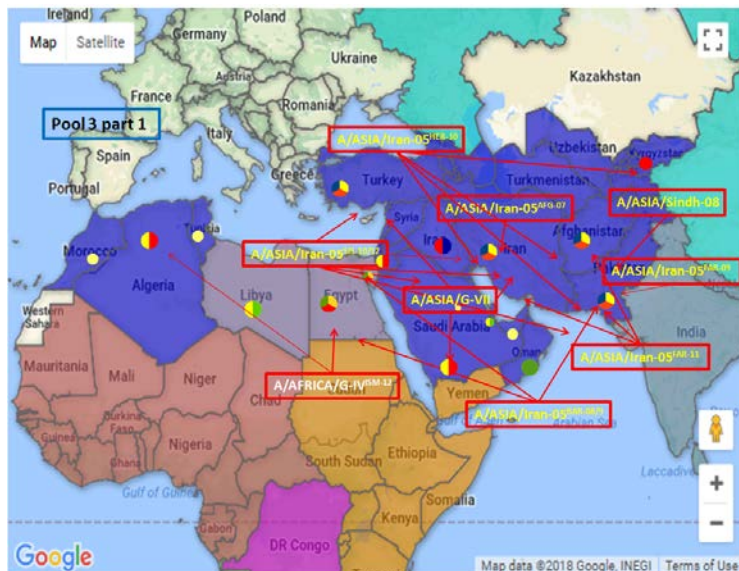
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(source – Google Fusion Maps, WRLFMD).

(Note: Kazakhstan is not included in map as declared by OIE as FMD free divided in zones with and without vaccination)

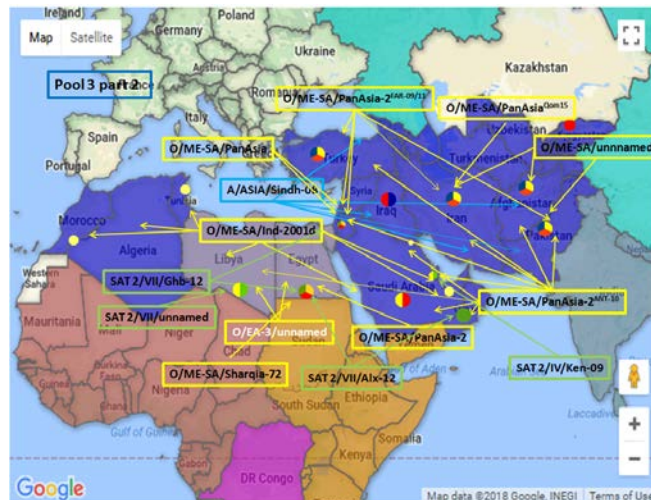
Conjectured circulating FMDV serotype A and Asia 1 lineages in Pool 3 ^{1,13}:

- A/ASIA/Iran-05 (from AFG-07, HER 10, SIS-10-13, FAR 11 and BAR-08 sub-lineages)
- A/Asia/G-VII (recent incursion from South Asia)
- 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, Libya, Israel and Palestine
- SAT 2/IV/Ken-09
- SAT 2/VII/Alx-12 and Ghb-12 sublineages



D. POOL 4 – Eastern Africa

Ethiopia ⁷

The National Animal Health Diagnostic and Investigation Center (NAHDIC), Ethiopia detected FMDV serotypes O and SAT 1 in the ten cattle samples collected from two different outbreaks and tested using antigen detection ELISA during the reporting month.

The laboratory staff was involved in the field in the investigation of FMD outbreaks and in providing advice to the local community for the containment of the these.

Kenya ^{3,8}

As for the previous country, the FMD National Reference Laboratory, Embakasi, Kenya detected during February 2018, FMDV serotypes O in seven samples and SAT 1 in one sample out of the eighteen cattle samples tested.

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The field viruses O/KEN 4 and 6/2017 that were genotyped as O/EA-2 obtained good matching results in the VMSS tests conducted with vaccine strains O 3039, O Manisa and O TUR5/09.

Table 12: Summary of the history of FMD Pool 4 between 2012 – 2018. For geographic distribution of circulating FMDVs between 2013 -2017, see Map 12 below. (Source – WAHIS, EuFMD Global Monthly Report)

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2012 – 2016 **(1 st 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
Democratic Republic of Congo	2012 – 2016**/A, O, SAT 1	May 2017/not typed	Follow –up needed
Djibouti	DISEASE ABSENT	Not available	Follow –up needed
Egypt	2012, 2014, 2016**/SAT 2 2012 – 2016**/O, A	May-Jun 2016/ O & Sat 2, March 2016/A, Aug 2016/typing pending	Follow –up needed
Eritrea	2014, 16/ DISEASE PRESENT 2015/ NO DATA REPORTED 2013/ DISEASE ABSENT, 2012/O	Nov 2016/not reported, Jan 2012/O	Follow –up needed
Ethiopia	O, 2015-16/SAT 1 2012 & 2105/SAT 2, 2012/A	Feb 2018/O & SAT 1, Jan 2018/A & SAT 2	See text
Kenya	2012 – 2016 /NOT TYPED, A, O, SAT1, SAT2	Feb 2018/O & SAT 1, Nov 2017/A & SAT 2	See text
Libya	NO DATA REPORTED	Oct 2013/ O, Sat 2/Apr 2012	Follow-up needed
Rwanda	2015-16/NO DATA AVAILABLE 2012-2013/A, O, SAT1, SAT 2	Nov 2012/not typed	Typing required
Somalia	2012-13, 2015-16/DISEASE PRESENT, 2014/PENDING	June 2016/not reported	Follow –up needed
Sudan	2015-16 -16/A, SAT 1 & NOT SAMPLED, 2012-2014/O & NOT TYPED 2013/SAT 2,	Dec 2016/ not sampled, Oct 2016/O, Dec 2013/A, Jan 2014/SAT 2	Follow –up needed
South Sudan	2015/DISEASE PRESENT 2014/A, O SAT 1, SAT 2, SAT 3 2012-2013 & 2016 NO DATA REPORTED	2011	Follow –up needed
United Republic of Tanzania	2012-2016/A, O, SAT 1, SAT 2	Oct 2016/SAT 1, Aug 2016/O & SAT 2, Jun 2016/ A	Follow –up needed
Uganda	2016/NO DATA REPORTED 2013-16/NOT TYPED or NOT SAMPLED, 2012, 2015/ SAT 1, 2012, 2014-15/O	May 2017/O Nov 2014/SAT1, Jan 2015/A and SAT 3, July 2015/ SAT 2 and untyped	Follow –up needed
Yemen	2015-16/NO DATA REPORTED 2013 – 2014/ DISEASE	2009/O	Follow –up needed

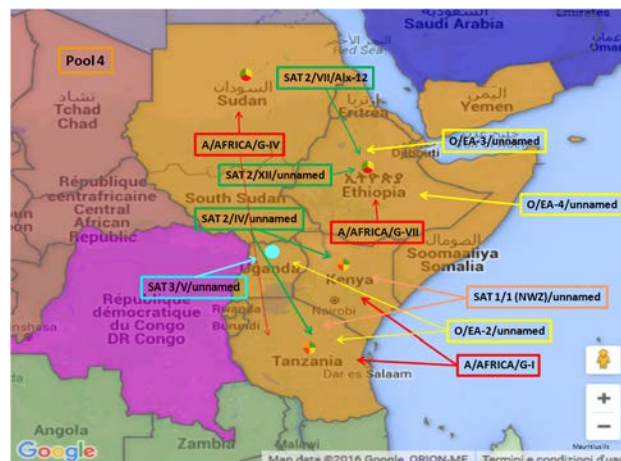
	PRESENT BUT WITHOUT QUANTITATIVE DATA, 2012/O		
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Map 12: FMD distribution between 2013 – 2017, by serotype and topotype for East Africa - red boxes and circles refers to serotype A genotypes, yellow refers to serotype O genotypes, green refers to serotype SAT 2 genotypes and light blue refers to SAT 3 genotypes.
(source – Google Fusion Maps, WRLFMD).

East Africa is known to be endemic for FMD, but available data is at present limited.

Conjectured circulating FMDV lineages in Pool 4 ^{1, 13}:

- O (topotypes EA-2 (Tanzania, DR Congo & Uganda), EA-3 and EA-4 (Ethiopia))
- A/AFRICA (genotypes I (Kenya, Tanzania, D.R. Congo), VII (Ethiopia))
- SAT 1 (topotypes I (Kenya, Tanzania), IX (Ethiopia))
- SAT 2 (topotypes IV (Kenya, Tanzania), VII (Sudan, Egypt, Ethiopia), XII (Ethiopia, Sudan))
- 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 ⁹, **Ghana** ¹⁰, **Nigeria** ¹¹, **Senegal** ¹²

The Laboratoire National Vétérinaire (LANAVET), Garoua, Cameroon, The ACCRA Veterinary Laboratory, Ghana, The National Veterinary Research Institute Vom, Nigeria and the Laboratoire National de l'Élevage et de Recherches Vétérinaires of Senegal did not report FMD outbreaks in their respective countries for February 2018.

Only the Laboratoire National Vétérinaire (LANAVET), Garoua, Cameroon reported that it conducted the serological examination of 368 sera collected from sheep and goats using non-structural protein (NSP) ELISA with 98 samples reacting (26.6%) positive.

Table 13: Summary of the history of FMD Pool 5 between 2012 – 2018. For geographic distribution of circulating FMDVs between 2012 -2016, see Map 13 below. (Source – WAHIS, EuFMD Global Monthly Report)

Country	FMD history FMDV serotypes, reported to OIE in 2012 – 2016 **(1 st semester)	Last outbreak reported/serotype #see pg. 1	Comment (Genotyping would be useful for this region)
Benin	2016/NO DATA REPORTED A, O, SAT 1, SAT 2/2012-2015	Jun 2014/O, A, SAT 1, SAT 2	Follow –up needed
Burkina Faso	DISEASE PRESENT	Dec 2016/ not available	Follow –up needed
Cameroon	2016/NO DATA REPORTED DISEASE PRESENT	April 2017/untyped, Nov 2014/O, SAT 2, May 2014/SAT 1, Apr 2014/ A	See text
Cabo Verde	DISEASE ABSENT	Not available	Follow –up needed

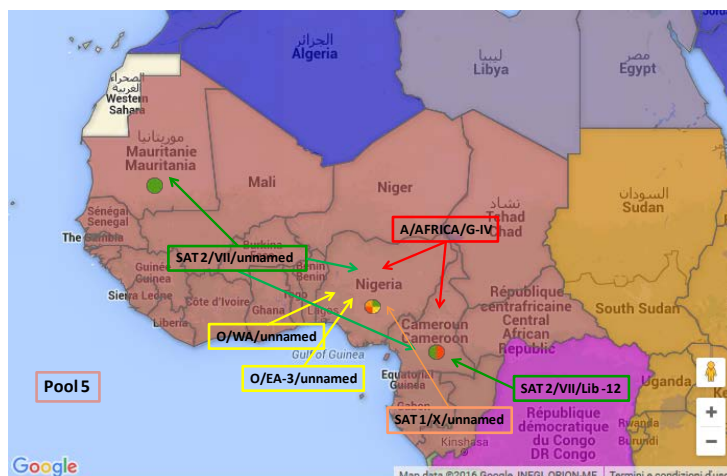
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Central African Republic	DISEASE PRESENT BUT WITHOUT QUANTITATIVE DATA	Not available	Follow –up needed
Chad	2016/DISEASE PRESENT 2014-15/ DISEASE ABSENT 2012 – 2013/ DISEASE PRESENT	Aug 2016/Not reported	Follow –up needed
Democratic Republic of the Congo	2012 – 2016/A, O, SAT 1	Dec 2016/A, O & Sat 1	Typing required
Congo	NO DATA AVAILABLE	Jun 2013/not typed	Typing required
Côte d'Ivoire	2013-16/ not sampled or not reported, 2012/A,	Jul 2016/not reported	Follow –up needed
Equatorial Guinea	2014 – 2016/ NO DATA AVAILABLE 2012 – 2013/DISEASE SUSPECTED	Not available	Follow –up needed
Gabon	2012, 2014-16/DISEASE ABSENT 2013/NO DATA AVAILABLE	Not available	Follow –up needed
Gambia	NO DATA AVAILABLE	2012/O	Follow –up needed
Ghana	2016/NO DATA AVAILABLE 2012 – 2015/DISEASE PRESENT	Feb 2017/O, Dec 2016/ SAT 2 2014/not available	See text
Guinea-Bissau	2015-16**/DISEASE SUSPECTED 2014/ DISEASE PRESENT 2012-2013/DISEASE ABSENT	Oct 2016/O Dec 2016/SAT1 & SAT 2	Follow –up needed
Guinea	2012-2013, 2015-16**/ DISEASE ABSENT 2014/ DISEASE PRESENT	2014/not available	Follow –up needed
Liberia	NO DATA AVAILABLE	Not available	Follow –up needed
Mali	2013, 2016/DISEASE PRESENT 2015/A, SAT 1 2014-2015/SAT 2 2012/ NO DATA AVAILABLE	Oct 2016/not reported	Follow –up needed
Mauritania	2016/DISEASE SUSPECTED, 2014-2015**/SAT 2, 2012-2013/NO REPORTED OUTBREAKS	Dec 2014/SAT 2	Follow –up needed
Niger	2016**/DISEASE PRESENT BUT WITH NO QUALITATIVE DATA, 2015/O 2012 – 2014/NOT SAMPLED	2014/not sampled, May 2015/O	Follow –up needed
Nigeria	2015-16/DISEASE PRESENT 2012-2014/O	Feb 2017/not typed Sept 2016/ O & SAT 1 Nov 2015/A, Sept 2014/ SAT 2	See text
Sao Tome Principe	2013-16/NO DATA AVAILABLE 2012/DISEASE ABSENT	Not available	Follow –up needed
Senegal	2015-16/DISEASE PRESENT 2012, 2014/NOT SAMPLED 2013/NO DATA AVAILABLE	Feb 2015/ A and O, 2014/ SAT 2	See text
Sierra Leone	DISEASE ABSENT**	Oct 1958	Follow –up needed
Togo	O, SAT 1	2012/O	Follow –up needed

Map 13: FMD distribution between 2013 – 2017 by serotype and topotypes for West Africa. Red boxes and circles refer to serotype A genotypes, yellow refers to serotype O genotypes, orange boxes to serotype SAT 1 genotypes, green refers to serotype SAT 2 serotypes and white script in map refers to new introduction of viral lineage in pool or country of the pool during 2017. (Source – Google Fusion Maps, WRLFMD).

Conjectured circulating FMDV lineages in Pool 5¹³:

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



F. POOL 6 – Southern Africa

South Africa^{1, 16}

The Agriculture Research Council- Onderstepoort Veterinary Institute examined 2,940 serum samples using liquid-phase blocking ELISA for the detection of FMDV serotypes SAT 1, SAT 2 and SAT 3 and 340 sera using FMD NSP ELISA. The FMD outbreaks caused by SAT 1 that occurred during October 2017 in cattle at Limpopo were notified on February 2nd 2018.

The outbreaks are within South Africa's FMD protection zone, close to the Kruger National Park and therefore do not alter the status of South Africa's FMD free zone.

The source of outbreaks is due to contact with wild animals and the control measures in place are movement control inside the country, surveillance within containment and/or protection zone, screening, quarantine.

Vaccination is prohibited and no treatment is provided to affected animals.

A summary of the animals involved and approximate location of outbreak, as required by the local legislation on privacy, are respectively reported in Table 14 and Map 14.

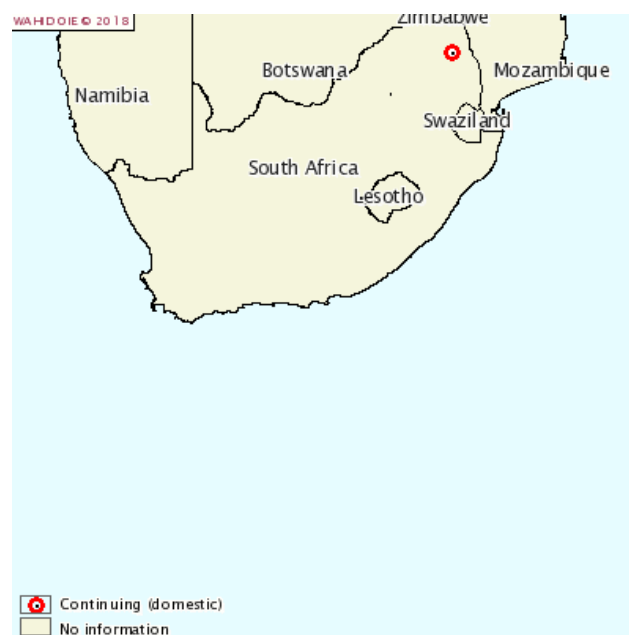
Table 14: summary of FMD outbreaks caused by SAT 1 that occurred during October 2017 in cattle at Limpopo (Source – WAHIS)

Species	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Apparent morbidity rate	Apparent mortality rate	Apparent case fatality rate	Proportion susceptible animals lost*
Cattle	1996	23	0	0	0	1.15%	0.00%	0.00%	0.00%

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

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Map 14: location of the FMD outbreaks caused by SAT 1 that occurred during October 2017 in cattle at Limpopo. Coordinates have been modified to protect privacy as required by South African legislation.



Zimbabwe¹

Three FMD outbreaks for which serotyping were not carried out occurred on cattle farms during January 17th and 18th 2018 at Mashonaland East.

The source of outbreaks was reported as due to the introduction of new live animals, illegal movement of animals, contact with infected animal(s) at grazing/watering.

Suspected cases of FMD were detected on a farm, about 7km south of Chegutu town on January 17th 2018. Thirteen cattle in a herd of 239 beef cattle on the farm presented FMD lesions. Farm records indicated there were movements into the farm between December 2nd 2017 and January 17th 2018. Movement permit records were used to map out all destinations of cattle that were on the three sales that had animals from this farm. A list of all the source farms that sent animals to this farm and all destination farms that received animals from the three sales in which this farm participated were compiled to facilitate trace back and trace forward investigations by respective provinces. Disease surveillance inspections on these target farms are still ongoing. The source of infection has not yet been identified as no evidence of disease has been detected at any of the source farms that sent animals to index farm in the recent past. Trace forward investigations have shown the market sales that received animals from the index farm on January 3rd and 16th 2018 sold infected cattle as outbreaks were detected at some of the properties that received animals from these sales. To date infection was detected at two destination sites in Marondera and Macheke all in Mashonaland east province. Vaccinations are underway in the three infected areas while investigations continue.

Table 15: summary of FMD outbreaks for which serotyping was not carried out that occurred on cattle farms during January 17th and 18th 2018 at Mashonaland East (Source – WAHIS)

Species	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Apparent morbidity rate	Apparent mortality rate	Apparent case fatality rate	Proportion susceptible animals lost*
Cattle	1,600	71	0	0	0	4.44%	0.00%	0.00%	0.00%

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

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Map 15: location of the FMD outbreaks for which serotyping was not carried out that occurred on cattle farms during January 17th and 18th 2018 at Mashonaland East.

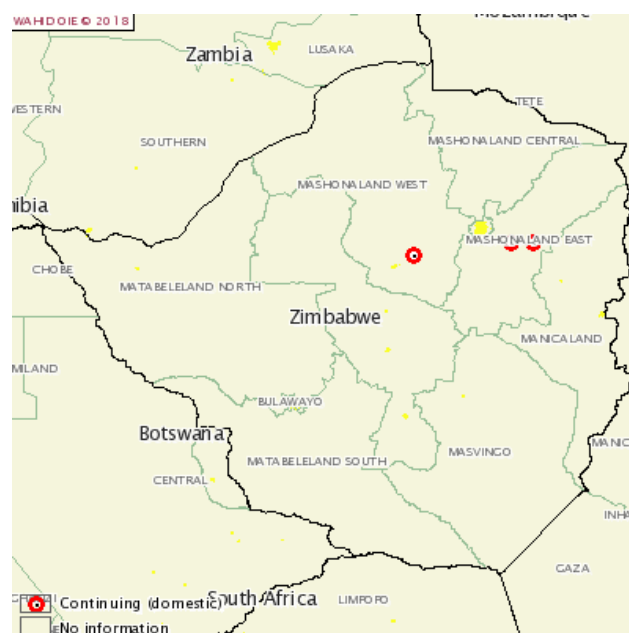


Table 16: Summary of the history of FMD Pool 6, 2013 – 2018, for geographic distribution see Map 16 below. (Source – WAHIS, EuFMD Global Monthly Report)

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2012 – 2016 **(1 st semester)	LAST OUTBREAK REPORTED/SEROTYPE #see pg. 1	Comment
Angola	2015-2016**/ DISEASE PRESENT 2013-2014/DISEASE ABSENT 2012/DISEASE SUSPECTED BUT NOT CONFIRMED	April 2016/SAT 2, July 2015/ SAT 2	Follow –up needed
Botswana	2012-2016**/SAT 2 2014-2015/SAT 1	Sep 2017/SAT 2, June 2015/SAT 1	Follow –up needed
Democratic Republic of the Congo	2012 – 2016/A, O, SAT 1	Dec 2016/A, O & Sat 1	Follow –up needed
Malawi	2012/NO OUTBREAKS REPORTED 2013-2015/ NO DATA AVAILABLE	June 2016/SAT 1, Oct 2011,	Follow –up needed
Mozambique	2016**/ NO DATA AVAILABLE 2012 -2015/DISEASE ABSENT	Dec 2017/ Typing pending, Oct 2017/SAT 2, May 2015/ SAT 1	Follow –up needed
Namibia	2014-2016**/SAT 2012-2014/SAT 1	Sep 2017/SAT 2, Aug 2017/typing pending, May 2015/SAT 1	Follow –up needed
South Africa	2015-16**/SAT 3 2012-2015/SAT 2 2013/SAT 1	Oct 2017/SAT 1, May 2017/SAT 2 Dec 2015/SAT 3,	See text
Zambia	2016/SAT 3 & NOT TYPE C	May 2017/SAT 3, Mar 2017/SAT 2, Jan 2013/SAT 1, Feb 2015/A,	Follow –up needed

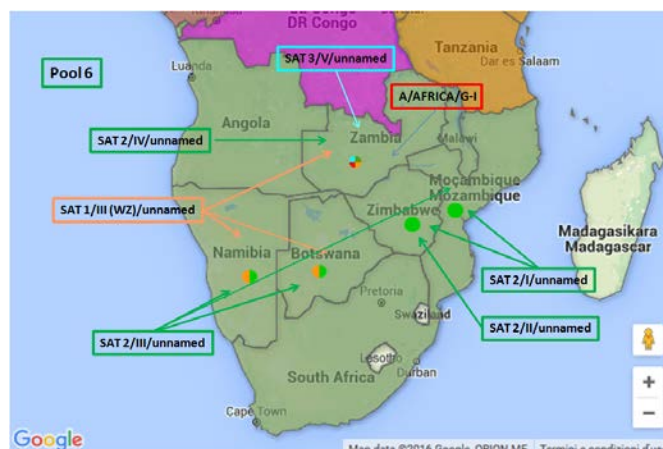
	2013-2014/ NO DATA AVAILABLE 2012/SAT 1, SAT 2		
Zimbabwe	2012-2016/SAT 2 2014-15SAT 1 2013/SAT 3	Jan 2018/typing pending, May 2017/SAT 2, Aug 2015/ SAT 1, Jun 2013/SAT 3	See text

Map 16: FMD distribution by serotype and topotype for Southern Africa, 2013 – 2017 - red refers to serotype A, orange refers to SAT 1, green refers to serotype SAT 2. (source – Google Fusion Maps, WRLFMD).

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^{1, 13}:

- Serotype SAT 1 (topotypes I, II 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

Rest of Latin America^{1, 13, 14}

The OIE FMD status of the countries in South America as reported in December 2017 is presented in Map 17. Most South American countries are FMD free with vaccination (Uruguay) or without vaccination (Chile, Guyana) or with free zones with vaccination (Argentina, Bolivia, Brazil, 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 17). In fact, before the outbreak which occurred in Columbia, PANAFTOSA reported data for historical FMD outbreaks that occurred in Venezuela in 2013 caused by serotype A during the OIE/FAO FMD Laboratory Meeting held in November 2016. The FMD history relative to the Region for 2012 –2017 is reported in Table 17.

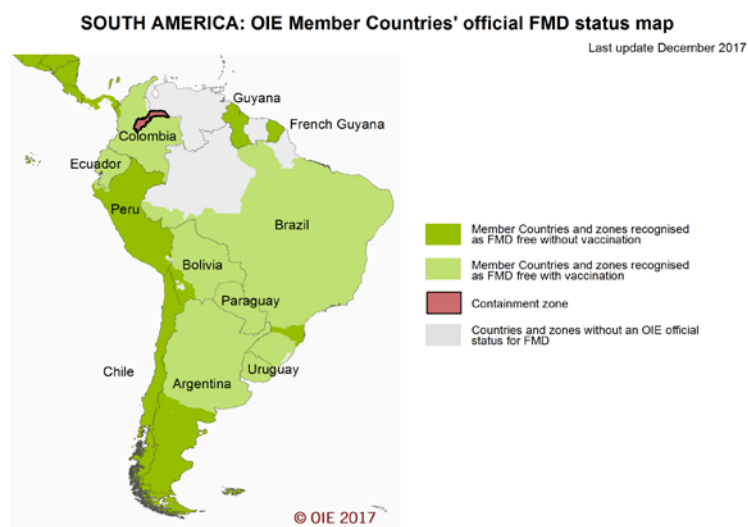
Table 17: Summary of the history of FMD Pool 16 between 2012 – 2018, for geographic distribution see Map 17 below. (Source – WAHIS, EuFMD Global Monthly Report)

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2012 2016**(1 st semester)	LAST OUTBREAK REPORTED/SEROTYPE #see pg. 1	Comment
Colombia	DISEASE ABSENT	July 2017/O	Follow –up needed

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Venezuela (Bolivarian Republic of)	DISEASE ABSENT**	2011/O, 2013/A	National situation needs verification
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Map 17: FMD status for South America ¹
(Source – OIE)



IV. OTHER NEWS:

⁵The 3rd WRLFMD Quarterly Report for the period October – December 2017 contains a list of recommended FMDV strains for antigen banks of FMD-Free countries. The discussion of this table is within the report. (Table 18)
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 18: 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

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/Sakoinakorn/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 highlights an apparent gap in vaccines supplied by International manufacturers for this viral lineage.

V. REFERENCES - Superscripts

1. WAHID Interface – OIE World Animal Health Information Database
<http://web.oie.int/wahis/public.php?page=home>
2. Regional Reference Laboratory for FMD (ARRIAH, Russia) - *Dr. S. Fomina*.
3. Project Directorate on Foot and Mouth Disease (PD-FMD), Indian Council of Agricultural Research, Mukteswar, India - *Dr. S. Saravanan*.
4. National Foot and Mouth Disease and TADS Laboratory, Nepal - *Dr. Sharmila Chapagain*
5. World Reference Laboratory for Foot-and-Mouth Disease (WRLFMD), www.wrlfmd.org.
6. Progressive Control of Foot and Mouth Disease in Pakistan, - *Dr. Manzoor Hussain*, National Project Director and *Dr. Muhammad Afzal*, Project Coordinator.
7. National animal health diagnostic and investigation center (NAHDIC), Ethiopia - *Dr. Daniel Gizaw*.
8. National FMD Reference Laboratory, Embakasi, Kenya - *Miss. Hellen Mutua*.
9. Laboratoire National Vétérinaire (LANAVET) - Garoua, Cameroon - *Dr. Simon Dickmu Jumbo*.
10. ACCRA Veterinary Laboratory, Ghana - *Dr. Joseph Adongo Awuni*.
11. FMD Research Centre, Virology Research Department, National Veterinary Research Institute, Vom, Plateau State, Nigeria - *Dr. Ularamu Hussaini*.
12. Laboratoire National de l’Elevage et de Recherches Vétérinaires (LNERV, Senegal) – *Miss Mariame Diop and Dr. Moustapha Lô*.
13. OIE/FAO FMD Reference Laboratory Network, Annual Report 2016
14. 44a Reunión Ordinaria de la Comisión Sudamericana para la Lucha contra la Fiebre Aftosa - 6 – 8 March 2017, Rio de Janeiro, Brasil
15. OIE Regional Coordination Unit, Bangkok - <http://www.arahis.oie.int/reports.php?site=seafmd>
16. ARC -Onderstepoort Veterinary Institute, Republic of South Africa - *Dr LE Heath/Ms E Kirkbride*