



Foot-and-Mouth Disease situation

Food and Agriculture Organization of the United Nations

Monthly Report November 2011

Information sources used:

Databases:

Emergency Prevention System/Global Early Warning System (EMPRES/GLEWS)

WRL FMD

OIE/WAHIS

Other sources:

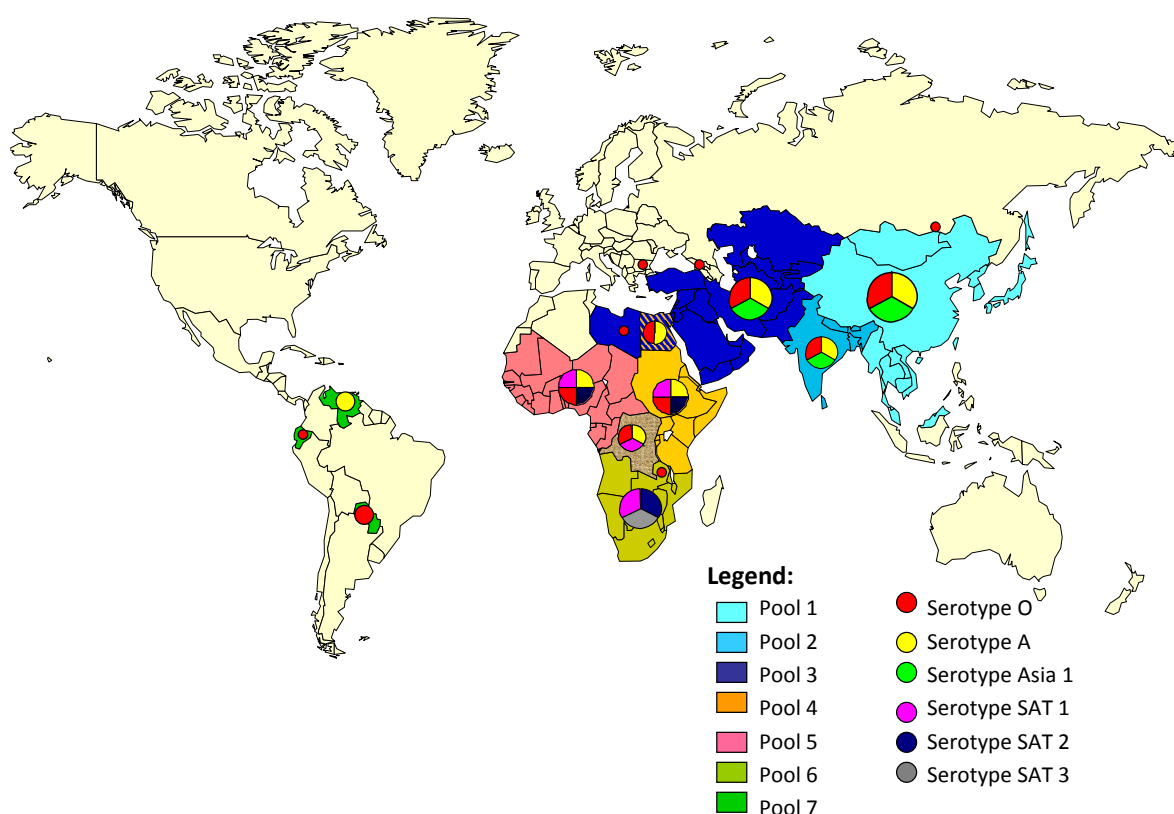
FAO/EuFMD supported FMD networks (EARLN-FMD Eastern Africa, RESOLAB-FMD West Africa)

FAO/EuFMD projects and field officers

Crisis Management Centre-Animal Health (CMC-AH)

*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.*

Foot-and-mouth disease distribution by serotype and the seven virus pools, 2010-2011



HEADLINE NEWS

Pool 3:

- serotype Asia 1 outbreak in cattle and goats in Tajikistan¹
- serotype A outbreaks in cattle in Kyrgyzstan (A-Iran-05)²
- serotype Asia 1 epidemic in West Eurasia, outbreaks in Turkey³
- epidemic of serotype A in Turkey³

Pool 4:

- SAT2 epidemic widespread in the central parts of the Rift Valley of Kenya⁴

Pool 1. CENTRAL / EAST ASIA

Country	Data WRL FMD ⁵	Data from field officers ⁴	Reported serotype/outbreaks in OIE 2011 (1 st 6 month report or immediate notifications) ¹		Reported serotype/outbreaks in OIE 2010 (annual report) ¹	
			Serotype	No of outbreaks	Serotype	No of outbreaks
Cambodia	O		?	88	?, O	138
China (People's Rep. of)(mainland)		Asia 1?	O	5	O, A	20
China (Hong Kong, SAR)	O		not reported		O	4
China (Taiwan Province)			O	7	O	4
Japan			not reported		O	292
Korea (DPR)	O		O			
Korea (Rep. of)	O		report missing		O, A	89
Laos, PDR	O		report missing		O	1
Malaysia	O		O, A	13	O, A	51
Mongolia			O	1	O	9
Myanmar			report missing		O, A, ?	10
Thailand			O, A	15	O, A	35
Viet Nam	O, A		?, O	472	O, A, ?	280
Russia			O	1	O	2

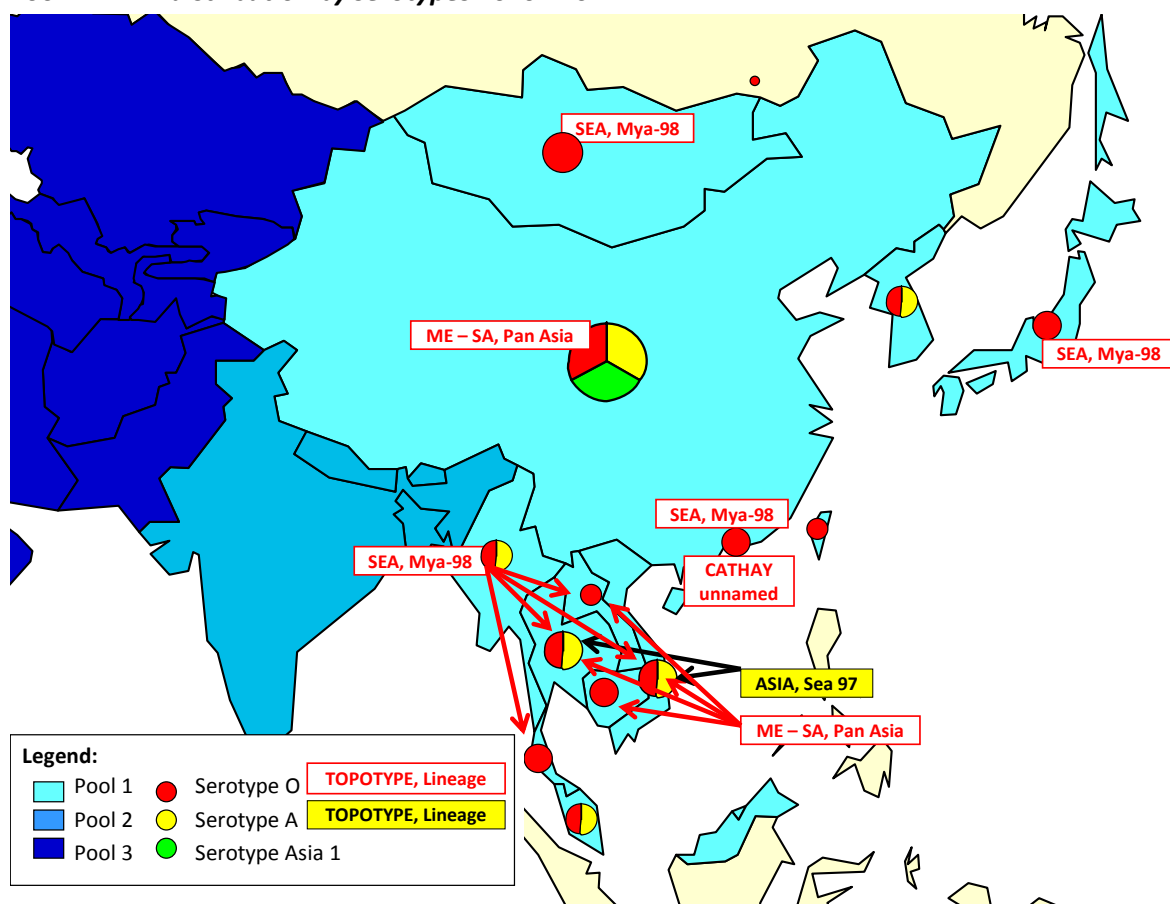
Note: Molecular evidence indicates Asia 1 circulates for long periods in Southeast Asia/China with gaps between reporting/isolation, with big epidemics seen less frequently than for O and A. Absence from reports does not equal evidence of absence.

*There are three topotypes (meaning very distantly related, at least 15% apart = separation of 10's of years) of serotype O circulating in Southeast Asia (SEA) and China (Pool 1): **Cathay**; **SEA**, **MYA-98**; and **ME-SA**, **PanAsia**. The Cathay topotype seems to be unique to China (Hong Kong, SAR). The MYA-98 topotype was responsible for the FMD explosive outbreaks in the Republic of Korea and the Democratic People's Republic of Korea, as well as in Japan in 2010. The PanAsia topotype is an overspill from South Asia occurring around the mid-1990s, the others are unique (hence the concept of a virus pool, where viruses evolve mostly independently of other regions). Each sequence report needs to be reviewed to follow these topotypes. The FMDV in China (Taiwan Province) has apparently evolved from the PanAsia topotype over about 12 years, independently. So, there are some disease islands and some epidemics which are more Transboundary in nature, all in one region. [FAO officer, 20/10/2011]⁴ Commentary on the three endemic serotypes (O, A, and Asia-1) for 2010 is found in the annual FAO/OIE FMD surveillance report (www.wrlfmd.org)⁵*

Continuing events from previous months¹ (OIE status)

Country	Start of event	Outbreaks: Serotype	Continued outbreak / Date of previous occurrence
China, People's Republic of (mainland)	22/02/2010	O	Continuing
China (Taiwan Province)	30/10/2011	O	Continuing

Pool 1. FMD distribution by serotypes 2010 - 2011



Comments for results available (WRL)⁵ in 2011

Cambodia:

Date received: 28/07/2011

No. of samples: 4; O: 2; Topotype: ME-SA, PanAsia

China: FMDV serotype O outbreak reported to have occurred on 29/03/2011 in Jing Xiang Village, Tianzhu, Qian Dongnan, Guizhou. VP1 sequence data provided by the Lanzhou Veterinary Research Institute (and submitted to GenBank – accession number JF837375) showed the virus to belong to the ME-SA/PanAsia lineage and to be closely related to recent viruses from Viet Nam.

Three further outbreaks of FMD type O have been reported: on 13/07/2011 at Longfeng Village, Pudi, Bijie, Guizhou in cattle/sheep/goats/pigs; on 31/08/2011 at Liebugou, Lengda Village, Jiacha, Shannan, Tibet in cattle; and on 30/09/2011 at Duixu Village, Zhongda Town, Lang, Linzhi, Tibet in cattle. No sequence data has been reported.

Hong Kong SAR, P.R. China:

Date received: 15/09/2011

No. of samples: 5; O: 5; Topotype: CATHAY, unnamed

Laos:

Date received: 28/07/2011

No. of samples: 4;

O: 1 Topotype: SEA, Mya-98

O: 3 Topotype: ME-SA, PanAsia

Thailand:

Date received: 28/07/2011

No. of samples: 17

O: 1; Topotype: ME-SA, PanAsia

O: 5; Topotype: SEA, Mya-98

A: 11; Topotype: ASIA, Sea-97

Taiwan Province of China (POC):

Three outbreaks were detected by serology on 06/05/2011 (Xinpu Township, Hsin-chu), 16/05/2011 (Yongjing Township, Chang-hua) and 23/05/2011 (Tianwei Township, Chang-hua), all in pigs. No viruses were isolated. Two new outbreaks of FMD type O were detected by serology on 11/07/2011 (Yingge District, T'ai-pei) and 26/07/2011 (Shigang District, T'ai-nan); both were in pigs. No viruses were detected.

Vietnam:

Date received: 28/07/2011

No. of samples: 7

O: 1; Topotype: SEA, Mya-98

O: 5; Topotype: ME-SA, PanAsia

A: 1; Topotype: ASIA, Sea-97

Pool 2. SOUTH ASIA

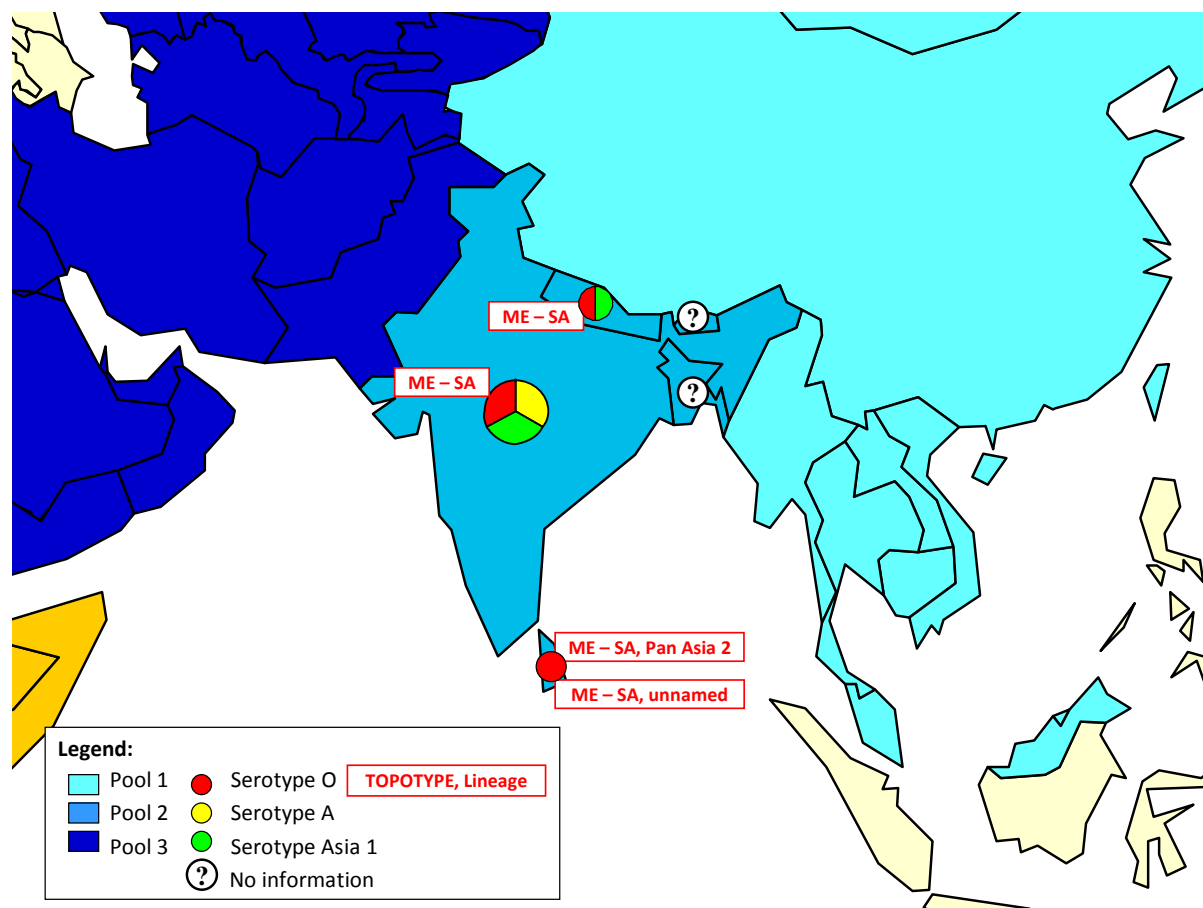
Country	Data WRLFMD ⁵	Data from field officers	Reported serotype/outbreaks in OIE 2011 (1st 6 month report or immediate notifications) ¹		Reported serotype/outbreaks in OIE 2010 (annual report) ¹	
			Serotype	No of outbreaks	Serotype	No of outbreaks
Bangladesh			?	?	not reported	
Bhutan			?	4	?	5
India			?, O, Asia 1	439	O, Asia 1, A,	422
Nepal			O, Asia 1	48	O	22
Sri Lanka	O		O	5	O	18

Commentary on the three endemic serotypes (O, A, and Asia-1) for 2010 is found in the annual FAO/OIE FMD surveillance report (www.wrlfmd.org)

New events

Continuing events from previous months⁵ (OIE status)

Pool 2. FMD distribution by serotypes 2010 - 2011



Comments for results available (WRL)⁵ in 2011

Sri Lanka:

Date received: 28/07/2011

No. of samples: 2

O: 1 (2010); Topotype: ME-SA, unnamed

O: 1 (2011); Topotype: ME-SA, PanAsia-2

Pool 3. WEST EURASIA & MIDDLE EAST

Country	Data WRL FMD ⁵	Data from field officers ⁴	Reported serotype/outbreaks in OIE 2011 (1st 6 month report or immediate notifications) ¹		Reported serotype/outbreaks in OIE 2010 (annual report) ¹	
			Serotype	No of outbreaks	Serotype	No of outbreaks
Afghanistan	A, O, Asia 1		A, O, Asia 1	219	?	333
Bahrain	Asia 1		?	10	?	4
Iran	O, A, Asia 1	O, A, Asia 1	O, Asia 1, A	1304	O, Asia 1, A	4846
Iraq			report missing		A, O	104
Israel	O		O	16	not reported	
Jordan			report missing		not reported	
Kazakhstan			O	2	O	1
Kuwait	O		O	1	not reported	
Kyrgyzstan			report missing		report missing	
Lebanon			not reported		?	Yes
Oman			O	122	O	122
Pakistan	O, A, Asia 1		A, O, Asia 1		report missing	
Qatar			?		?	yes
Saudi Arabia			?		?	yes
Syrian Arab Republic			not reported		not reported	
Tajikistan			1		not reported	
Turkey	O, A, Asia 1		O, A, Asia 1	1045	A, O	1626
Turkmenistan			report missing		report missing	
United Arab Emirates			report missing		not reported	
Uzbekistan			report missing		report missing	
Yemen			report missing		O	94
Egypt			not reported		O, A	7
Lybya	O		report missing		O	2
Bulgaria	O		O	11	not reported	
Georgia	O		not reported		not reported	

Commentary on the three endemic serotypes (O, A, and Asia-1) for 2010 is found in the annual FAO/OIE FMD surveillance report (www.wrlfmd.org)

New events

- **Tajikistan** - serotype Asia 1 in cattle and goats¹
- **Kyrgyzstan** - serotype A in cattle in (A-Iran-5)²
- **Turkey** - serotype Asia 1 epidemic³

Turkey

In 2011 1553 outbreaks have been confirmed by end of Nov. Most of outbreaks have been type A, the new lineage of A/IRN/05. Pan Asia 2 endemic is not causing that many outbreaks at the moment. After 9 years new incursion by Asia-1 (Sub lineage Asia 1 AFG-07) occurred. Three different introductions from outside of the country were determined due to the Asia-1 serotype. Only introduction detected in Ardahan province have spread in other areas and caused 60 outbreaks until end of Nov 2011³.

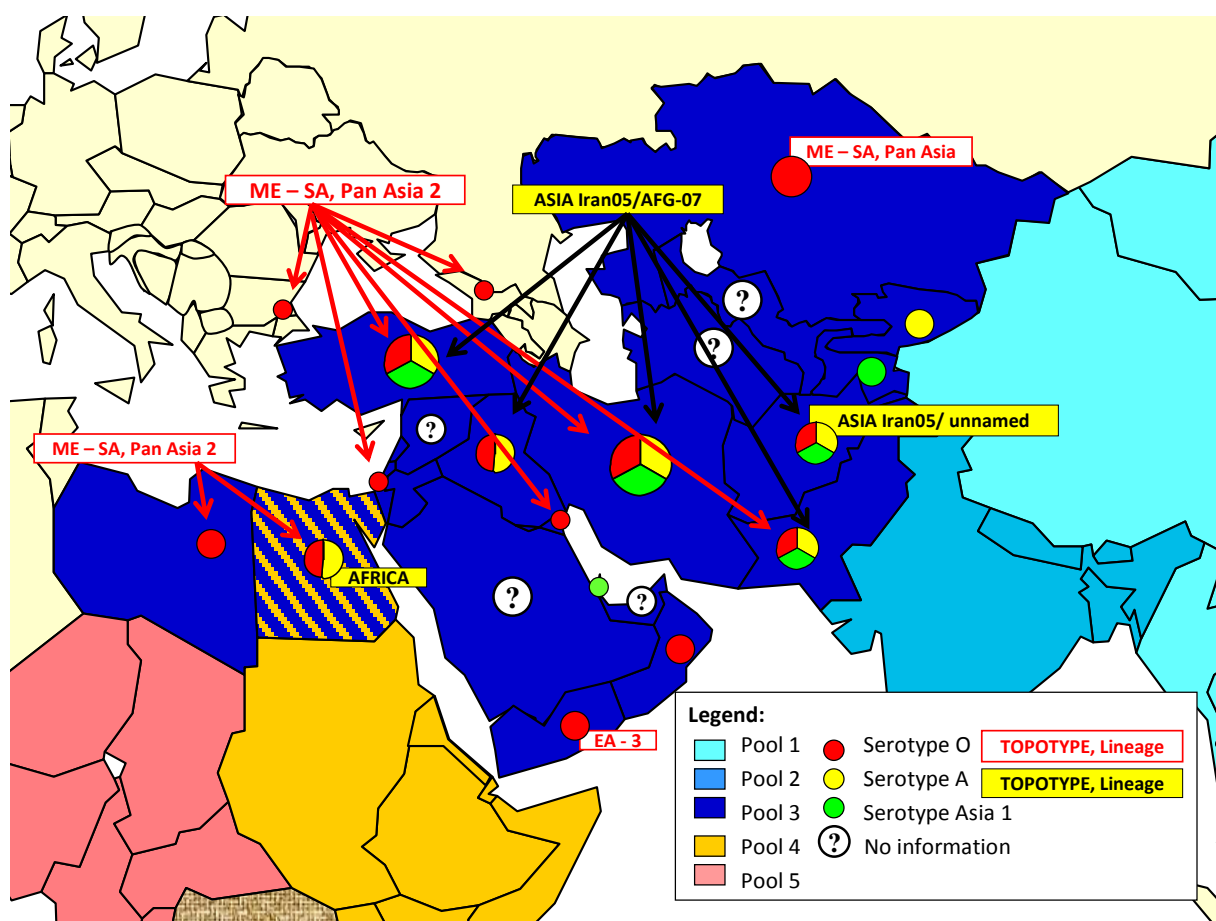
Iran

1592 outbreaks have been detected by end of Nov 2011. Most of the outbreaks in November are in the North – West part of the country⁴.

Continuing events from previous months¹ (OIE status)

Country	Start of event	Outbreaks: Serotype	Continued outbreak / Date of previous occurrence
Kazakhstan	11/08/2011	O	26/07/2011
Israel	15/10/2011	O	

Pool 3. FMD distribution by serotypes 2010 - 2011



Comments for results available (WRL)⁵ in 2011

Turkey

The WRLFMD reported on 17 October 2011, FMD results for 38 samples taken from cattle submitted from Turkey: serotype O (3); serotype A (17); both serotype O and A in one sample; serotype Asia 1 (3); and 14 samples with no virus detected.

[WRLFMD, 17/10/2011]

Note: FMDV serotype Asia 1 was detected in Pakistan (December 2010 in Bahawalpur, Punjab and December 2010/January 2011 in Karachi, Sindh). These viruses are closely related to previous viruses isolated from Sindh in 2008-2009. Subsequently, closely related Asia 1 viruses were detected in Bahrain (February 2011).

Asia 1 epidemics periodically spread from the Indian sub-continent across the Middle East entering Turkey, and on two occasions (1984 and 2000), even Greece. These epidemics have been recorded in 1973-1974, 1983-1984 and 1999-2000.

[WRLFMD, 2011, http://www.wrlfmd.org/fmd_alerts/asia_1_2011.htm]

Israel

Following 12 outbreaks of FMD type O in the Hazafon/Haifa and Hadarom areas between April and June 2011, six further outbreaks were reported in the Hazafon area at Shamir, Tsefat (24/06/2011), Shirion Junction, Golan (30/06/2011), Orcha Junction, Golan (18/07/2011), Devora, Yizreel (10/07/2011), Dalton, Tsefat (10/07/2011) and Mi'elya, Acco (26/07/2011). All outbreaks involved only cattle. Viruses isolated at the WRLFMD all belonged to the ME-SA topotype, PanAsia-2ANT-10 lineage

Afghanistan and Pakistan

The O/ME-SA/PanAsia-2ANT-10 and A-Iran-05AFG-07 lineages continue to dominate in these countries. A new, as yet unnamed, A-Iran-05 lineage was found in Afghanistan.

Kazakhstan

An outbreak of FMD O occurred in cattle on the 11/08/2011 at Karashilik, Kurchumskiy, East Kazakhstan. A sample was submitted to the FGI-ARRIAH and the VP1 sequence provided to the WRLFMD. Phylogenetic analysis showed the sequence to belong to the ME-SA topotype, PanAsia lineage and was closely related to sequences obtained from viruses occurring in Vietnam and P.R. China (Guizhou province)

South Ossetia / Tskhinvali Region Georgia (disputed)

An outbreak of FMD type O occurred in cattle on 05/08/2011. Laboratory diagnosis took place at the FGI-ARRIAH and the VP1 sequence was provided to the WRLFMD. The virus belonged to the ME-SA topotype, PanAsia-2ANT-10 lineage.

Kuwait

2 samples received on 18/07/2011. Phylogenetic analysis showed the sequence to belong to type O, ME-SA, Pan Asia-2ANT-10

Pool 4. EAST AFRICA

Country	Data WRL FMD ⁵	Data from field officers ⁴	Reported serotype/outbreaks in OIE 2011 (1st 6 month report or immediate notifications) ¹		Reported serotype/outbreaks in OIE 2010 (annual report) ¹	
			Serotype	No of outbreaks	Serotype	No of outbreaks
Burundi			report missing		report missing	
Comoros			report missing		?	2
Djibouti			not reported		not reported	
Eritrea			report missing		report missing	
Ethiopia			A, SAT 1, SAT 2, O	15	A, O, SAT 1, SAT 2	67
Kenya	O, SAT 1	SAT 2 detected	O, SAT 1	26	O, SAT 1, SAT 2, A	103
Rwanda			report missing		A, O, SAT 2	7
Somalia			?	39	?	?
Sudan			?	6	?	9
Tanzania			report missing		?	51
Uganda		O	report missing		report missing	
Congo D. R.	O, A		A, C, SAT 1	2	not reported	
Egypt			not reported		O, A	7

Commentary on the endemic serotypes for 2010 is found in the annual FAO/OIE FMD surveillance report (www.wrlfmd.org)

New events

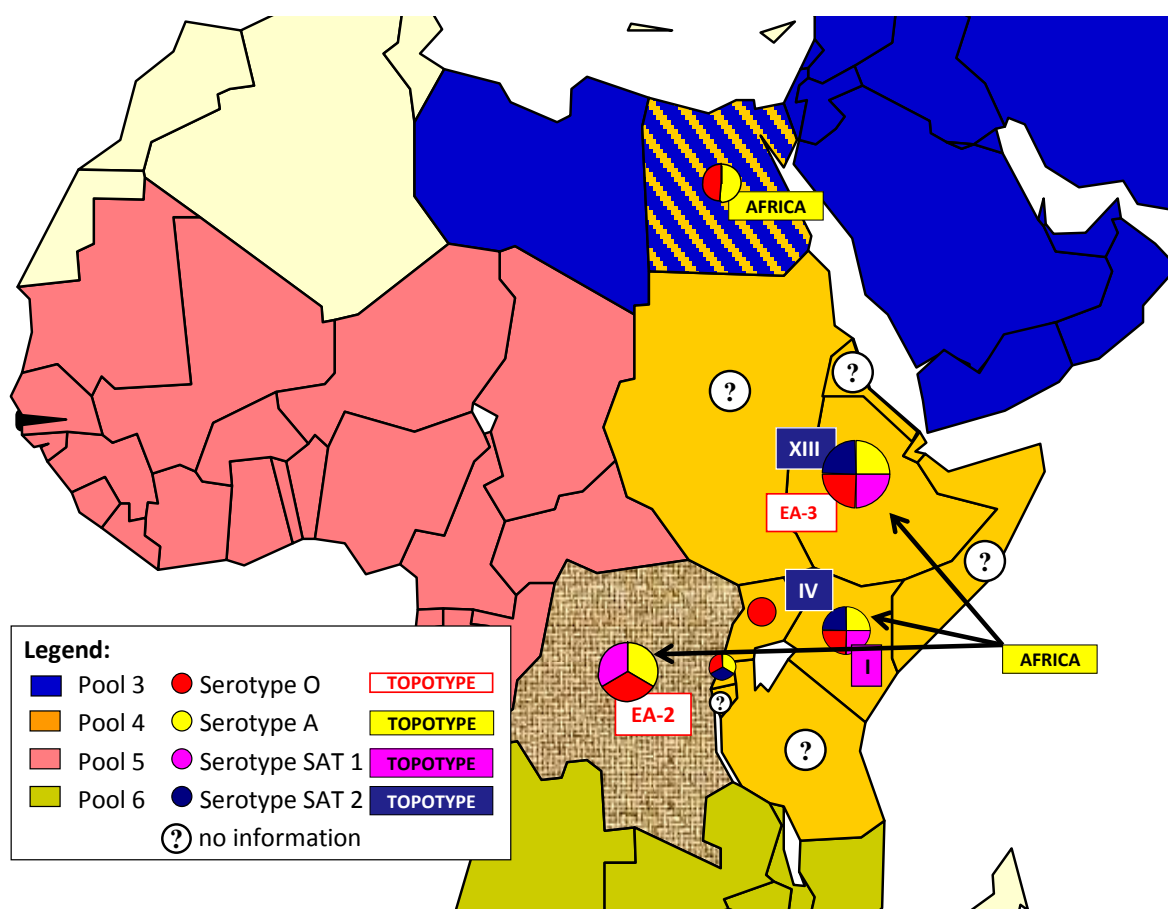
SAT2 epidemic is widespread in the central parts of the Rift Valley of Kenya. [FAO officer, Nov 2011]⁴

Significant events from previous months (see Oct report)

- Democratic Republic of the Congo (DRC) - serotypes O and A in cattle reported by WRL⁵

Continuing events from previous months¹ (OIE status).

Pool 4: FMD distribution by serotypes 2010 – 2011



Comments for results available (WRL)⁵ in 2011

Democratic Republic of the Congo (DRC)

The World Reference Laboratory for FMD (WRLFMD) received samples from the DRC on 29 September 2011 and completed the testing on 18 October 2011. FMD serotype O (**O Topotype: EA-2**) was found in epithelial tissues samples collected from cattle in October 2010 and FMD serotype A (**A Topotype: AFRICA**) was found in epithelial tissue samples collected from cattle in February 2011. The serotype O is close to the northern Zambian incursion outbreaks of last year, suggesting closer links that would link these events. The serotype A (may be the first time for DRC, that we know of) is related to East African pool (Kenya and Tanzania recent isolates, but sufficiently different to suggest local evolution).

Pool 5. WEST AFRICA

Country	Data RESOLAB Jan-Aug 2011 ⁶	Data from field officers ⁴	Reported serotype/outbreaks in OIE 2011 (1st 6 month report or immediate notifications) ¹		Reported serotype/outbreaks in OIE 2010 (annual report) ¹	
			Serotype	No of outbreaks	Serotype	No of outbreaks
Benin			A, O, SAT 1, SAT 2	22	A, O, SAT 1, SAT 2	39
Burkina Faso			?	48	?	111
Cameroon	pending		?	13	?	32
Cape Verde			report missing		report missing	
Central African Republic			report missing		?	11
Chad			report missing		?	2
Congo R.			not reported		not reported	
Cote d'Ivoire		no known outbreaks	SAT 1	10	?	15
Equatorial Guinea			not reported		not reported	
Gabon			not reported		not reported	
Gambia		no known outbreaks	report missing		report missing	
Ghana	43 samples ELISA pos.	no outbreaks reported	?	8	?	39
Guinea Bissau			not reported		not reported	
Guinea Conkary			not reported		not reported	
Liberia			report missing		report missing	
Mali	SAT 2		report missing		?	4
Mauritania			not reported		not reported	
Niger			?	37	?	72
Nigeria	no virus detected		?	10	?	17
Sao Tome & Principe			report missing		report missing	
Senegal	no virus detected		?	2	?	6
Sierra Leone			not reported		not reported	
Togo	FMDV		O, SAT 1	46	O, SAT 1	42
Congo D. R.	O, A		A, C, SAT 1	2	not reported	

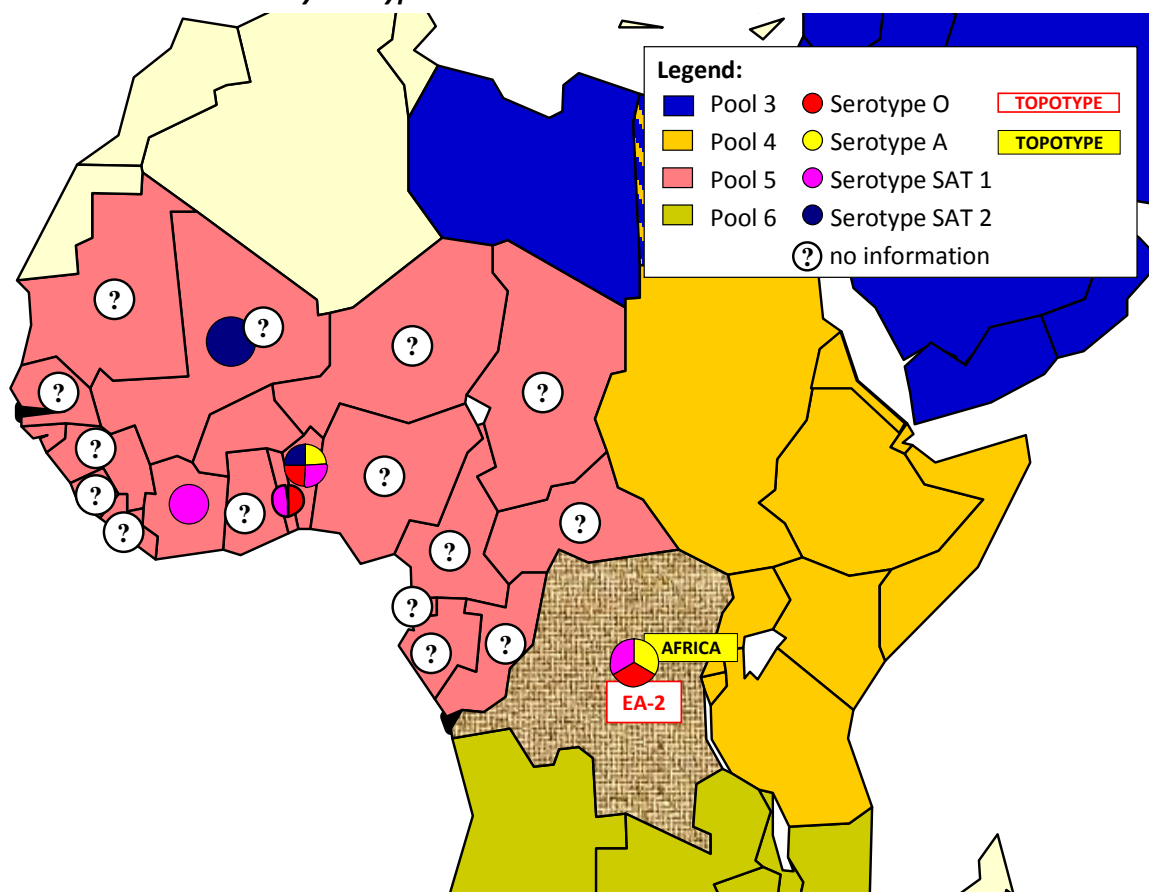
Commentary on the endemic serotypes for 2010 is found in the annual FAO/OIE FMD surveillance report (www.wrlfmd.org)

Significant events from previous months (see Oct report)

- Democratic Republic of the Congo (DRC) - serotypes O and A in cattle reported by WRL⁵

Continuing events from previous months¹ (OIE status)

Pool 5. FMD distribution by serotypes 2010 - 2011



Comments for results available (WRL)⁵ in 2011

Democratic Republic of the Congo (DRC) - See pool 4.

Pool 6. SOUTH AFRICA

Country	Data WRL FMD ⁵	Data from field officers ⁴	Reported serotype/outbreaks in OIE 2011 (1st 6 month report or immediate notifications) ¹		Reported serotype/outbreaks in OIE 2010 (annual report) ¹	
			Serotype	No of outbreaks	Serotype	No of outbreaks
Angola			report missing		SAT 2	1
Botswana	SAT 2		SAT 2	3	SAT 2	1
Malawi			SAT 2	1	?	?
Mozambique			SAT 2	11	SAT 2	10
Namibia			not reported		SAT 1	1
South Africa		SAT 3	?	12	SAT 1	5
Zambia			O	1	O	1
Zimbabwe	SAT 2		SAT 2	1	SAT 2	9
Congo D. R.	O, A		A, C, SAT 1	2	not reported	

New events

Significant events from previous months (see Oct report)

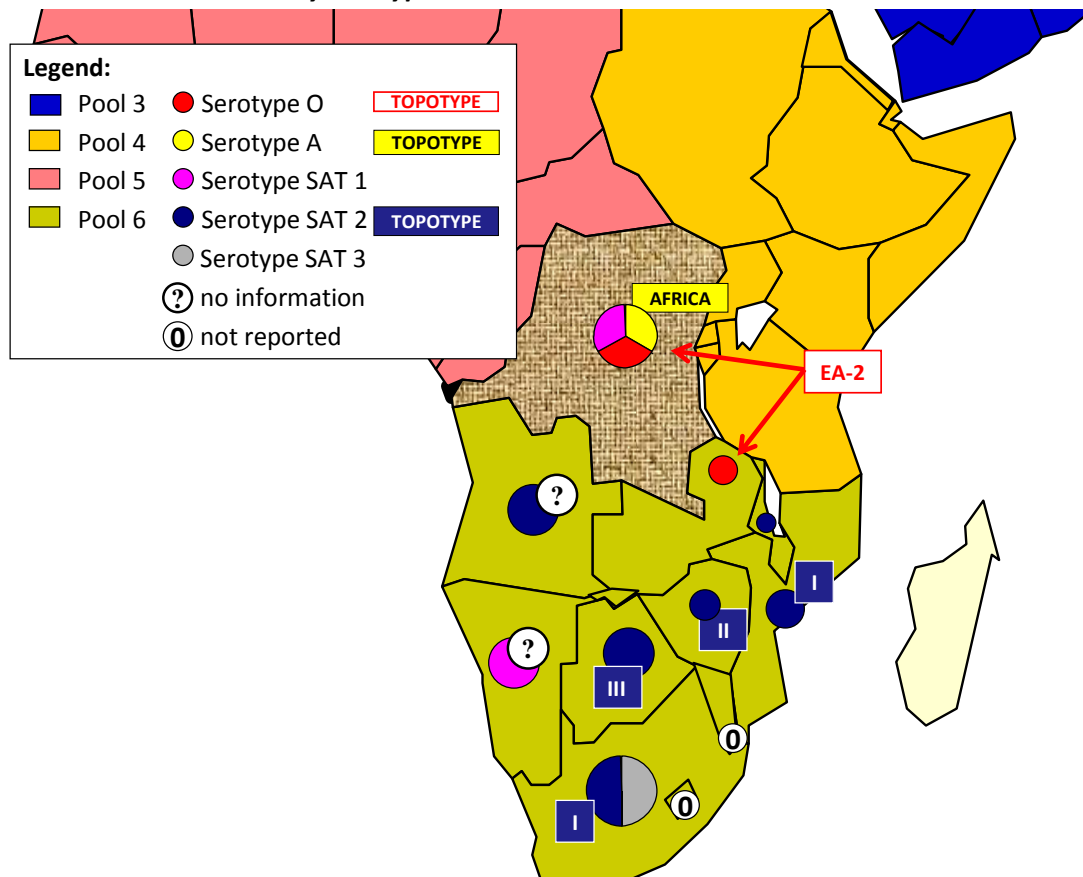
- Democratic Republic of the Congo (DRC): serotypes O and A in cattle reported by WRL⁵

Continuing events from previous months¹ (OIE status)

Country	Start of event	Outbreaks: Serotype	Continued outbreak / Date of previous occurrence
Angola	27/02/2009	SAT 2	Continuing
Botswana	17/09/2011	-	Continuing
Mozambique	24/09/2010	SAT 2	Continuing
South Africa	01/02/2011	-	Continuing
Zambia	22/09/2010	O	Continuing
Zimbabwe	28/05/2010	-	Continuing

Commentary on the endemic serotypes for 2010 is found in the annual FAO/OIE FMD surveillance report (www.wrlfmd.org)

Pool 6. FMD distribution by serotypes 2010 - 2011



Comments for results available (WRL) ⁵ in 2011

Botswana

Previously, in February 2011, an outbreak of FMD serotype SAT 2 was reported in cattle at Kaepe crush, Okavango, Ngamiland, Maun. A second focus of infection in cattle, also due to serotype SAT 2, was reported on 29/04/2011 at Butale Syndicate Crush, Francistown, North East, close to the border with Zimbabwe. The previous outbreak of FMD in this area was in 2003. Subsequently, two further outbreaks were reported in the region (on 22/05/2011 at Mabethe Crush, Francistown and on 27/05/2011 at Ramokgwebana, Selibe-phikwe, Central, Selibe Phikwe). Collaboration between the Botswana Vaccine Institute (BVI) and the WRLFMD has shown that the viruses isolated from the two foci belong to two different serotype SAT 2 topotypes. The viruses from the Maun area belong to topotype III and are closely related to viruses present in that area during 2008 and 2009.

A new outbreak of FMD was reported in cattle at Itoto, Okavango, Ngamiland, Maun (17/09/2011); typing and genetic analysis by the regional reference laboratory is awaited.

Democratic Republic of the Congo (DRC) - see pool 4

Pool 7. SOUTH AMERICA

Country	Data WRLFMD ⁵	Data from field officers ⁴	Reported serotype/outbreaks in OIE 2011 (1st 6 month report or immediate notifications) ¹		Reported serotype/outbreaks in OIE 2010 (annual report) ¹	
			Serotype	No of outbreaks	Serotype	No of outbreaks
Ecuador			O	3	O	42
Paraguay			O	1	not reported	
Venezuela			report missing		A	3

Commentary on the endemic serotypes for 2010 is found in the annual FAO/OIE FMD surveillance report (www.wrlfmd.org)

New events

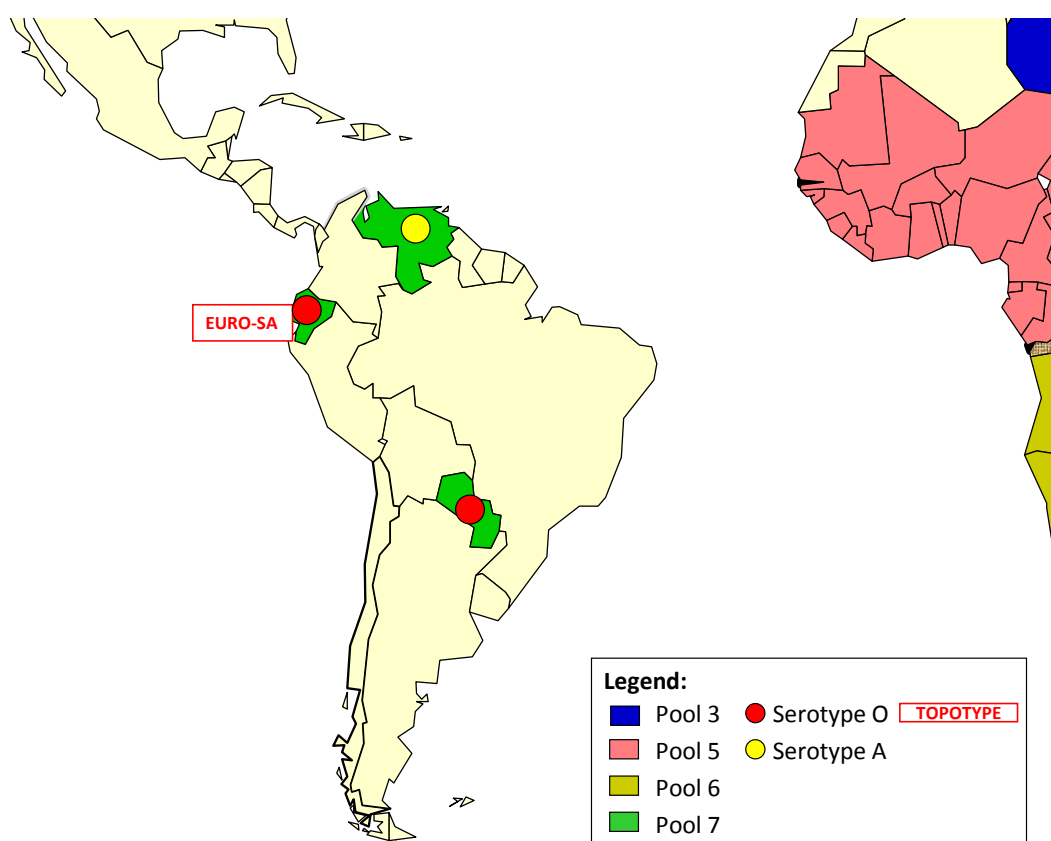
Significant events from previous months

- Paraguay: serotype O outbreak in cattle¹

Continuing events from previous months¹ (OIE status)

Country	Start of event	Outbreaks: Serotype	Continued outbreak / Date of previous occurrence
Paraguay	17/09/2011	O	07/2003

Pool 7. FMD distribution by serotypes 2010 – 2011



Current and continuing disease events in November 2011

Reported events in Nov 2011

- serotype Asia 1 outbreak in cattle and goats in Tajikistan¹
- serotype A outbreaks in cattle in Kyrgyzstan (A-Iran-5)²
- serotype Asia 1 epidemic in West Eurasia, outbreaks in Eastern Turkey³

Continuing events¹ (OIE status)

Country	Start of event	Outbreaks: Serotype	Continued outbreak / Date of previous occurrence
Angola	27/02/2009	SAT 2	Continuing
Botswana	17/09/2011	-	Continuing
China (People's Rep. of) (mainland)	22/02/2010	O	Continuing
China (Taiwan Province)	30/10/2011	O	Continuing
Israel	15/10/2011	O	01/09/2011
Kazakhstan	11/08/2011	O	26/07/2011
Korea (Dem. People's Rep.)	25/12/2010	O	Continuing
Korea (Rep. of)	26/11/2010	O	Continuing
Libya	22/12/2010	O	Continuing
Mozambique	24/09/2010	SAT 2	Continuing
Paraguay	17/09/2011	O	07/2003
Zambia	22/09/2010	O	Continuing
Zimbabwe	28/05/2010	-	Continuing

References

1. WAHID Interface – OIE World Animal Health Information Database
<http://web.oie.int/wahis/public.php?page=home>
2. Global Early Warning System (EMPRES/GLEWS) reports <http://empres-i.fao.org/empres-i/home> ; National Authorities, 10/11/2011, <http://www.gov.kg/?p=4716>
3. National Authorities, *FAO/the EuFMD Commission, Tripartite Group Meeting, Brussels, 5th Dec. 2011*
4. Reports from FAO/EuFMD projects and field officers
5. World reference laboratory for Foot and mouth disease (WRLFMD), www.wrlfmd.org
6. RESOLAB-FMD West Africa (FAO/EuFMD supported FMD network), Quarterly report on the Western & Central African laboratories network; Jan-Aug 2011 [2nd Sept 2011]