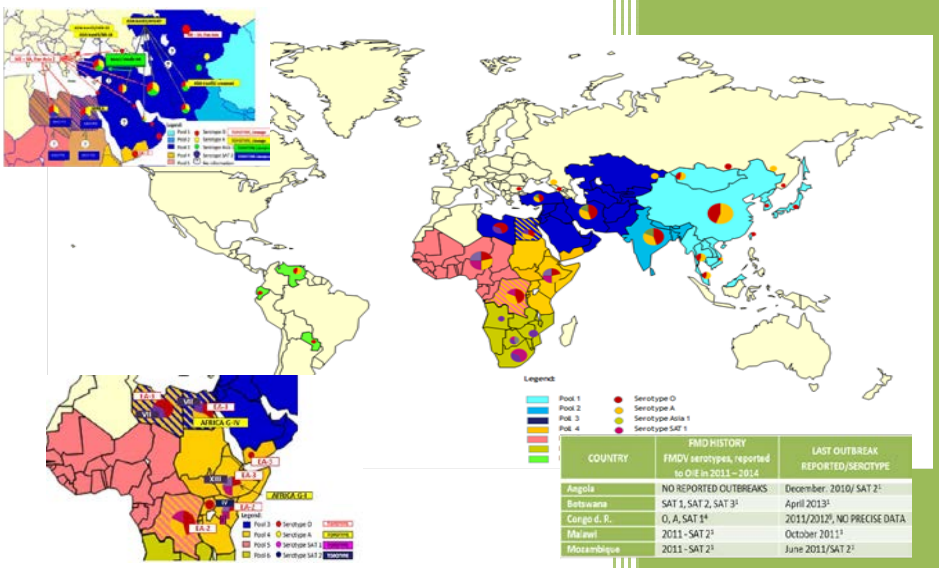
2014

Foot-and-Mouth Disease Situation
Monthly Report – APRIL 2014



COUNTRY	FMD HISTORY FMDV serotypes, reported to O.I.E 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

April 2014

Guest editor: Donald King, Head: WRLFMD, The Pirbright Institute, UK

INFORMATION SOURCES USED:

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

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

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

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

Contents

Guest Editor's Comment:

The spread of the O/ME-SA/Ind-2001 lineage from the Indian sub-continent into West EurAsia and North Africa appears to be gaining pace. Since the beginning of the year, further outbreaks due to this strain have been recognized in Saudi Arabia, and new cases have also occurred in the United Arab Emirates. More recently FMD outbreaks in cattle as well as small ruminants due to O/ME-SA/Ind-2001 have occurred in a number of locations in Tunisia (described in more detail later in this report). Prior to these outbreaks, Tunisia was FMD-free (with vaccination), and FMD had not been reported in the country since 1999. Close surveillance is now warranted since these recent cases increase the threats for onward spread of the virus to other countries in the region such as Algeria and Morocco that are FMD-free (with vaccination).

The annual report of the OIE/FAO FMD Laboratory Network has recently been published. This document collates the activities of the global reference centres for FMD, and includes a summary of all samples that have been collected from the seven endemic pools and tested by the Network during 2013. Copies of this report can be obtained from http://www.wrlfmd.org/ref_labs/fmd_ref_lab_reports.htm or donald.king@pirbright.ac.uk.

I. GENERAL OVERVIEW

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

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).

Map 1: Distribution of foot-and-mouth disease virus pools, 2011 – 2013 (EuFMD)

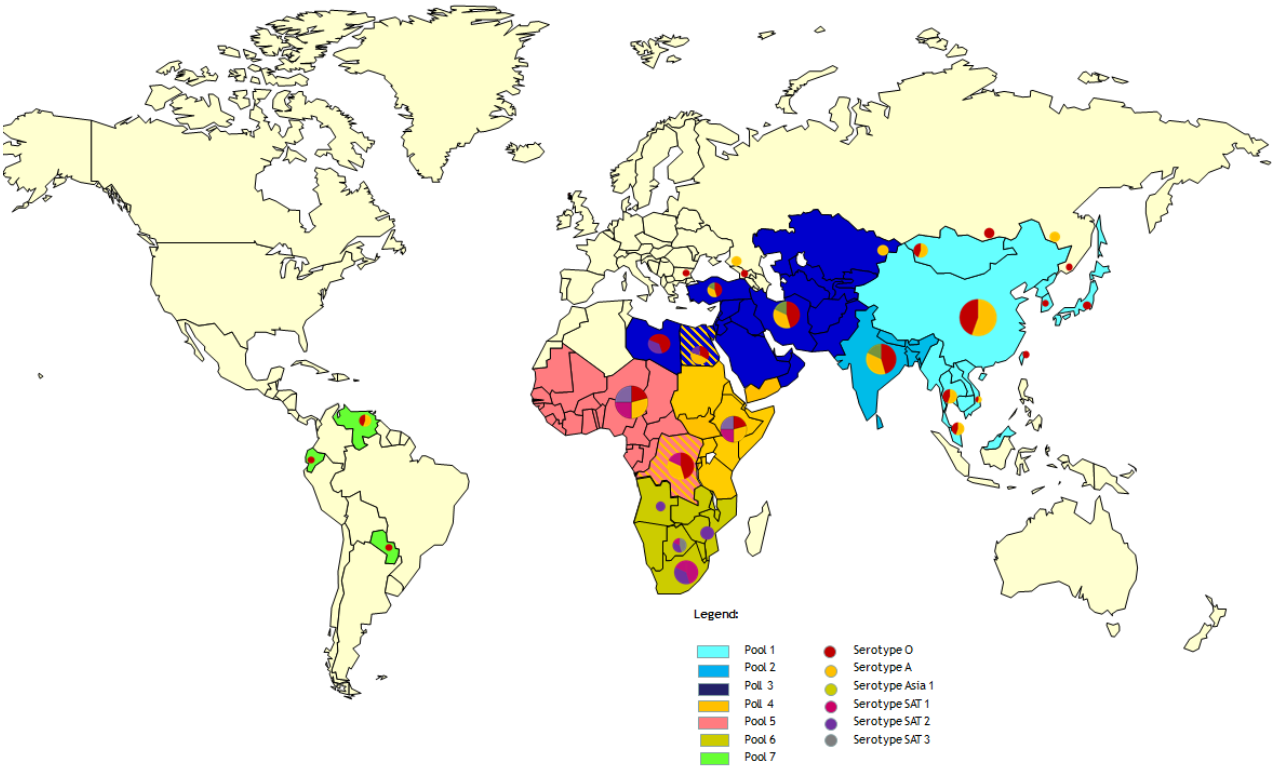


Table 1: List of countries representing each virus pool for the period 2010 – 2014

POOL	REGION/COUNTRIES	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, 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, 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**

* ONLY IN NORTH ZAMBIA AS SPILL-OVER FROM POOL 4

Egypt and Libya are indicated as being in multiple pools, since they have evidence of FMDV originating from 2 or more pools in the past four years.

II. HEADLINE NEWS

POOL 1

Mongolia[1,3,5] **-** FMD outbreak serotype O was notified in Khuliin dersen us, Dalanjargalan soum, in Dornogovi Province;

China (People's Rep. of)[1,14] **-** An outbreak of FMD serotype O has been reported at a cattle farm in Zhoutang village, Yingtan, Jiangxi province;

Vietnam[4] **-** Three new FMD outbreaks, located in Ha Tinh province. Two due to FMDV serotype O.

POOL 2

India[2,7,14] **-** PD-FMD at Mukteswar reported FMDV serotype O.

Nepal[3] - Exclusively FMDV serotype O topotype ME-SA/Ind-2001d identified by The Pirbright Institute in samples from cattle and buffaloes in samples from 2012 – 2014.

POOL 3

Tunisia[1,10,2] **-** Confirmed FMDV serotype O, topotype O/ME-SA/Ind 2001 in in Es Somaa, Beni Khiar Nabeul Governorate in cattle;

Pakistan[2,11] **-** 159 outbreaks were reported. Majority of the outbreaks occurred due to serotype O, followed by serotype A and serotype Asia-1.

Iran[2,12] **-**195 FMD outbreaks in cattle, sheep and goats. 125 samples were analyzed, out of which 61 samples were positive due to serotype A (47 samples) and serotype O (14 samples).

POOL 4

Egypt[3] **-** FMDV serotypes O, A and SAT 2 identified by The Pirbright Institute in samples from cattle and buffaloes

POOL 5

Cameroon[2,8] **-** National Veterinary Laboratory (LANAVET) reported FMDV serotypes SAT2, A and O were detected during laboratory testing. Samples were sent to the Pirbright Institute for sequencing.

POOL 7

South America[9] - The 41st Ordinary meeting of the South American Commission for the fight against Foot and Mouth Disease (COSALFA) was held in Lima, Peru, 10-11 April 2014.

Other news:

Kazakhstan[13] **-** Annual West Eurasia FMD Control Roadmap Meeting, Astana, 23-24 April 2014.

III. DETAILED POOL ANALYSIS

A. POOL 1 – Central /East Asia

Mongolia[1,3,5]:

A new FMD outbreak serotype O was notified in a farm situated in Khuliin dersen us, Eldev bag, Dalanjargalan soum in Dornogovi province on 25 April 2014. According the OIE report the outbreak started on 6th of March in a farm of cattle and sheep. A total of 73 cattle and 23 sheep were reportedly found affected by the FMD outbreak. All 100 animals were destroyed. The control measures taken in the outbreak are: quarantine, movement control inside the country, screening and vaccination in response to the outbreak (Table 2) disinfection of the infected premises, dipping/spraying, and modified stamping out.

From the website of the World Reference Laboratory for Foot-and-Mouth Disease (WRLFMD) at Pirbright, five samples collected from Mongolian cattle were received on 17 Mar 2014 for genotyping, all identified as FMDV serotype O, topotype: ME-SA, genotype/strain: PanAsia.

Table 2: List of administrative divisions where vaccination was performed in Mongolia

Administrative division	Species	Total vaccinated
KHENTII	Cattle	164.330
TUV	Goats	287.890
	Cattle	256.379
	Sheep	413.394
SUKHBAATAR	Cattle	1,646.403
DUNDGOVI	Cattle	5.730
	Goats	235.597
	Sheep	245.027
GOVI-SUMBER	Cattle	8.018
	Goats	131.762
	Sheep	115.002
DORNOD	Goats	125.192
DORNOGOVI	Cattle	116.274
	Goats	110.011

China (People's Rep. of)[1,14]:

On Friday, 18 April, an outbreak of foot and mouth disease serotype O has been reported at a cattle farm in Zhoutang village, Yingtan, Jiangxi (Map 2). On the same date, an enzyme-linked immunosorbent assay (ELISA) and reverse transcription - polymerase chain reaction (RT-PCR) tests were conducted at the Lanzhou Veterinary Research Institute. Both tests proved the presence of the FMD virus.
The only affected species was cattle, no number of susceptible animals was provided but six cases were declared and 18 animals were destroyed.
Control measures applied were: stamping out, movement control inside the country, screening, zoning, disinfection of infected premises/establishment(s) and dipping/spraying.

During 2013, FMD outbreaks in China included four due to O/ME-SA/PanAsia in Tibet (Cattle) and one each in Sicuan and Jiangsu Provinces, respectively in pigs due to O/SEA/Mya-98. 17 serotype A outbreaks have affected five Chinese provinces (Guangdong, Qinghai, Xinjiang, Tibet and Yunnan) and have also occurred in Russia,

Mongolia and Kazakhstan. For serotype O, full genome sequence data generated at ARRIAH and WRLFMD have demonstrated that at least two separate O/SEA/Mya-98 lineages are responsible for outbreaks since 2010 in (i) the Russian Federation and Mongolia, and (ii) China, Japan, North Korea, South Korea and Russia, respectively.

Map 2. Location (red dot) of the FMDV serotype O outbreak in a cattle farm in Zhoutang village, Yingtan, Jiangxi, 18 April 2014 (WAHID-OIE)

Vietnam[4]:

During April, Vietnam reported three FMD outbreaks, 2 in villages and one in a farm all located in Ha Tinh province situated in the northern part of central Vietnam.
The outbreaks affecting Ha Linh and Phuong My villages in Huuong Khe region were due to FMDV serotype O (Map 3), no samples were taken from the Duc Dung, Duc Tho outbreak (Map 4).
The affected species included cattle (17 affected out of 788 susceptible) in Ha Linh village and cattle and buffaloes in Phuong My village (7 cattle affected out of 778 susceptible and 9 buffaloes out of 810 susceptible). In Duc Dung, Duc Tho outbreak only one cow was affected being also the only susceptible animal.
The samples were tested in a National Laboratory (Regional Animal Health Office 3) using indirect sandwich ELISA.
The current control measures include movement control inside the country, disinfection of infected premises and quarantine.

Map 3. Location (red dots) of the Ha Linh and Phuong My FMD outbreaks in Ha Tinh province, 10 and 12 April 2014 (SEAFMD)

Map 4. Location (blue star) of the Duc Dung, Duc Tho FMD outbreak in Ha Tinh province, 13 April 2014 (SEAFMD)

Map 5: FMD distribution by serotype and topotype in South East Asia, 2010 – 2013 (EuFMD)

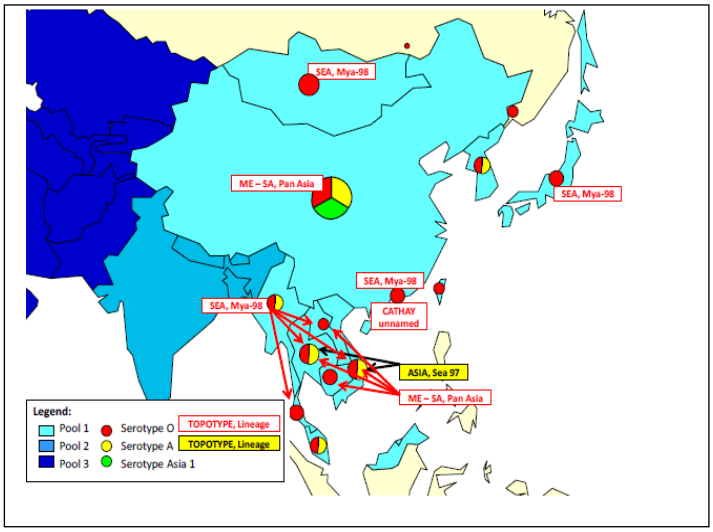


Table 3: Summary of the history of FMD Pool 1, 2011 – 2014

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

Conjectured circulating FMD viral lineages in pool 1 during 2013[14]:

- 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[2,7,14]:

The FMD Reference Laboratory for South Asia, PD-FMD at Mukteswar during April 2014 it reported FMDV serotype O. No samples were genotyped but 1615 serum samples were tested for FMDV antibodies.

Data from PD-FMD, which were collated from 22 different reporting centres in India, indicates that the O/ME-SA/Ind-2001 is the predominant serotype O lineage circulating in the country.

FMD history for the past three years is given in Map 6 and Table 4.

Nepal[3]:

In recent years (2012 – 2014) only FMDV type O has been detected in Nepal. In a recent shipment to The Pirbright Institute all isolates were characterized as FMDV serotype O topotype ME-SA/Ind-2001d.

Map 6: FMD distribution by serotype and topotype in South Asia, 2011 – 2013 (EuFMD)

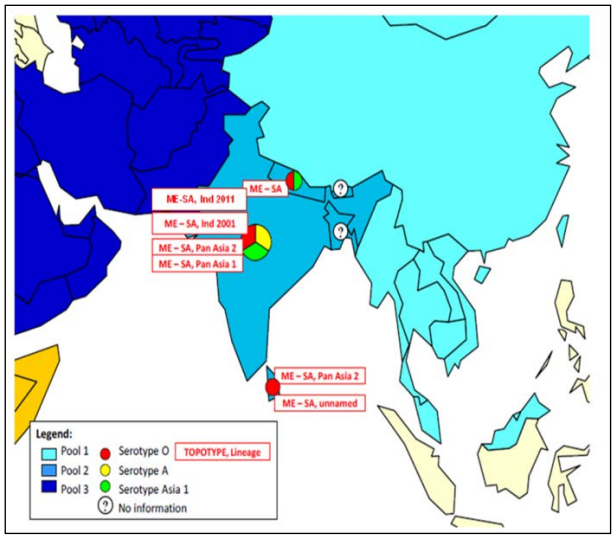


Table 4: Summary of the history of FMD Pool 2, 2011 – 2014

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2011 – 2014	LAST OUTBREAK REPORTED/SEROTYPE
Bangladesh	2011 - O, A, Asia 1	Not available
Bhutan	2011, 2012 - O	Nov 2012/O
India	O, A, Asia 1	Sep 2013/ Asia 1 , April 2014/ O
Nepal	O, A, Asia 1	Mar 2013/O
Sri Lanka	O	2012/O

Conjectured circulating FMD viral lineages in pool 2 during 2013[14]:

- 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

Tunisia[1,10,2]:

The Tunisia Ministry of Agriculture mentioned in a statement released on 28 April 2014, the discovery of two cows with clinical signs suggestive of FMD, noted on 24 April 2014, in Es Somaa, Beni Khiar Nabeul Governorate in a herd of 17 cattle (Map 13).

The Tunisian Veterinary Research Institute confirmed the disease by real-time RT-PCR on 26 April 2014 and the sequencing was performed at the Veterinary Faculty in Tunis. The phylogenetic analysis identified topotype O/ME-SA/Ind 2001 which is closely related to recent virus isolates from Libya (LIB/2/2013 (99%)) and Saudi Arabia (SAU/3/2013).

Two cattle were introduced into a farm in Somaa, Sidi Busil on 20 April 2014, whose immune status related to FMD was unknown.

According to the OIE report, the source of the outbreak is due to the illegal movement of animals.

The Department has decided to make a vaccination campaign throughout the region by setting up teams to perform the vaccination operations and to distribute medicines for livestock facilities.

The vaccination is performed with a vaccine produced by Merial and it is the same vaccine (O Manisa –O 3039) used in Libya that according to vaccine matching analysis has a good matching for the topotype identified. Vaccination campaign of 2013 has covered 79% of the bovine (serotypes O, A, SAT2) and 68% of the small ruminants (O and SAT 2 serotypes).

Both cattle were burned to prevent the spread of disease and animal movements of incoming and outgoing Nabeul Governorate are now prohibited until further notice.

In addition to the control measures mentioned, the following measures are being implemented: - Crisis cells at national and regional levels, - Burying of the fifth quarter and bones between two layers of lime, - Disinfection of vehicles leaving the affected governorates, - Vaccination points of susceptible species at the entrance of livestock markets, Perifocal vaccination in 5 km radius, - Epidemiological investigation to determine the origin of the infection - communication plan.

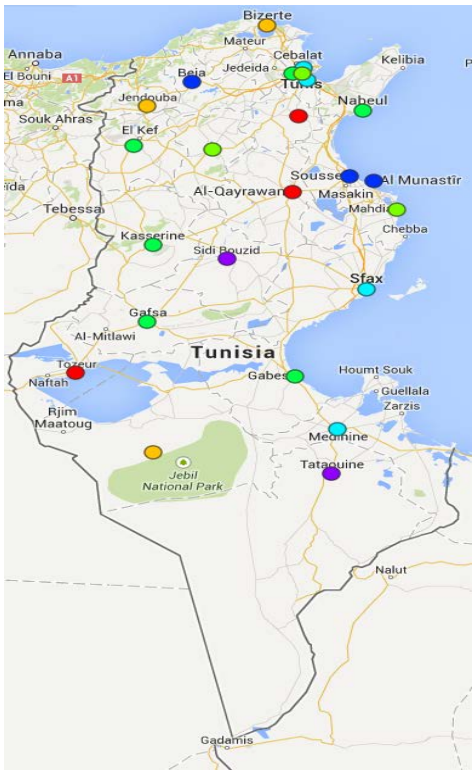
March 1999 was the date of previous occurrence of the disease in the country.

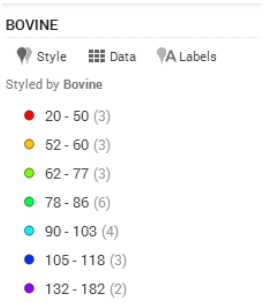
The bovine and small ruminants' FMD vaccination coverage done in 2013 is showed in map 14 and map 15.

Tunisia's neighbouring country, Libya last reported FMD outbreaks occurring in September 2013.

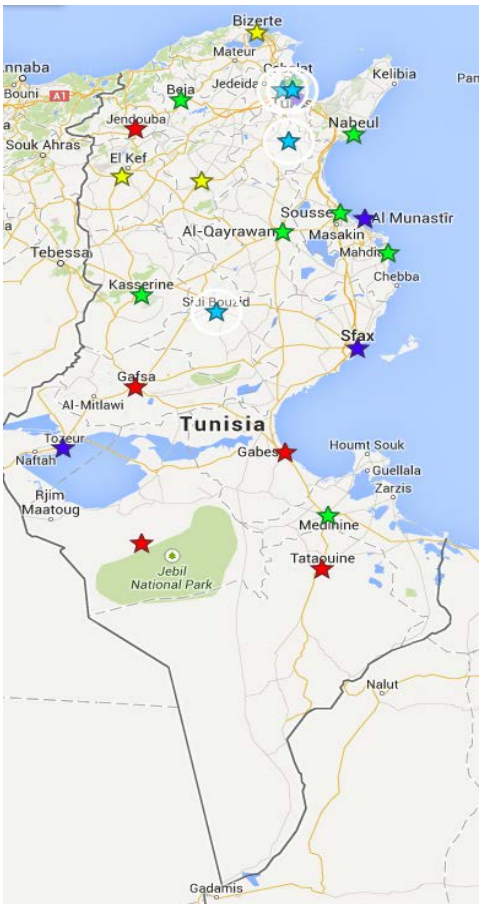
Map. 13 Location (red circle) of in Es Somaa, Beni Khiar FMD outbreak in Nabeul Governorate, 29 April 2014 (WAHID-OIE)

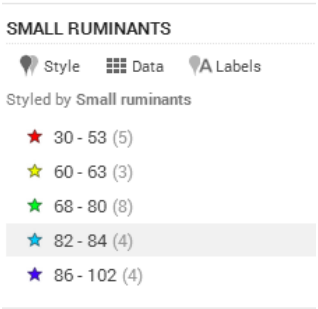
Map. 14 Bovine FMD vaccination coverage for 2013 in Tunisia (EuFMD)





Map. 15 Small ruminants FMD vaccination coverage for 2013 in Tunisia (EuFMD)





Pakistan[2,11]:

During April, under the project *Progressive control of Foot and mouth disease in Pakistan*, the Veterinary Authorities reported the following progress:

- Seven disease awareness seminars were held where 319 farmers have participated which had as an immediate result the notification of a larger number of FMD outbreaks (159) in this period. This together with capacity building of the field veterinary staff led to improvement of the existing surveillance system in Pakistan.

- 159 FMD outbreaks were attended, free treatment for 452 sick animals was provided and also ring vaccination was carried out in 5317 animals by field veterinarians. The hottest spot in the country remains Landhi Cattle Colony (LCC) where 73 out of 159 outbreaks were reported. Laboratory analysis indicated that the majority of the outbreaks occurred due to serotype O, followed by serotype A and serotype Asia-1.

- Use of the quality FMD vaccine according to the SOPs developed within the project has provided protection of the animals against the disease and served as a proof to convince a large number of farmers to vaccinate against FMD.

- A Laboratory Information Management System (LIMS) has been installed at eight designated ELISA laboratories that are now fully functional and providing diagnostic services.

- Samples from Pakistan have been sent recently to WRLFMD, Pirbright and results are pending

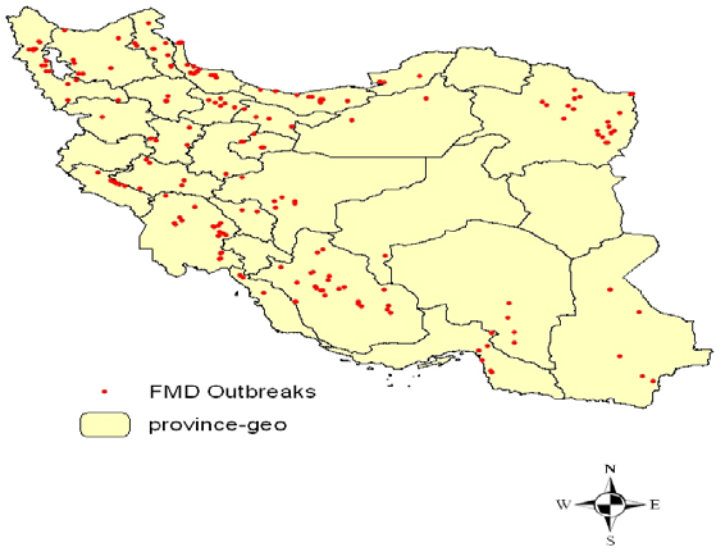
Iran[2,12]:

In April, Iran experienced a total of 195 FMD outbreaks in cattle, sheep and goats. A detailed situation of the outbreaks and the species affected on each province is given in Table 5 and is shown in Map 7.
Fars, Razavi Khorasan, Khozestan, Gilan and West Azerbaijan provinces were most affected by FMD with 95 outbreaks representing 48, 71% out of the total number of outbreaks, with 79 outbreaks in cattle and 16 outbreaks in goats and sheep.
In the period 21st of March and 20th of April 2014, 125 samples were analyzed, out of which 61 samples were positive due to serotype A (47 samples) and serotype O (14 samples).
During the same period 247.006 cattle and 2,764.756 sheep and goats were vaccinated against FMD.

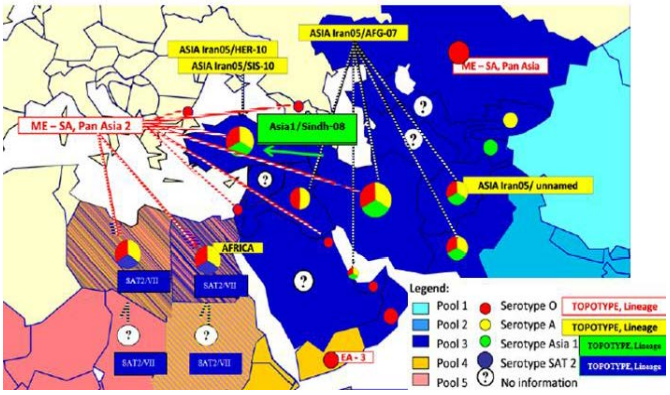
Table 5: FMD Outbreak Situation in Iran by province in April 2014

Province Name	No. of outbreaks in sheep and goats	No. of outbreaks in cattle	Total No. of outbreaks
East Azerbaijan	0	7	7
West Azerbaijan	0	15	15
Ardabil	4	5	9
Isfahan	1	5	6
Alborz	0	2	2
Ilam	4	2	6
Bushehr	0	3	3
Tehran	0	2	2
Chahar Mahal	0	2	2
Razavi Khorasan	13	7	20
Khozestan	17	2	19
Zanjan	0	3	3
Semnan	0	2	2
Sistan and Baluchestan	3	3	6
Fars	8	17	25
Qazvin	0	6	6
Qom	1	7	8
Kordestan	0	1	1
South Kerman	1	3	4
Golestan	0	3	3
Gilan	0	16	16
Lorestan	0	5	5
Mazandaran	0	11	11
Markazi	0	1	1
Hormozgan	2	6	8
Hamadan	2	2	4
Yazd	1	0	1
Total	**57**	**138**	**195**

Map 7[12]**.** FMD Outbreak Situation in Iran by provinces in April 2014



FMD history in Pool 3 for the past 3 years is given in Table 6 and Map 8.



Map 8: FMD distribution by serotype and topotype for West Eurasia and Middle East, 2011 – 2013 (EuFMD)

Table 6: Summary of the history of FMD Pool 3, 2011 – 2014

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2011 – 2014	LAST OUTBREAK REPORTED/SEROTYPE
Afghanistan	2011 - O, A, Asia 1	Dec 2011
Armenia	NO REPORTED OUTBREAKS	Not available
Azerbaijan	NO REPORTED OUTBREAKS	Jun 2001
Bahrain	2011 - O, A, Asia 1 2012 - O	Mar 2012/O
Bulgaria	2011 - O	Apr 2011/O
Egypt	A, O 2012 - O, A, 2014 - SAT 2	May 2014/SAT2
Georgia	NO REPORTED OUTBREAKS	2002
Iran	O, A, Asia 1	Sep 2013/O, A, Jun 2013/Asia 1
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	Nov 2012/O, Asia 1, Nov 2013/ A
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
Saudi Arabia	O	Nov 2013/O
Syrian Arab Republic, 2011	NO REPORTED OUTBREAKS	Mar/2002
Tajikistan, 2011	2011 - Asia 1	Nov 2011/Asia 1
Turkey	Asia 1, A, O	Mar 2014/O, A, Asia 1
Turkmenistan	NO DATA AVAILABLE	Not available
Uzbekistan	NO DATA AVAILABLE	Not available

Conjectured circulating FMD viral lineages in pool 3 during 2013[14]:

- 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

Egypt[3]

FMDV serotypes O, A and SAT 2 were identified by The Pirbright Institute in the samples sent by the Ministry of Agriculture and Land of Arab Republic of Egypt, in April 2014. The positive samples were collected from cattle and buffaloes. Samples were also collected from sheep but no virus was detected.

East Africa is known to be endemic for FMD, but current data are limited (Map 9).

Map 9: FMD distribution by serotype and topotype for East Africa. 2011 – 2013 (EuFMD)

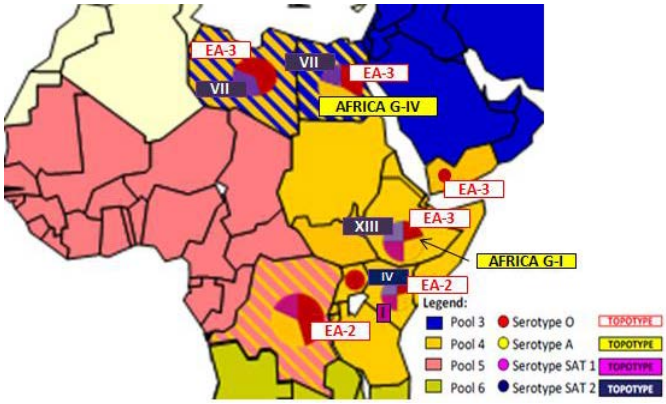


Table 7: Summary of the history of FMD Pool 4, 2011 – 2014

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2011 2014	LAST OUTBREAK REPORTED/SEROTYPE
Burundi	O, A, SAT 1, SAT 2	Aug 2013 / not available
Comoros	NO DATA AVAILABLE	2010
Congo d. R.	O, A, SAT 1	Jun 2013/not typed
Djibouti	NO DATA AVAILABLE	Not available
Egypt	2011 - A, O 2012 - A, O SAT 2	Jun 2012/SAT 2
Eritrea	O	Dec 2011/O
Ethiopia	A, SAT 1, O	2012/O
Kenya	2011 - O, A, SAT 1, SAT 2	Jan 2013/A, October 2013/O, SAT2, SAT1
Libya	2011 - O 2012 - O, SAT 2	O, Oct 2013/Apr 2012
Rwanda	ABSENT NOT TYPED	Nov 2012/not typed
Somalia	NO DATA AVAILABLE	2011
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
Yemen	NO DATA AVAILABLE	Not available

Conjectured circulating FMD viral lineages in pool 4 during 2013[14]:

- 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 [2,8]:

The 18th of March marks the date when vaccination campaign again FMD was launched for the first time in the history of Cameroon. According to Dr. Simon Dickmu, this important event was officially opened by the Cameroon Minister in charge of livestock. The vaccines used are imported from Botswana Vaccine Institute after vaccine matching tests were performed.

National Veterinary Laboratory (LANAVET) reported that FMDV serotypes SAT2, A and O were detected during month of April 2014. Samples have been sent to the Pirbright Institute for sequencing.

FMD is endemic in West Africa. The FMDV topotypes presented in the region are given in Map 10.

Map 10: FMD distribution by serotype and topotypes for West Africa, 2011 – 2013 (EuFMD)

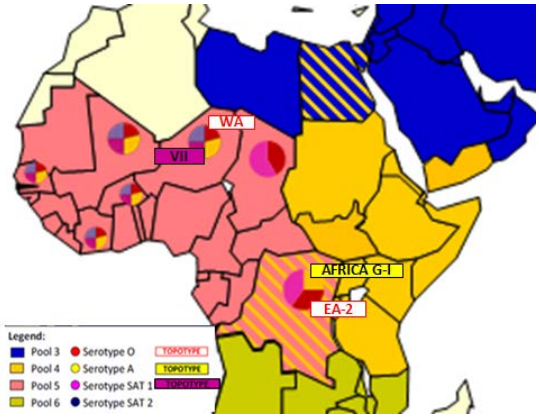


Table 8: Summary of the history of FMD Pool 5, 2011 – 2014

Country	FMD history FMDV serotypes, reported to OIE in 2011 – 2014	Last outbreak reported/serotype
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
Cameroon	2011 - O, A, SAT 2	2013/O, SAT 1, SAT 2; April 2014/O,A, SAT 2
Cape Verde	No data available	Not available
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
Congo R.	No data available	Not available
Cote D'Ívoire	2011 - SAT 1, A, O, SAT 2	2011
Equatorial Guinea,	No data available	Not available
Gabon	No data available	Not available
Gambia	O, A, SAT 2	2012/O
Ghana	O, A, SAT 1, SAT 2	2013/not available
Guinea Biss.	No data available	No data available
Guinea	No data available	No data available
Liberia	A, SAT 2	2011/2012, no precise data
Mali	O, A, SAT 1, SAT 2	2011/2012, no precise data
Mauritania	No data available	Not available
Niger	O, A, SAT 1, SAT 2	2013/not available
Nigeria	O, A, SAT 1; SAT 2	2013/O, A, SAT 1, SAT 2
Sao Tome Principe	No data available	Not available
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

Conjectured circulating FMD viral lineages in pool 5 during 2013[14]:

- 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

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

Swaziland and Lesotho are free from FMD without vaccination. There is a zone in both Botswana and Namibia which is FMD free without vaccination, since 2010 and 1997 respectively (Map 11).

FMD history for the past 3 years for southern Africa is given in Table 9.

Map 11: FMD distribution by serotype and topotype for southern Africa, 2011 – 2013 (EuFMD)

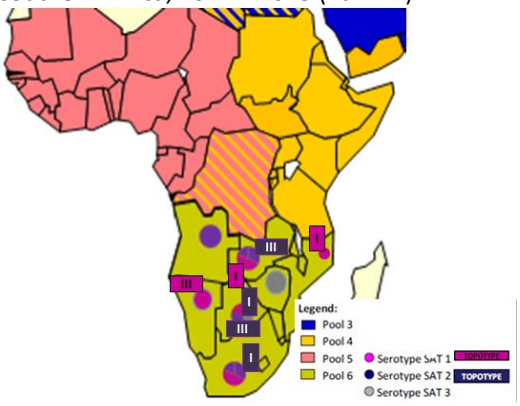


Table 9: Summary of the history of FMD Pool 6, 2011 – 2014

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2011 – 2014	LAST OUTBREAK REPORTED/SEROTYPE
Angola	NO REPORTED OUTBREAKS	Dec 2010/ SAT 2
Botswana	SAT 1, SAT 2, SAT 3	Apr 2013
Congo D. R.	O, A, SAT 1	2011/2012, NO PRECISE DATA
Malawi	2011 - SAT 2	Oct 2011
Mozambique	2011 - SAT 2	Jun 2011/SAT 2
Namibia	SAT 1	Aug 2013/ NOT AVAILABLE
South Africa	SAT 1, SAT 2	Aug 2013/SAT 1; MARCH 2014 SAT 2
Zambia	SAT 1, SAT 2	Jan 2013/SAT 1 , SAT 2
Zimbabwe	SAT 2	Aug 2013/NOT AVAILABLE Jun 2013/SAT 3

Conjectured circulating FMD viral lineages in pool 6 during 2013[14]:

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

G. POOL 7 – South America

South America[9]:

On 10-11 April in Lima, Peru, the 41st Ordinary meeting of the South American Commission for the fight against Foot and Mouth Disease (COSALFA) was organized where the chiefs of Animal Health Services of 12 South America countries and Panama, as well as representatives of private sectors participated. During the meeting the regional FMD current situation and the action Plan 2011-2020 of the Hemispheric Program for the Eradication of

Foot and Mouse Disease (PHEFA) was evaluated. Prior to this important event, the International Seminar "Risk-based surveillance: a tool to consolidate the status of FMD free" was held.

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 (Map 12).

The FMD history in past three years is given in Table 10.

Map 12: FMD distribution by serotype and topotype for South America, 2011 – 2013 (EuFMD)

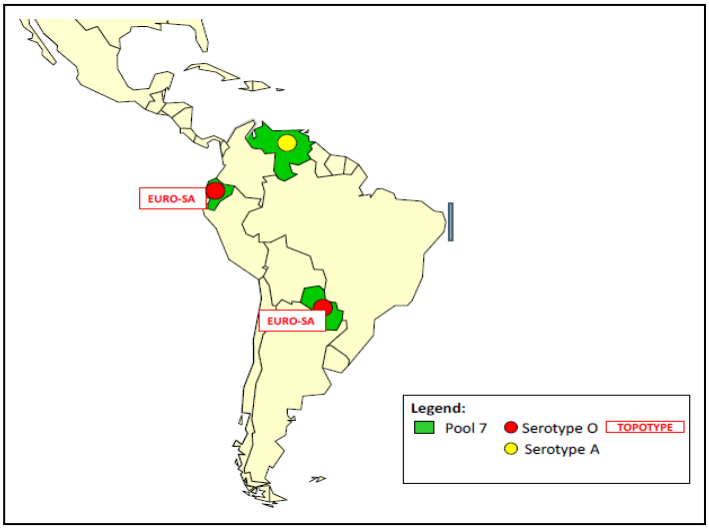


Table 10: Summary of the history of FMD Pool 7, 2011 – 2014

COUNTRY	FMD HISTORY FMDV serotypes, reported to OIE in 2011 2014	LAST OUTBREAK REPORTED/SEROTYPE
Ecuador	O	Aug 2011/O
Paraguay	O	Dec 2011/O
Venezuela	O, A	2011/O, A

History was made during 2012, the first year without reported FMD outbreaks in 50 years in the Andean region. According to official reports submitted to the OIE, in 2012 Peru accomplished more than eight years without FMD, Bolivia and Colombia 4 and 6 years, respectively[1]. Argentina has not had an FMD outbreak since February 2006[9].

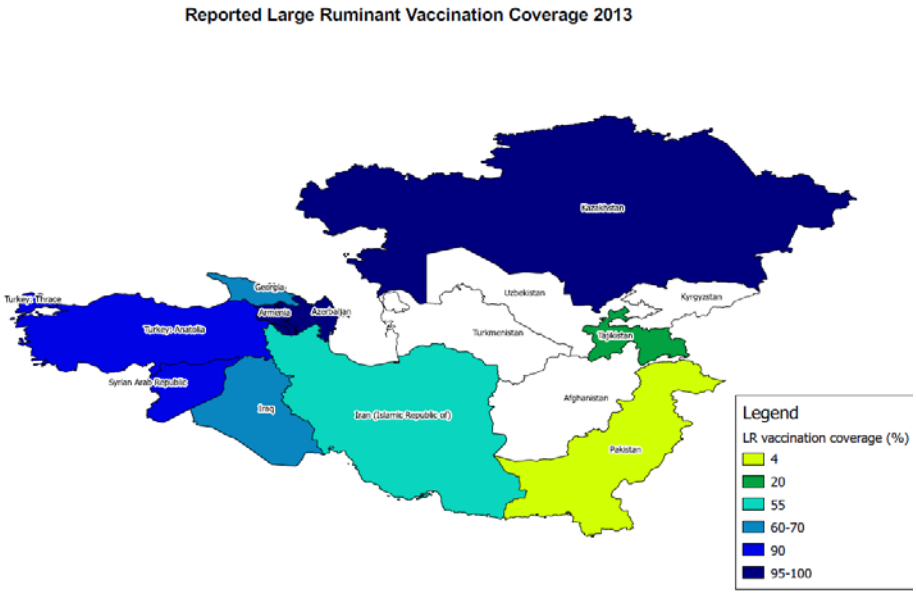
IV. OTHER NEWS:

Kazakhstan[13]:

The **5th Regional Meeting West Eurasia FMD Control Roadmap** was held in Astana, Kazakhstan on 23-24 of April 2014 in the framework of the FAO/OIE GF-TADs with support of the FAO/EMPRES and in cooperation with the

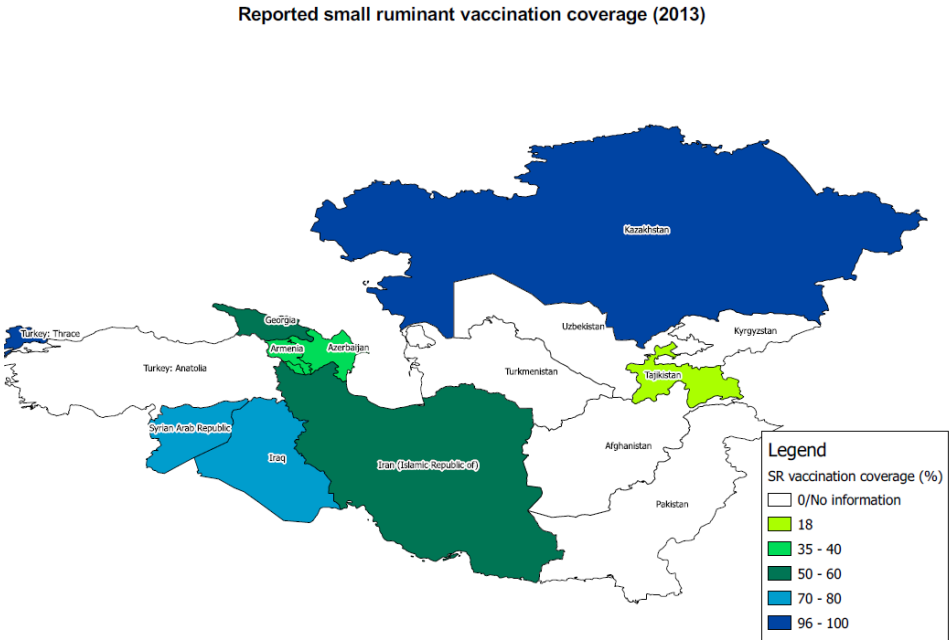
EuFMD. The meeting was hosted by the Ministry of Agriculture of Kazakhstan and organized by the OIE as a GF-TADs event in collaboration with the FAO and the EuFMD.
The first objective of the meeting was to share information on FMD virus circulation within the West Eurasia FMDV ecosystem and to review the progress of each country along the Regional roadmap towards the vision identified at the Shiraz Meeting in 2008, of a "West Eurasia region free of clinical FMD by 2020."
The second objective was to assist countries preparing national control programmes, project proposals for investment on FMD control and submissions to the OIE for control programme endorsement and possible FMD status recognition for countries and zones.
Participating countries received two questionnaires prior to the meeting, one regarding vaccination against Foot-and-mouth disease in the West Eurasia Region (2012-2013), and another on livestock identification, registration and movement control systems.
For vaccination against FMD, responses were received from 10 out of 14 countries (Armenia, Azerbaijan, Georgia, Iran, Iraq, Kazakhstan, Pakistan, Syria, Tajikistan and Turkey).
The result received show that **large ruminant vaccination** was compulsory for cattle in Armenia, Azerbaijan, Iran, Kazakhstan, Iraq, Syria, Tajikistan and Turkey.
Seven out of 10 countries reported mass vaccination campaigns, in 6 of the countries these occur twice per year and in 1 country (Iran) three times per year;
Also seven out of 10 countries reported ring vaccination of large ruminant around outbreaks (all but Georgia, Armenia and Tajikistan). Large ruminants vaccination coverage for 2013 in West Eurasia is shown in Map 16.

Map. 16 Large ruminants vaccination coverage for 2013 in West Eurasia (EuFMD)



For **small ruminants**, vaccination was compulsory in Armenia, Azerbaijan, Iran, Iraq, Kazakhstan, Syria, Tajikistan, and in Turkey it is compulsory in Thrace.
Georgia, Syria and Iraq reported vaccination campaigns every 6 months and 3 countries reported campaigns every 12 months (Armenia, Azerbaijan, and Iran).
Six out of eight countries reported ring vaccination of small ruminants around outbreaks (all but Georgia, Armenia and Tajikistan). Small ruminants vaccination coverage for 2013 in West Eurasia is shown in Map 17.

Map. 17 Vaccination coverage of small ruminants for 2013 in West Eurasia (EuFMD)



The vaccination schedule in 2013 is given in the table 11, below.

Vaccination schedule in 2013													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Kazakhstan													
Kyrgyzstan													
Tajikistan													
Turkmen													
Uzbekistan													
Afghanistan													
IR of Iran													
Pakistan	On Farmer demand												
Turkey													
Syria													
Iraq													
Armenia													
Azerbaijan													
Georgia													

The vast majority of vaccines used were in trivalent (A/O/Asia 1), yet their composition (strains) varied greatly, even between neighboring countries.

Nicaragua[6]:
The Nicaraguan government has raised fears that the planned reopening of the US market to Brazilian beef could risk spreading FMD to north and Central America.

Nepal[6]:
Some 150 cattle heads perished to FMD in Darchula district in the past few months, said Basanta Bahadur Singh, senior veterinarian at the District Livestock Office. Khalanga and Dhap Village Development Committees are in high risk of the disease, Dr Singh added. Meanwhile, over 10,000 cattle heads in the district have been already vaccinated against the disease so far and the vaccination campaign is still underway, the Office said.

Brazil[6]:
The official launch of the Campaign against FMD occurred this year at Fazenda Pedra Preta, in São Luiz do Anauá. The event was attended by the Governor Chico Rodrigues, Senator Romero Juca, deputies and state secretaries, mayors, councilors and farmers. Vaccination is already being carried out since the 1st of April and ended on the 30th.
The State of Goias wants to be the second in the country to achieve the status of FMD free without vaccination. The Agricultural Protection Agency of Goiás (Agrodefesa) is discussing the issue with oianos ranchers and shall submit the proposal to the Ministry of Agriculture, Livestock and Supply (MAPA) this year.
The last case of FMD in Goiás was recorded in 1995.

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