Food and Agriculture Organization of the United Nations

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

GLOBAL Monthly Report

Foot-and-Mouth Disease

Foot-and-Mouth Disease Situation | 2019 | April

Foot-and-Mouth Disease Situation

Food and Agriculture Organization of the United Nations

Monthly Report

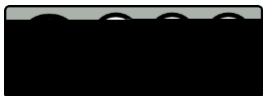
April 2019

MAIN INFORMATION SOURCES USED:

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.

Required citation:
FAO/EuFMD. 2019. *Global Monthly Report. Foot-and-Mouth Disease Situation April 2019*. Rome, FAO.



CONTENTS

Please note that the report contains hyperlinks

I. HIGHLIGHTS

“Response Actions to Outbreaks and Emerging FMD Serotypes”

II. GENERAL OVERVIEW

Pools represent independently circulating and evolving 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:

POOL	REGION/COUNTRIES – colour pools as in Map	SEROTYPES
1	SOUTHEAST ASIA/CENTRAL ASIA/EAST ASIA	A, Asia 1 and O
2	SOUTH ASIA	A, Asia 1 and O
3	WEST EURASIA & MIDDLE EAST	A, Asia 1 and O (SAT 2)*
	NORTH AFRICA	A, O and SAT 2
4	EASTERN AFRICA	O, A, SAT 1, SAT 2 and SAT 3
5	WEST/CENTRAL AFRICA	O, A, SAT 1 and SAT 2
6	SOUTHERN AFRICA	{O, A}**, SAT 1, SAT 2 and SAT 3
7	SOUTH AMERICA	O and A

III. IN THIS REPORT

POOL 1- SOUTHEAST ASIA/CENTRAL ASIA/EAST ASIA

China [1] –

POOL 2 - SOUTH ASIA

Bhutan [2] –

POOL 3 - WEST EURASIA & MIDDLE EAST

Afghanistan [3]

Israel [2]

Pakistan [4] –

Palestine [2]

POOL 3 – NORTH AFRICA

Algeria[2] –

Egypt [2] –

Morocco [2]

Libya [1]

Tunisia [2] –

POOL 4 - EASTERN AFRICA

Comoros [1] –

Ethiopia [2, 5]

Kenya [6]

POOL 5 - WEST/CENTRAL AFRICA

Cote d'Ivoire [2]

Ghana [2]

Guinea [2] **–**

Guinea-Bissau [1]

Mauritania [2]

POOL 6 - SOUTHERN AFRICA

Zambia [2]

POOL 7 - SOUTH AMERICA [1, 7]

COUNTER

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

IV. DETAILED POOL ANALYSIS

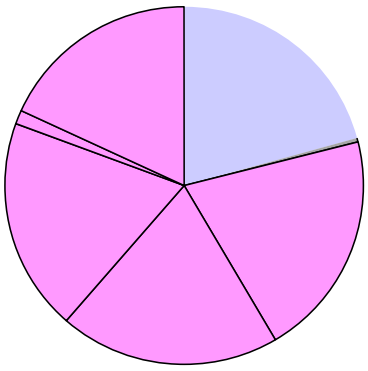
A. POOL 1 – SOUTHEAST ASIA/CENTRAL ASIA/EAST ASIA

OUTBREAKS	
Country	*Description*
Serotype O in China [1]	*Interpretation*

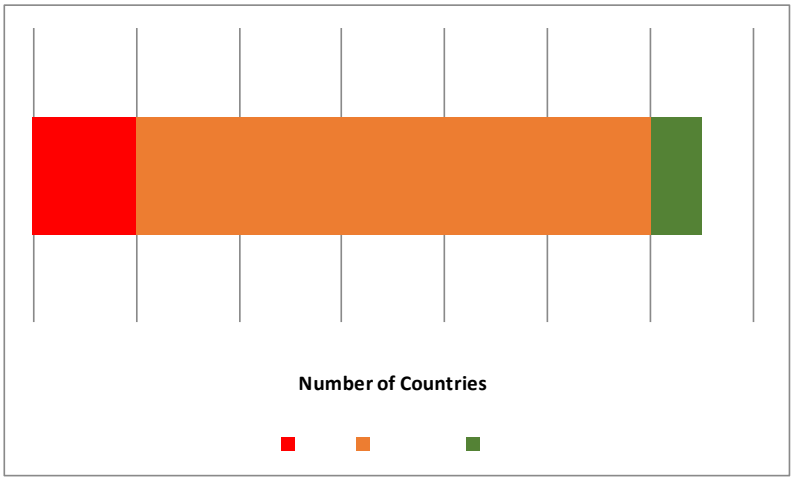
SURVEILLANCE (Surv.), VACCINATION (Vacc.) AND POST VACCINATION MONITORING (PVM)		
Country	**Activity**	**Description**
Russian Federation [1],		

Table 2 and Graph 1

Serotype	Viral lineage	Number of countries where strain is believed to circulate in the 13 countries of Pool 1



Graph 2:

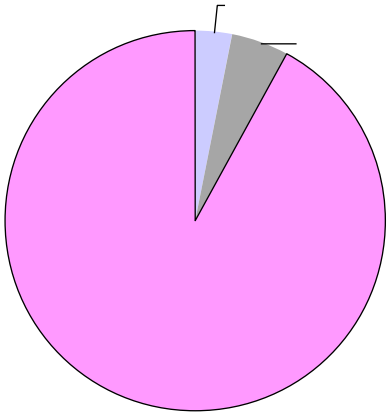


B. POOL 2 – South Asia

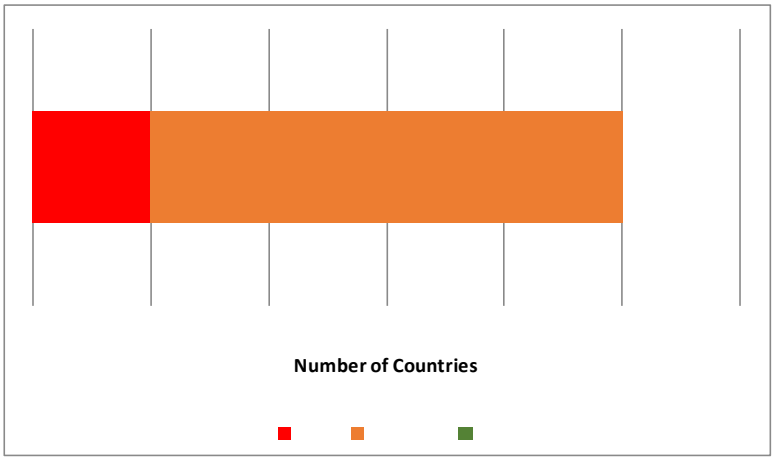
SURVEILLANCE (Surv.), VACCINATION (Vacc.) AND POST VACCINATION MONITORING (PVM)		
Country	*Activity*	*Description*
Bhutan [2]		
India [9]		

Table 3 and Graph 3:

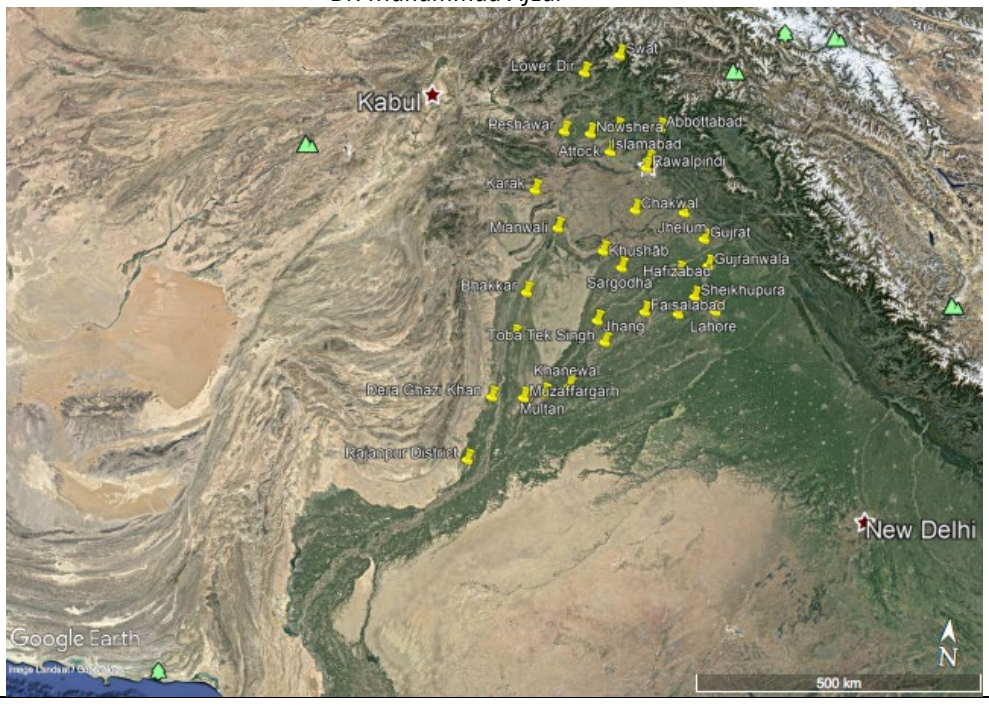
Serotype	Viral lineage	Number of countries where strain is believed to circulate in the 5 countries of Pool 2



Graph 4:



C. POOL 3 – West Eurasia & Middle East

OUTBREAKS	
Country	***Description***
Serotypes A, ASIA 1 and O in Pakistan [4]	*Interpretation* **Map 1** *Dr. Muhammad Afzal* 

OUTBREAKS

Table 4:

Dr. Muhammad Afzal

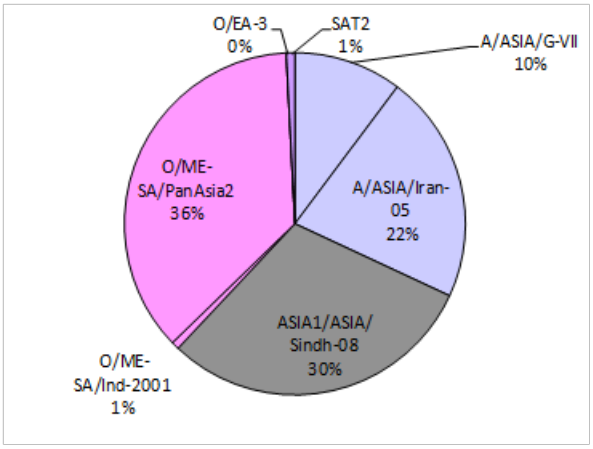
Province	District	Number Outbreaks	Number (%) of Outbreaks due to FMD Virus Serotype(s)					
			'O'	'A'	'Asia-1'	'Mixed'	Negative	Not yet typed
Total		**244**	**20 (40%)**	**4((8%)**	**21 (42%)**	**5 (10%)**	**45**	**149**

SURVEILLANCE (Surv.), VACCINATION (Vacc.) AND POST VACCINATION MONITORING (PVM)		
Country	*Activity*	*Description*
Afghanistan [3]		
Israel [2]		
Palestine [2]		
Pakistan [4]		

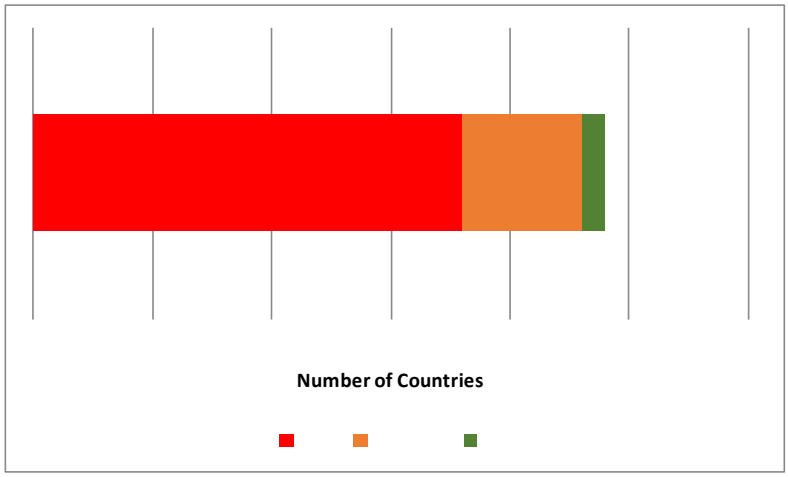
Province	Ring Vaccination (Doses)
Total	**37,675**

Table 5 and Graph 5

Serotype	Viral lineage	Number of countries where strain is believed to circulate in the 24 countries of Pool 3 - West Eurasia



Graph 6:



D. POOL 3 – North Africa

OUTBREAKS	
Country	*Description*
Serotype pending in Libya [1]	*Interpretation*

SURVEILLANCE (Surv.), VACCINATION (Vacc.) AND POST VACCINATION MONITORING (PVM)		
Country	*Activity*	*Description*
Algeria[2]		**Table 6**

Sample Identification	Location of origin of sample	Host species	Date of collection	Genotype	Most Closely Related Viruses not pertaining to the country- Seq id %	Host species

		Map 2 
Egypt [2]		**Map 3** 

Morocco [1,2]		**Map 4**  **Administrative division** / **Species** / **Total Vaccinated** / **Number of farms** Total: 55,500 / 10,918
[Tunisia [2]]		

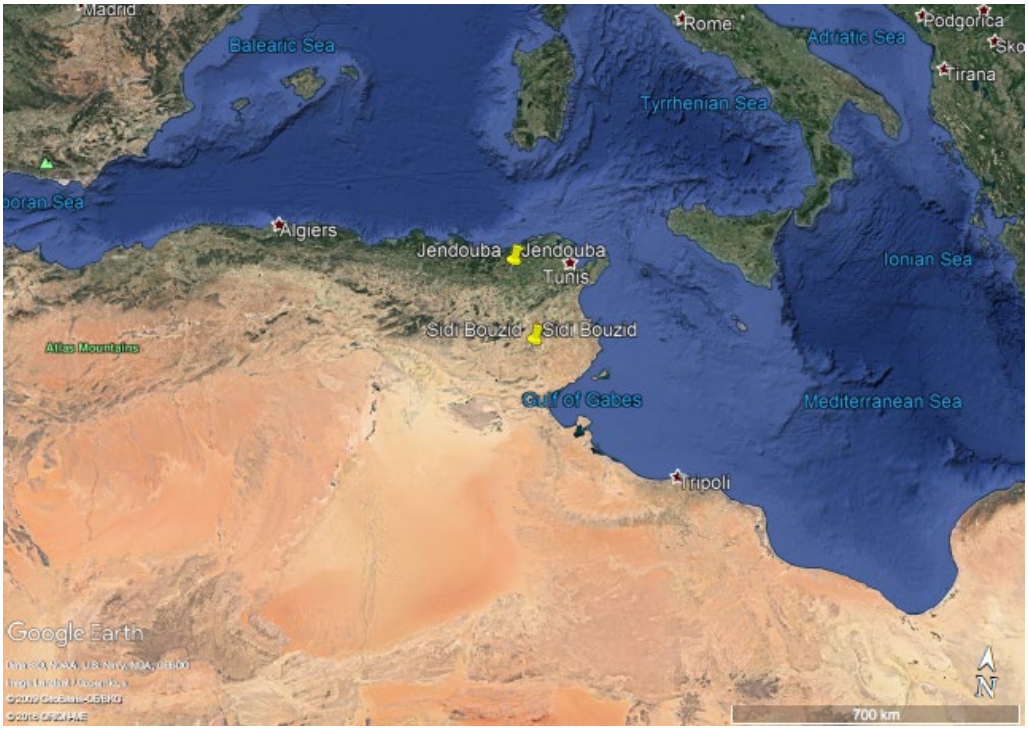
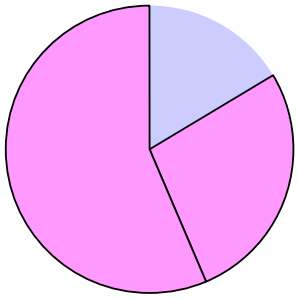
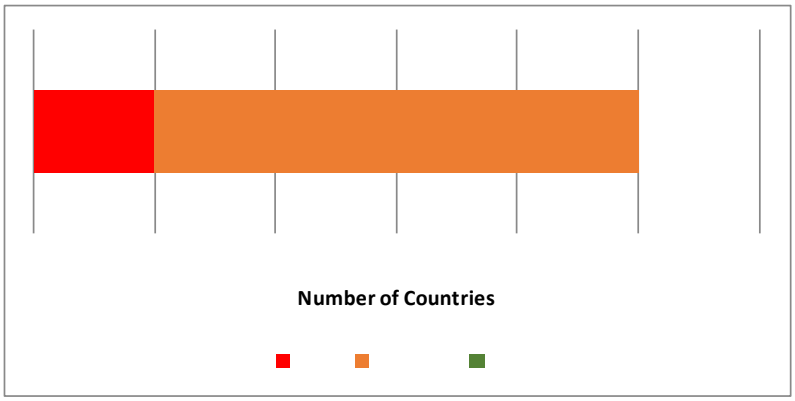
		Map 5 

Table 8 and Graph 7:

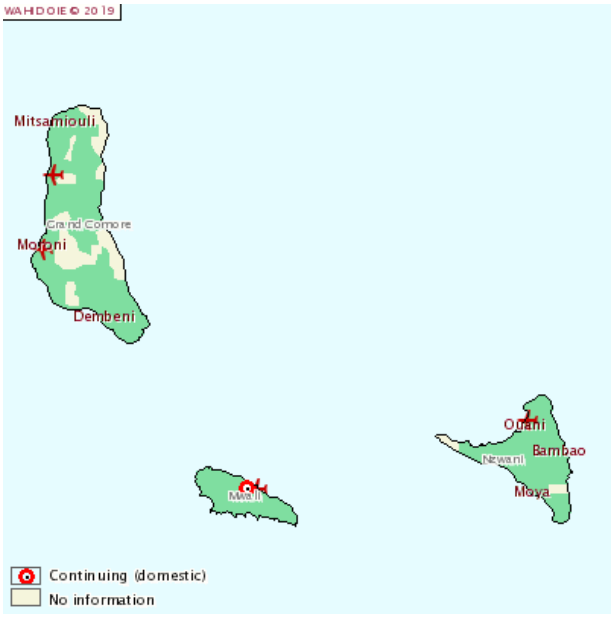
Serotype	Viral lineage	Number of countries where strain is believed to circulate in the 5 countries of Pool 3 - North Africa



Graph 8:



E. POOL 4 – Eastern Africa

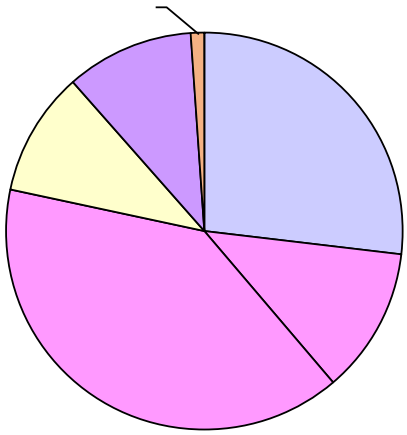
OUTBREAKS	
Country	*Description*
Serotype O in Comoros [1], 10	*Interpretation:*  **Map 6**

Serotypes A and SAT 2 in Ethiopia [5]	*Interpretation:* **Map 7** 

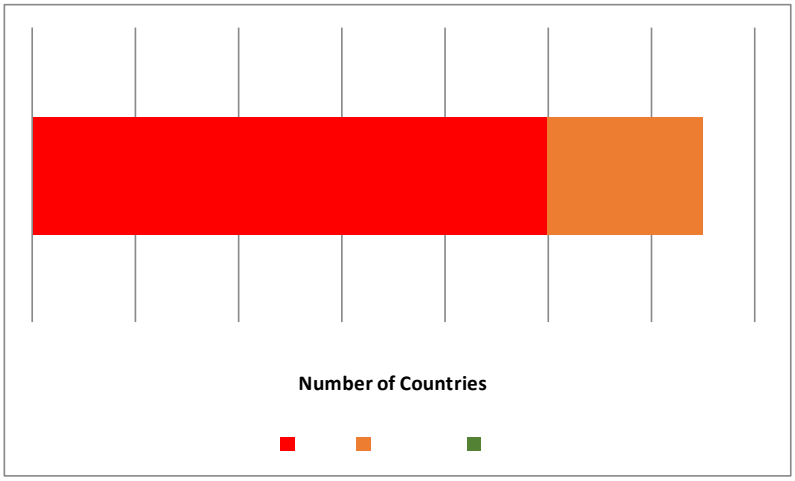
SURVEILLANCE (Surv.), VACCINATION (Vacc.) AND POST VACCINATION MONITORING (PVM)		
Country	*Activity*	*Description*
Ethiopia [2]		
Kenya [6]		

Table 9 and Graph 9:

Serotype	Viral lineage	Number of countries where strain is believed to circulate in the 13 countries of Pool 4 - East Africa



Graph 10:



F. POOL 5 – West / Central Africa

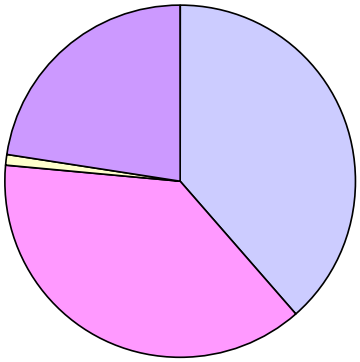
Country	Description
Serotype O in Guinea-Bissau [1]	*Interpretation*
Serotyping pending in Nigeria [11]	

	Interpretation

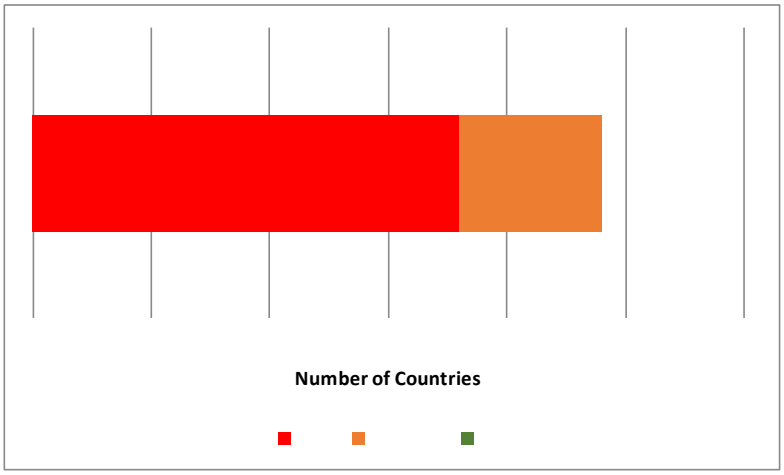
SURVEILLANCE (Surv.), VACCINATION (Vacc.) AND POST VACCINATION MONITORING (PVM)		
Country	*Activity*	*Description*
Cote d'Ivoire [2]		**Map 8** 
Ghana [2]		
Guinea [2]		
Mauritania [2]		

Table 10 and Graph 11:

Serotype	Viral lineage	Number of countries where strain is believed to circulate in the 24 countries of Pool 5 - West Africa



Graph 12:

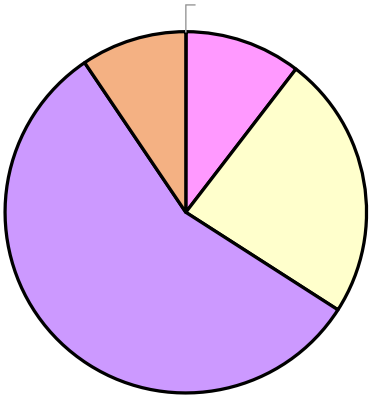


G. POOL 6 – Southern Africa

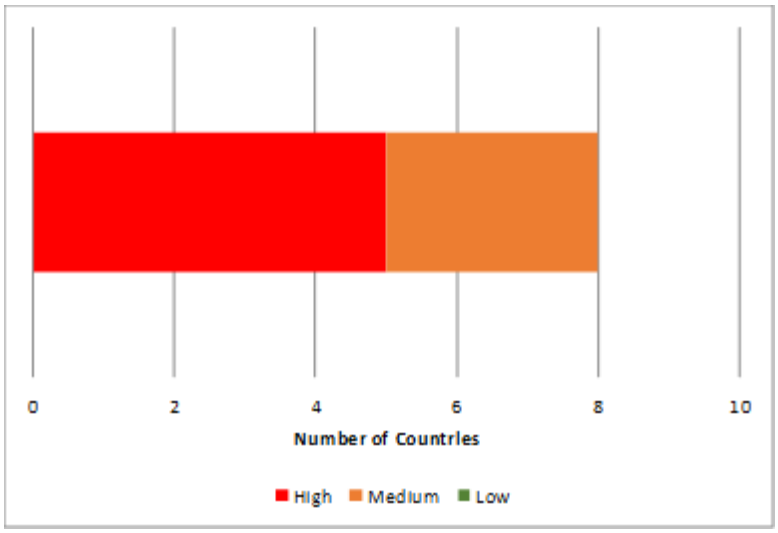
SURVEILLANCE (Surv.), VACCINATION (Vacc.) AND POST VACCINATION MONITORING (PVM)		
Country	**Activity**	**Description**
South Africa [12]		
Zambia [2]		

Table 11 and Graph 13:

Serotype	Viral lineage	Number of countries where strain is believed to circulate in the 8 countries of Pool 6 -Southern Africa



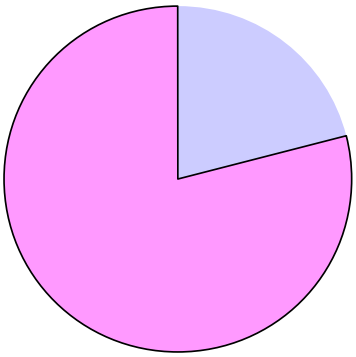
Graph 14:



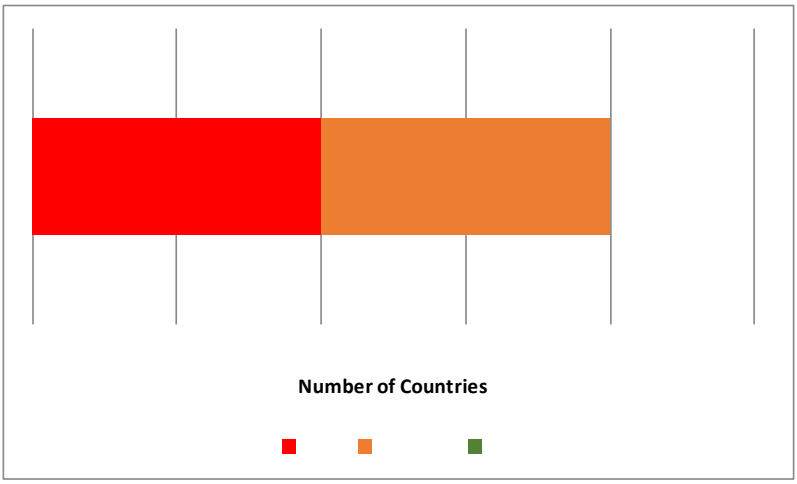
H. POOL 7 – South America

Table 12 and Graph 15:

Serotype	Viral lineage	Number of countries where strain is believed to circulate in the 2 countries of Pool 7 -South America



Graph 16:



V. OTHER NEWS

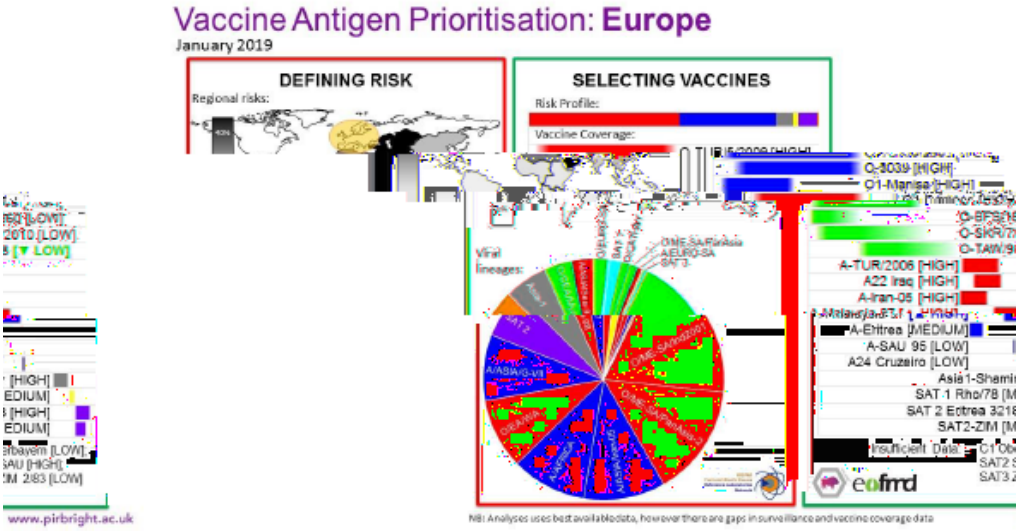
Thailand[17] –

[2]

Table 13:

This report provides recommendations of FMDV vaccines to be included in antigen banks. These outputs are generated with a new tool (called PRAGMATIST) that has been developed in partnership between WRLFMD® and EuFMD. These analyses accommodate the latest epidemiological data collected by the OIE FAO FMD Laboratory Network regarding FMDV lineages that are present in different *source regions* (see Table below), as well as available *in vitro, in vivo* and field data to score the ability of vaccines to protect against these FMDV lineages.

Lineage	West Eurasia	East Asia	North Africa	India and Southern Asia	East Africa	West and Central Africa	Southern Africa	South America
O ME-SA PanAsia-2	35	-	-	-	-	-	-	-
O ME-SA PanAsia	-	10	-	-	-	-	-	-
O SEA Mya-98	-	33	-	-	-	-	-	-
O ME-SA Ind2001	6	20	35	80	-	-	-	-
O EA or O WA	3	-	20	-	45	37	-	-
O EURO-SA	-	-	-	-	-	-	-	74
O CATHAY	-	10.5	-	-	-	-	-	-
A ASIA Sea-97	-	25	-	-	-	-	-	-
A ASIA Iran-05	25.5	-	-	-	-	-	-	-
A ASIA G-VII	17.5	-	-	16	-	-	-	-
A AFRICA	-	-	35	-	24	25	-	-
A EURO-SA	-	-	-	-	-	-	-	26
Asia-1	12.5	1.5	-	4	-	-	-	-
SAT 1	-	-	-	-	10	10	27	-
SAT 2	0.5	-	10	-	20	28	57	-
SAT 3	-	-	-	-	1		16	-
C	-	-	-	-	-	-	-	-



e eight *source regions*, r Europe (using data for assistance to tailor ıta presented is based ividual vaccines.

The table defines the relative distribution of FMDV lineages in each of th while the figure highlights the importance of these *source regions* fo collected at the EU-RL Workshop); please contact WRLFMD EuFMD these outputs to other geographical regions. NB: Vaccine-coverage da on available data and may under-represent the true performance of ind

VI. REFERENCES – Superscripts

Dr. Muhammad Afzal

Dr. Wahidullah

Dr. Daniel Gizaw

Dr. Kenneth Ketter.

Dr. S. Kremenchugskaya.

Dr. S. Saravanan

Dr. Ularamu Hussaini

Dr LE Heath/Ms E Kirkbride

VII. Annex

Description of methods

How to interpret the estimates of the relative prevalence of serotypes and strains:

2.

Pool-level estimates and assumptions:

$$weight_{country\ 1} = \frac{(FMD\ incidence * susceptible\ population)_{country1}}{\sum_{country\ 1}^{country\ n}(FMD\ incidence * susceptible\ population)}$$

et al

-
-
-
-

$$relative\ prevalence_{serotype\ or\ strain} = \sum_{country\ 1}^{country\ n} \left(weight_{country} * RP_{serotype\ or\ strain}\right)$$

Uncertainty relative to the prevalence of circulating serotypes/strains

High

Medium

Low

Legend of icons in the following tables

●	
◕	
◑	
◔	
○	

Table 14:

			Presumed serotype distribution within country			Presumed viral lineage distribution within country								
Country	Last Outbreak Repoted/Serotype#	FMD incidence rate	A	Asia1	O	A/ASIA/SEA-97	ASIA1/ unnamed	O/ME-SA/Ind-2001	O/SEA/Mya-98	O/ME-SA/PanAsia	O/ME-SA/PanAsia2	O/CATHAY	Uncertainty on circulating serotypes/strains	Reference
			◑		◑	◑				◑				
			◔		◕	◔		◔	◔	◔		◔		
					●							●		
			◑		◕	◑		◕						
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					●			◑	◑	◑				
			◔	◔	◕	◔	◔	◑			◑			
			◑		◕	◑		◕						
					●			◑	◑	◑				
					●							●		
			◔		◕	◔		◔	◔	◔				
			◑		◕	◑		◔	◑	◔		◔		

Table 15:

			Presumed serotype distribution within country			Presumed viral lineage distribution within country				
Country	Last Outbreak Repoted/Serotype#	FMD incidence rate							Uncertainty on circulating serotypes/strains	Reference
			◔	◔	◕	◔	◔	◕		
			◔		◕	◔		◕		
				○	●		○	●		
			◔	◑	◕	◔	◑	◕		
					●			●		

Table 16:

			Presumed serotype distribution within country			Presumed viral lineage distribution within country									
Country	Last Outbreak Repoted/Serotype#	FMD incidence rate												Uncertainty on circulating serotypes/strains	reference
			◑	◔	◑			◑	◔		◑				
			◔		◕		◔				◕				
			◑	◔	◑		◔	◑	◔		◑				
			◕		◑		◕			◔	◔				
			◔		◕		◔				◕				
			◑	◔	◑		◔	◑	◔		◑				
			◑	◔	◑		◔	◑	◔		◑				
			◔		◕		◔				◑	◔			
			◕		◑		◕			◔	◔				
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			◑	◔	◑		◔	◑	◔		◑				
			◕		◑		◕			◔	◔				
			◑	◔	◑		◔	◑	◔		◑				

Table 17:

			Presumed serotype distribution within country			Presumed viral lineage distribution within country				
Country	Last Outbreak Repoted/Serotype#	FMD incidence rate	A	O	SAT 2	A/AFRICA	O/EA-3	SAT 2	Uncertainty on circulating serotypes/strains	Reference
			◑	◕		◑	◕			
			◔	◔	◕	◔	◔	◕		
			◔	◔	◕	◔	◔	◕		
				●			●			
			◔	◕		◑	◕			

Table 18:

			Presumed serotype distribution within country					Presumed viral lineage distribution within country							
Country	Last Outbreak Repoted/Serotype#	FMD incidence rate	A	O	sat1	sat2	sat3	A/AFRICA	O/EA-2	O/EA-3	SAT1	SAT2	SAT3	Uncertainty on circulating serotypes/strains	Reference
			◑	◔	◔	◔		◑		◔	◔	◔			
				●					●						
			◔	◕	◔		○	◔		◕	◔		○		
			◔	◕	◔		○	◔		◕	◔		○		
			◔	◕	◔		○	◔		◕	◔		○		
			◔	◕	◔	◔		◔	◕		◔	◔			
			◔	◕	◔	◔		◔	◕		◔	◔			
			◔	◕	◔		○	◔		◕	◔		○		
				●						●					
			◑	◔		◔		◑		◔		◔			
			◑	◔	◔	◔		◑		◔	◔	◔			
			◑	◑	◔	◔		◑	◑		◔	◔			
			◔	◕	◔		○	◔		◕	◔		○		

Table 19:

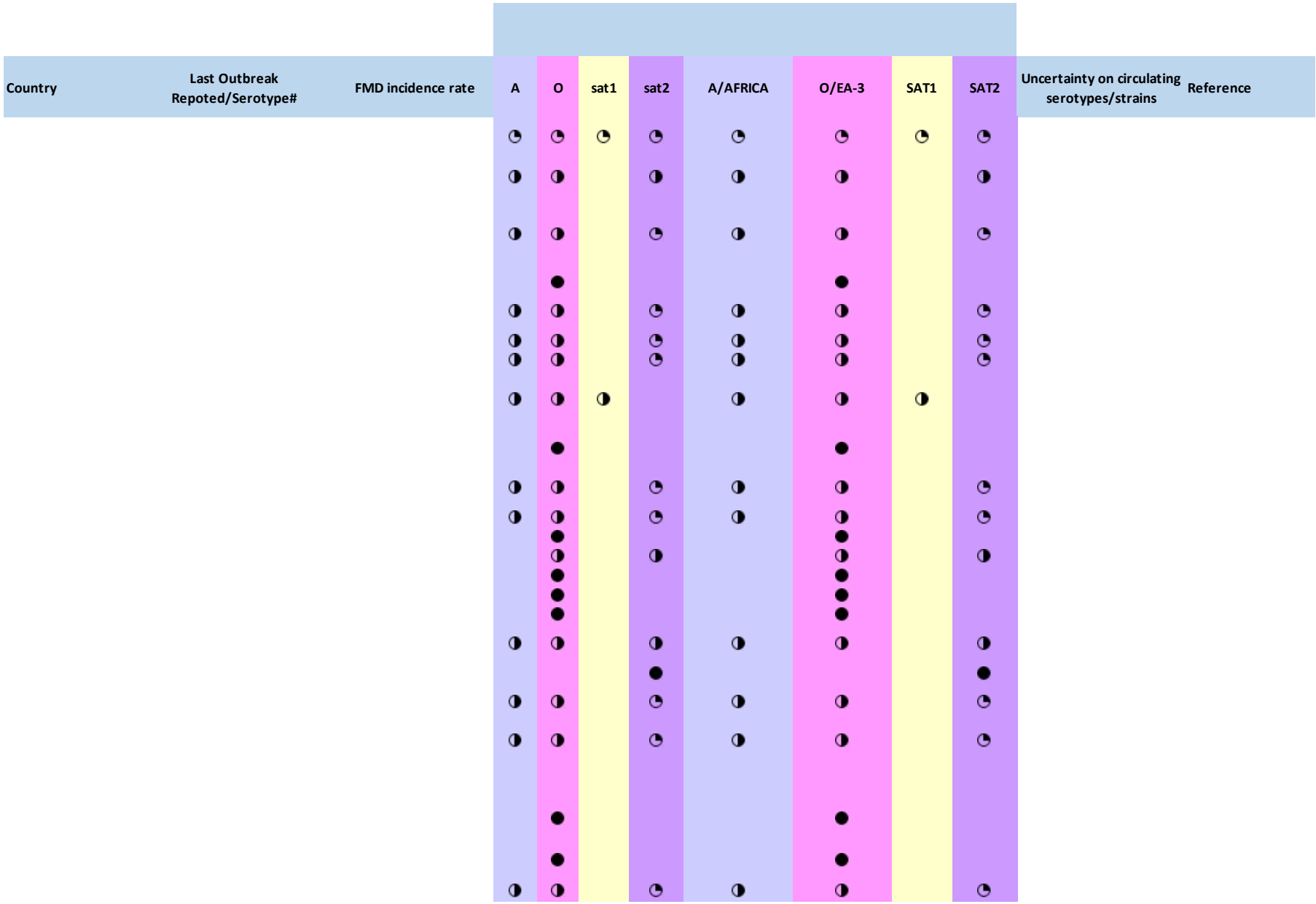
Country
Last Outbreak Repoted/Serotype#
FMD incidence rate
A
O
sat1
sat2
A/AFRICA
O/EA-3
SAT1
SAT2
Uncertainty on circulating serotypes/strains
Reference

Table 20:

			Presumed serotype distribution within country					Presumed viral lineage distribution within country						
Country	Last Outbreak Repoted/Serotype#	FMD incidence rate	A										Uncertainty on circulating serotypes/strains	Reference
				◑	◔	○	◔		◑	◔	○	◔		
						●					●			
					◑	◑				◑	◑			
						◕	○				◕	○		
					◑	◑				◑	◑			
					○	◕				○	◕			
			○	◑	○	○	◔	○	◑	○	○	◔		
					◑	◑				◑	◑			

Table 21:

Country	Last Outbreak Repoted/Serotype#	FMD incidence rate	Presumed serotype distribution within country		Presumed viral lineage distribution within country		Uncertainty on circulating serotypes/strains	Reference
			◑	◑	◑	◑		
				●		●		

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