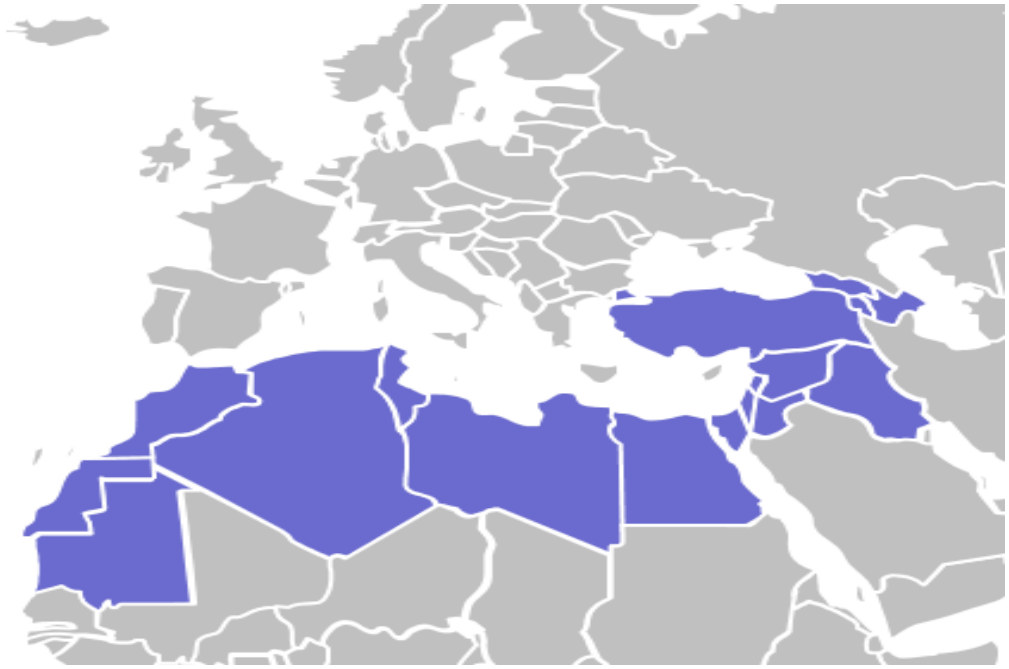
Transboundary disease risks in the European Region

Situation report, co-ordination arrangements and priorities for future actions to reduce risk



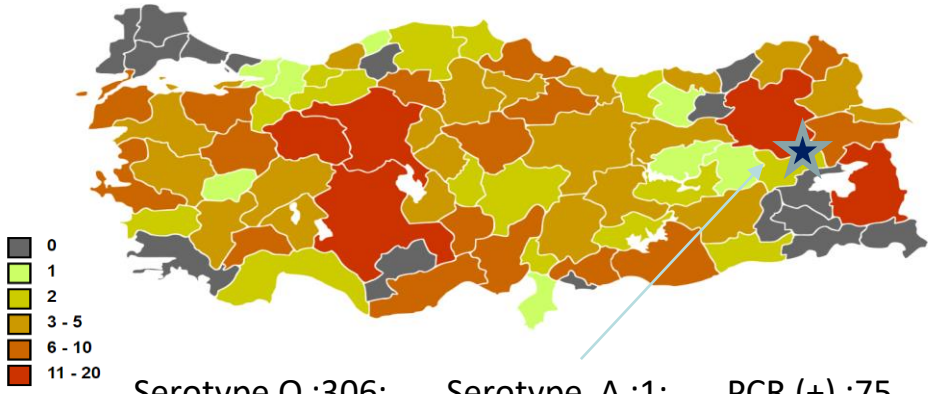
43rd EuFMD General Session, 2019

Foot and Mouth Disease

South East Europe

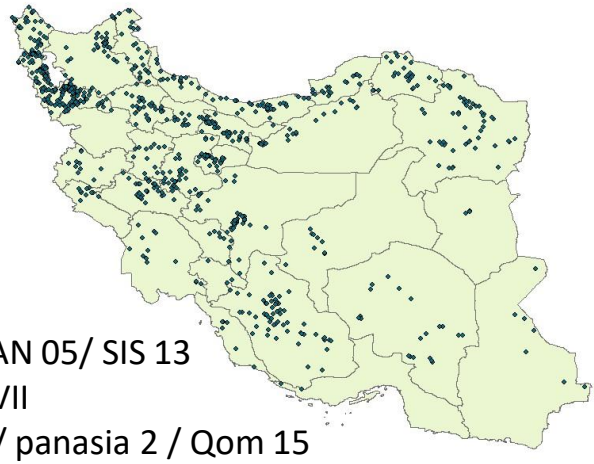
FMD distribution '13-'17 for ME and WE (A-O)

Year 2018



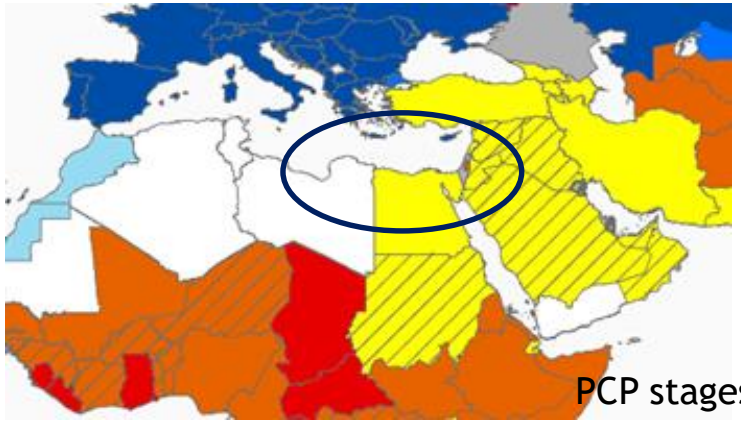
Serotype O :306; Serotype A :1; PCR (+) :75

No outbreaks since 2016 (Arm). Candidate zone for PCP 3 and reduced virus circulation

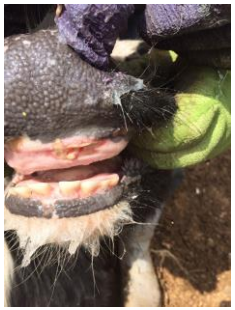


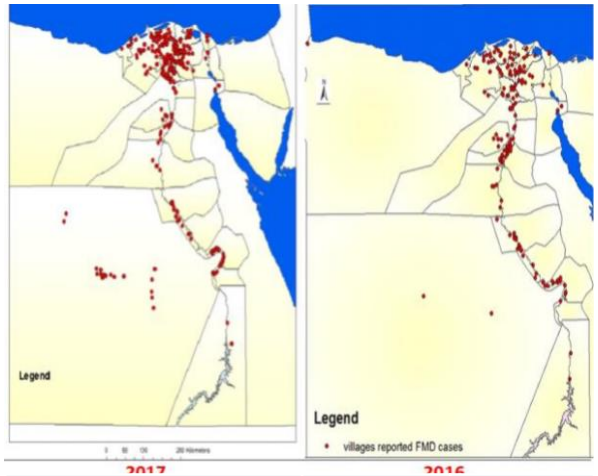
FMD/type A/Asia/IRAN 05/ SIS 13
FMD/type A/Asia/G VII
FMD/type O/ ME-SA/ panasia 2 / Qom 15
FMD/type Asia 1/ Asia/ Sindh 08

East Mediterranean

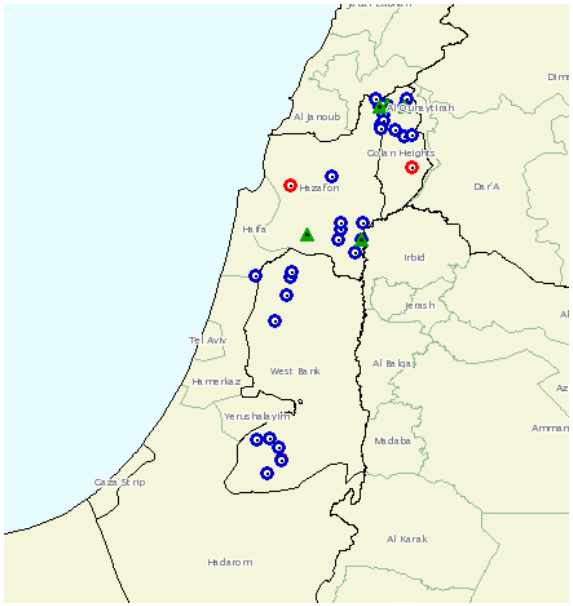


PCP stages





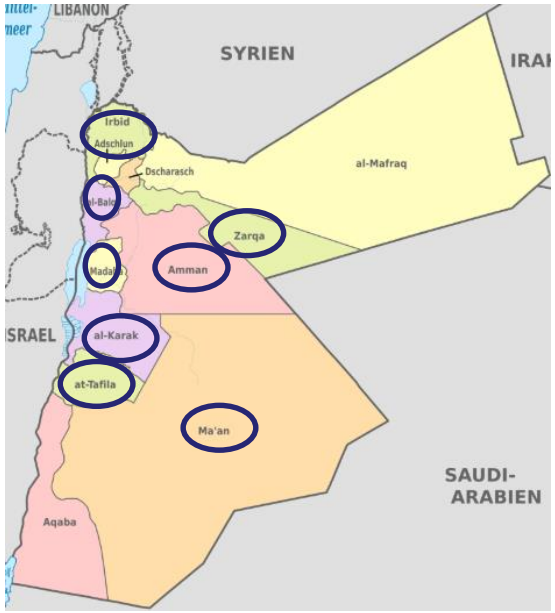
FMD sero – type	2016	2017
O	44	89
A	5	0
SAT2	5	5
Pan FMD	10	30
Total	64	124



Outbreaks 2018-2019

Israel: O/Panasia -2 (two substrains)

Palestine: O/EA-3



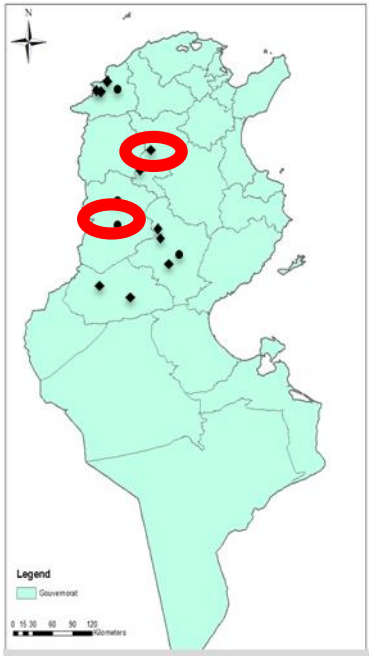
54 outbreaks (Feb-March 2017)

O/ME-SA/Ind-2001

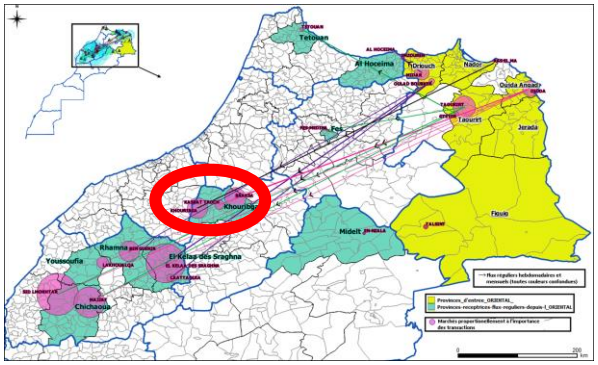
North Africa

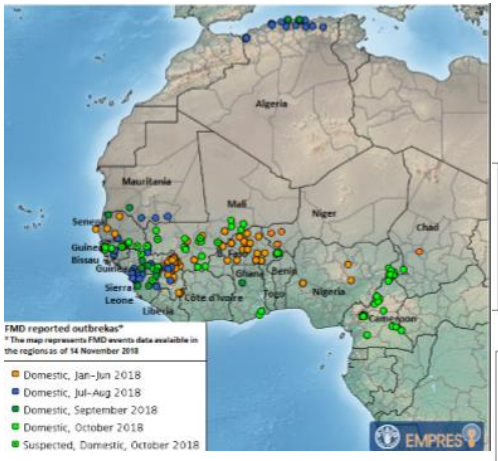
32 outbreaks (82 LR) from 05/01/2019 to 09/03/2019

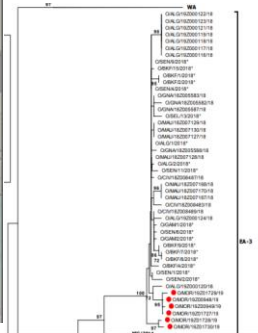
FMD outbreaks 119 in 28 wilayas (1226 LR) from 20 June 2018. From Sept 2018 cocirculation of FMD-PPR in 36 wilayas affected and 477 municipalities (3310 SR dead, slaughtered, destroyed.)

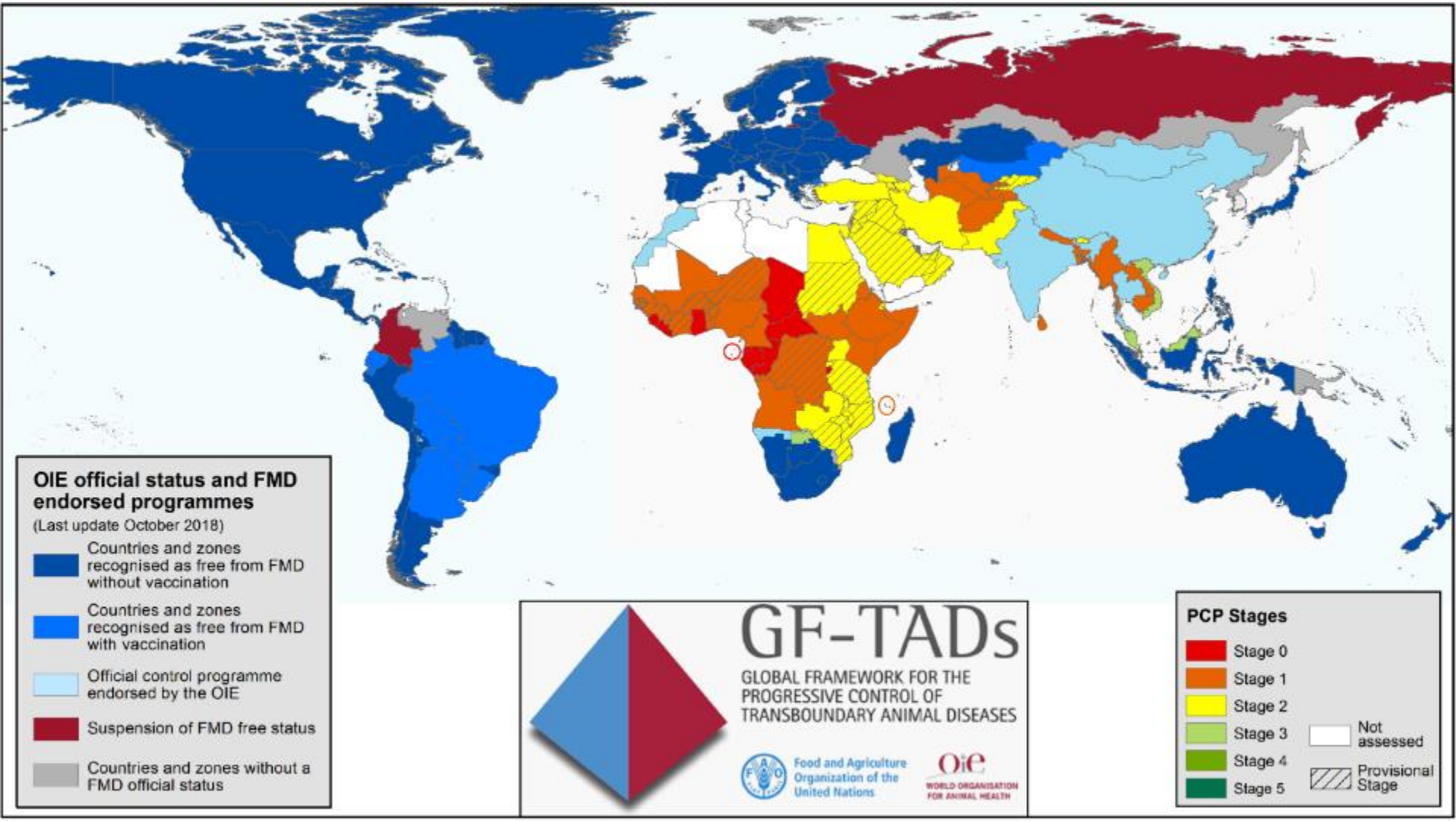


14 outbreaks (40 LR and 75 SR) from 15/12/2018 to 07/03/2019

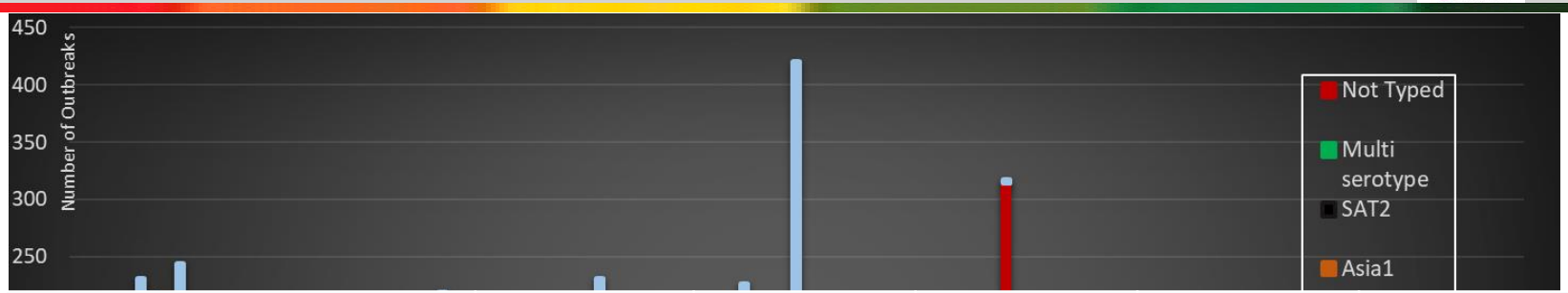




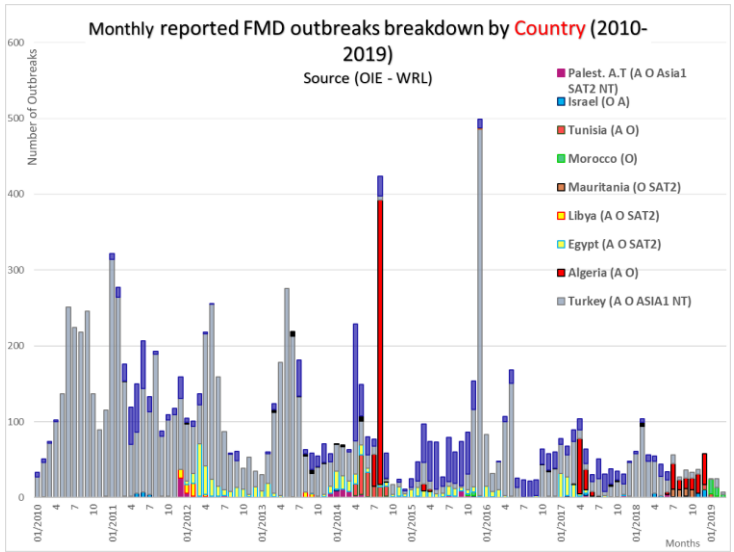




How to ensure that GF-TADs process is applied in North Africa ?
(Importance of provide indicators of progress and addressed gaps)



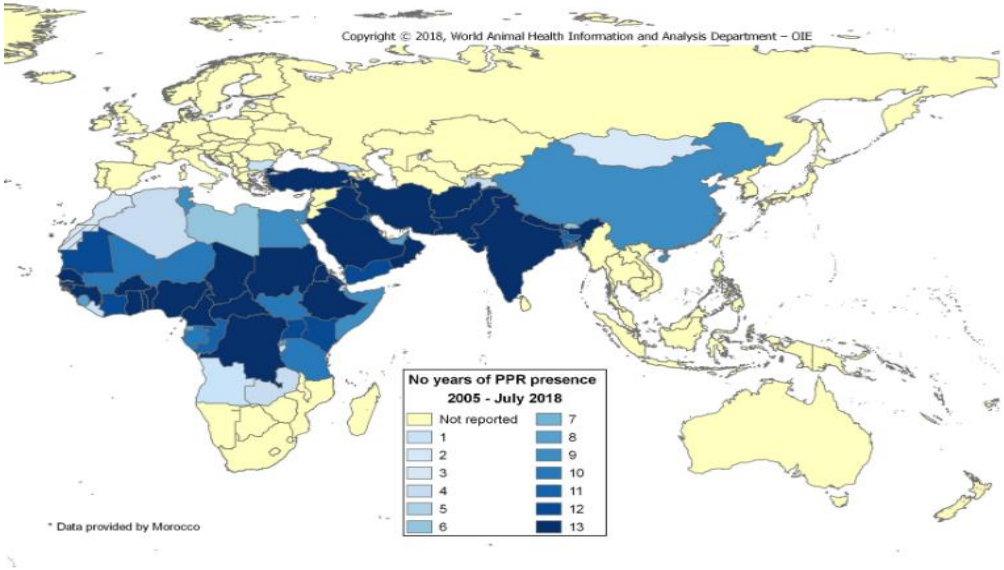
Region	Type O	Type A	Type SAT2	Type Asia1	period
Middle East	68%	44%	36%	-	84 months (2012-2018)
North Africa	22%	5%	2%	-	110 months (2011 - 2019)
WestEurasia (TCC , Turkey, Russia)	80%	84%	-	42%	108 months (2011 - 2018)



FMDV Type	FMDV Topotype	Region	Country	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
A	A AFRICA	Middle East	Egypt			■			■	■		■	
		North Africa	Algeria								■		
			Tunisia										
	A ASIA	Middle East	Egypt			■	■	■	■		■		
			ISRAEL										
			Palestine										
		West Eurasia	Afghanistan	■	■		■			■	■		
			Armenia										
			IRAN	■	■	■	■		■	■	■	■	
			Kazakhstan										
			Russia										
			Turkey	■	■	■	■	■	■		■		
Asia1	Asia1 ASIA	West Eurasia	Afghanistan		■		■			■	■		
			IRAN			■			■				
			IRAQ										
			Turkey		■	■	■	■	■				
SAT2	SAT2 VII	Middle East	Egypt			■		■	■				
			Oman										
			Palestine										
		North Africa	Libya			■							
			Mauritania										

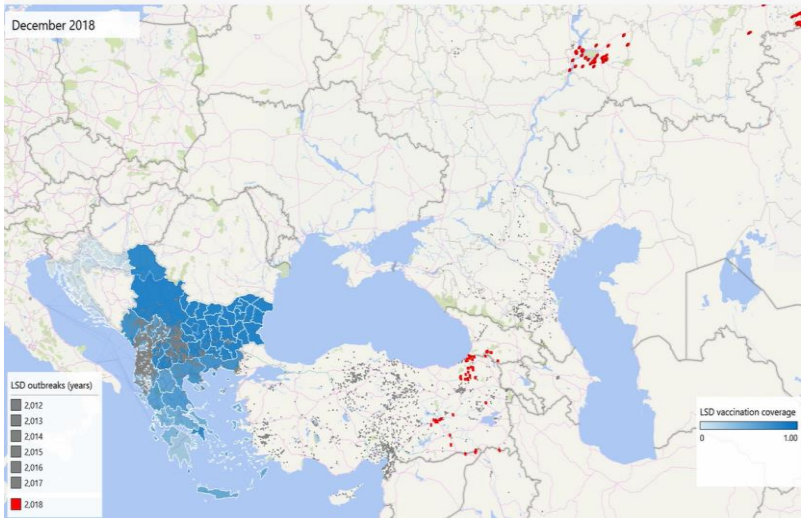
FMDV Type	FMDV Topotype	Region	Country	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
O	O EA-3	Middle East	Egypt			■			■	■		■	
			ISRAEL										
			Palestine										
		North Africa	Algeria								■		
			Libya			■							
			Mauritania										
			Morocco										
	O ME-SA	Middle East	Egypt	■	■	■	■	■	■		■		
			IRAQ	■									
			ISRAEL		■	■	■	■	■				
			Jordan										
			Palestine				■		■				
		North Africa	Algeria					■					
			Libya		■	■	■						
			Morocco						■				
			Tunisia					■	■		■	■	
		West Eurasia	Afghanistan	■					■				
			Georgia										
			IRAN	■		■	■		■	■	■		
			Kazakhstan										
			Russia					■	■		■	■	
			Turkey	■	■			■	■	■	■	■	■
	O SEA	West Eurasia	Russia	■									■

Peste des Petits Ruminants



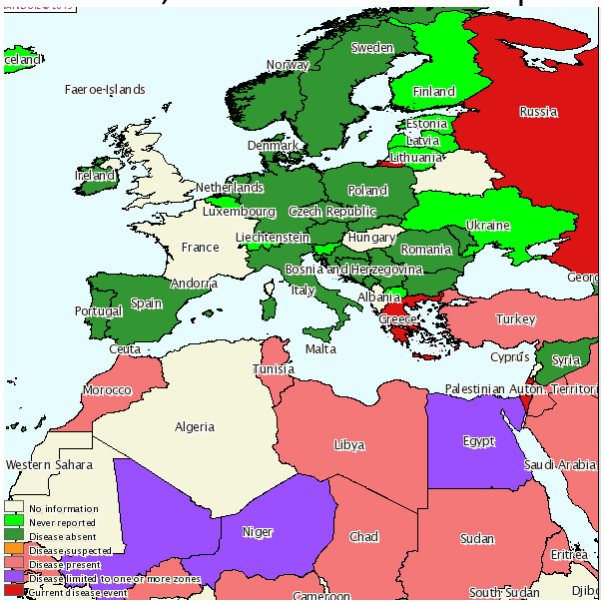
Number of years od PPR presence 2005 – 2018 (OIE)

Lumpy Skin Disease



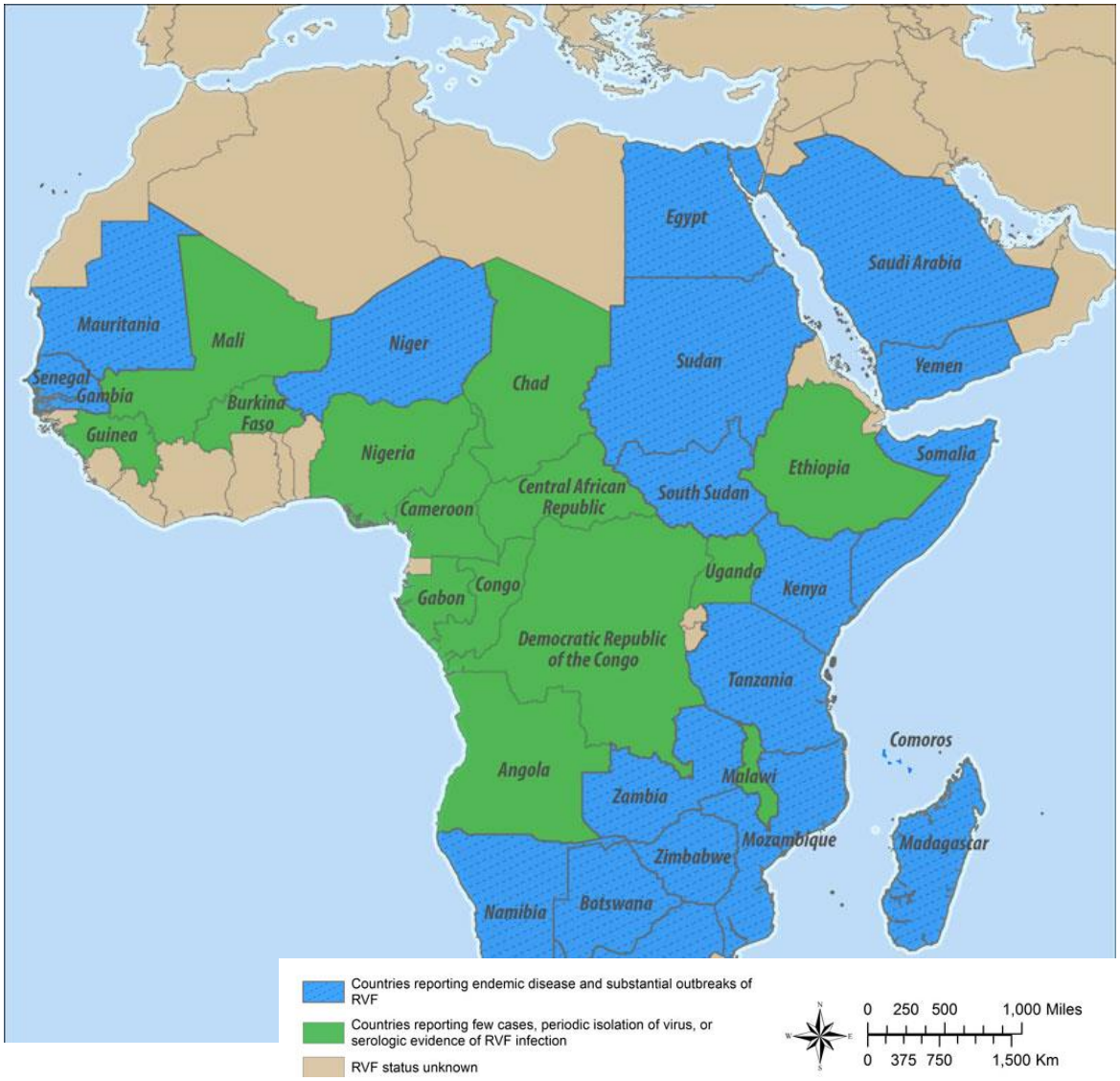
EFSA, LSD in South East Europe

Sheep and Goat Pox



Six monthly report (Jan-Jun 2018, WAHIS)

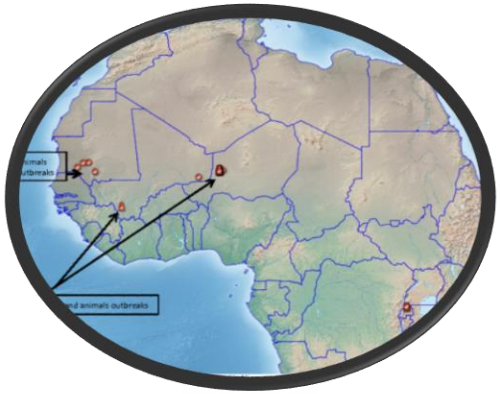
Rift Valley Fever



CDC - Centre for disease control and prevention

Aedes and *Culex*

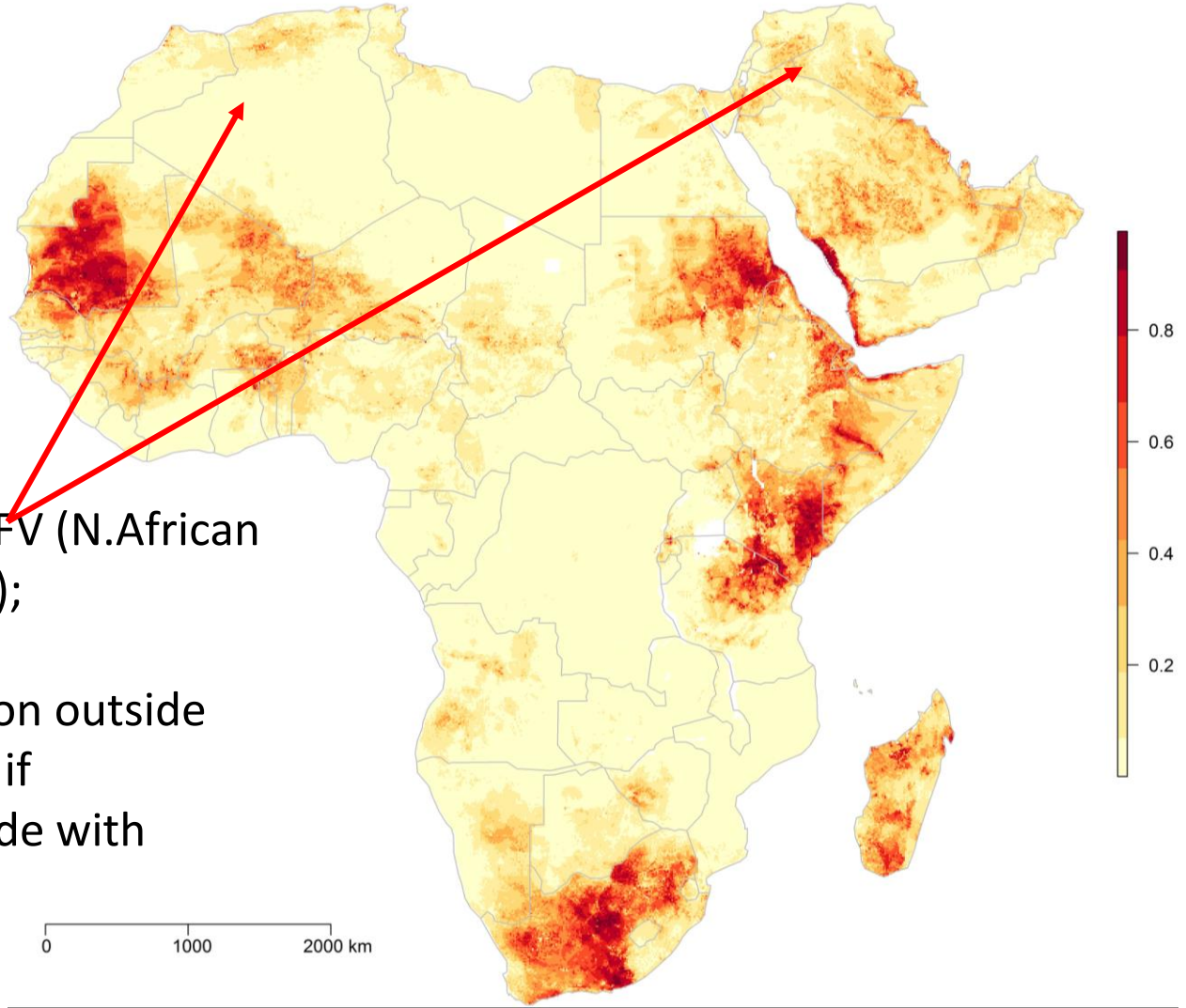
ANIMALS
Abortions
Death (100% young)
HUMANS
Febrile illness
Haemorrhagic fever



More recent events
’17 Nigeria – Niger - Mali

Results from recent study on Landscape suitability to RVF epidemics

The risk is derived from the ecological niche of RVF outbreaks (Walsh et al, 2017)



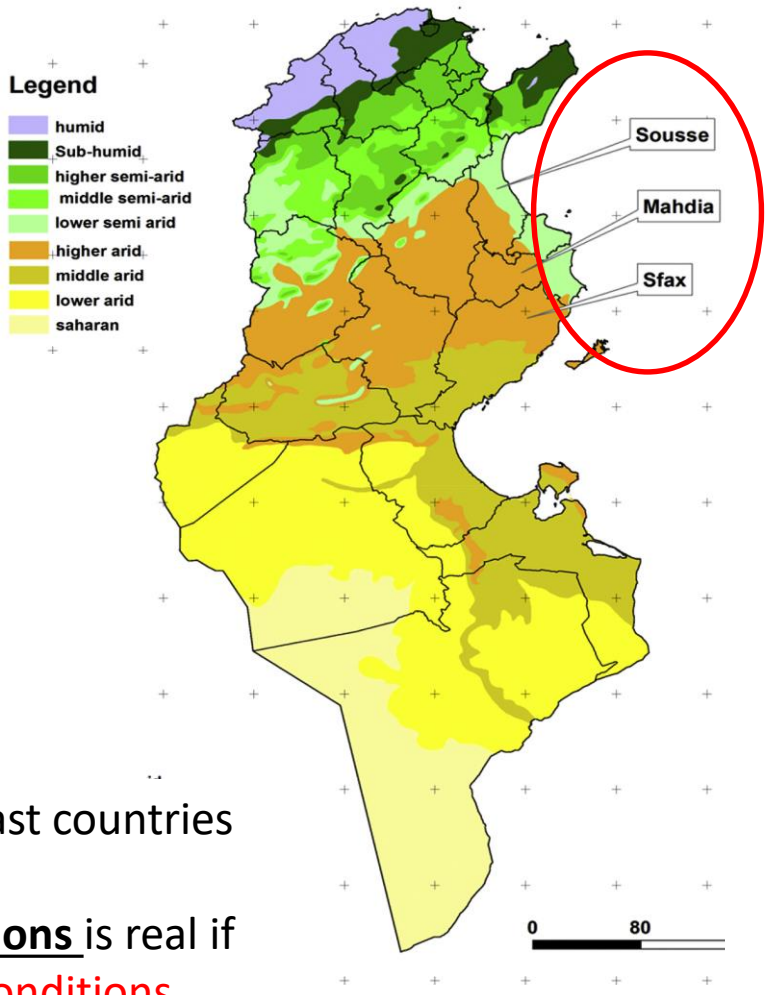
- Landscapes suitable to RVFV (N.African and Middle East countries);
- Sustained virus transmission outside the endemic region is real if introduction events coincide with optimal conditions

Virus circulation

- In southern Morocco, a serological survey conducted in 2009 showed a 15% prevalence in camels nearby regions of Mauritania, with regular illegal transboundary movements of this countries to Morocco (El-Harrak et al., 2011)
- Samples taken from the Sahara in 2008 showed a seroprevalence ranging from 1 to 10% in goats, sheep and camels (Di Nardo et al., 2014)
- A serological survey (A. Bosworth et al., 2015) in humans conducted during the summer of 2014 in regions in Tunisia showing that:
  - ✓ 8.3% of unexplained febrile patients had IgM (indicating recent infection)
  - ✓ 7.8% of sera collected from slaughterhouse workers (healthy status) had IgG against this virus

Serologic evidence of exposure to Rift Valley fever virus detected in Tunisia

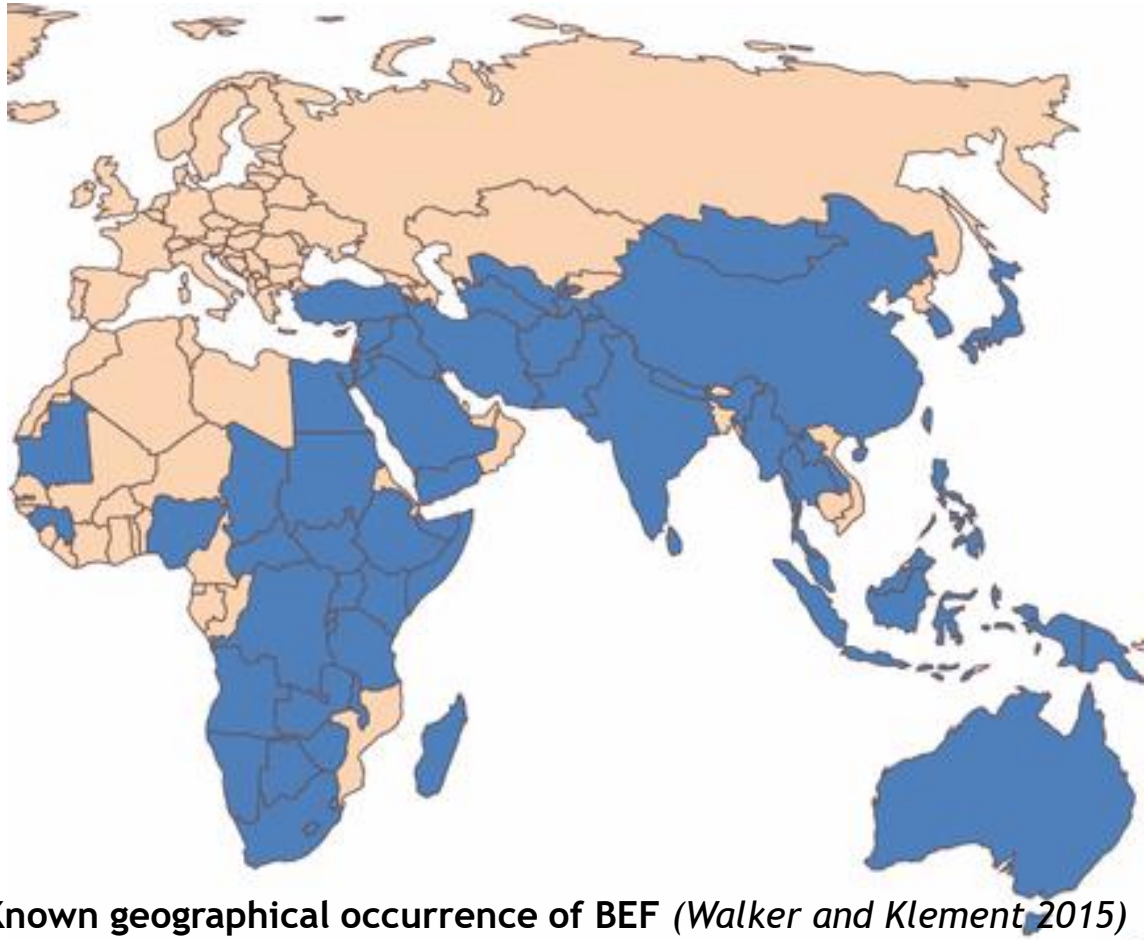
A. Bosworth[1,4], T. Ghabbari[2], S. Dowall[1], A. Varghese[1], W. Fares[3], R. Hewson[1,4], E. Zhioua[3], M. Chakroun[5], H. Tiouiri[6], M. Ben Jemaa[7], A. Znazen[7] and A. Letaief[2]
1) Public Health England, Porton Down, Salisbury, UK, 2) Infectious Diseases Department, Farhat Hached University Hospital, Sousse, 3) Institut Pasteur de Tun
Tunis, Tunisia, 4) National Institute of Health Research, Health Protection Research Unit in Emerging and Zoonotic Infections, Liverpool, UK, 5) Infectious Diseas
Department, F Bourguiba University hospital, Monastir, 6) Infectious Diseases Department and 7) Laboratory of Microbiology, Sfax, Tunisia



<u>Risk for RVFV introductions</u> in N.African and Middle East countries remains high and continuous,

<u>Sustained virus transmission outside the endemic regions</u> is real if these introduction event(s) coincide with optimal conditions

Bovine Ephemeral Fever



Culicoides

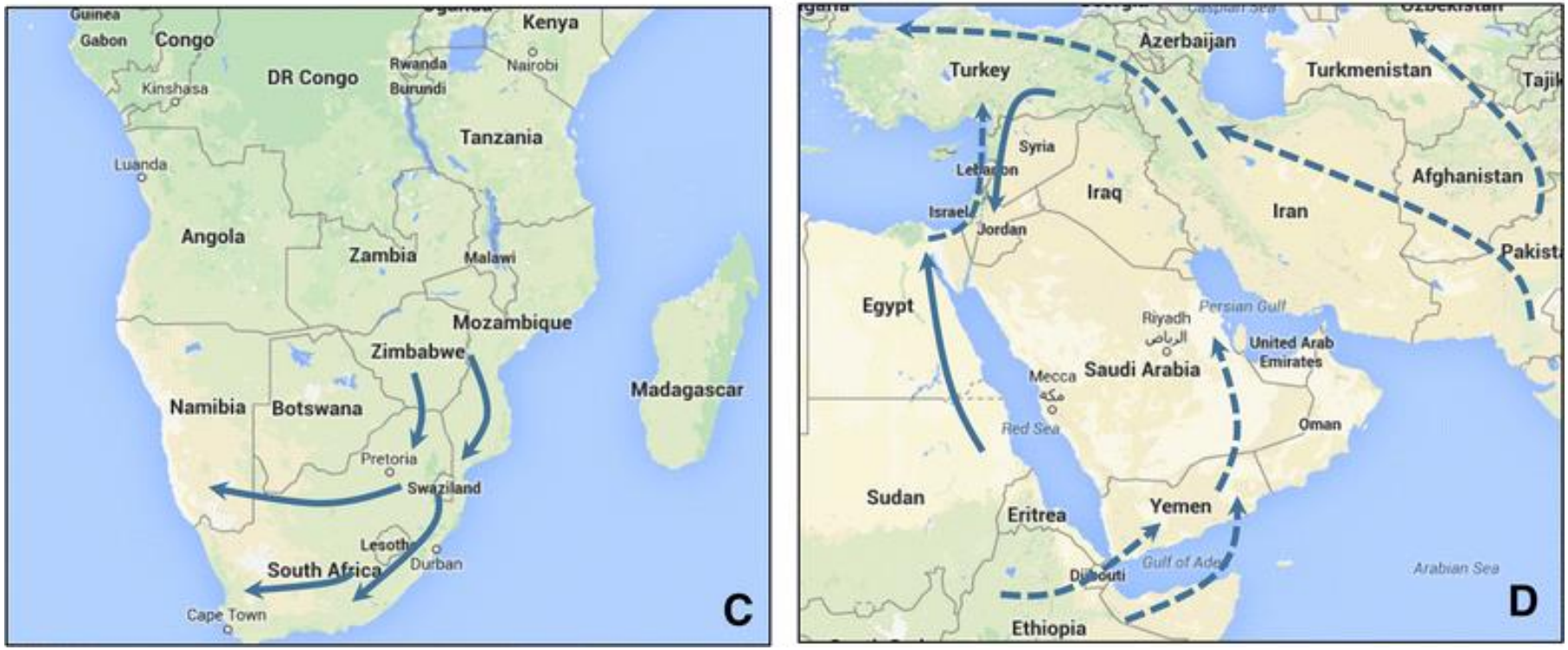
Fever, abortion, lameness. drooling, lethargy, milk drop (high morbidity)

Nasal discharge, drooling

Unable to rise

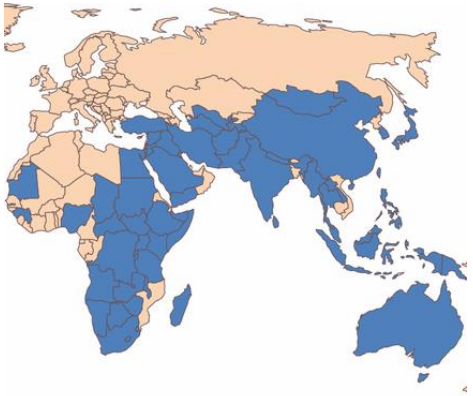
Known geographical occurrence of BEF *(Walker and Klement 2015)*
The extent of BEFV distribution is not necessarily country-wide (as shown) and may include neighbouring countries from which there are no known formal reports of disease (not shown). The distribution may also vary seasonally and from year to year.

Likely general directions of seasonal spread of BEFV for S.Africa and Middle East



Pathways in the **Middle East** are <u>less clear and may be complex</u> with potential for epizootics to originate in either East Africa or West Asia. Dashed arrows indicate possible pathways in this region.

Source: https://veterinaryresearch.biomedcentral.com/articles/10.1186/s13567-015-0262-4



THE BEF THREAT TO EUROPE IS REALISTIC

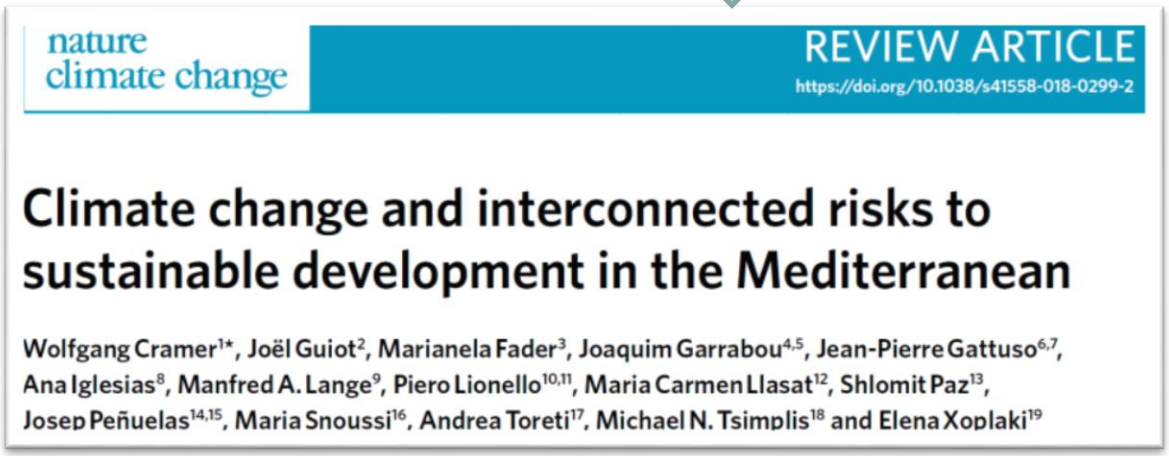
- Big epidemic recorded in Turkey 2012, with outbreaks in many regions (unlike previous Turkey epidemics).

- Frequency of new epidemics increased over the year

Importance of rapid detection/confirmation if introduced in Europe, as for the RVF

Climate change

Recent accelerated climate change has exacerbated existing environmental problems in the Mediterranean Basin that are caused by the combination of changes in land use, increasing pollution and declining biodiversity.



nature climate change

REVIEW ARTICLE

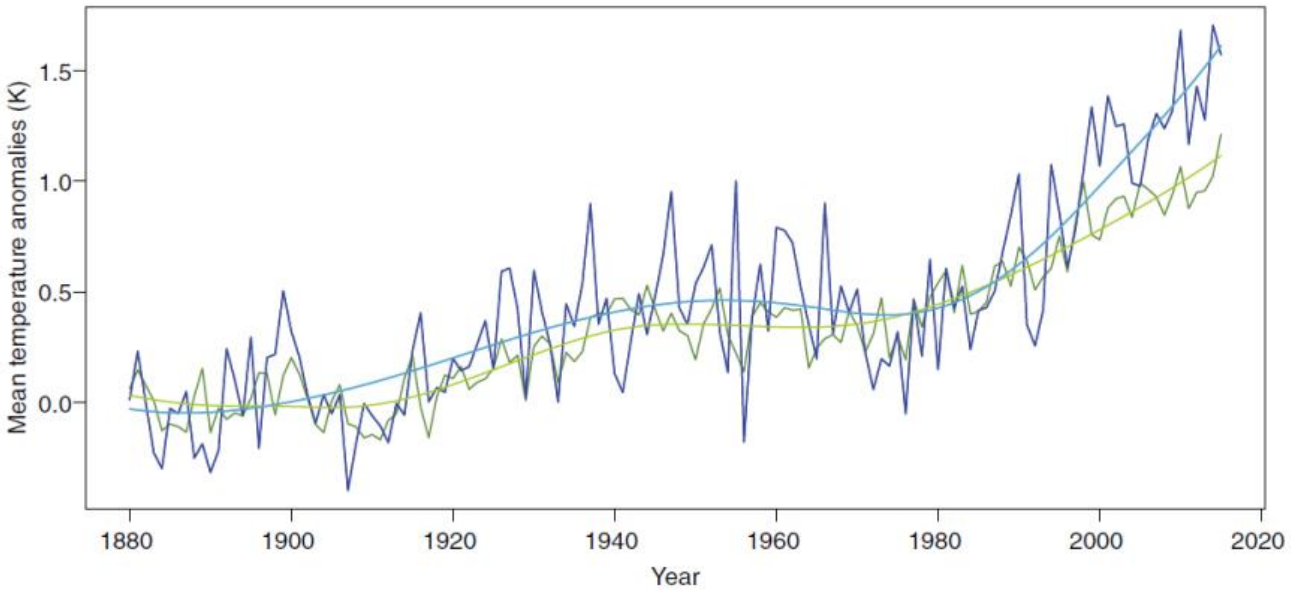
https://doi.org/10.1038/s41558-018-0299-2

Climate change and interconnected risks to sustainable development in the Mediterranean

Wolfgang Cramer[1*], Joël Guiot[2], Marianela Fader[3], Joaquim Garrabou[4,5], Jean-Pierre Gattuso[6,7], Ana Iglesias[8], Manfred A. Lange[9], Piero Lionello[10,11], Maria Carmen Llasat[12], Shlomit Paz[13], Josep Peñuelas[14,15], Maria Snoussi[16], Andrea Toreti[17], Michael N. Tsimplis[18] and Elena Xoplaki[19]

Slide of R.Bouguedour (OIE)

Climate change



Basin-wide, annual mean temperatures are **now 1.4 °C above late-nineteenth-centur**y levels, particularly during the summer months. Heat waves now occur more frequently, and the frequency and intensity of droughts have increased since 1950. For each of the most recent decades, **the surface of the Mediterranean Sea has warmed by around 0.4 °C**

Slide of R.Bouguedour (OIE)

Priorities to reduce the risk

- Early Warning Systems for major threats
- Regular collection and sharing of relevant risk information including submission of isolates
- Improved networking between centres of expertise and Ref Laboratories
- Training programme for national staff (epi-lab-PVM-etc.)
- Assist definition of integrated control and surveillance
- Emergency arrangements for vaccine supply

Thank you