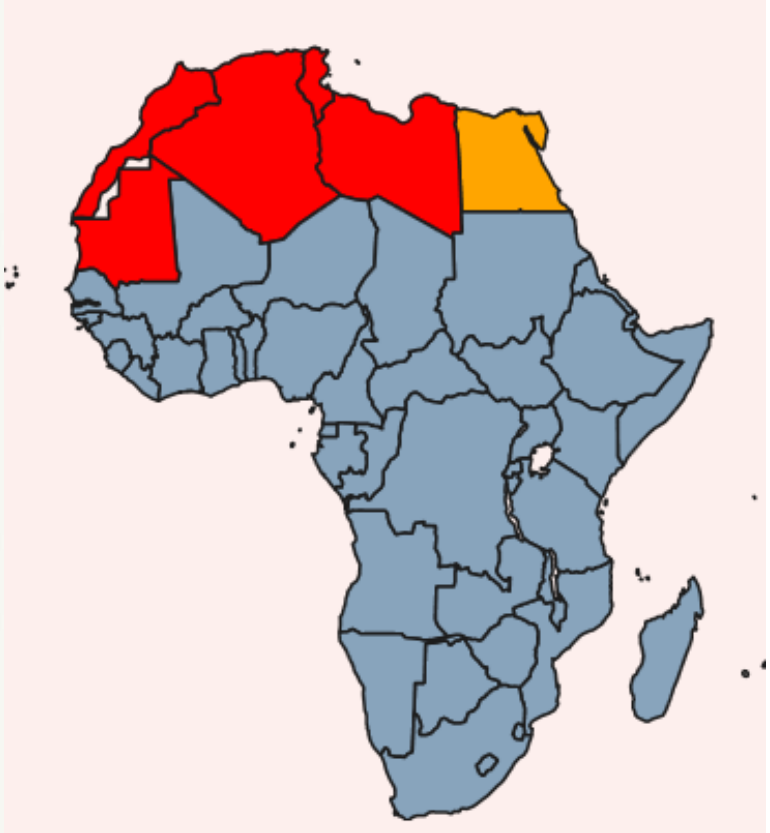
Inter-Regional Conference “Rift Valley fever: *new options for trade, prevention and control*”
Djibouti City, Djibouti, 21-23 April 2015

# Recent RVF outbreaks in North-Western Africa

WORLD ORGANISATION FOR ANIMAL HEALTH
*Protecting animals, preserving our future*

Alessandro Ripani
OIE Sub Regional Representation for North Africa
Tunis, Tunisia

# OIE SUB-REGIONAL OFFICE FOR NORTH AFRICA



The OIE office in Tunis is in charge of managing the **Secretariat** for:

- **REMESA** = official platform for cooperation amongst the Countries of the Mediterranean basin to assist and coordinate the development, implementation and harmonisation of animal health activities, projects and programmes between the shores

- **REEV-Med** = Network of Establishments for Veterinary Education to encourage and reinforce the collaborations between them among the two Mediterranean shores and to implement in the North African region an evaluation process for EVE similar to the evaluation applied at the European level

# REMESA
# Joint Secretariat (OIE-FAO)

## REseau MEditerranéen de Santé Animale (REMESA)

(Mediterranean Animal Health Network)

**Greece**

**Malta**

**Cyprus**

**Jordan**

**Lebanon**

There is rotation to hold the co-presidency (2 Countries)

# REMESA

Among the diseases identified by REMESA
4 of them got the attention in the Region in the recent past

FMD

RVF

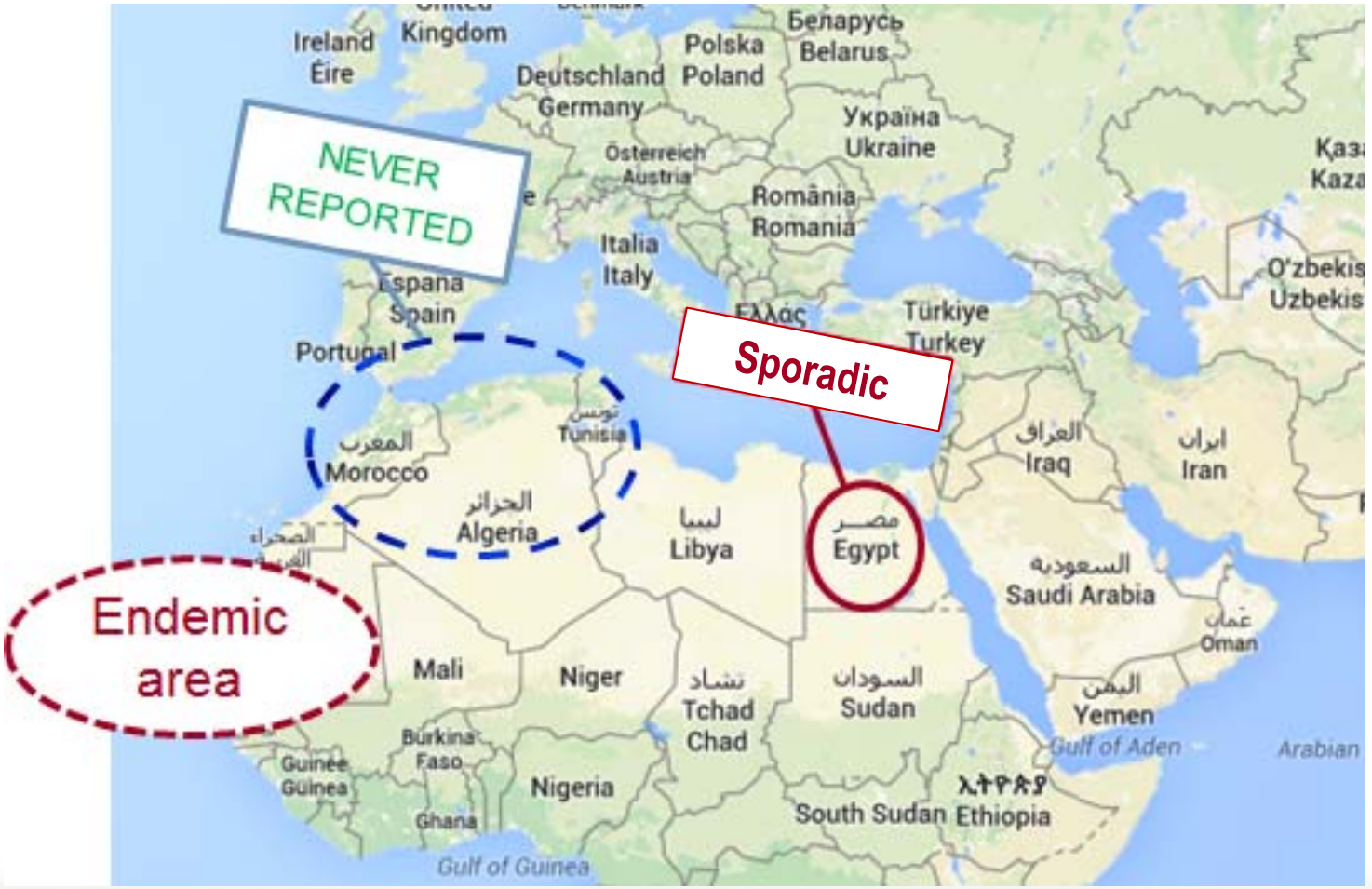
REMESA
Mediterranean Animal Health Network

PPR

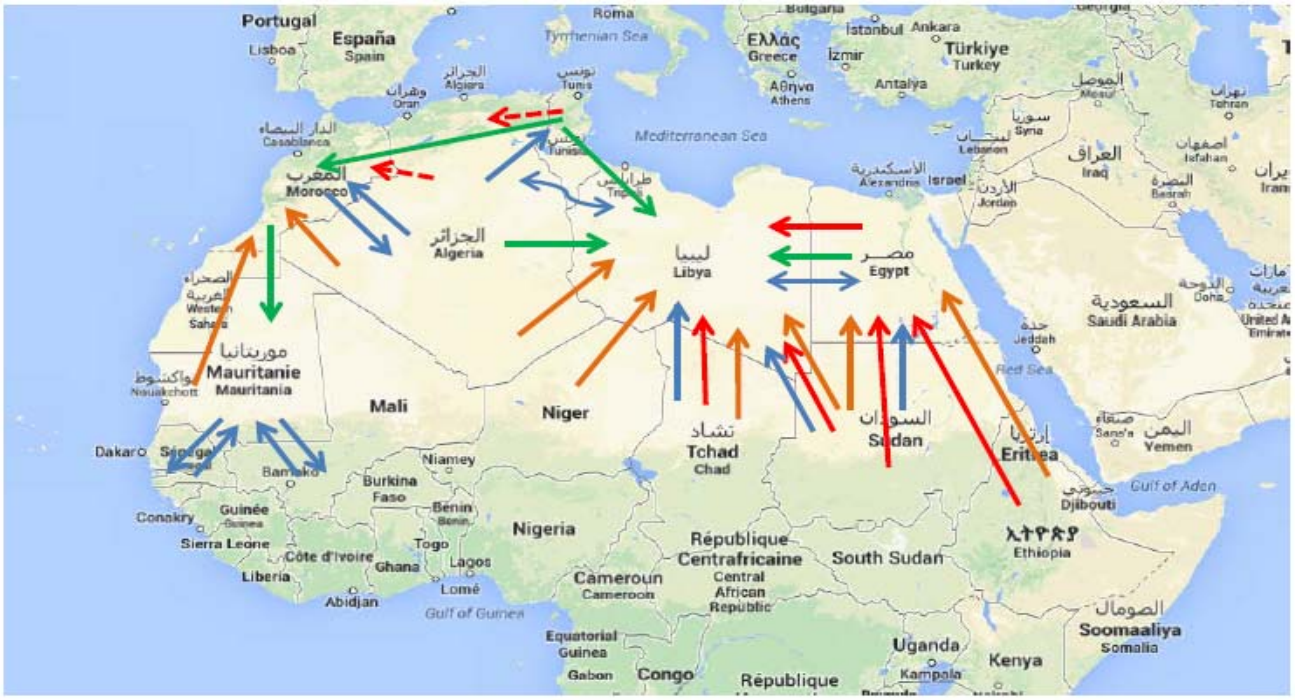
Rabies

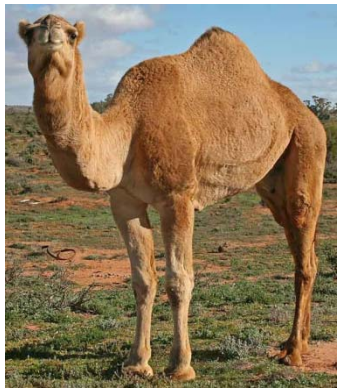
# RVF OUTBREAKS IN NORTH-WESTERN AFRICA

## Geographical distribution of RVF in the region



# ANIMAL MOVEMENTS IN THE MAGHREB



- Imported bovine
- Domestic bovine
- Small ruminants
- Camelidae
- Dairy products

Major pathways of traditional animal movements and dairy products in the Maghreb region

# RVF OUTBREAKS IN NORTH-WESTERN AFRICA

- Virological or serological evidence of RVF virus circulation in Western African region prior to 1987 without noticeable clinical manifestations

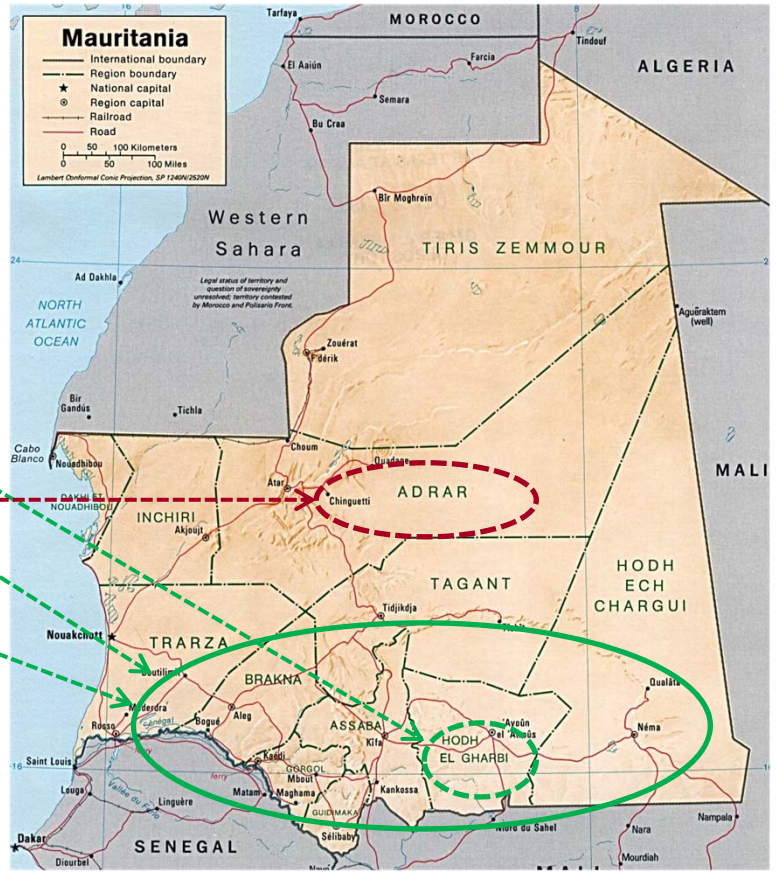
- The first substantial outbreak in Western African region was reported 1987 after the building of the Diama dam in the framework of Senegal River Project


*Changes of some local ecological characteristics e.g. creation of more water accumulation points*

# RVF OUTBREAKS IN NORTH-WESTERN AFRICA

Recent large outbreaks of RVF occurred in Mauritania

| Year | Human case | Deaths |
|---|---|---|
| 1998 | 300-400 | 6 |
| 2003 | 25 | 4 |
| 2010 | 63 | 13 |
| 2012 | 35 | 17 |




*Unexpected outbreak in the northern Sahelian region of Mauritania in late 2010*

# RVF OUTBREAKS IN NORTH-WESTERN AFRICA

## Unexpected Rift Valley Fever Outbreak, Northern Mauritania

**Ahmed B. Ould El Mamy, Mohamed Ould Baba, Yahya Barry, Katia Isselmou, Mamadou L. Dia, Ba Hampate, Mamadou Y. Diallo, Mohamed Ould Brahim El Kory, Mariam Diop, Modou Moustapha Lo, Yaya Thiongane, Mohammed Bengoumi, Lilian Puech, Ludovic Plee, Filip Claes, Stephane de La Rocque, and Baba Doumbia**

During September–October 2010, an unprecedented outbreak of Rift Valley fever was reported in the northern Sahelian region of Mauritania after exceptionally heavy rainfall. Camels probably played a central role in the local amplification of the virus. We describe the main clinical signs (hemorrhagic fever, icterus, and nervous symptoms) observed during the outbreak.

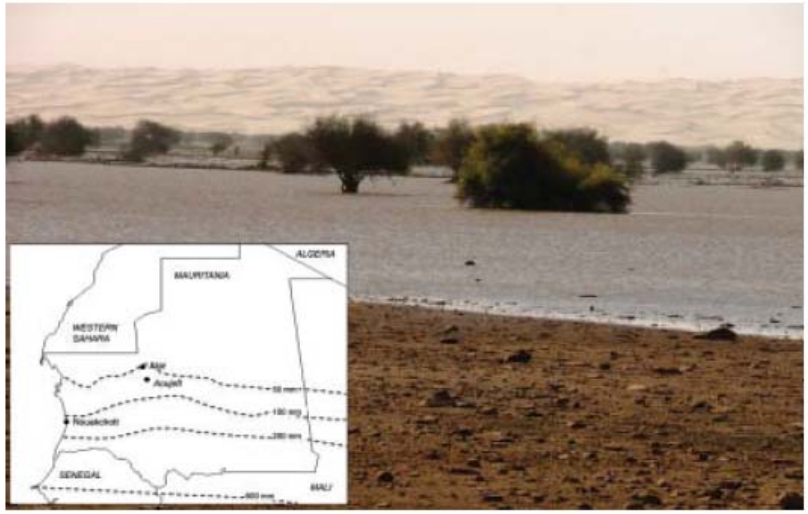



Figure 1. Lefrass Oasis, 30 km north of Atar, one of the main outbreak foci of an outbreak of Rift Valley fever in camels, northern Mauritania. Inset shows the location of Atar and Aoujeft and the isohyets (average during 1965–2002; source: Food and Agricultural Organization of the United Nations, Land and Water Development Division).

*uniformis, An. ziemani*); some of these species were known to be competent vector species for major arboviruses.

A few weeks after these rains, severe outbreaks of malaria and Rift Valley fever (RVF) were reported in

# RVF OUTBREAKS IN NORTH-WESTERN AFRICA

## Some information on the outbreak in 2010 Mauritania

- Exceptional rainfall during September–October 2010 created highly favorable conditions for colonization and subsequent multiplication of competent vectors as well as an attractive vegetation for grazing
- The virus was probably introduced rapidly through viremic animals transported by truck for grazing opportunities from areas where RVF is endemic
- The price of livestock decreased by 40% during the epidemic creating additional opportunities for traders so as to potentially further disseminate the virus

# RVF OUTBREAKS IN NORTH-WESTERN AFRICA

- *The abortions was rarely reported in camels*
- *Abortions and other clinical signs were reported in camels in Mauritania during the epidemics of 2010 and 2012*

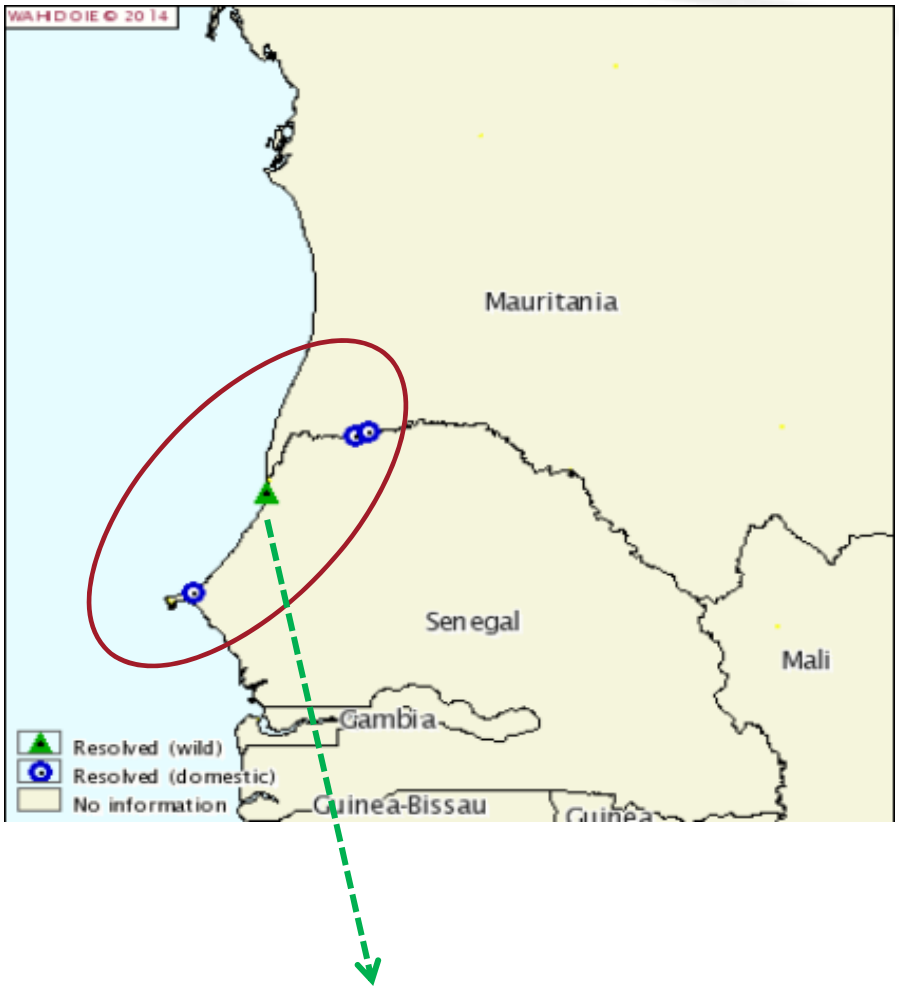
Outbreaks in animals in 2010

| | Total outbreaks | Species | Susceptible | Cases | Deaths | Destroyed | Slaughtered |
|---|---|---|---|---|---|---|---|
| Rift Valley fever | 3 | Small ruminants | 550 | 144 | 1 | 0 | 0 |
| | | Camelidae | 120 | 29 | 20 | 12 | 1 |

# OUTBREAKS IN SENEGAL (2013/2014)

- Start of the event in Sept 2013
- Resolved in May 2014
- A total of 4 outbreaks

| Species | Susceptible | Cases | Deaths |
|---|---|---|---|
| Cattle | 190 | 7 | 0 |
| *Dorcas gazelle* | 33 | 8 | 3 |
| Goats | 208 | 37 | 8 |
| Total | 431 | 52 | 11 |

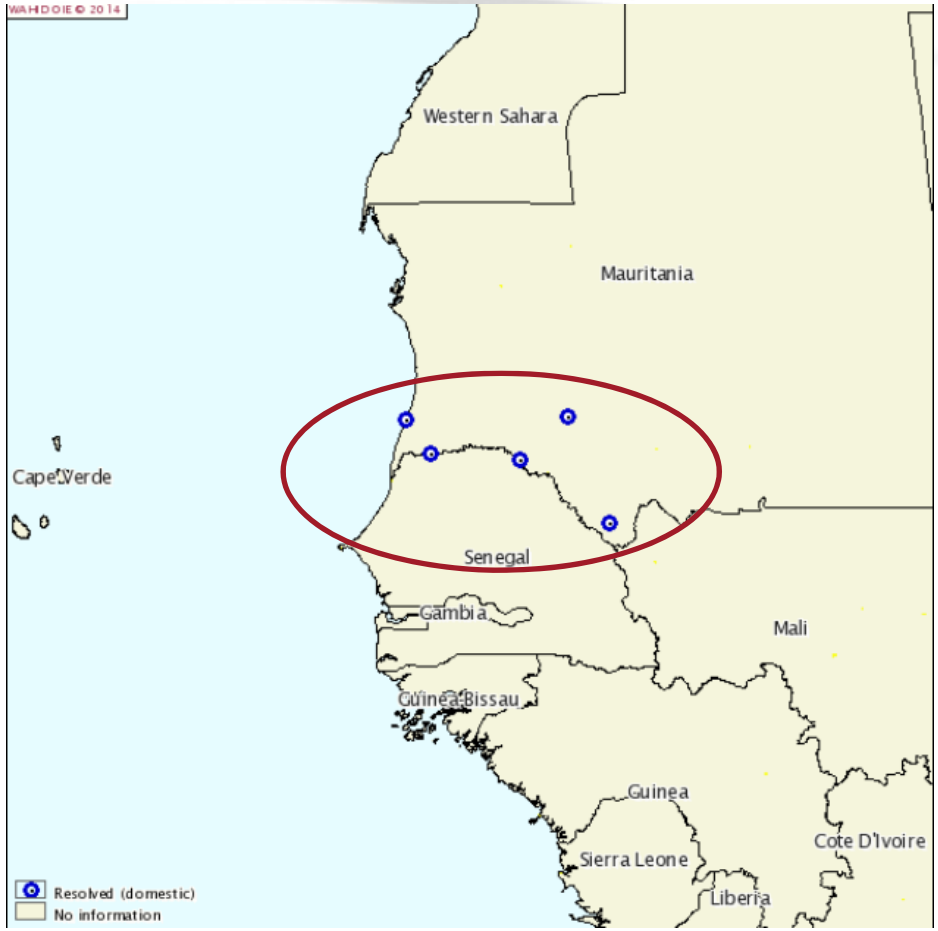



The date of last detection of the disease in wild species was in 2004

# OUTBREAKS IN MAURITANIA (2013/2014)

- Start of the event Sept 2013
- Resolved in January 2014
- A total of 5 outbreaks

| Species | Susceptible | Cases | Deaths |
|---|---|---|---|
| Camelidae | 100 | 11 | 3 |
| Sheep/goats | 1050 | 280 | 0 |
| - | - | | - |
| Total | 1150 | 291 | 3 |



# SURVEILLANCE ACTIVITIES

## Surveillance in place: endemic zone in Mauritania

- Purpose of the surveillance: to avoid human cases
- Active Surveillance (sentinel herds with 17 sites: 12 in the south, 3 in the North and 2 South-East);
- Passive surveillance (suspect case definition: abortion OR abnormal mortality + suspected area and mosquitoes period activity - confirmation IgM or PCR)
- Several risk areas have been identified and a control plan is in place (emergency vector control in 2010)

# SURVEILLANCE ACTIVITIES

Surveillance in place: free area Morocco- Algeria-Tunisia

- Passive surveillance with the objective of detecting the incursion of the disease
- Occasional active serological surveys were conducted:
  - ✓ 4.000 samples were collected and analyzed in southern Morocco in 2011);
  - ✓ Investigations in Algeria in 2006 and 2012;
  - ✓ Serum bank in Tunisia

# RVF OUTBREAKS IN NORTH-WESTERN AFRICA

## Mauritania: some specific needs identified

- Climate prediction models
- Evaluation of the system of sentinel herds
- Optimization of ways to vector control
- Revitalise passive and active surveillance
- Communication plans targeted based on the public sector to be reached

# RVF OUTBREAKS IN NORTH-WESTERN AFRICA

Morocco-Algeria-Tunisia: some specific needs identified

- Better identification of risk areas (previous studies were done for AI)
  - mapping the distribution of the vectors
- Establishing an early warning system
  - active surveillance (sentinel herds) or other tools
- Definition of a control plan

# SPECIFIC PROJECTS ON RVF

OIE and FAO coordinated project
(project started in 2012 ended in September 2014)

Focus on 4 specific areas:

- Lab diagnostic
- Epidemiology
- Entomology
- Regional coordination

# INTERLABORATORY TEST ON RVF

Organiser : IZS Abruzzo and Molise (Teramo)

Participants: 10 laboratoires of 6 countries part of REMESA

| | | |
|---|---|---|
| **Algeria** | Institut National de la Médecine Vétérinaire | *Alger* |
| **Algeria** | Institut National de la Médecine Vétérinaire | *Laghouat* |
| **Algeria** | Institut National de la Médecine Vétérinaire | *Tlemcen* |
| **Spain** | Centro de Investigación en Sanidad Animal (CISA-INIA) | *Valdeolmos (Madrid)* |
| **France** | ANSES | *Lyon* |
| **France** | CIRAD | *Montpellier* |
| **Morocco** | ONSSA-Ministère de l'Agriculture | *Agadir* |
| **Morocco** | Laboratoire Régional d'Analyses et de Recherches | *Casablanca* |
| **Mauritania** | Centre National d'Elevage et de Recherches Vétérinaires | *Nouakchott* |
| **Tunisia** | IRVT | *Tunis* |

Test used: ELISA IgG, ELISA IgM and RT-PCR

# INTERLABORATORY TEST ON RVF

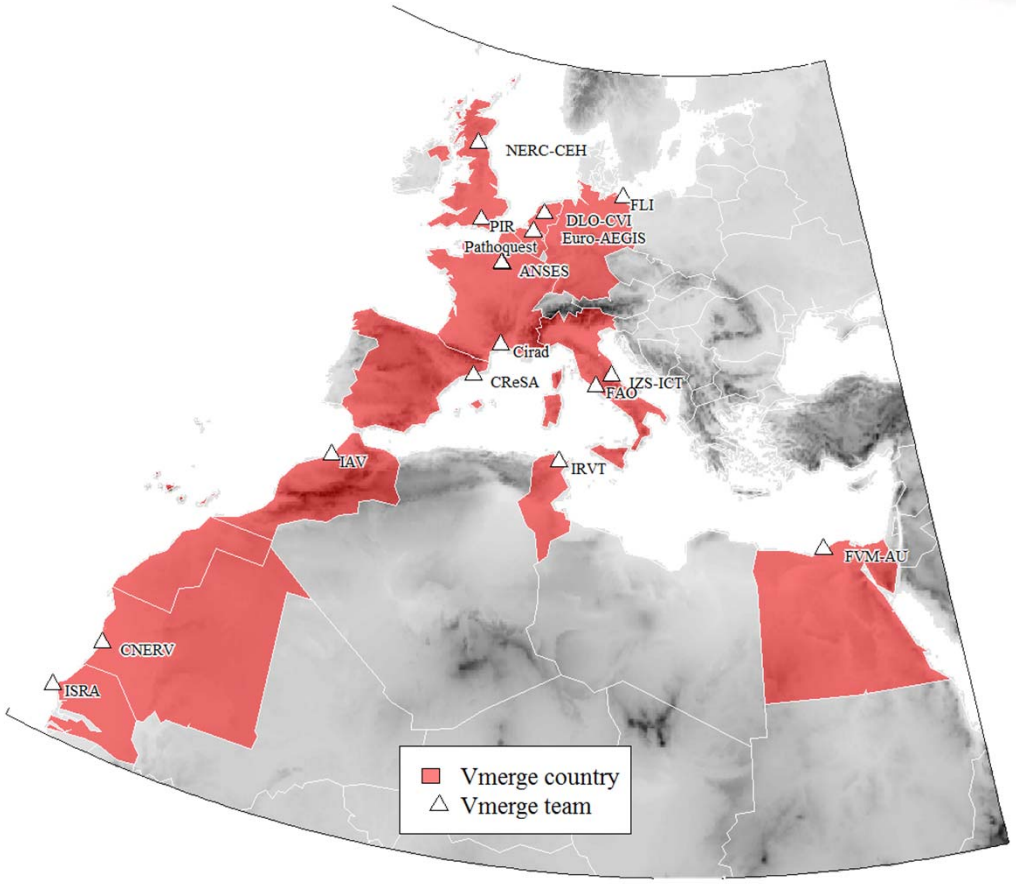
- The results of the first inter-laboratory test indicated that countries have the diagnostic capabilities to detect the disease if introduced
- In addition to the preliminary assessment of diagnostic capabilities, the aim of inter-laboratory test was to harmonise the tests used by each laboratory in view of a supranational surveillance system
- The organisation of the inter-laboratory test has created relationships between laboratories, shared experiences, protocols and technical information for the benefit of monitoring RVF

# V-Merge PROJECT

- 16 partners
- 12 countries

REMESA
Réseau Méditerranéen Santé Animale

General objective: Address <u>risk of introduction, emergence and spread</u> of known - or still unknown - vector-borne viruses (VBV) associated with mosquitoes (*Aedes* and *Culex* genera), and *Culicoides* biting midges



# MAJOR CONCLUSIONS

- The re-occurrence of RFV in Mauritania in October 2013 confirmed that this disease is a continuous threat for the entire region
- Countries in the region have the diagnostic capabilities to detect the disease if introduced
- More targeted actions are necessary to build an effective surveillance system in the region
- The OIE Sub regional Representation for North Africa is providing support to these countries to implement such activities in line with the OIE International Standards

# Gracias, Merci and Thanks!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