



# REPIVET – RESEPA workshop

## Epidemiology and surveillance of animal diseases

Tunis 1-2 December 2015





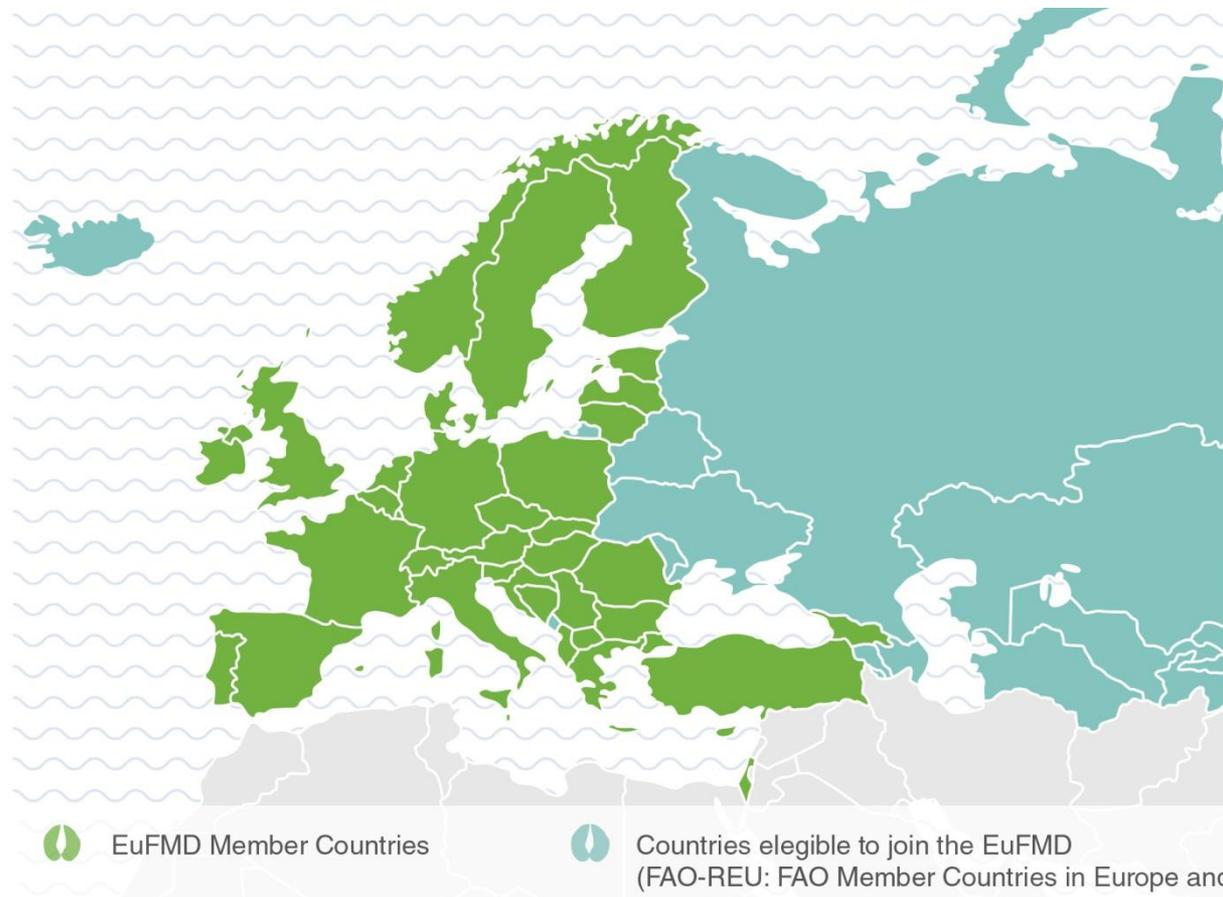
# EuFMD - Who we are and what we do

**A commission of 37 member states; newest member is Georgia**

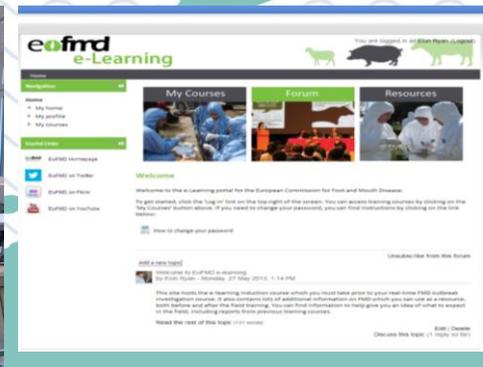
**Established 1954**

**Coordinates activities to prevent FMD incursions, improve emergency preparedness, and control FMD in neighbouring region**

**Secretariat based in Rome, team of consultants working internationally**

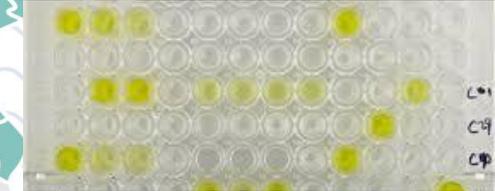


## 3 Pillars of the EuFMD Strategic Plan

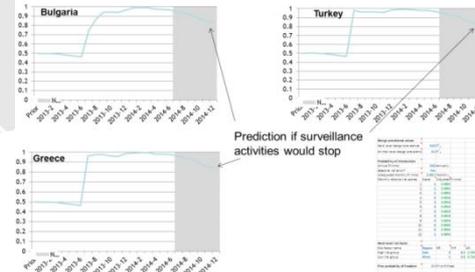


## Pillar 1: Improve readiness for FMD crisis management of Members

- ✓ Trainings
- ✓ Improve contingency plans
- ✓ Improve early detection capacity
- ✓ Research funding
- ✓ Crisis management
- ✓ Proficiency test services

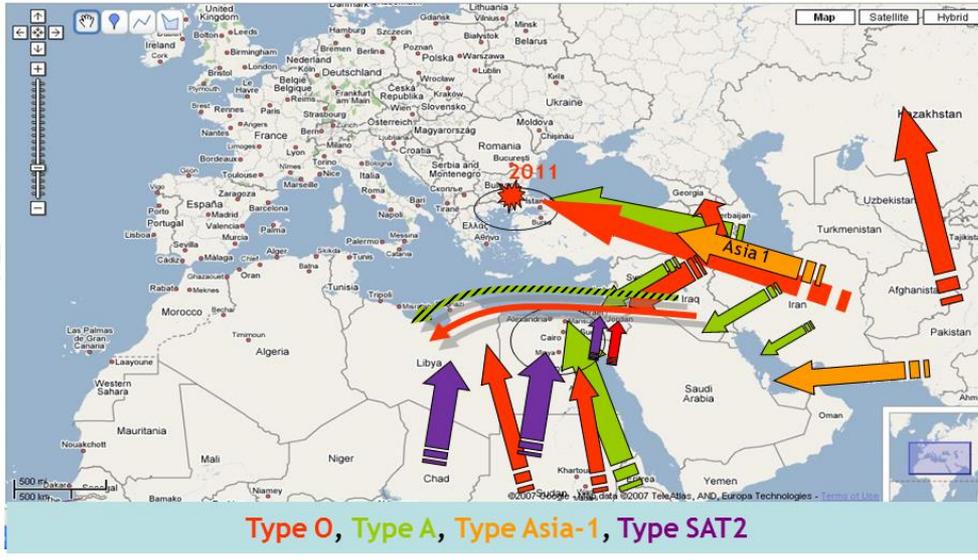


FMD freedom confidence – Cameron model





## 2010-2013: FMD incursions into North Africa and West Eurasia



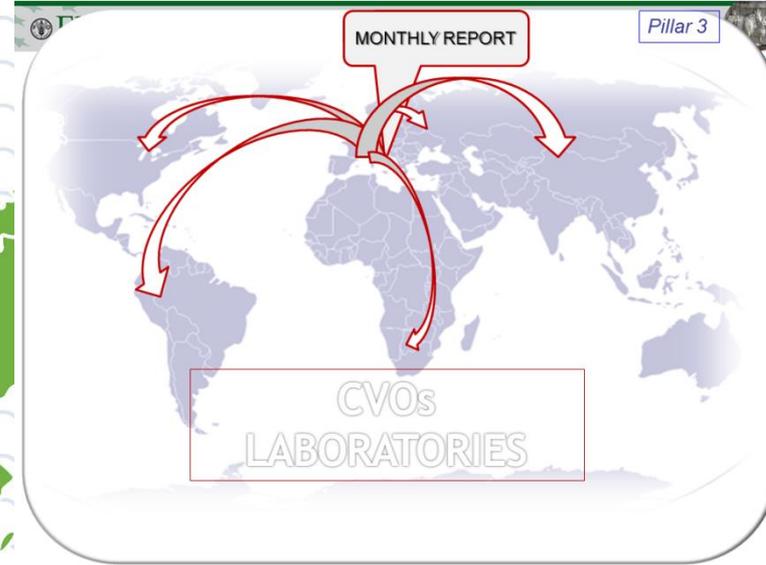
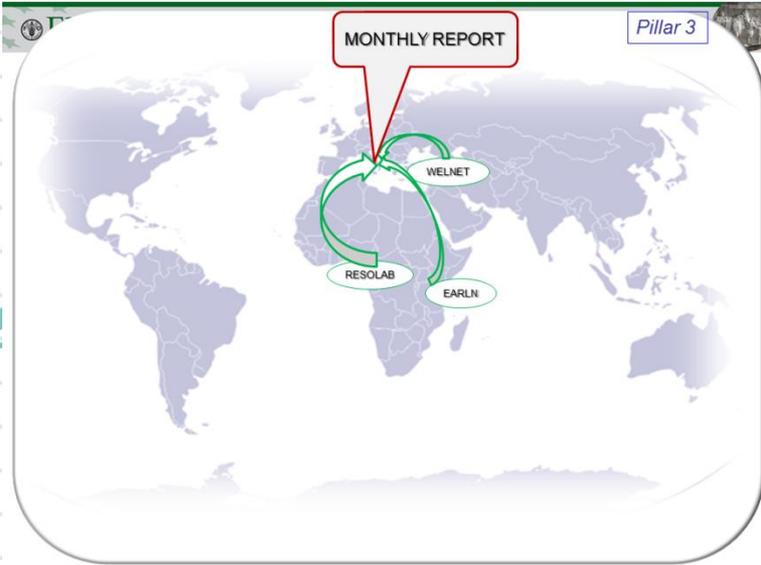
**Pillar 2:** Reduce the risk to Members of an FMD incursion from the European neighborhood



EuFMD Member Countries



Countries eligible to join the EuFMD  
(FAO-REU: FAO Member Countries in Europe and



## Pillar 3: Promote the global FMD control strategy

Progressively increase the level of FMD control



EuFMD Member Countries



Countries eligible to join the EuFMD (FAO-REU: FAO Member Countries in Europe and



# Workplan 2015-2017 - REMESA

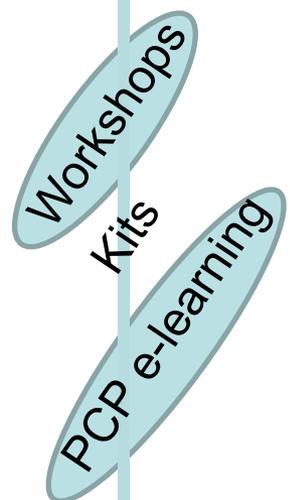
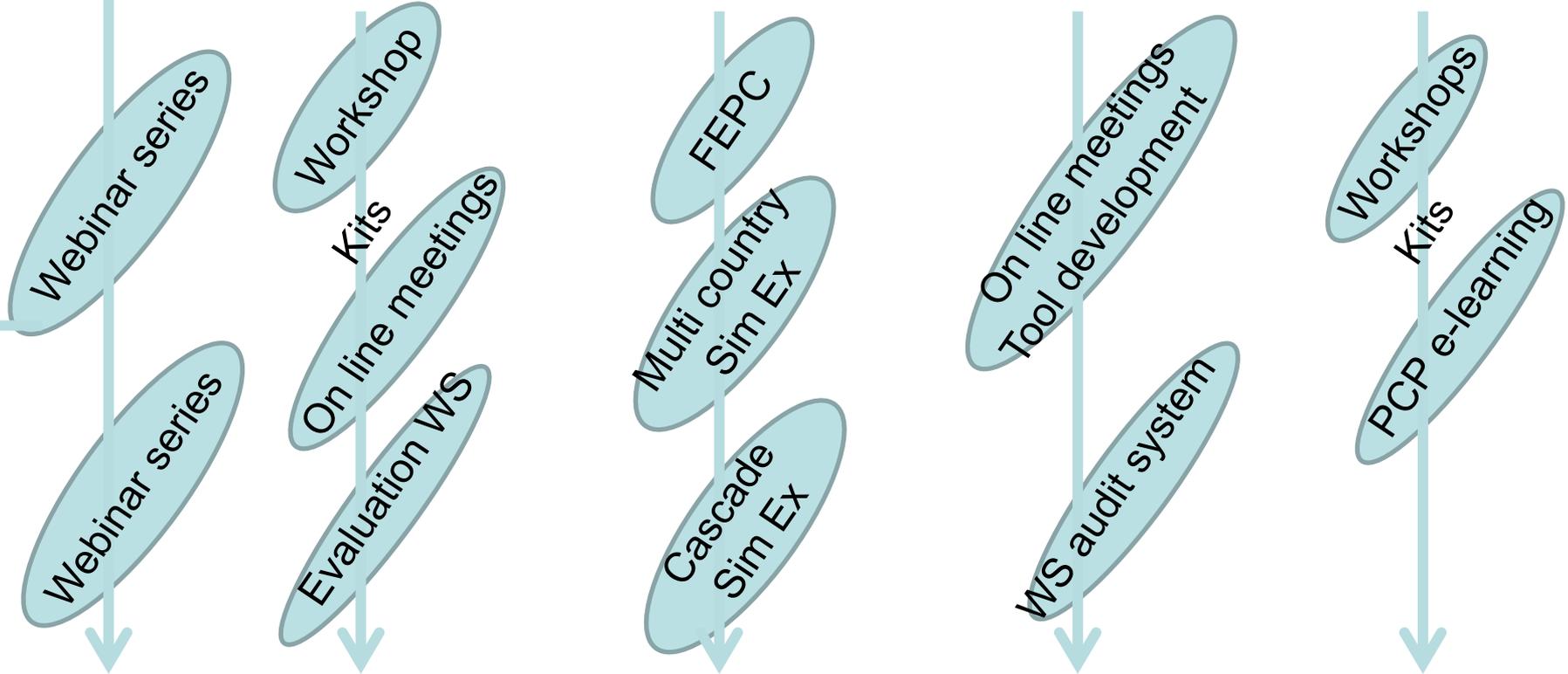
## Epi and Lab network (REPIVET and RELABSA)

Early warning – risk based surveillance

Emergency preparedness

Vaccination programmes

Risk Based Strategic Plan





# Ensuring biosecurity to prevent FMD spreading from farm to farm



Carsten Pöttsch  
EuFMD/FAO Consultant





# Most likely method of spread of FMD to farms/premises, 2001 FMD outbreaks in the UK (n=1847, until 9/7/2001)

Airborne	18
Milk Tanker	11
Infected cattle	18
Infected pigs	1
Infected sheep	68
Other fomites	10
Swill suspected	1
Person	67
Vehicle	28
Local*	1454
Under investigation	171
Grand total	1847

**biosecurity**

\* new infected premise (IP) within 3 km of previously confirmed IP and more than one possible conveyor

(Gibbens et al., Vet. Rec., 2001)



# Biosecurity & FMD spread

**Veterinary surveillance, farm visits etc → high risk**

**Vital to “lead by example”; if vets do not observe biosecurity properly, very difficult to persuade other staff & farm visitors**

**Sequencing techniques allow detailed analysis of transmission pathways → “nowhere to hide”**



# Main routes of FMD infection

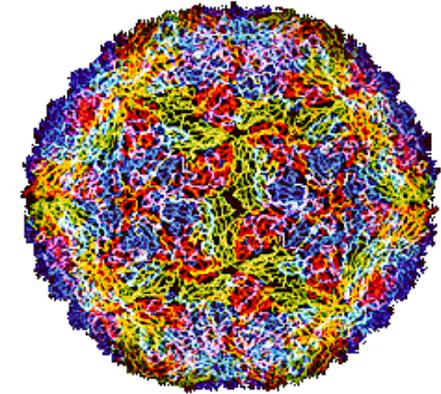
**Direct contact with infected animals**  
**(movement restrictions, vaccination)**

**Contaminated animal products**  
**(ban on meat/milk from infected areas)**

**Mechanical transmission of virus on  
people, vehicles, etc → **BIOSECURITY****



# Physical and chemical properties of the virus



**Relatively stable/resistant in the environment**

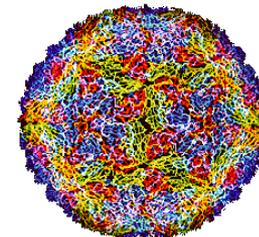
⇒ importance of cleaning and disinfection in control

**Particularly susceptible to small pH changes**

⇒ the use of “mild” acidic or alkaline reagents as disinfectants



# Virus survival



**Inactivated** below pH 6.5 or above pH 9,  
most stable at pH 7.2-7.6

**Survival:** 14 days in dry faeces, 39 days in urine and up to 6 months in slurry in winter

3 days on soil in summer and 28 days in autumn

Up to 20 weeks on hay/straw or up to 4 weeks on cow's hair at 18 to 20°C

**Survival is dependent on pH, temperature, UV light, humidity and initial virus concentration**



# **Biosecurity principles**

## **Minimise contact between farms**

**Do not enter or bring anything onto or off a farm unless necessary**

**Carry out cleansing and disinfection before and after visiting any farm**

**Strict segregation between “dirty” and “clean” areas are essential**

**Quarantine period: if you have been in a “dirty” area, avoid livestock premises for the next (2-5) days**

***→ Risk reduction at every step***

# Biosecurity

## - disinfection principles -



### **Clean *before* disinfection**

- dirt and organic matter can protect virus from disinfectant



### **Disinfect surfaces fully and completely**

- splashing disinfectant on something is not enough

### **Ensure adequate contact time**

- disinfectant need time to work

### **Use approved disinfectant**



# Personal Biosecurity

## Two layers may be required

(e.g. consequences of transmission high, visiting multiple farms, high chance of tear):

### Inner layer:

Single-use overall and gloves

### Outer layer:

Waterproof outer-wear

Durable gloves taped to outer-wear

Wellingtons with plastic over-boots to reduce dirt on boots, facilitating cleaning

Hat/hood





# Personal Biosecurity



- charged, in zip-locked plastic bag

**Do not bring** lighter/cigarettes onto farm, unless prepared to leave them there

If something is **exposed** on farm, it **must be disinfected** prior to removal

e.g. if you wear glasses, these must be submerged in disinfectant when leaving





# Vehicle biosecurity for visits

**Remove** all non-essential items from car

Arrange a **“clean” area** (e.g. back seat) and a **“dirty” area** (e.g. boot); line both with plastic bags

Do not drive onto farm



**park outside** premises



# Vehicle biosecurity

## Cleaning and disinfecting



**Exterior:** Clean with water and remove all visible dirt  
(wheel arches and tyres)

Spray with disinfectant

**Interior:** clean of all rubbish and dirt

Wipe steering wheel, gearstick, pedals, handbrake,  
legroom, etc with disinfectant

**Assess risk** in rest of vehicle and act accordingly



# Disinfection point

clean side

farm entrance

dirty side

→ farm





## Common problems encountered in the field

- The whole investigation team may be contaminated if infected premises are visited first (e.g. in outbreak investigations)
  - get an overview first, plan your activities, collect prior data and information, divide teams
- Disinfectant solution too weak, too little, too old
  - check concentration or renew!
- Spraying disinfectant on dirty surfaces (border checkpoints!)
  - clean first



# Applied biosecurity



## Vets and personnel

- should make every effort to maximise biosecurity: **“lead by example”**
- should avoid any impression among farmers that they are spreading disease

## **Movements** between farms/villages:

- Dirty to dirty ✓
- Clean to dirty ✓
- Dirty to clean ✗

Achievable level of biosecurity depends on the circumstances

→ Use your **veterinary judgement**



## **EuFMD webinars - proposed topics (FR, EN, AR)**

- ✓ Statistical thinking: principles and methods of epidemiology
- ✓ Confidence in disease freedom: Risk based serosurveillance and early detection
- ✓ Data collection: Construction of questionnaires for epidemiological surveillance, collection and analysis of
- ✓ Cost-benefit analysis: economic risk factors and measures to mitigate the risk
- ✓ Animal identification system and animal movements
- ✓ Outbreak investigation and animal tracing: North Africa experiences
- ✓ Spatial epidemiology and mapping systems
- ✓ Early detection: awareness , primary surveillance and cooperation between stakeholders
- ✓ Risk assessment and risk based surveillance: a regional approach
- ✓ Biosecurity at farm level: what it is feasible and effective
- ✓ Biosecurity and biosafety in the laboratories
- ✓ Quality control in the laboratories
- ✓ Emergency and preventive vaccination : how to plan, implement, evaluate
- ✓ Vaccination programme auditing
- ✓ Vaccine bank: how does it work, benefits and accessibility)
- ✓ Communication at all levels and improvement of awareness: tools and methods
- ✓ Emergency planning and simulation exercises



## **Resources**

EuFMD biosecurity video (English and French)

<https://www.youtube.com/watch?v=H9oVv47ZGHQ>

EuFMD guidelines on use of personal protective equipment and disinfection points when entering/exiting a suspected FMD-infected premises (English & French)

E-learning material: [www.](http://www.) (contact Fabrizio Rosso/EuFMD)

## **Acknowledgments**

EuFMD team for support and training material (Ch.Bartels, M. McLaws, E. Ryan, N. Juleff, J. Maud , K. Sumption)

EuFMD thanks OIE for the good collaboration