Tools for better emergency preparedness and contingency plans: GET Prepared and EuFMDiS

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Tools for better emergency preparedness and contingency plans: GET Prepared

Starting point

How can we help member countries to improve?

- FMD specific tools developed by EuFMD e.g. training, e-learning, videos, guidelines, EuFMDis
- Wealth of experience in member countries - in particular those that have experienced outbreaks of various diseases in recent years
- How do we access this? No single platform for sharing materials

Starting point

- DG SANTE Directorate F - SANTE.F2 identifies gaps in preparedness and good practices during audits on contingency planning and disease control, but limited opportunities to share these

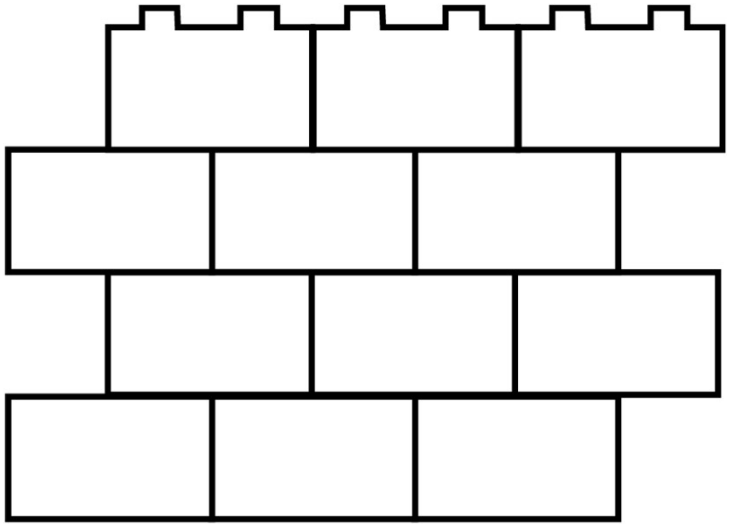
Discussions with SANTE.F2 have been positive towards a collaboration with EuFMD to:

- contribute to webinars on gaps in preparedness
- develop criteria for good practice

EuFMD will follow up on examples of good practices identified by SANTE.F2, through the member country focal points

Visualisation of the concept

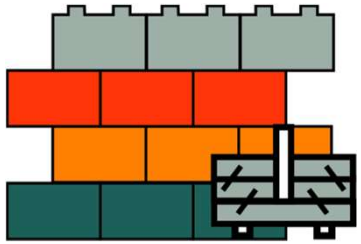
- Each component of emergency preparedness is a brick in a wall
- The wall is to give the idea of building preparedness
- Bricks are lego-style - indicating that the building process is continuous



Visualisation of the concept

- The layers

Visualisation of the concept

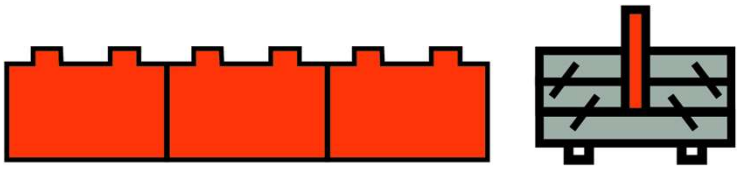


- Each phase could have multiple layers

- Each layer can include complementary components e.g.
  - Alert phase:
    - Suspect investigation (personal biosecurity, epidemiological investigation, clinical examination and sampling)
  - Emergency phase:
    - Infected premises (valuation, killing, disposal, cleaning and disinfection, and restocking)
    - Outbreak management (Central Decision Making Unit, NDCC, LDCC, Expert Groups)
    - The 3 Cs (Cooperation, Coordination, Communication)

Restoration		Vaccination exit strategy	Recovery of free status	Psychological support		
The 3 Cs		Coordination with operational partners	Cooperation with stakeholders	Communication		
Support functions		Legal	Financial	Purchases, tenders, contracts		
Resources		Personnel	Equipment	Facilities		
Emergency management		Central Decision-Making Unit	NDCC	LDCC	Expert groups	
Additional measures		Vaccination	Preventive culling	Welfare slaughter		
Zones		Control zones	Checkpoints	Zone Surveillance	Movement controls	
Infected premises	Valuation	Killing	Disposal	Cleaning & disinfection	Re-stocking	
Suspect investigation		Personal biosecurity	Clinical examination	Sampling	Epidemiological investigation	
Early detection	Risk assessment	Surveillance	Awareness	Farm biosecurity		
Foundations		Training	Simulation exercises	EuFMDis		
Foundations	Outline contingency plan	Outline operations manual	Format for SOPs	Self-assessment tool		
Foundations		Identification & registration	Value chain analysis	Laboratory	Prevention	

What is/will be in the toolbox?



- For each component there will be 3 categories:
  - self-assessment (e.g. questionnaire, checklist)
  - assessment of resource requirements (e.g. resource calculator, **EuFMDis**)
  - examples of good practice (e.g. videos, guidelines, templates, SOPs)

- Tools will be mixture of those developed/approved by EuFMD and by EU Member States

Emergency Preparedness

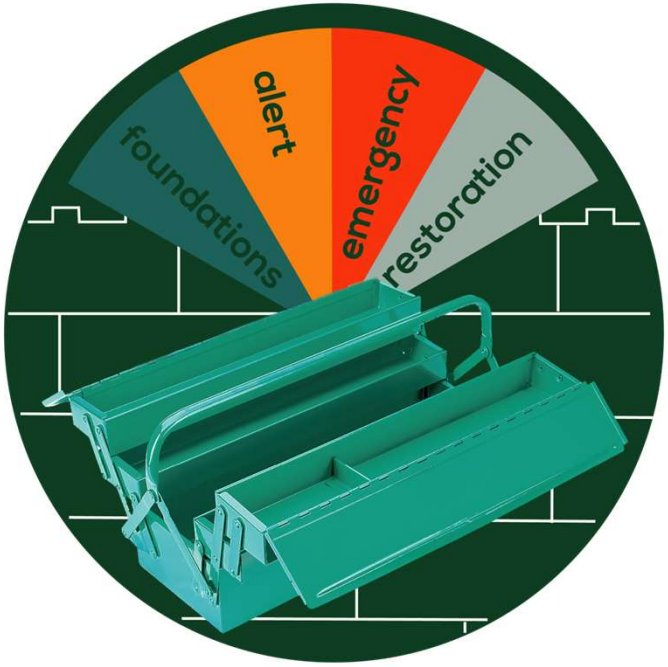
GET PREPARED

TOOL BOX

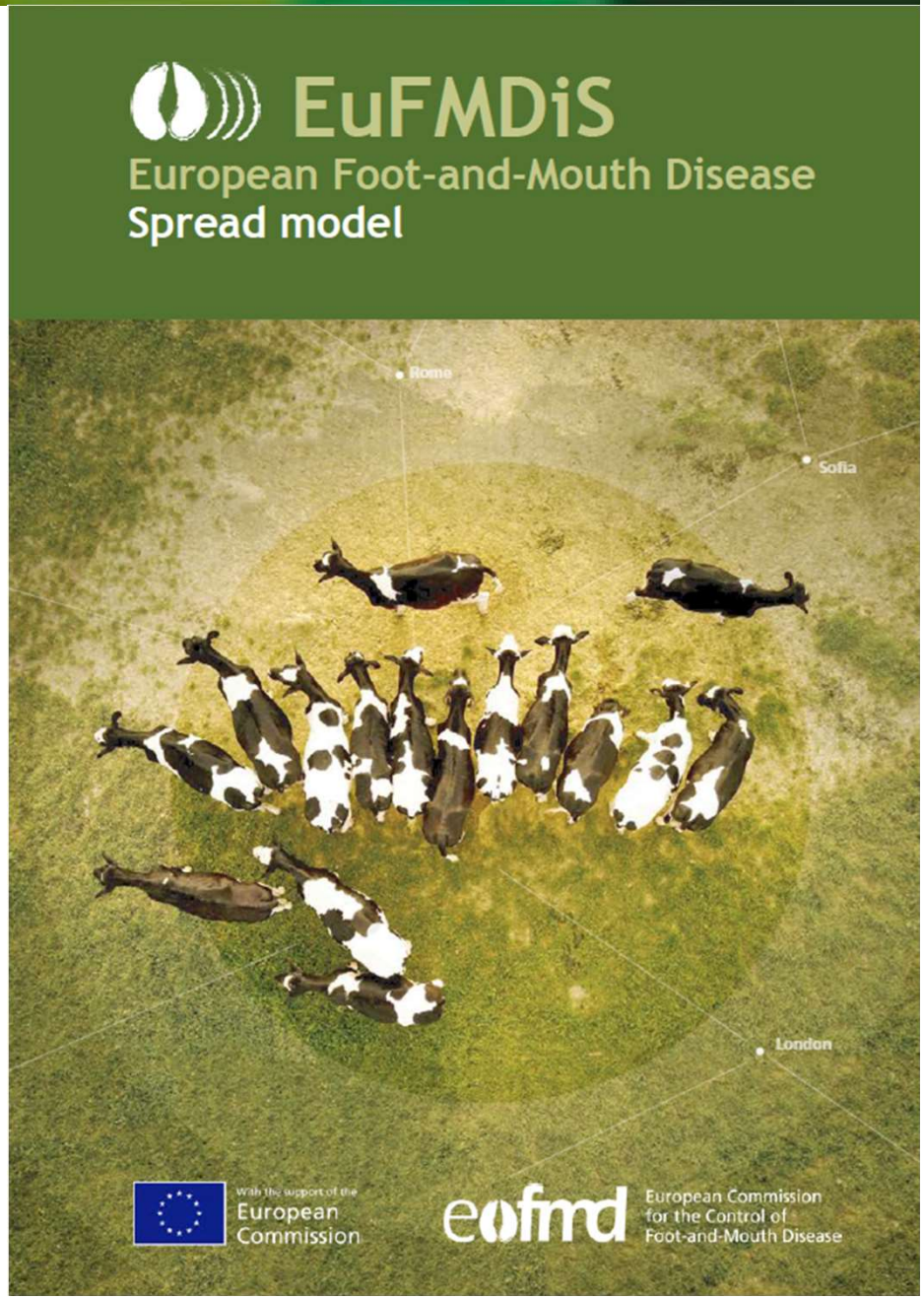
A set of existing tools and new tools for assessing gaps in preparedness and resource requirements

A collaboration to share good practices

A tool box to assist country contingency planners



Tools for better emergency preparedness and contingency plans: EuFMDiS



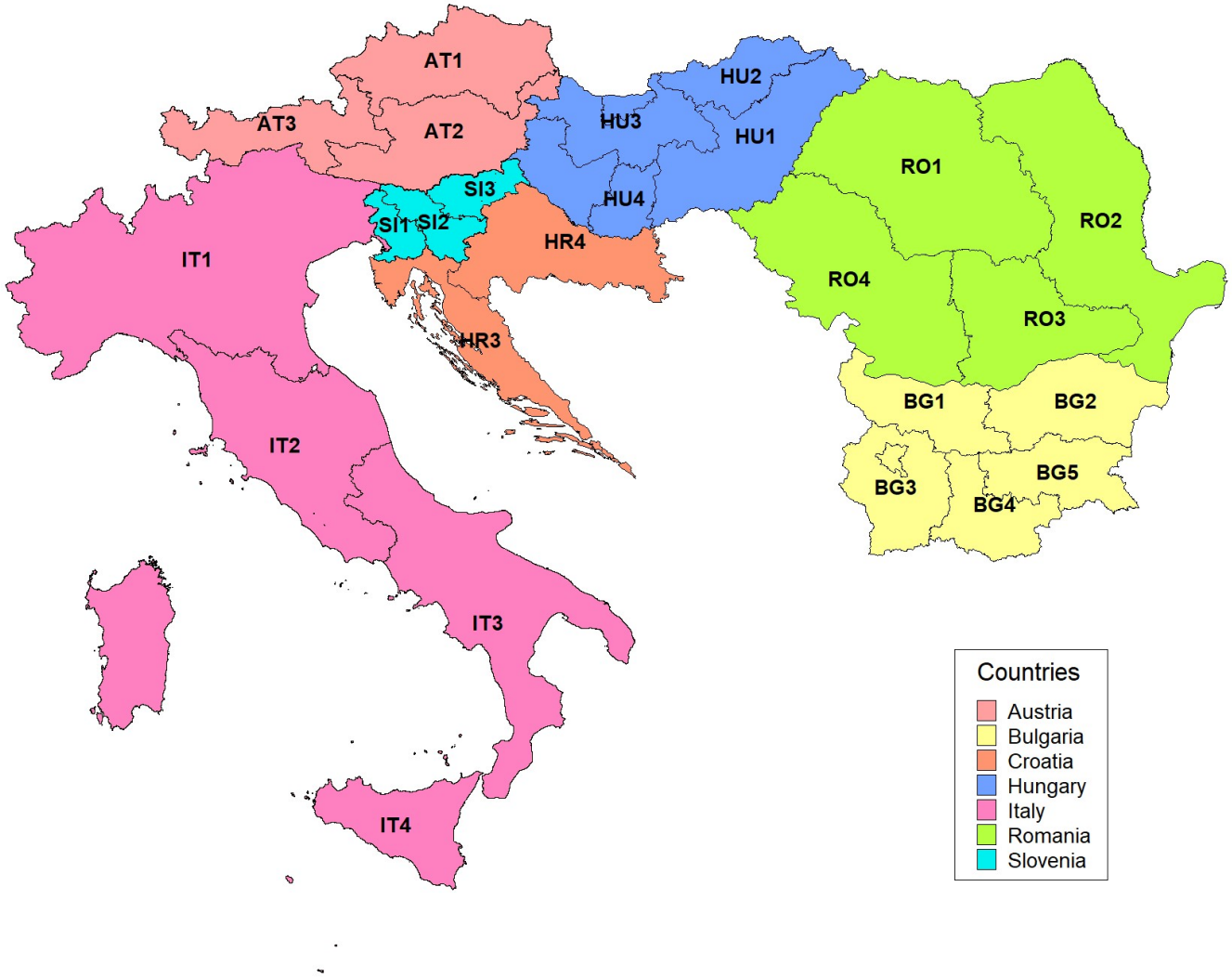
EuFMDiS project

- **EuFMD-funded project to develop a modelling tool to enable FMD outbreaks to be simulated within and between countries**

- **EuFMDiS is a robust and flexible tool to support FMD planning, training and response by European countries**

- **Pilot study with seven central European countries**
  - Italy, Austria, Croatia, Hungary, Romania, Bulgaria and Slovenia

- **Participants have defined**
  - Common herd classification (n=9 herd types)
  - Livestock production regions (n=25) that represent different livestock production characteristics and disease risk
  - Country-level disease spread and control parameter values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Countries
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Bulgaria
Croatia
Hungary
Italy
Romania
Slovenia

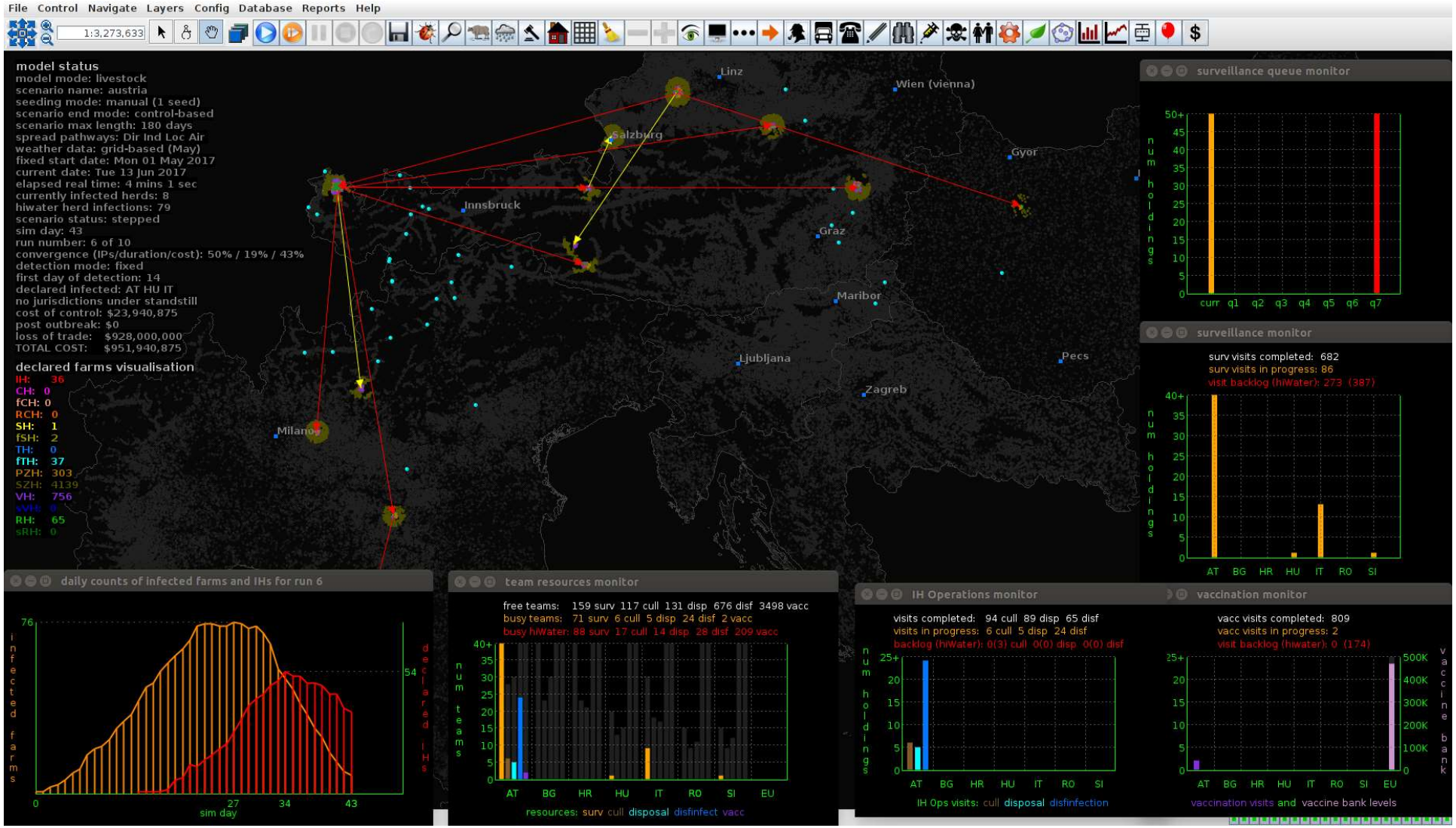
EuFMDiS overview

- **Based on the Australian FMD model (AADIS)***
  - modifications to the software and collection and incorporation of European farm population and other data to parameterize FMD transmission and control

- **Hybrid model structure:**
  - Equation-based modelling (within-herd spread)
  - Agent-based modelling (between-herd spread)
  - Animal movement networks (between regions and countries) based on data from The European Trade Control and Expert System (TRACES)

* ***Bradhurst RA, Roche SE, Kwan P and Garner MG (2015) A hybrid modelling approach to simulating foot-and-mouth disease outbreaks in Australian livestock. Front. Environ. Sci., 19 March 2015 | http://dx.doi.org/10.3389/fenvs.2015.00017***

https://www.youtube.com/watch?v=PeTTs2lOPk4



An example of how we have used EuFMDiS

EuFMD "Putting Vaccination into practice"

AIM OF THE WORKSHOP:

To enhance the knowledge and skills of participants on planning the implementation of FMD emergency vaccination in a previously-free country setting

HOW EuFMDiS WAS USED

To produce two initial outbreak scenarios (Slovenia and Italy)

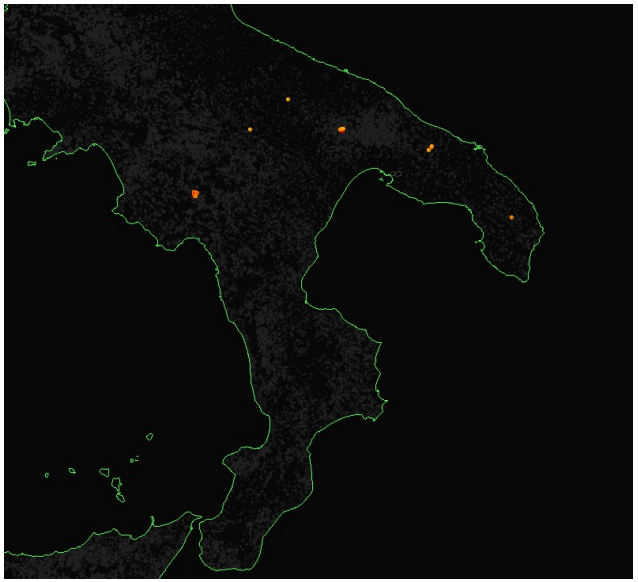
To run the vaccination strategies proposed by the participants and obtain some outputs from the model

To compare the different control strategies (vaccination and no vaccination)

Outbreak scenarios

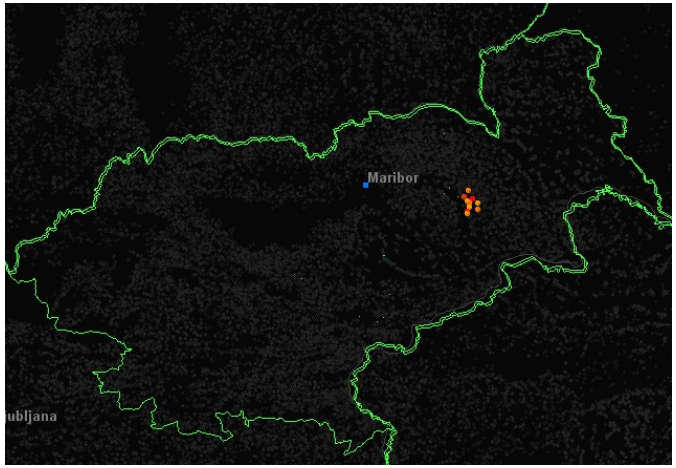
ITALY

- Long silent spread phase (24 days)
- Affected provinces in the South
- Area with Ovine/Caprine > Cattle.
- Not densely populated area; extensive production systems



SLOVENIA

- FMDv introduced from Italy
- Affected provinces in the East
- Area with Commercial pig farms> Cattle (beef/dairy)
- Densely populated area; intensive and semi-extensive production systems



Vaccination strategies: Outputs from the model

ITALY

- **Suppressive Vaccination: 3 Km ring around IP**
- **All species**

OUTPUTS

Measure	Min	Median	Max
Duration of the outbreak (days)	74	94	191
Number of infected holdings	60	146	488
Number of vaccinated holdings	325	659	1911
Number of total vaccinated animals	22 255	46 363	115 101
Number of total culled animals (stamping out only*)	5281	14 413	78 198

SLOVENIA

- **Suppressive Vaccination: 3 Km ring around IP**
- **Cattle and pigs**

OUTPUTS

Measure	Min	Median	Max
Duration of the outbreak (days)	51	69	112
Number of infected holdings	16	29	111
Number of vaccinated holdings	179	319	1146
Number of total vaccinated animals	9 100	15 883	74 119
Number of total culled animals (stamping out only*)	893	1776	8195

*This number is not considering all the vaccinated animals that would be culled once vaccinated (post-outbreak management)

Vaccination strategies: Outputs of the model

The outputs of the model (Number of vaccinated animals, number of vaccinated holdings, etc) helped participants to:

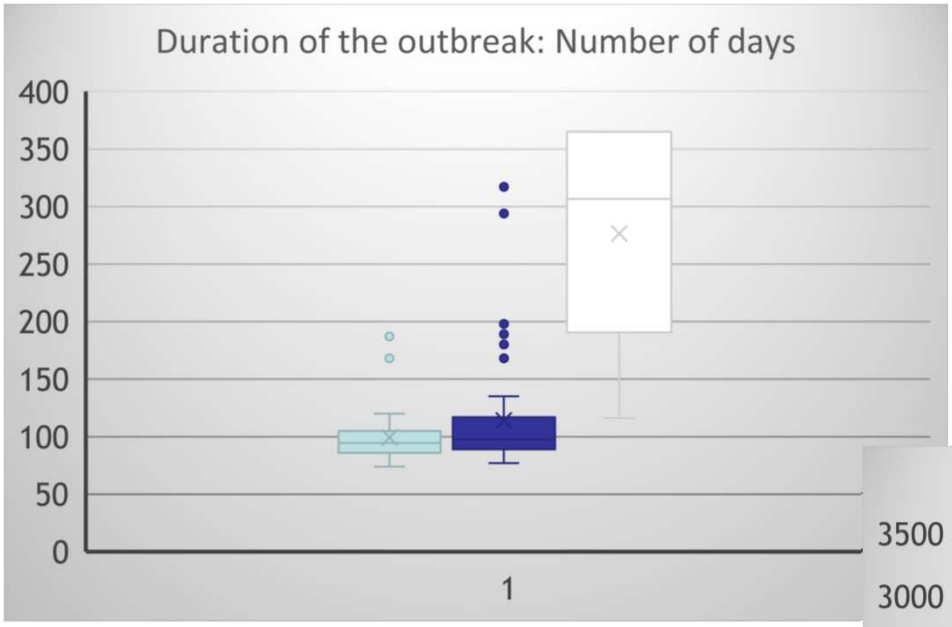
- **Plan their vaccination campaign, and**
- **draft a letter to the EC Vaccine Bank requesting a number of vaccine doses.**

Comparing different vaccination strategies

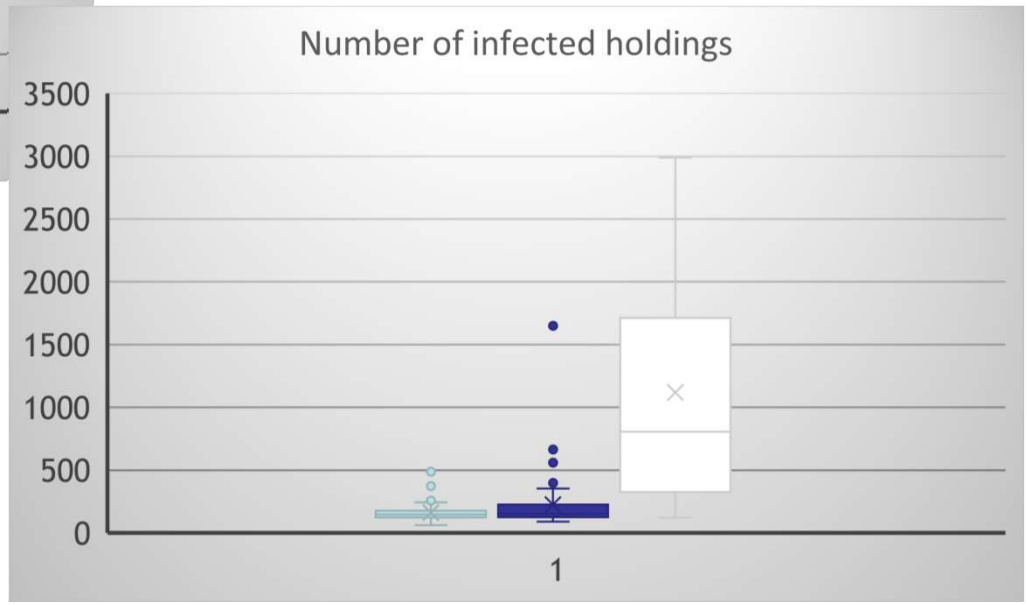
Participants were requested to design a second vaccination strategy for their scenario

- **The two strategies were compared + No vaccination strategy**

Comparing different vaccination strategies

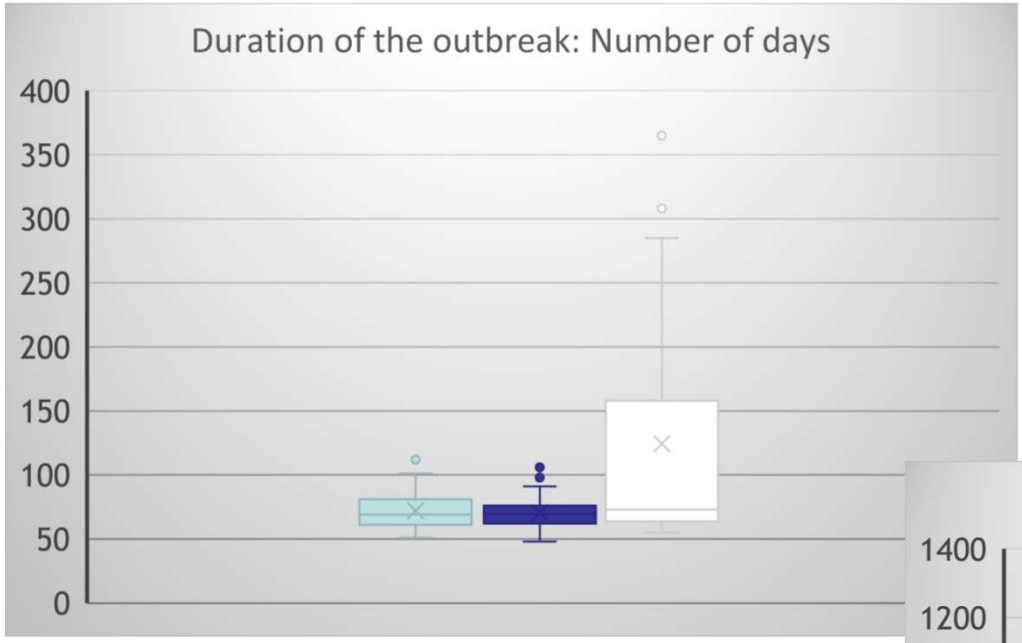


Italy

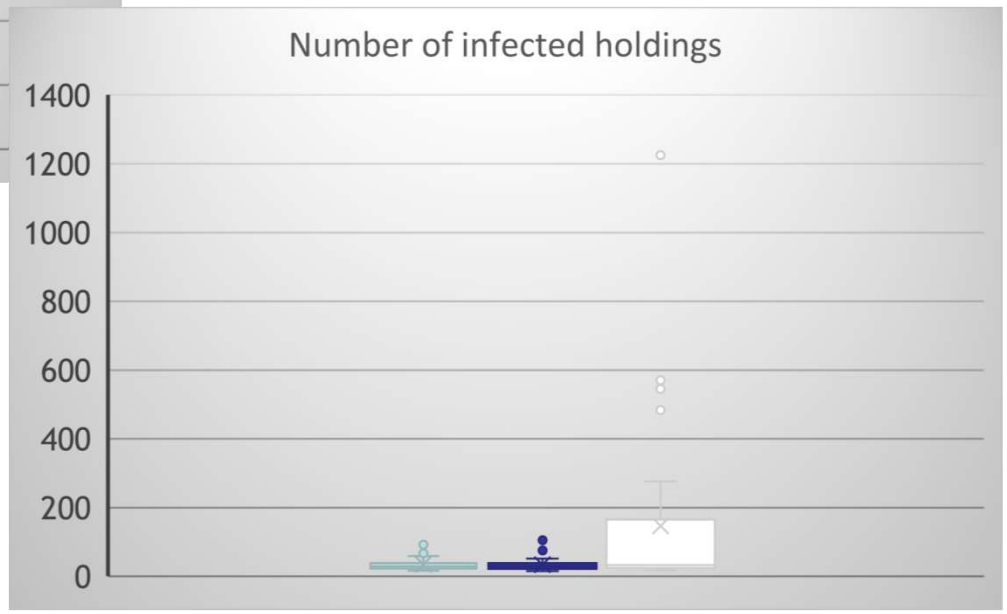


Light blue: SV 3 km all species
Dark blue: SV 3 km only cattle
White: No vaccination

Comparing different vaccination strategies



Slovenia



Light blue: SV 3km cattle and pigs
Dark blue: PV 2-5km cattle and pigs
White: No vaccination

THANKS FOR YOUR ATTENTION!