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Importance of spatial information in disease reporting: WAHIS prospective

OIE – GS training course: The use of GIS in animal diseases response

Shenzhen, China, 12-16 March 2018



WORLD ORGANISATION FOR ANIMAL HEALTH

Protecting animals, preserving our future

CONTENTS

- 1.** OIE mandate and World Animal Health Information System (WAHIS)
- 2.** Data collected by the OIE and spatial information
- 3.** WAHIS evolution

General mandate of the OIE

Improve animal health and welfare worldwide

One of the OIE's main objectives

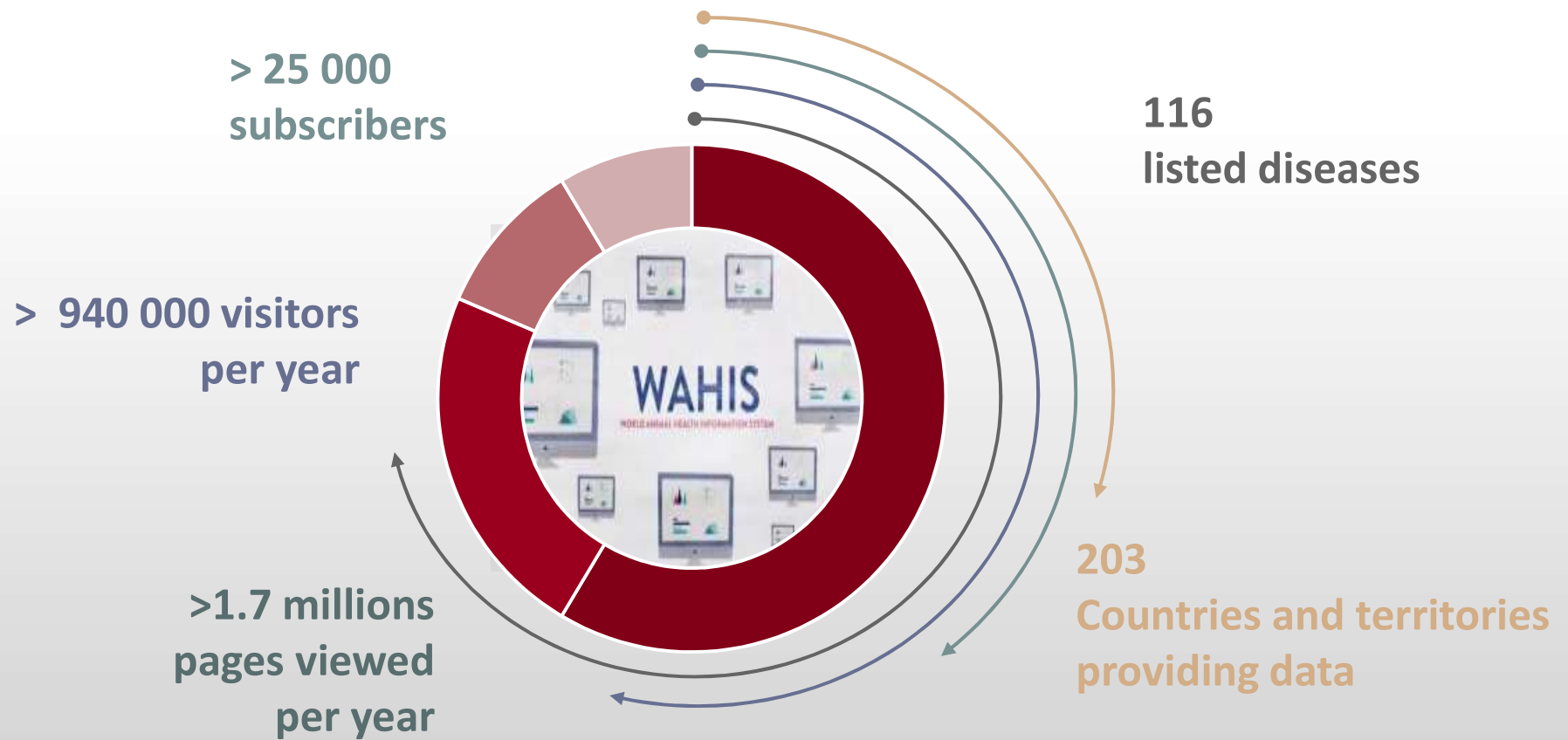


To ensure **transparency** in the global animal disease situation, including zoonosis.



WAHIS today

WAHIS is a secure online notification system whose main purpose is being a global and sensitive early warning system



WAHIS for all



A wealth of information accessible to all

- Veterinarians
- Countries
- Government agencies
- Trade partners
- Academics and researchers
- International organisations
- Journalists
- Public health

CONTENTS

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2. Data collected by the OIE and spatial information in WAHIS
3. WAHIS evolution

WAHIS



Monitoring system

Early warning system



Six-monthly reports



Annual reports

Immediate notifications

116 OIE-listed diseases
+
Emerging diseases

116 OIE-listed diseases
(twice a year)

Zoonosis/Animals population/VS
Wildlife (55 diseases)

EARLY WARNING SYSTEM

- **General objective:**

Inform the international community of relevant epidemiological events through alert messages

Through:

- immediate notifications
- follow-up reports
- final reports

EARLY WARNING SYSTEM



Important concepts:

- Accurate and timely information (24h)
- Accurate geographical location

Alert messages for exceptional
epidemiological events /emerging
diseases

<http://www.oie.int/en/animal-health-in-the-world/the-world-animal-health-information-system/registration-form/>

Home > Animal health in the World > The World Animal Health Information System

Animal health in the World

- > OIE-Listed diseases 2018
- > Overview
- > Disease Information Summaries
- > Technical disease cards
- ▼ [The World Animal Health Information System](#)
- > Disease alerts
- > Data after 2004 (WAHIS Interface)
- > Data before 2005 (Handistatus)
- > Active Search
- > Simulation Exercises
- > Info list & RSS
- > National Disease Contingency Plans
- > WAHIS-Wild Interface
- > World Animal Health
- > The WAHIS+ project
- > Official disease status
- > Self-declared disease status
- > Avian Influenza Portal
- > FMD Portal
- > BSE Portal

Registration form

In order to subscribe to the distribution list, please fill in the following form. The information provided will be used to better serve the subscribers to the list and will remain strictly private.

Fields with a "*" are compulsory

A. General information

* Civility

* Last Name

* First Name

* Profession

* Professional address

* Institution

Address

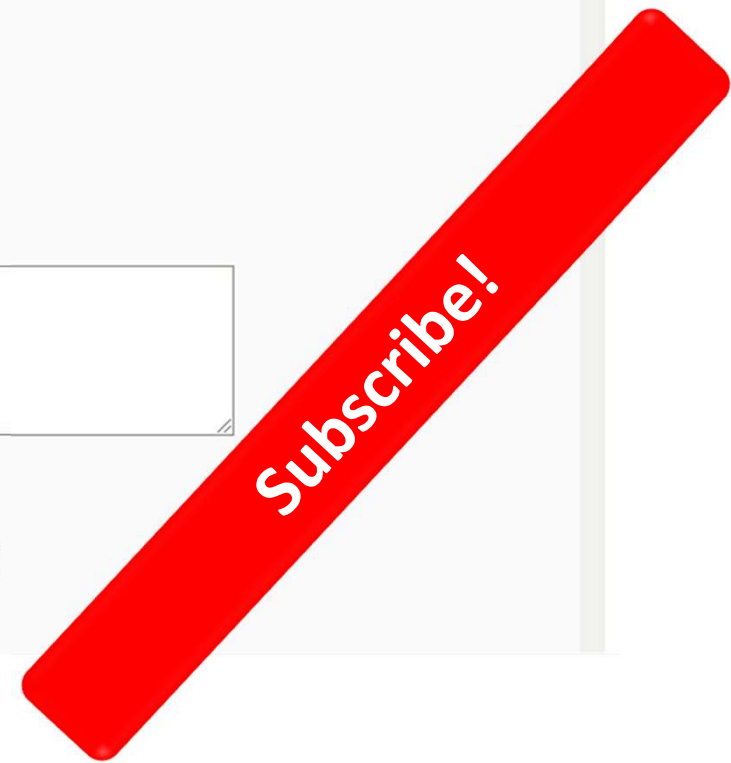
* City

Postal Code

* Country

Telephone

E-mail



Concept of event



Single outbreak or group of **epidemiologically related outbreaks** of a given disease that is the subject of a notification

An event includes all related outbreaks reported from the immediate notification through to the final report

Concept of outbreak



Occurrence of one or several **cases** in an **epidemiological unit**.

Concept of epidemiological unit



A group of **animals** with a defined epidemiological relationship that share approximately the same likelihood of exposure to a pathogen.
(...)



Information received on 08/12/2017 from Mr Vsevolod Stamati, Deputy Director General, National Food Safety Agency of the Republic of Moldova, National Food Safety Agency, CHISINAU, Moldova

Summary

Report type	Immediate notification
Date of start of the event	12/11/2017
Date of confirmation of the event	21/11/2017
Report date	08/12/2017
Date submitted to OIE	08/12/2017
Reason for notification	First occurrence of a listed disease
Manifestation of disease	Sub-clinical infection
Causal agent	African swine fever virus
Nature of diagnosis	Laboratory (advanced)
This event pertains to	a defined zone within the country
Related reports	Immediate notification (08/12/2017) Follow-up report No. 1 (18/12/2017) Follow-up report No. 2 (26/12/2017) Follow-up report No. 3 (03/01/2018) Follow-up report No. 4 (09/01/2018) Follow-up report No. 5 (15/01/2018) Follow-up report No. 6 (22/01/2018) Follow-up report No. 7 (28/01/2018) Follow-up report No. 8 (05/02/2018) Follow-up report No. 9 (19/02/2018) Follow-up report No. 10 (26/02/2018) Follow-up report No. 11 (06/03/2018)

New outbreaks (3)

Outbreak 1	Lucesti, CAHUL					
Date of start of the outbreak	12/11/2017					
Outbreak status	Continuing (or date resolved not provided)					
Epidemiological unit	Forest					
Affected animals	Species	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered
	Wild boar: <i>Sus scrofa</i> (Suidae)		1	0	1	0
Affected population	Samples for ASF testing were collected from a hunted wild boar and sent to the Republican Center for Veterinary Diagnosis (National laboratory) within the framework of the national ASF surveillance programme.					

Outbreak 2	Zloti, CIMISLIA					
Date of start of the outbreak	12/11/2017					
Outbreak status	Continuing (or date resolved not provided)					
Epidemiological unit	Forest					
Affected animals	Species	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered
	Wild boar: <i>Sus scrofa</i> (Suidae)		1	0	1	0
Affected population	Samples for ASF testing were collected from a hunted wild boar and sent to the Republican Center for Veterinary Diagnosis (National laboratory) within the framework of the national ASF surveillance programme.					

Outbreak 3	Vatici, ORHEI					
Date of start of the outbreak	12/11/2017					

Source of the outbreak(s) or origin of infection	Unknown or inconclusive
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Control measures

Measures applied	<ul style="list-style-type: none"> Movement control inside the country Surveillance outside containment and/or protection zone Surveillance within containment and/or protection zone Screening Traceability Quarantine Official destruction of animal products Official disposal of carcasses, by-products and waste Control of wildlife reservoirs Zoning Disinfection Disinfestation Control of vectors Process to inactivate the pathogenic agent in products or by-products Vector surveillance Vaccination permitted (if a vaccine exists) No treatment of affected animals
Measures to be applied	No other measures

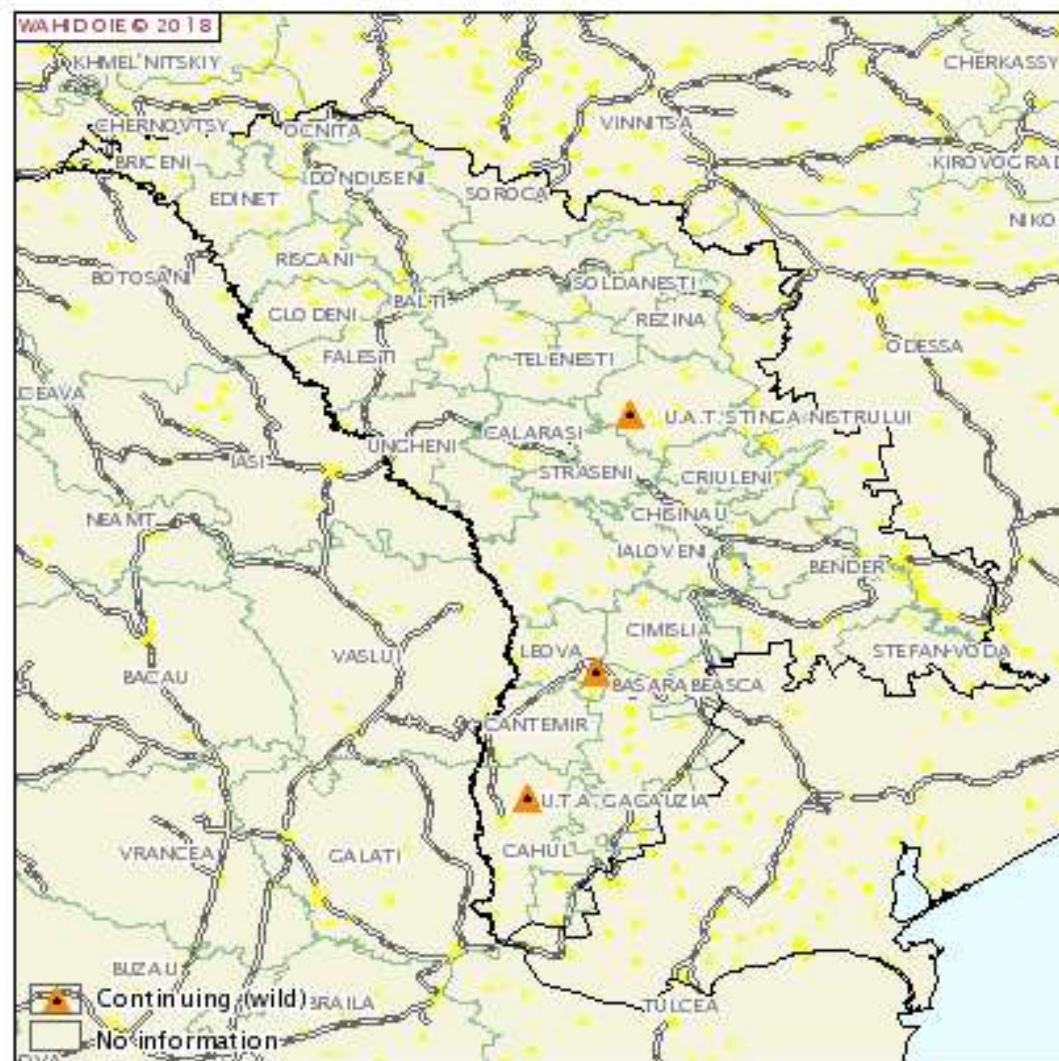
Diagnostic test results

Laboratory name and type	Species	Test	Test date	Result
Republican Center for Veterinary Diagnosis (National laboratory)	Wild boar	antigen (Ag) detection ELISA	21/11/2017	Negative
Republican Center for Veterinary Diagnosis (National laboratory)	Wild boar	real-time PCR	21/11/2017	Positive
European Union Reference Laboratory for African swine fever, INIA-CISA (OIE Reference Laboratory)	Wild boar	immunoperoxidase procedure for differentiation of pestiviruses by monoclonal antibodies	05/12/2017	Positive
European Union Reference Laboratory for African swine fever, INIA-CISA (OIE Reference Laboratory)	Wild boar	real-time PCR	05/12/2017	Positive

Future Reporting

The event is continuing. Weekly follow-up reports will be submitted.

Map of outbreak locations

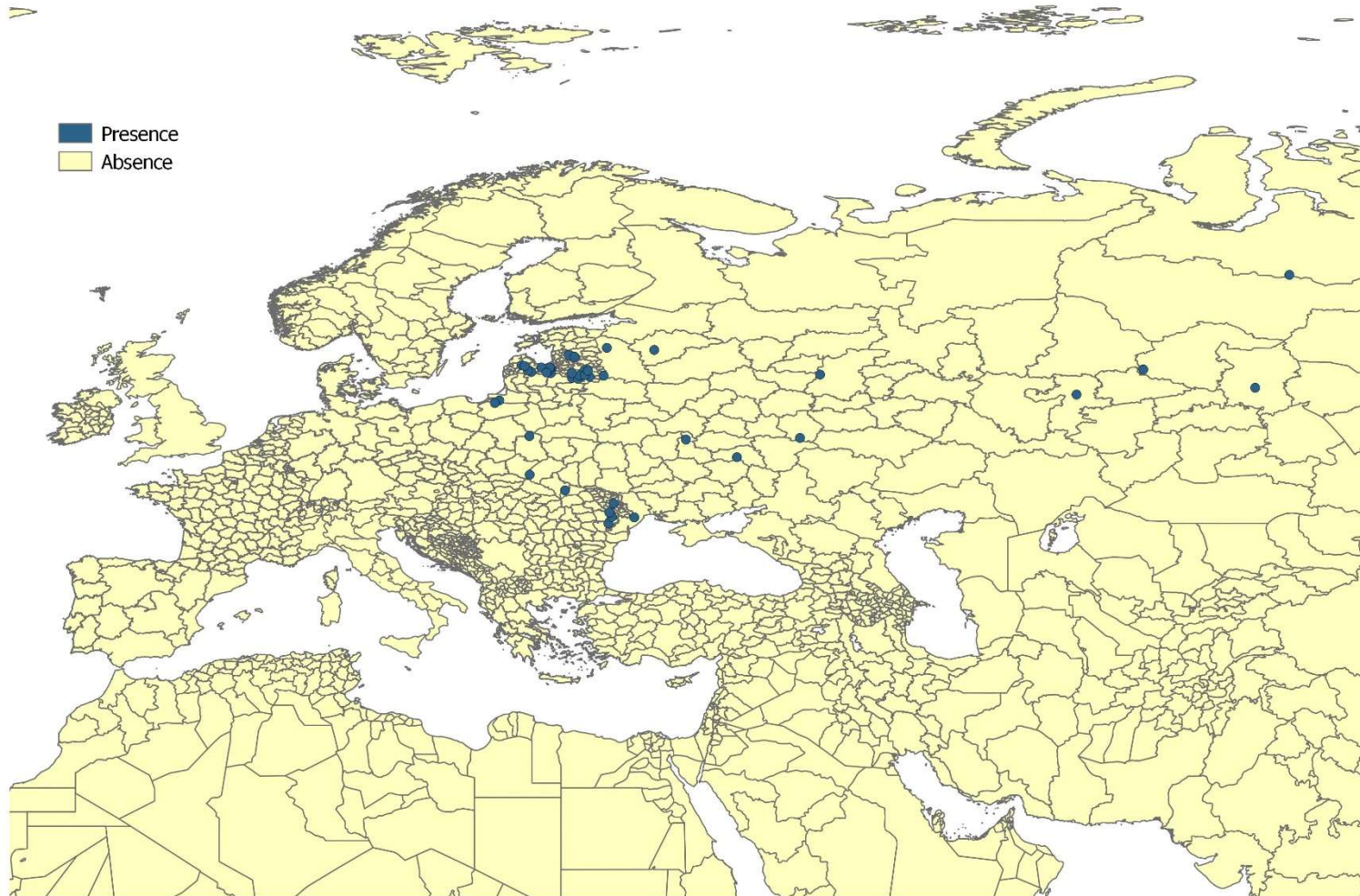


SIX-MONTHLY REPORT

General objective:

Monitor absence or presence, and evolution of all OIE-listed diseases, infections or infestations over time

Different level of accuracy in early warning / monitoring system



Annual Report



General structure

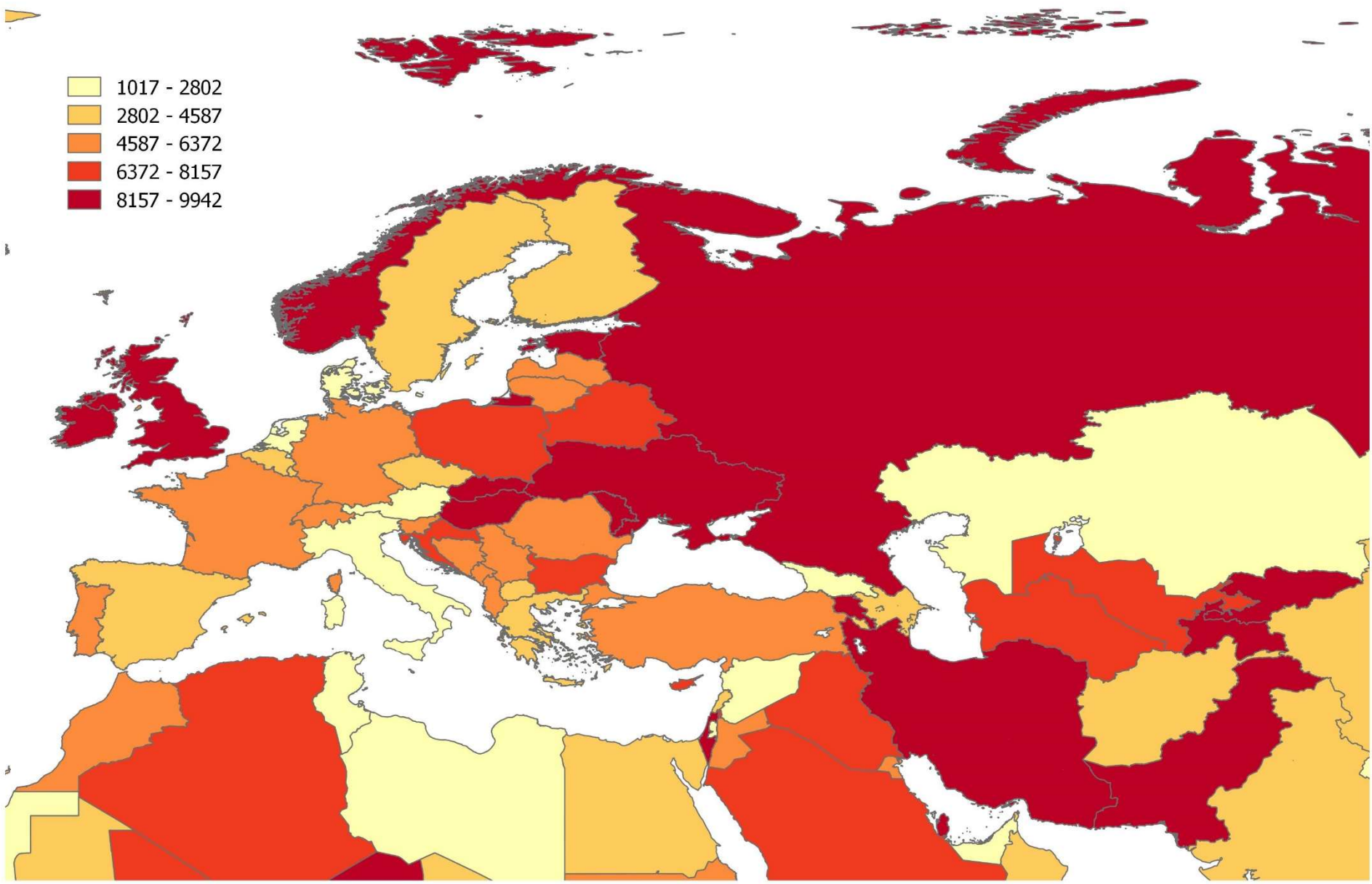
- Zoonotic diseases in humans
- Animal population
- Veterinarians and veterinary para-professionals
- National Reference laboratories
- Vaccine production

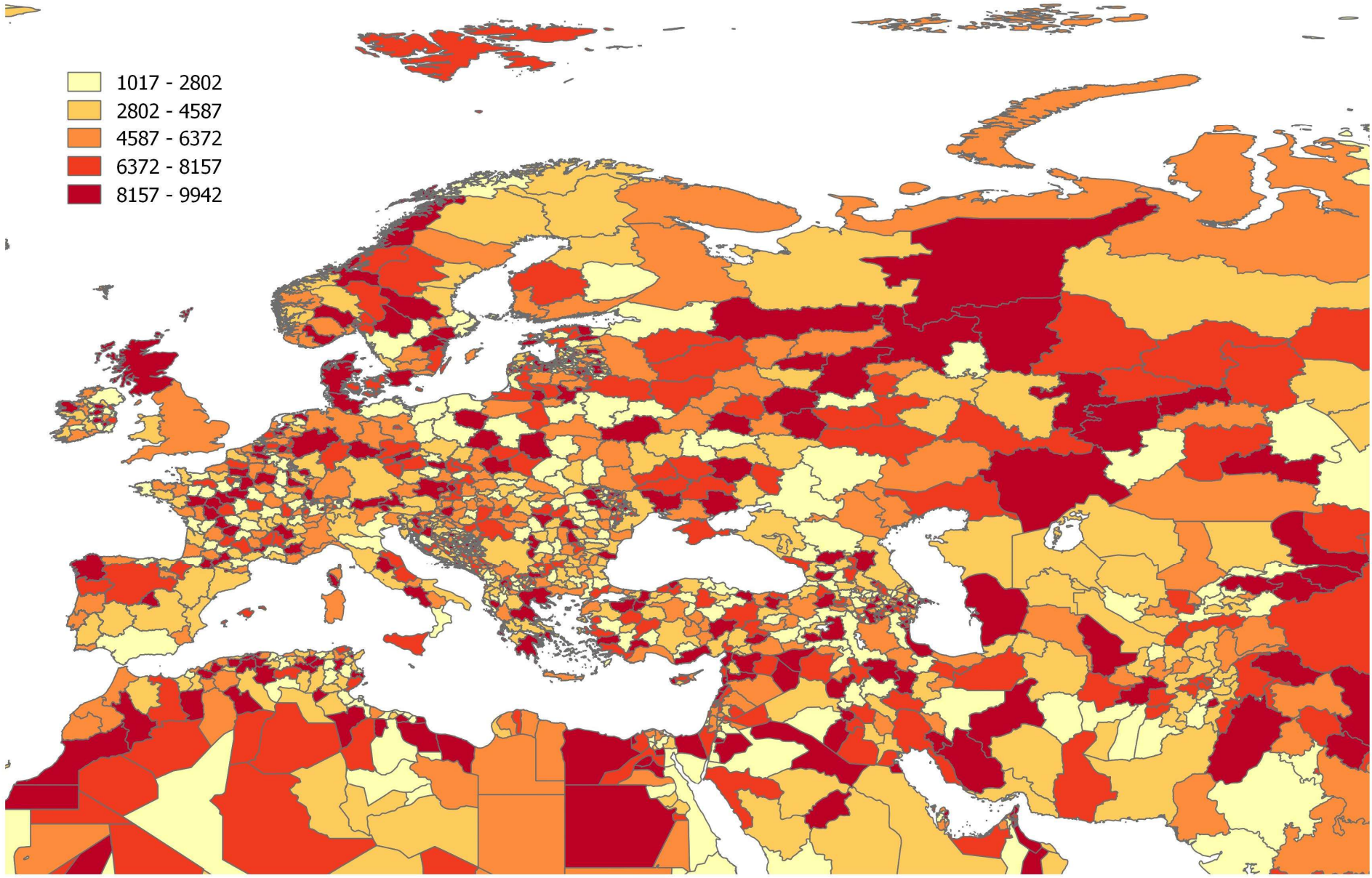
Annual Report



General objective:

Share additional information related to the capacities of Veterinary Services, animal population and impact of zoonotic diseases in humans





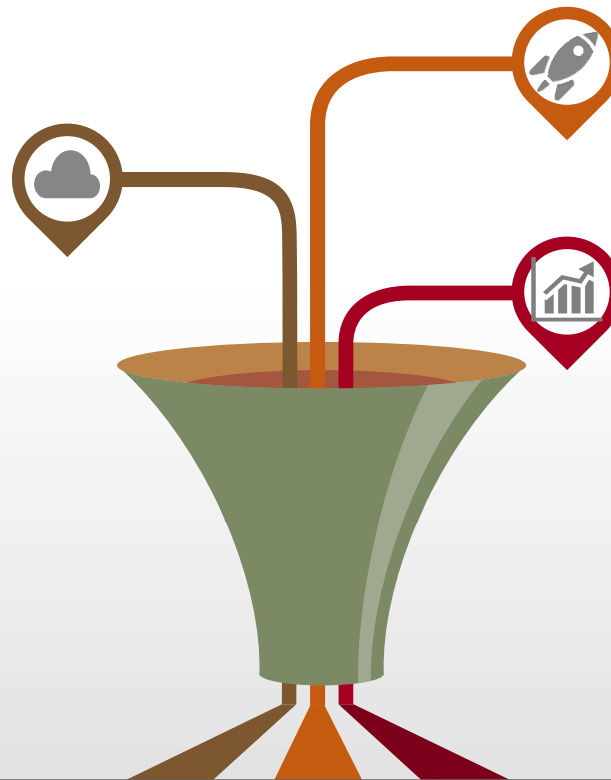
- 1017 - 2802
- 2802 - 4587
- 4587 - 6372
- 6372 - 8157
- 8157 - 9942

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It's now time for WAHIS+ !

Intensified animal production, food insecurity and climate change



Higher level of expectations

Increased movement of people, animals and commodities

Require to evolve and adapt WAHIS to new and emerging necessities

Broad participation in the identification of end users needs

Internal users

Delegates & Focal
Points.
March 2016

On-line survey

206 respondents
from 167
countries



01

Recommendations

Governance
Methodology,
Technical issues,
Budgeting
Skills -Human resources



02

WAHIS Think Tank
April 2016

External users

April 2017

On-line survey

739 stakeholders
from 143 countries



03

Consultative meetings

Specialist services
providers



04

**WAHIS+ Project
team 2017**

The temporal roll-out strategy for 4 stages



Foundation

Rebuilding modernised Core modules

Dec. 2019

Evolutive

Interoperability, integration with other systems and data sources

May 2020

Advanced

Integration of historical data after 2005 (WAHIS) sources

March 2021

Optimisation

Integration of historical data before 2005 (Handistatus) sources

2027 and beyond

Next steps

**Progressive launch
May - Dec 2019**

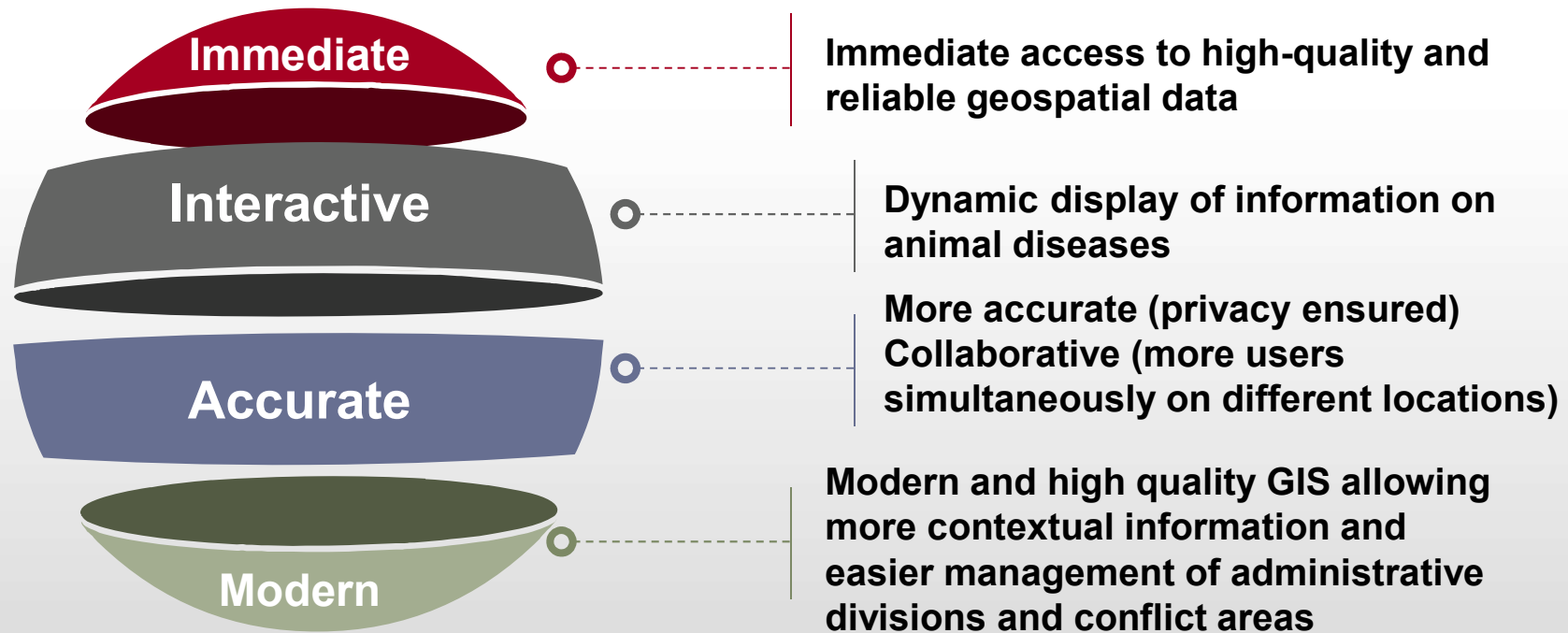


**Interconnectivity
with partners**

**Development of
WAHIS+ Core modules**

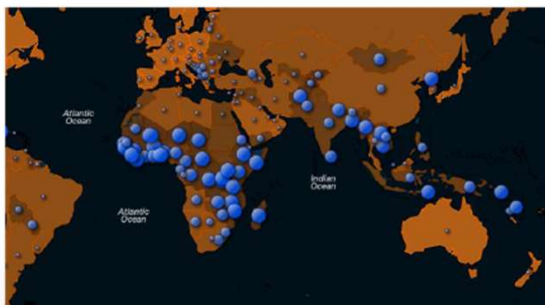
**Training activities for
WAHIS + users**

WAHIS+ vision

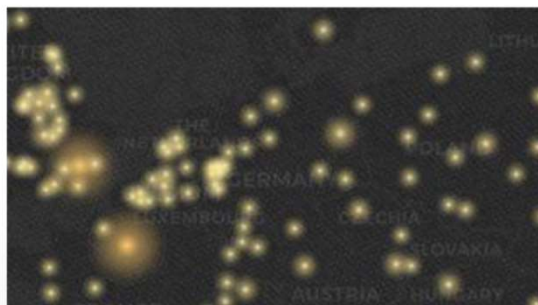


Example of maps

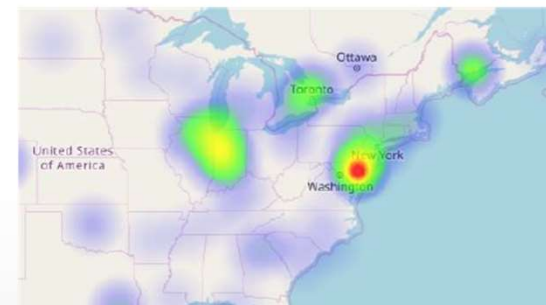
Events distribution



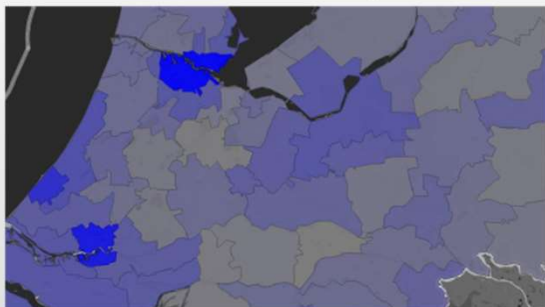
Events heat map (global view)



Events heat map (local view)



Events distribution by area



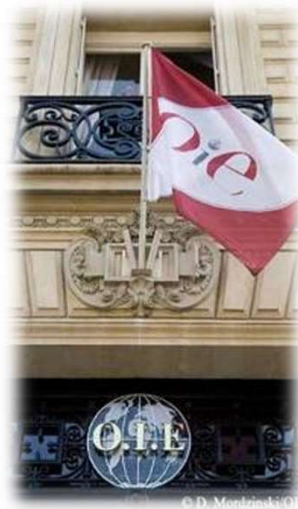
Events temporal distribution (global view)



Events temporal distribution (local view)



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