



New diagnostic technologies: Challenges and opportunities for the World Organisation for Animal Health (OIE)

RAPIDA –FIELD WORKSHOP Madrid, 12 May 2015

Elisabeth Erlacher –Vindel

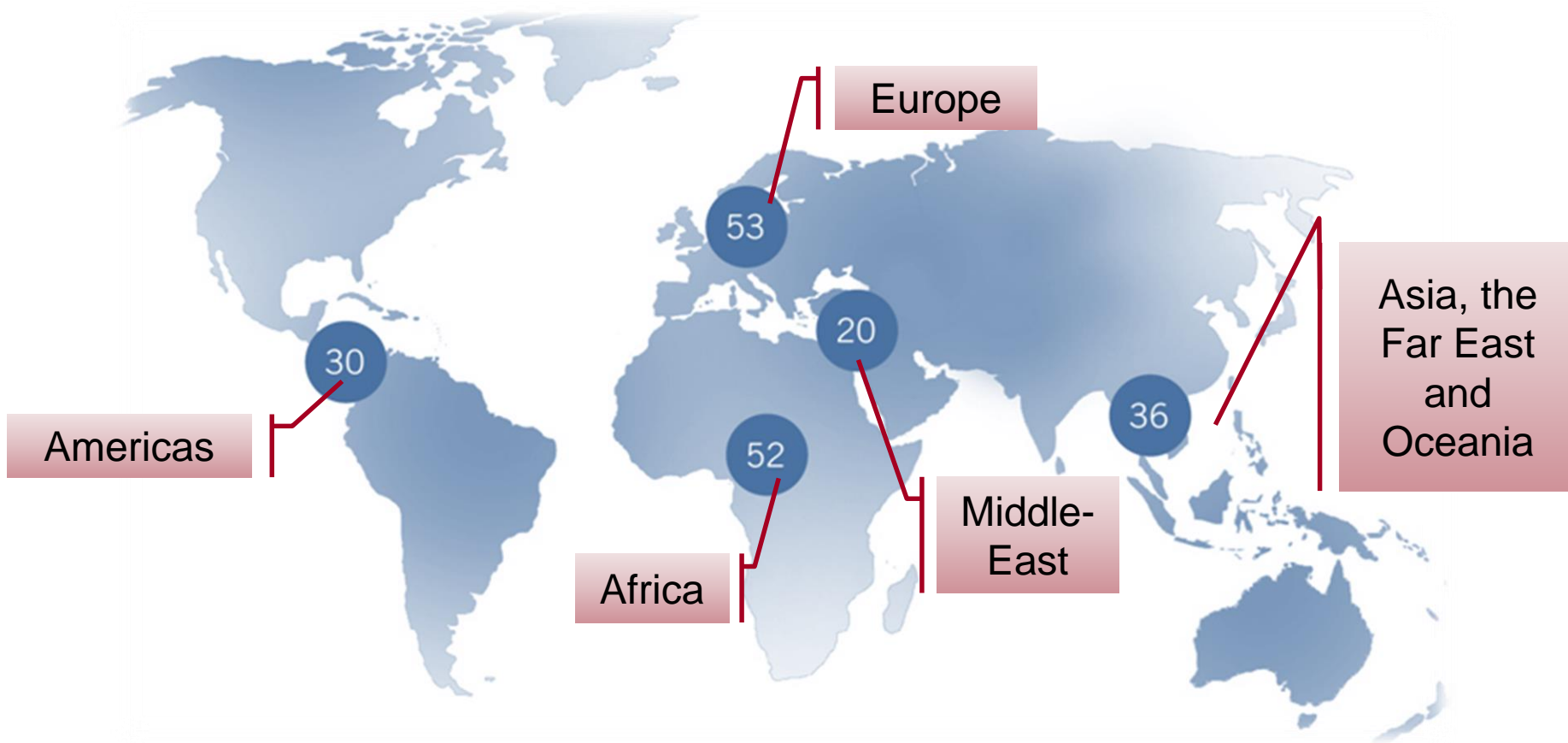
Deputy Head of the Scientific and Technical Department



WORLD ORGANISATION FOR ANIMAL HEALTH

Protecting animals, preserving our future

180 OIE Member Countries 2014

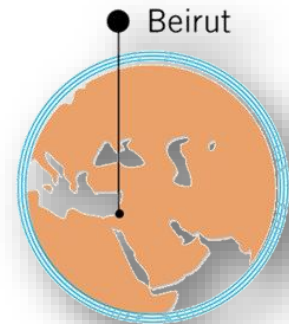
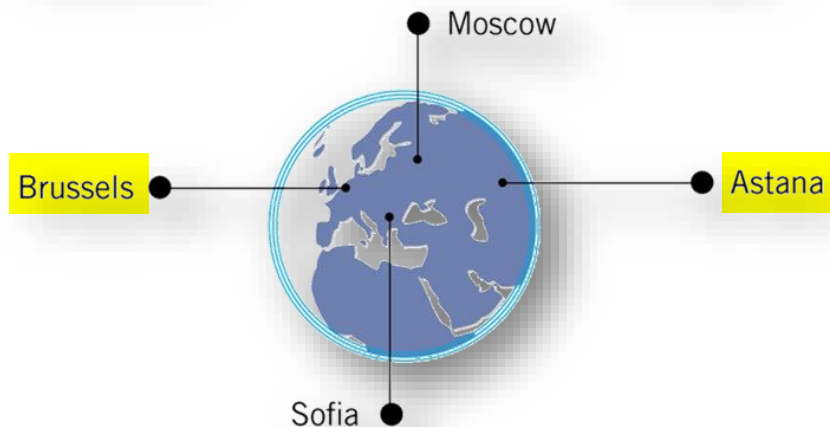
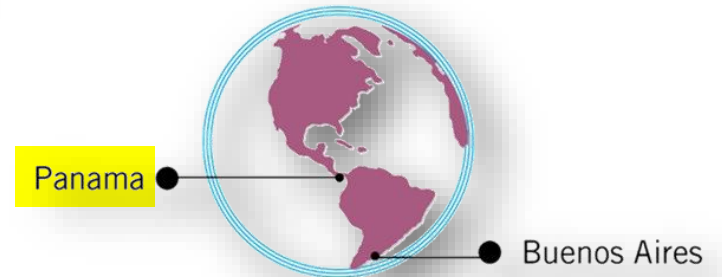
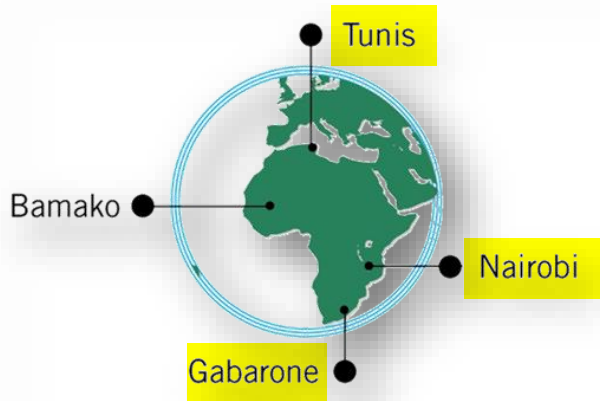


Presentation of the OIE

OIE Headquarters
in Paris (France)

5 Regional
Representations

8 Sub-Regional
Representations and Sub-Regional
Offices



Presentation of the OIE

An intergovernmental organisation founded in 1924
preceding the United Nations



5th Strategic Plan 2011-2015

Three pillars

Transparency
of the world
animal disease
situation
(including
zoonoses)

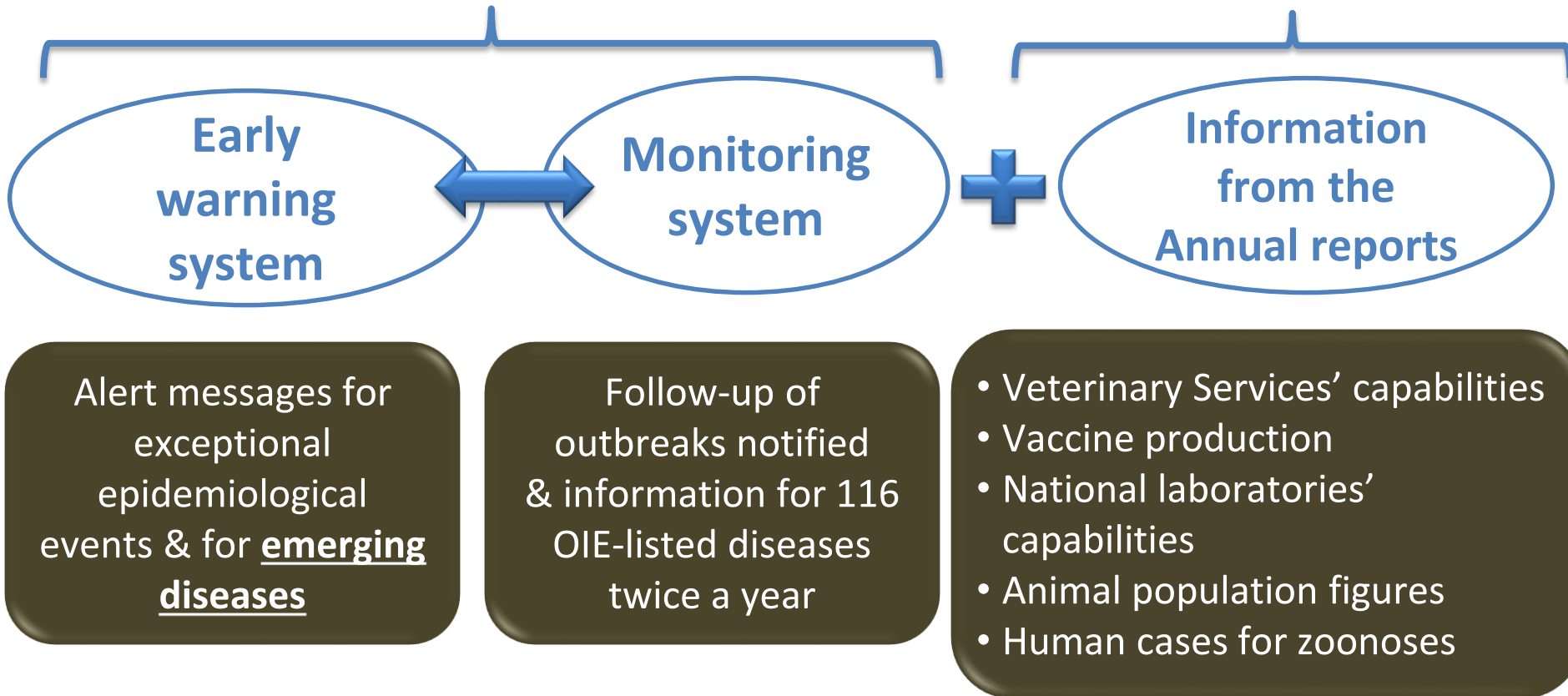
Collection and
dissemination
of veterinary
**scientific
information**
(animal disease
prevention and
control methods)

**Sanitary
safety** of
international
trade of
animals and
animal
products
(under the
mandate given by
the WTO)

WAHIS*



180 countries on line



***World Animal Health Information System**

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

Scientific expertise

Strengthen the OIE's network

Reference Centres
(**296** in 2014)

Laboratory Twinning

Specific laboratory
support projects



Support veterinary scientific communities in developing countries
by facilitating their involvement
and their ability to create networks



Disease control
worldwide



Continuously update the
international standards of
the OIE and the Codex
Alimentarius

Reference Laboratories

Expert Centres for animal diseases

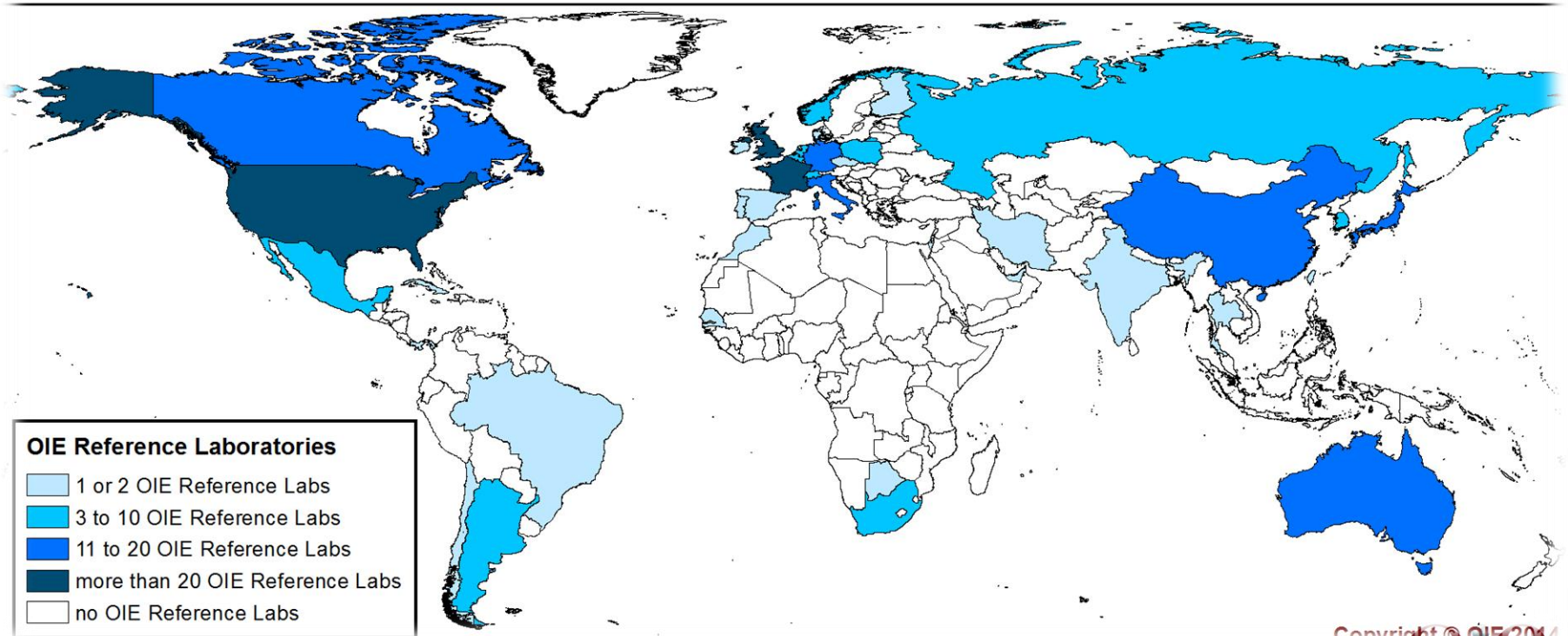
- Under the responsibility of an OIE expert
 - Develop, perform and validate **diagnostic tests**
 - Store and distribute **reference reagents**
 - Conduct laboratory **proficiency tests** of samples from other Members' laboratories
 - Coordinate **technical** and **scientific** studies
 - Organise and implement technical and scientific **training** for Members
- List of Reference Laboratories validated annually by the World Assembly of Delegates

Reference Laboratories

Expert Centres for animal diseases

247 Reference Laboratories in 38 countries
117 diseases

World Distribution of OIE Reference Laboratories



Collaborating Centres

Centres of excellence on horizontal topics

- Contribute to the **development of procedures** to update and promote OIE international standards and guidelines
- Coordinate **scientific studies**
- Provide technical **training**
- Organise and host **scientific meetings** in collaboration with the OIE

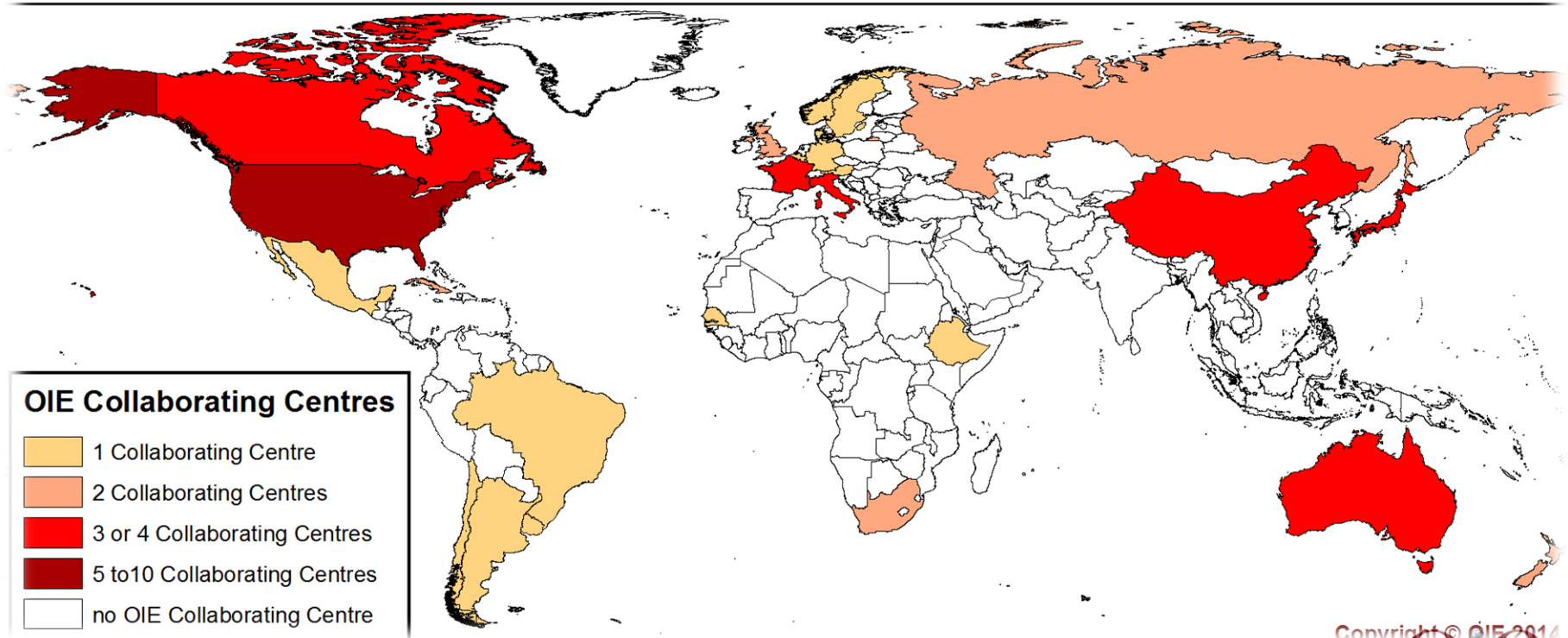
Collaborating Centres

Centres of excellence on horizontal topics

49 Collaborating Centres in 26 countries

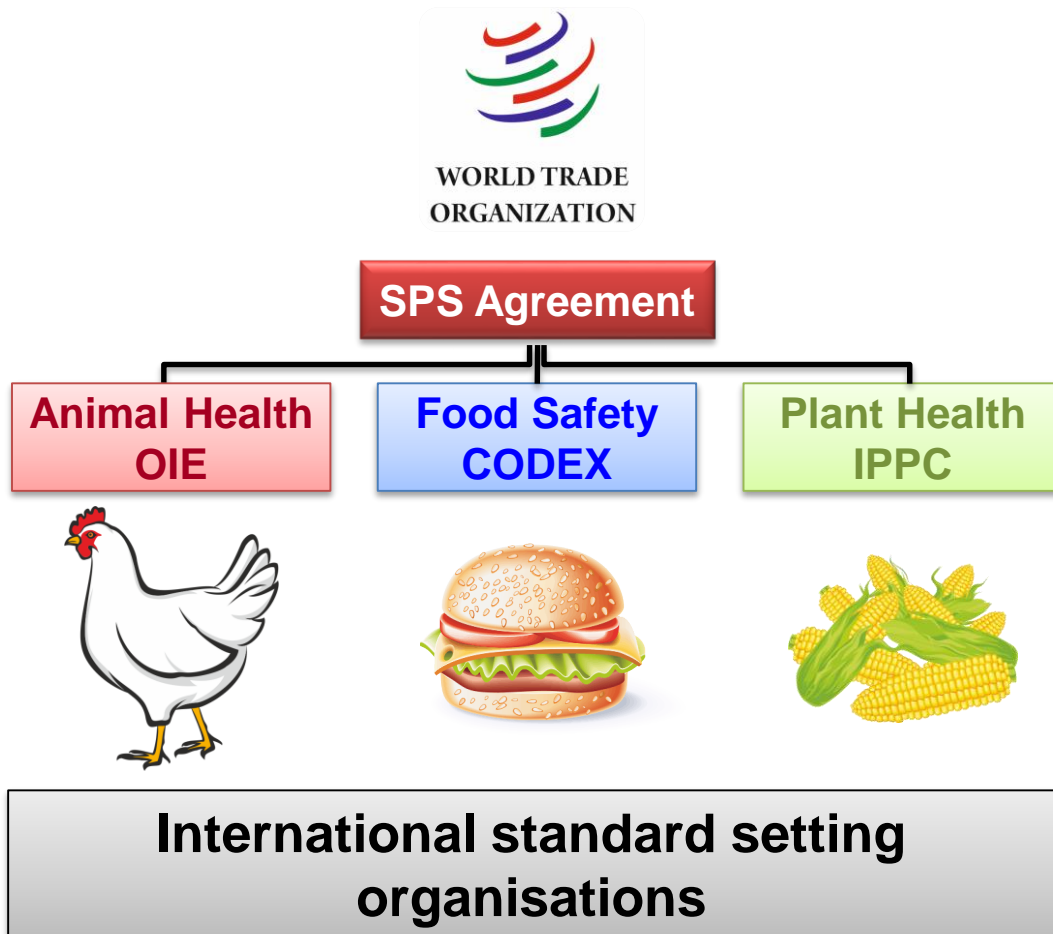
46 topics

World Distribution of OIE Collaborating Centres



Presentation of the OIE

Standard Setting



The OIE develops sanitary standards that safeguard world trade in animals and animal products

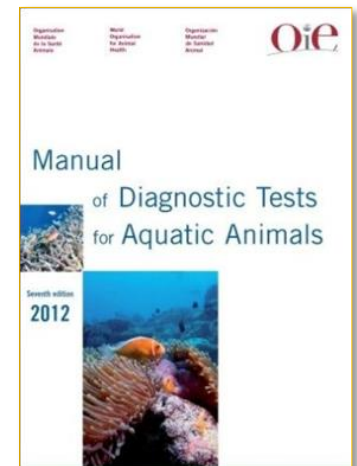
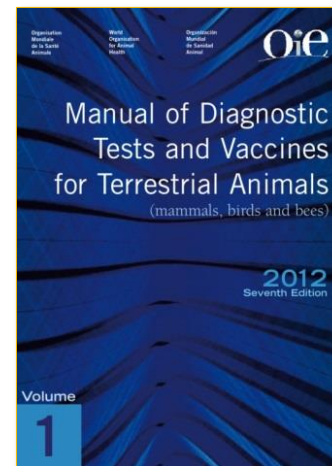
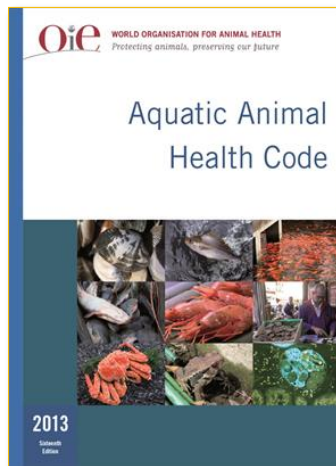
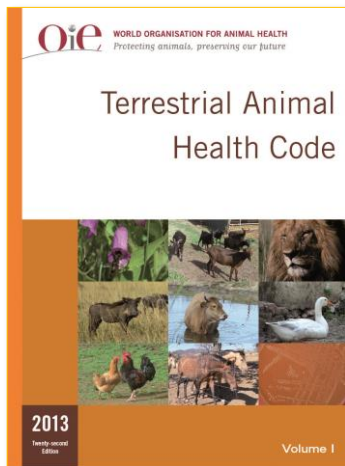
Standard setting

CODES

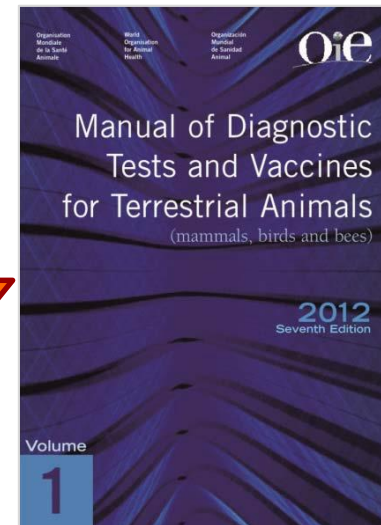
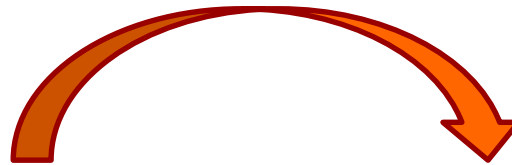
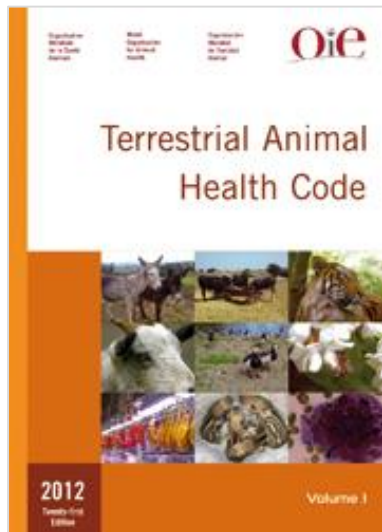
- Terrestrial
- Aquatic

MANUALS

- Terrestrial
- Aquatic



OIE international standards



Where the *Terrestrial Code* requires that surveillance is conducted or diagnostic tests are carried out for international movement, the *Terrestrial Manual* provides recommended laboratory methods and if relevant sets vaccine standards.

OIE Terrestrial Manual

Terrestrial manual – structure → Divided into 4 parts, presented in 2 volumes:

Volume I

Part 1

- 10 introductory chapters

Volume II

Part 2

- 113 Chapters on specific diseases

Part 3

- General Guidelines

Part 4

- OIE Reference Experts and disease index



OIE Terrestrial Manual

Content Part 1

Volume 1



Horizontal chapters include General **Standards** on

- > Biosafety and biosecurity in the veterinary diagnostic microbiology laboratory and animal facilities
- > Standard for managing biorisk in the veterinary laboratory and animal facilities
- > Quality management in veterinary testing laboratories
- > Principles and methods of validation of diagnostic assays for infectious diseases → Chapter 1.1.5.

OIE Terrestrial Manual

Content Part 3

Volume 2



3.6. OIE Validation Guidelines *(approved in May 2014)*

3.6.1 Development and optimisation of antibody detection assays

3.6.2 Development and optimisation of antigen detection assays

3.6.3 Development and optimisation of nucleic acid detection assays

3.6.4 Measurement uncertainty

3.6.5 Statistical approaches to validation

3.6.6 Selection and use of reference samples and panels

3.6.7 Principles and methods for the validation of diagnostic tests for infectious diseases applicable to wildlife

3.6.8 *Comparability of assays after minor changes in a validated test method (under study)*

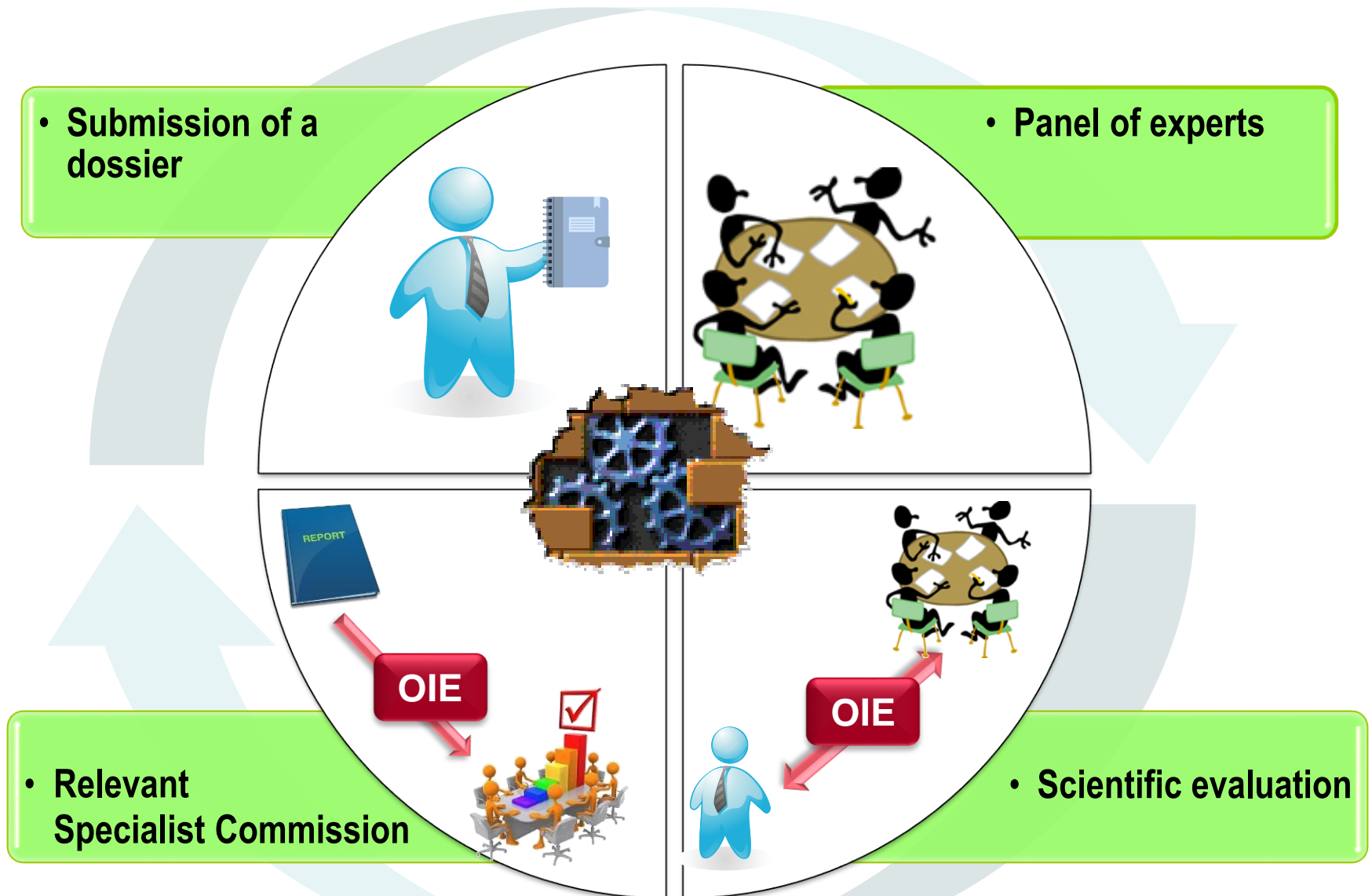
OIE Register of diagnostic kits

- Developed to meet the needs of OIE Member Countries, the aim of this procedure is:
 1. to certify a kit as validated fit for specific purpose(s).
 2. to produce an OIE register of recognised diagnostic kits (available on the OIE website).
- All diagnostic kits for animal diseases, including zoonosis, can be validated and certified by the OIE through the procedure.



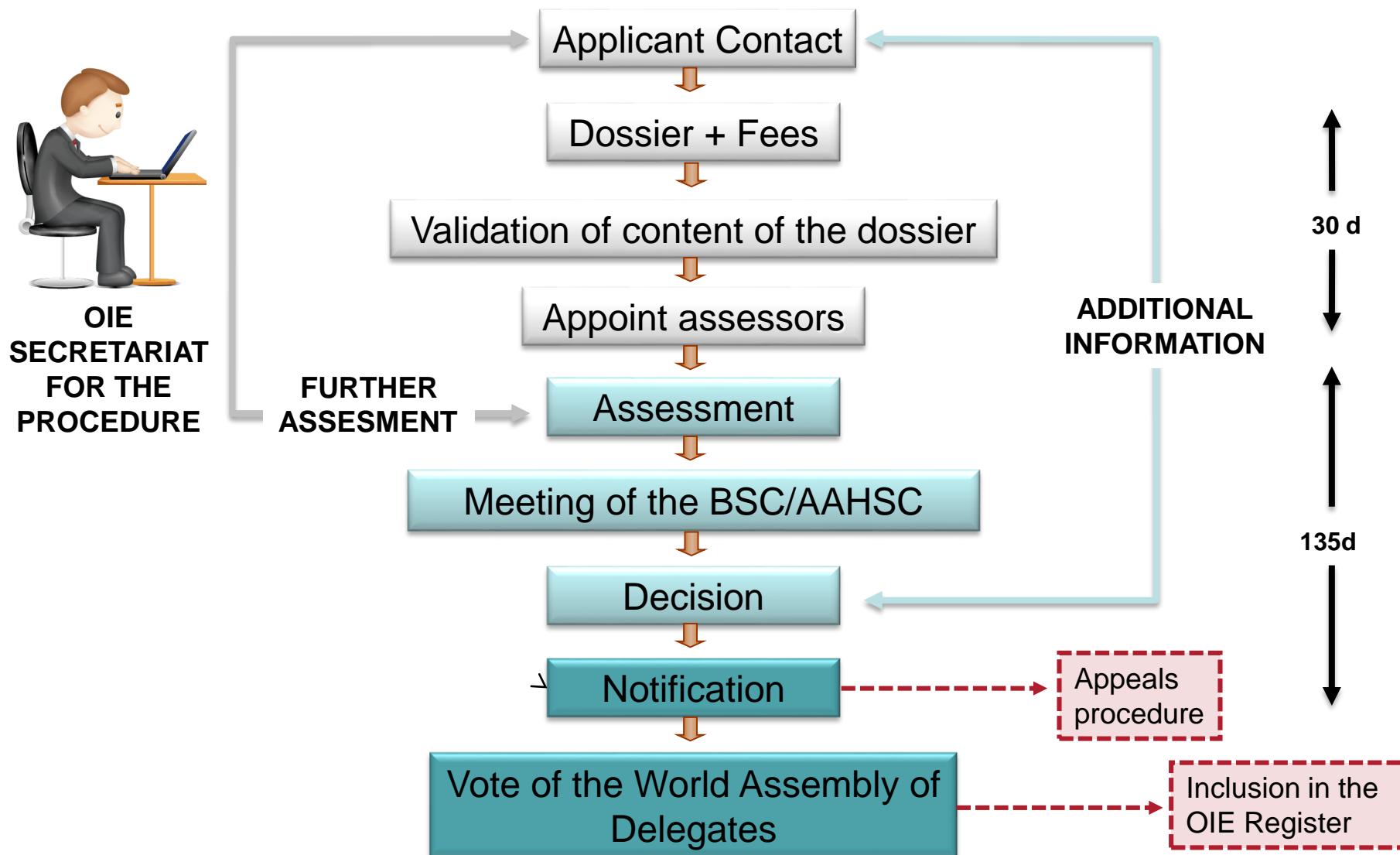
- <http://www.oie.int/en/our-scientific-expertise/registration-of-diagnostic-kits/background-information/>

Procedure in brief



OIE Procedure for Registration of Diagnostic Kits

Outline of all the process



Challenges and opportunities for the OIE

The challenge to the OIE:

- Rapid evolution of technologies used in the prediction, detection, control and eradication of animal diseases
- Need to integrate new technologies in disease detection and control in a timely manner
- Adapt, as necessary, OIE standards – disease-specific as well as more general
- Ensure availability of modern technologies to all OIE Member Countries

Challenges and opportunities for the OIE

General Session of the Assembly of Delegates of the OIE, May, 2013

Technical Item 1:

Modern Approaches and the Use of New Technologies for the Control and Eradication of Aquatic and Terrestrial Animal Diseases

→ RESOLUTION No. 35

- Modern approaches and the use of new technologies to enhance animal welfare and improve food security

THE ASSEMBLY RECOMMENDS THAT

- *The OIE evaluates opportunities for a more rapid validation and incorporation of new technologies into OIE animal health standards and guidelines in parallel with conventional technologies.*
- *The OIE continues to promote validation of diagnostic tests, including new diagnostic technologies, through its procedure for registration of diagnostic kits certified fit for a specific purpose*

Challenges and opportunities for the OIE



2013: Members survey and resolution: *Modern approaches and the use of new technologies...*



2013: Brainstorming on High-throughput sequencing, bioinformatics and computational genomics (HTS-BCG)



'White paper' published in the *OIE Scientific and Technical Review* 2013, Vol. 32 (3)

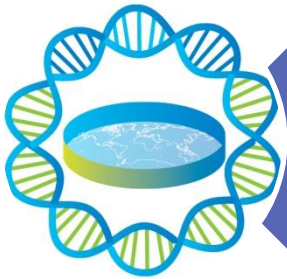


2014: Questionnaire to OIE Reference Centres on current use of HTS-BCG

Challenges and opportunities for the OIE



2014: OIE Pilot project on HTS-BCG developed



3rd Global Conference of the OIE Reference Centres, Oct. 2014, Incheon, Korea



2nd *ad hoc* Group meeting in 11/2014:
draft standards on HTS-BCG developed, and pilot project
progressed – see
http://www.oie.int/fileadmin/Home/eng/International_Standard_Setting/docs/pdf/BSC/A_BSC_Jan2015.pdf

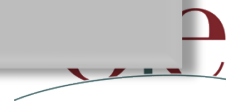
Challenges and opportunities for the OIE



May 2015: OIE General Session – resolution on HTS-BCG proposed

Key points

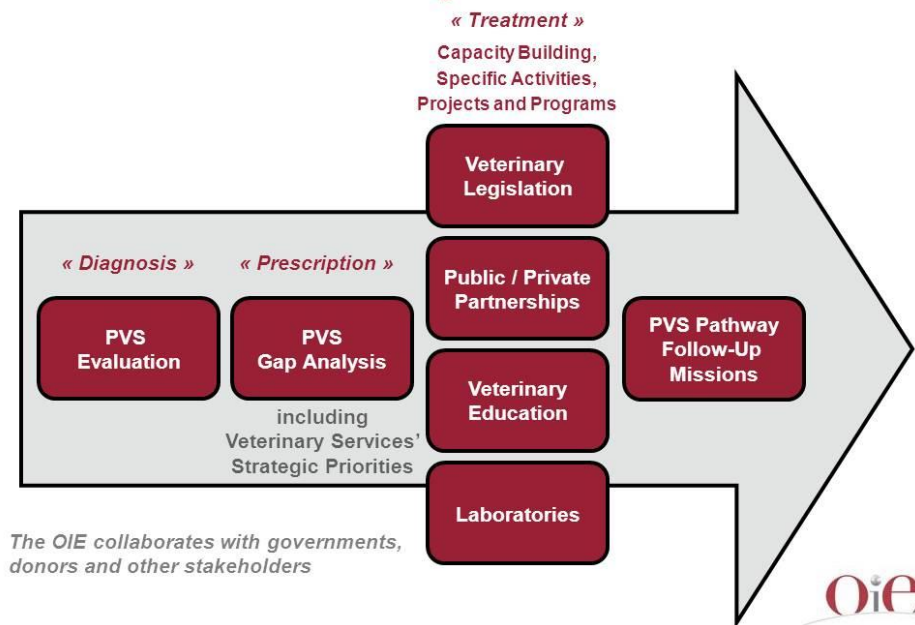
- Develop and updated guidelines and standards on HTS-BCG
- Establish an OIE platform for the collection and management of genomic sequences – integrate into AH reporting
- Report on challenges and opportunities for Veterinary services
- Support OIE Member Countries in utilisation of the technology



Good Governance of Veterinary Services for disease control at the animal source

Guarantes surveillance, **early detection, transparency and rapid response** to disease outbreaks

The OIE PVS Pathway



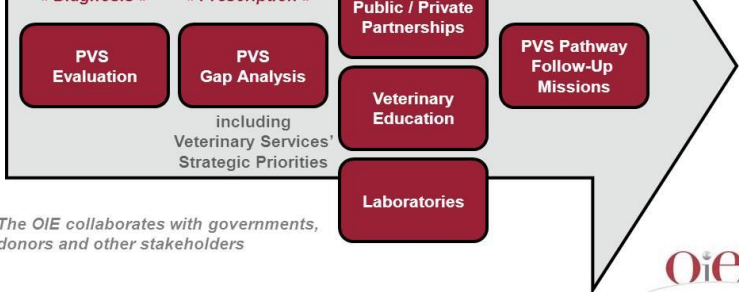
Evaluates country compliance with international standards for good governance (OIE **PVS Tool**)

OIE Website (www.oie.int)

The screenshot shows the OIE website interface with several callout boxes highlighting specific sections:

- Standards**: Points to the 'International Standard Setting' menu item.
- Medias**: Points to the 'For the media' section, which includes links for updates, press releases, and media resources.
- Diseases alerts**: Points to the 'Latest disease alerts' section, featuring a recent alert about low pathogenic avian influenza in Chinese Taipei.
- Editorial of the Director General**: Points to the 'Editorial' section, which features a portrait of the Director General and a quote about the importance of high-quality services.
- Publications**: Points to the 'Publications and documentation' section, which includes links to an online bookshop, scientific reviews, and a document database.
- conferences**: Points to the 'Official disease status' section, which lists upcoming conferences, including the 82nd General Session of the World Assembly of OIE Delegates in Paris (France) and the 2015 OIE Global Conference on Aquatic Animal Health in Ho Chi Minh City (Vietnam).
- Social networks**: Points to the 'Follow us on' section, which includes links to Facebook, YouTube, and Twitter.

The website layout includes a top navigation bar with links for Home, About us, Our scientific expertise, Support to OIE members, Animal health in the World, International Standard Setting, Animal welfare, One Health, and Publications and documentation. A search bar is also present in the top right corner.



for your attention !



WORLD ORGANISATION FOR ANIMAL HEALTH
Protecting animals, preserving our future

12 rue de Prony, 75017 Paris, France
www.oie.int – oie@oie.int