

# Current position of the OIE on the approach of emerging diseases

Colloquium “Emerging Animal Diseases”  
Brussels, Belgium, 17 October 2008

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OIE Sub-Regional Representative in Brussels



## Three components:

- why new strategies?
- which solutions?
- the OIE response

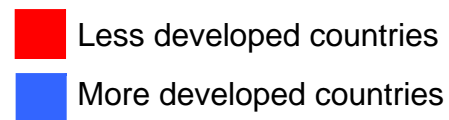
Why new appropriate animal health strategies became crucial?

# FOOD SECURITY CONCERN

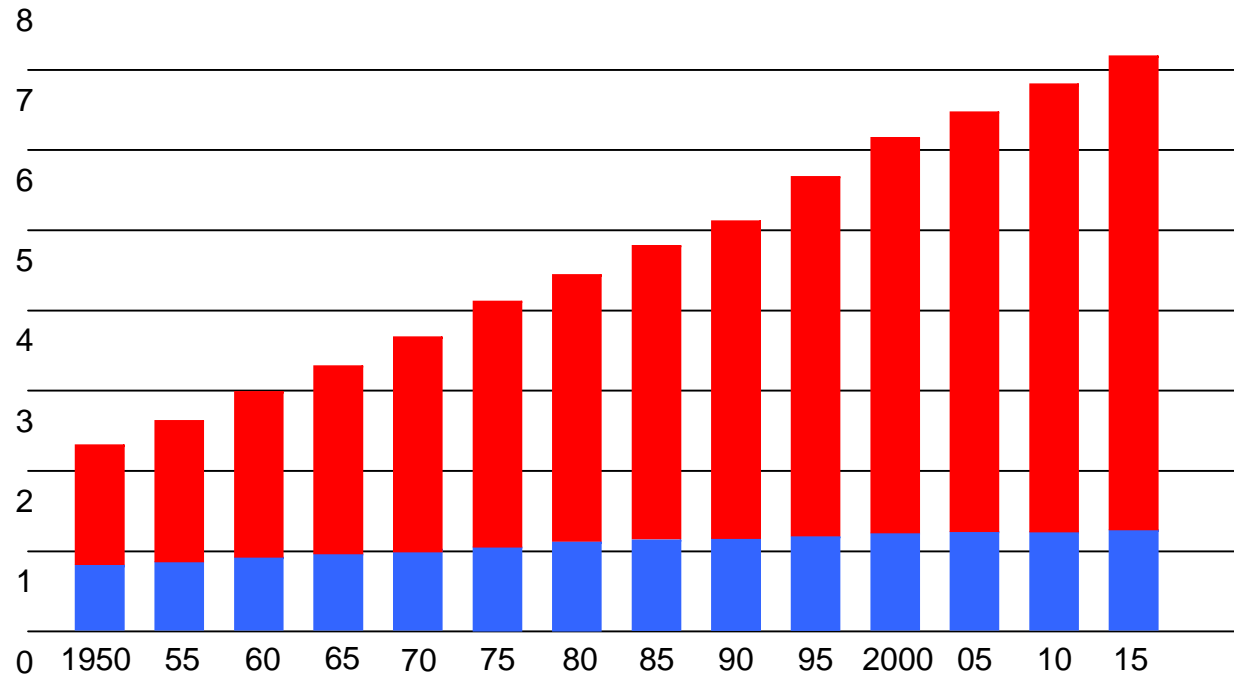
## TRENDS IN GLOBAL POPULATION

**Global Population: 1950-2015**

**Total**



*Billions*



Source: US Bureau of the Census

# FOOD SECURITY CONCERN

## PROJECTIONS

Projections toward 2020 indicate that the demand for animal protein will increase by 50%, especially in developing countries

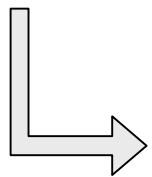
Food security is a key public health concern

Need for supply of safe food

# FOOD SECURITY CONCERN

## ANIMAL'S IMPORTANCE

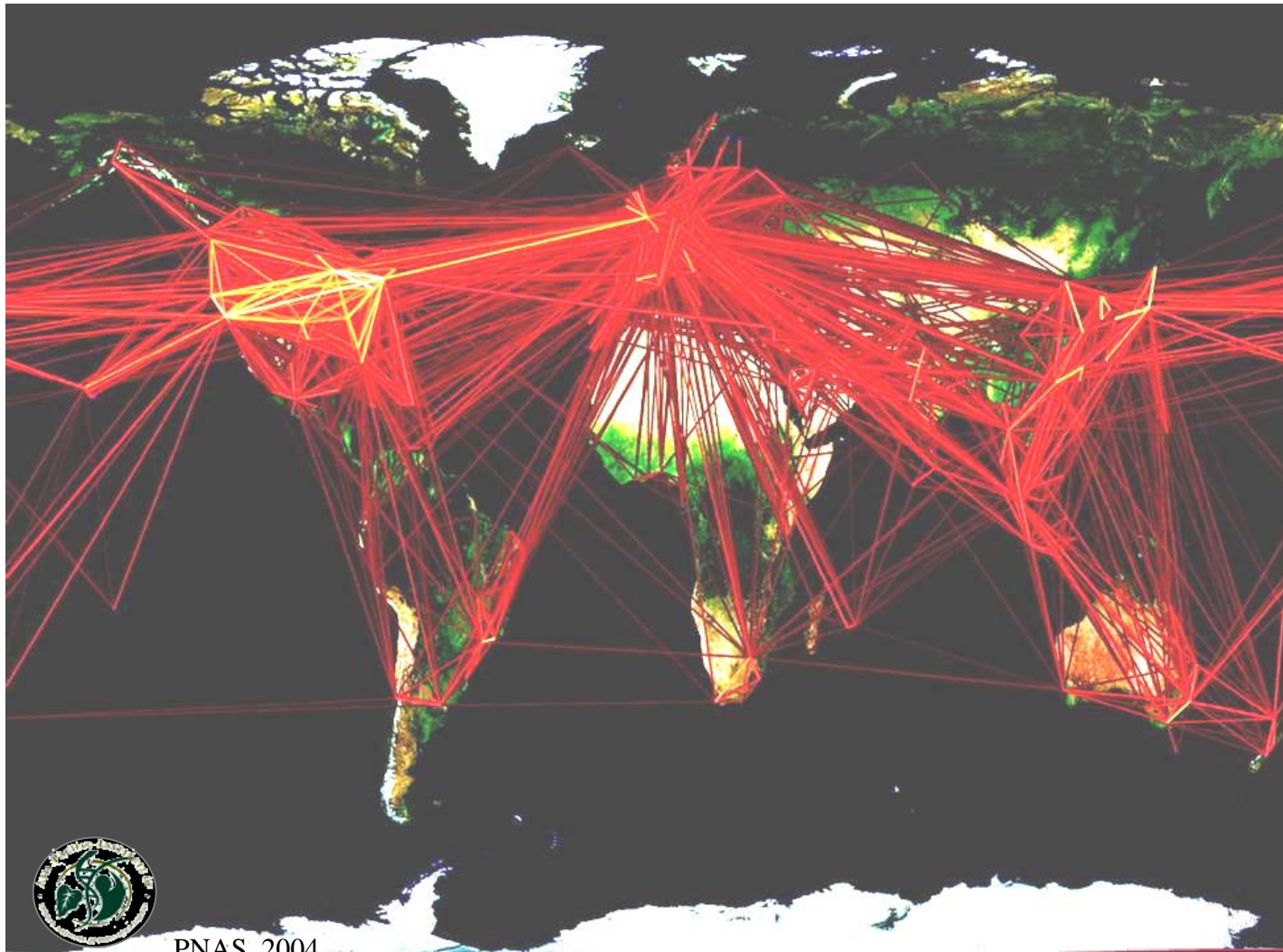
Healthy animals ensure food security and food safety



Animal health =  
Key element of Animal Productions / Public Health

# GLOBALISATION

## HUMAN AND COMMODITIES MOVEMENTS



PNAS, 2004

Oie

# GLOBALISATION

## HUMAN AND COMMODITIES MOVEMENTS

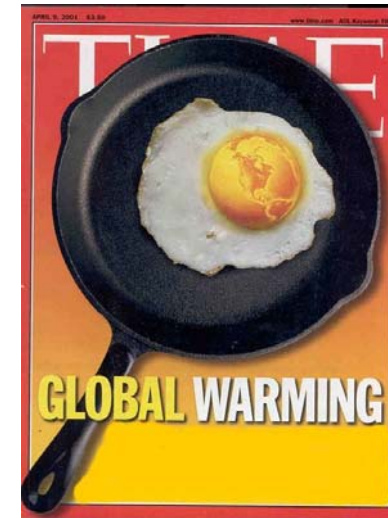
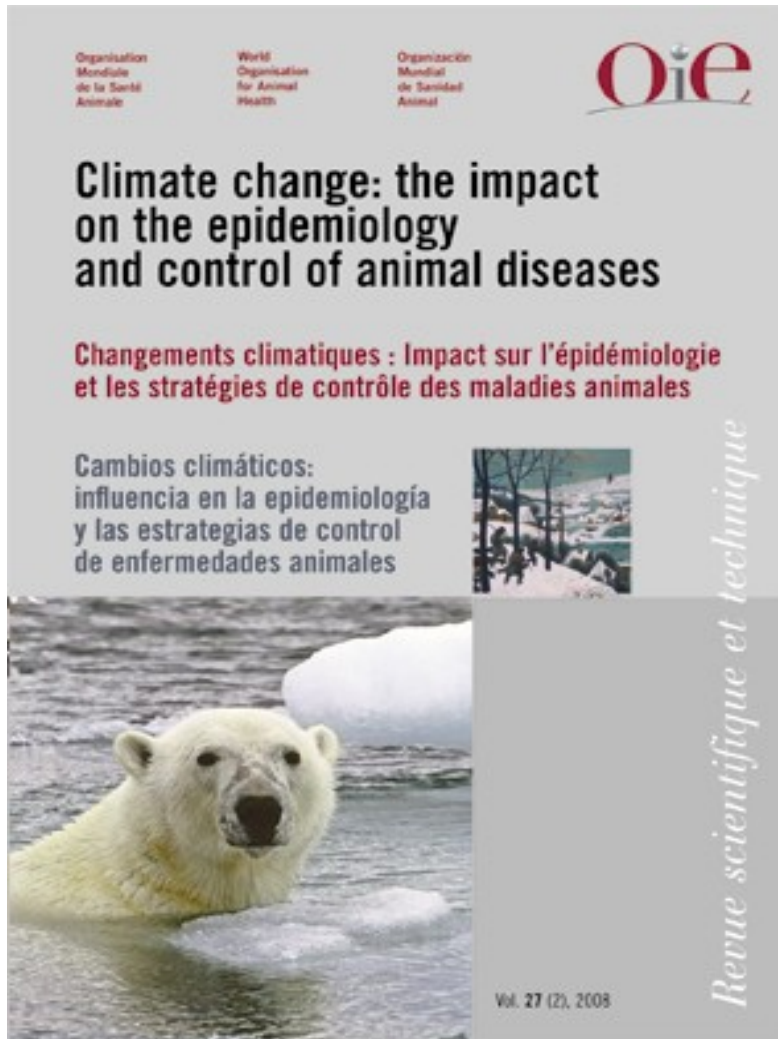
### Annual Global Trade in Exotic Animals

- ✓ 4 million birds
- ✓ 640,000 reptiles
- ✓ 40,000 primates
- ✓ Illegal trade unknown – estimate \$4-6 billion



# CLIMATE CHANGE

## A GROWING CONCERN



=> Recent creation of the OIE *Ad Hoc* Group on Climate Change :  
aims to define new needs arising from climate changes (e.g. surveillance of arthropods vectors)

# CLIMATE CHANGE

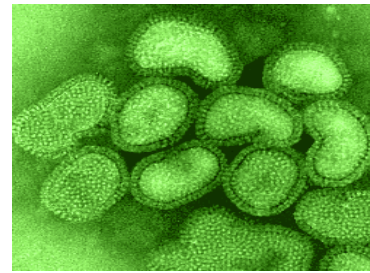
## IMPACT ON VECTORS



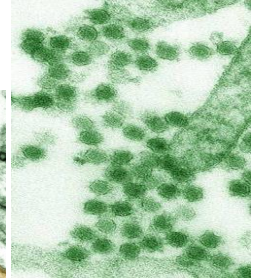
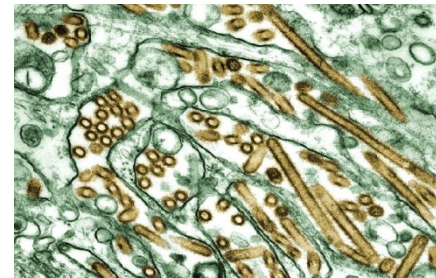
# EMERGING & RE-EMERGING DISEASES

## WHAT ARE THEY?

- Zoonotic infections with new animal hosts
- Biological agents in new environmental niches
- Newly identified pathogens
- Reappearance of once-eradicated pathogens
- Malicious or accidentally bioengineered organisms?



Avian Influenza



E. coli O157:H7

# EMERGING & RE-EMERGING DISEASES

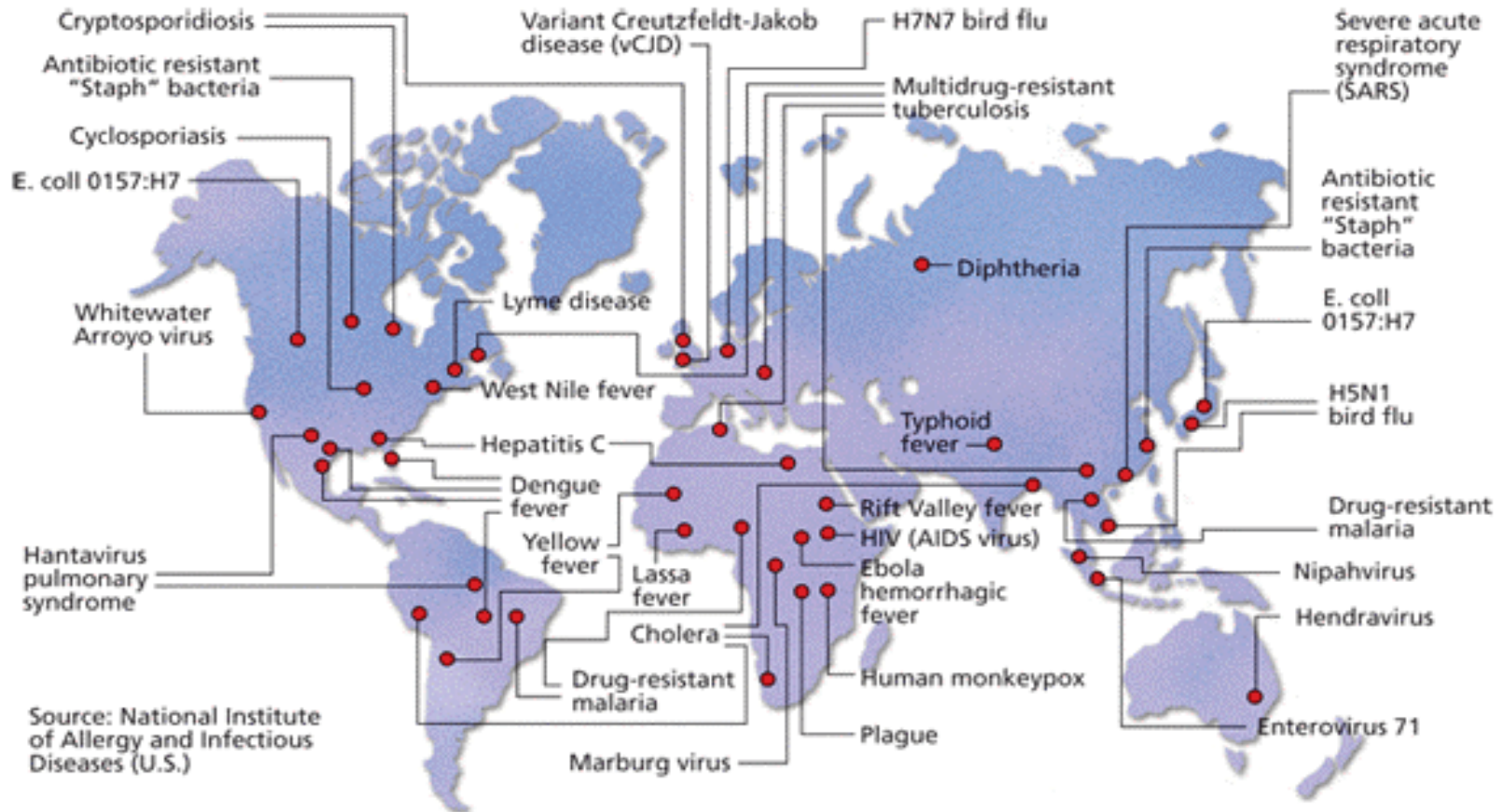
## POSSIBLE CAUSES OF INFECTION

- Incidental ('Normal'/expected)
- External  
(Uncontrolled/difficult to control)
  - Wild animals, migratory birds
  - Illegal trade
- Deliberate spread Agroterrorism



# EMERGING & RE-EMERGING DISEASES

## EXAMPLES



Map identifies origin of diverse or serious outbreak spreading or flared-up recently

# EMERGING & RE-EMERGING DISEASES

## EXAMPLES

- BSE
- FMD in UK (2001)
- AVIAN INFLUENZA in 3 continents (2003-2008...)
- NIPAH VIRUS in Malaysia (1999)
- SARS
- West Nile Virus in N. America
- Bluetongue in Northern Europe..

# EMERGING & RE-EMERGING DISEASES

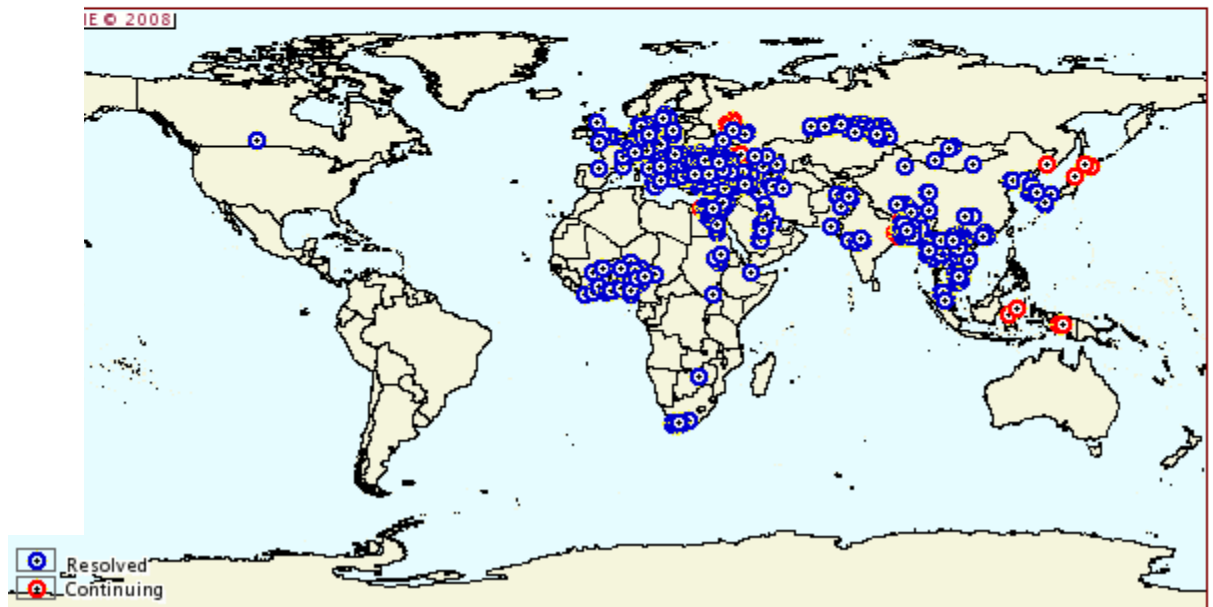
## THE HPAI CASE

- H5N1 infection in poultry declared in 48 countries since 2003
- Highly virulent H5N1 strains – Mortality among poultry up to 100%
- Other strains of highly pathogenic avian influenza identified (e.g.: H7N3, H7N7, H5N2)
- Wildlife reservoir

Filter Disease:  Terrestrial: Highly path. avian influenza  
 Aquatic: --- Aquatic ---

From: 1 Jan 2005 To: 31 Dec 2008 OK

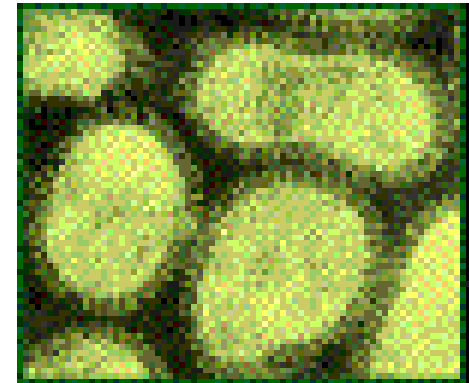
### Case outbreak maps



# EMERGING & RE-EMERGING DISEASES

## THE HPAI CASE

- First H5N1 human case recognized in China and Vietnam in 2003
- Total of 387 human cases reported since 2003 with 63% mortality in 15 countries
- Pandemic threat  
(Spanish influenza: 1918-1919  
20 - 40 million dead)



# EMERGING & RE-EMERGING DISEASES

## ZOONOTIC POTENTIAL OF ANIMAL PATHOGENS

- 60% of human pathogens are zoonotic
- 80% of animal pathogens are multi-host
- 75% of emerging diseases are zoonotic
- 80% of agents having a potential bioterrorist use are zoonotic pathogens

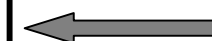
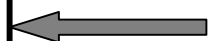


Nearly all emerging (new) human diseases originate from animal reservoirs

# EMERGING & RE-EMERGING DISEASES

## FACTORS

FACTOR	2007	2017	2027
Human demographics and behavior	↑	↑↑	↑↑↑
Technology and industry	↑	↑	↑
Economic development and land use	↑	↑↑	↑↑↑
International travel and commerce	↑	↑↑	↑↑↑
Microbial adaptation and change	↑	↑	↑
Breakdown of public health measures	↑	↑	↑
Climate change and weather	↑	↑↑	↑↑↑
Changing ecosystems	↑	↑	↑
Poverty and social inequality	↑	↑↑	↑↑↑
War and famine	↑	↑	↑
Lack of political will	↑	↑	↑
Intent to harm	↑	↑	↑



**Which solutions?**

# GOOD GOVERNANCE FOR VETERINARY SERVICES

## KEY ELEMENTS

### Requirements for all countries

Need for appropriate legislation and implementation through national animal health systems providing for:

- Appropriate **surveillance** (including wildlife), **early detection and warning** systems
- **Transparency**, notification through OIE
- **Rapid response** to animal disease outbreaks
  - rapid confirmation of suspects
  - confinement and humane stamping out
  - use of vaccination when available and if appropriate
  - compensation mechanisms

# GOOD GOVERNANCE FOR VETERINARY SERVICES

## KEY ELEMENTS

- Building and maintaining efficient epidemiosurveillance networks and territorial meshing in the entire national territory, potentially for all terrestrial and aquatic animal diseases, including wild animals surveillance

⇒ **A responsibility of Governments**

⇒ **Concept of Quality of Veterinary Services**

Governance, legislation, policies and resources must be in compliance with OIE international standards

# GOOD GOVERNANCE FOR VETERINARY SERVICES

## STANDARDS OF QUALITY

(Terr. Code, chap .3.1.1)

The Veterinary Services:

- must be able to demonstrate .... that they are in a position to have **control of the establishment and application of animal health measures**, and of international veterinary certification activities

VS need to define and document responsibilities and structure of the organisations in charge of:

- animal **identification** system,
- control of animal **movements**,
- animal **disease control** and reporting systems,
- **epidemiological surveillance** and communication of epidemiological information.

# GOOD GOVERNANCE FOR VETERINARY SERVICES

## STANDARDS OF QUALITY

The [Veterinary Services](#) should have at their disposal effective systems for animal disease surveillance and for notification of disease problems wherever they occur, in accordance with the provisions of the Terrestrial Code

Adequate coverage of animal populations should also be demonstrated.

+ Other quality requirements set up in chp 3.1/3.2 are to be met by VS

# SCIENTIFIC EXPERTISE

Need for development of :

- Research activities
  - epidemiology,
  - diagnostic tools
  - ...
- Laboratories capacities
  - New technologies
  - Networking
  - ...

# INTERNATIONAL SANITARY GOVERNANCE

- World Animal Health Organization – OIE
- World Trade Organization – WTO
- United Nations:
  - FAO – WHO
  - Codex Alimentarius
  - Biological Weapon Convention
  - Others
- Regional Organisations

# The OIE response

# OIE's OBJECTIVES

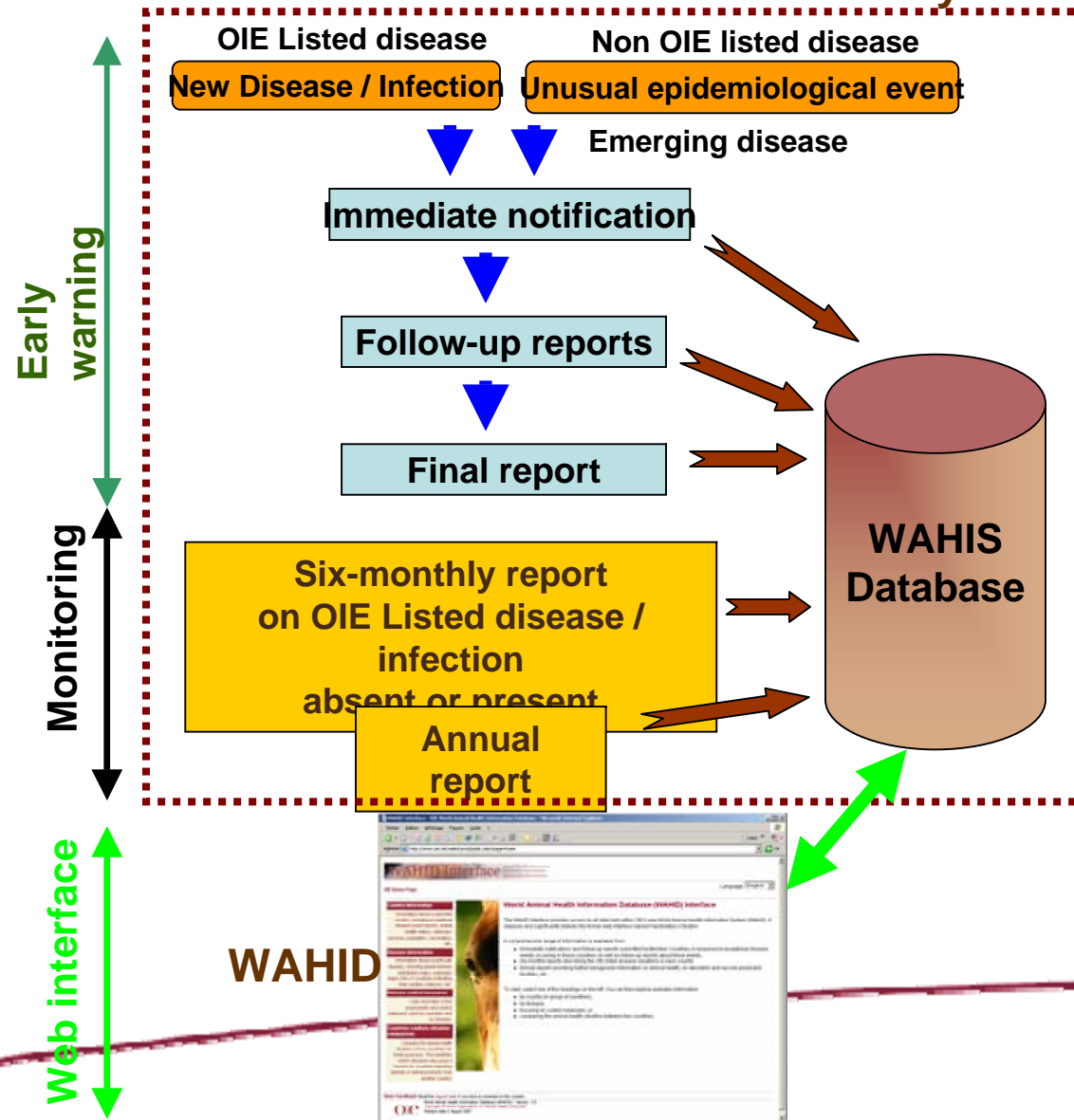
## TO IMPROVE ANIMAL HEALTH WORLDWIDE

1. To ensure **transparency** on the global animal disease and zoonosis situation
2. To collect, analyse and disseminate **veterinary scientific information**
3. To provide **expertise** and encourage international **solidarity** in the control of animal diseases
4. Within its mandate **under the WTO SPS Agreement**, to safeguard world trade by **publishing sanitary standards** for international trade in animals and animal products
5. To improve the legal framework and resources of national **Veterinary Services**
6. To better guarantee the **safety of food of animal origin** and to promote **animal welfare** through a science-based approach

# ENSURING TRANSPARENCY

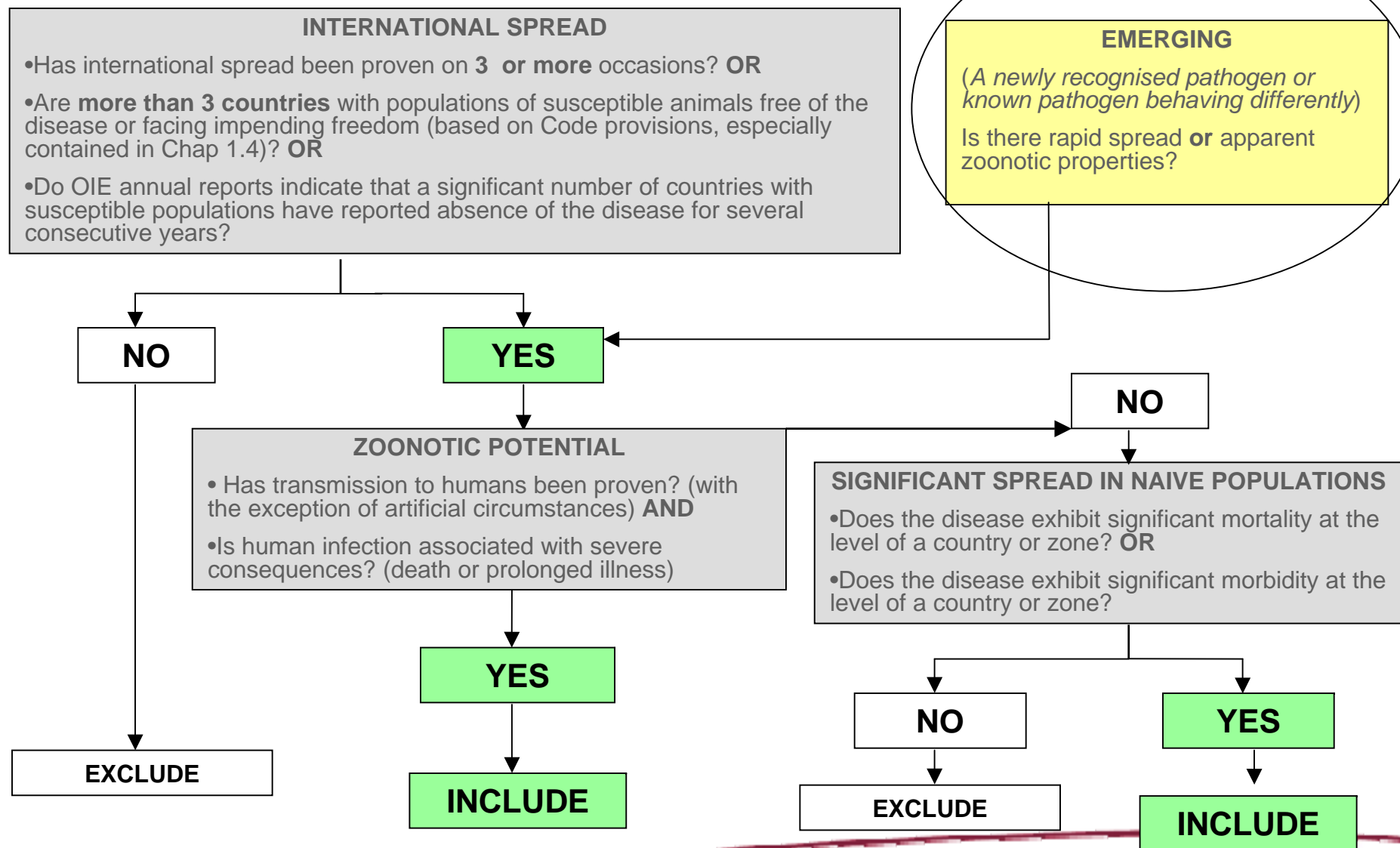
## WORLD ANIMAL HEALTH INFORMATION SYSTEM

### WAHIS – Secure Access system



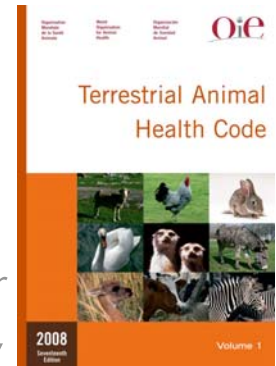
# OIE's LIST OF DISEASES

## DECISION TREE : TERRESTRIAL ANIMAL DISEASES



# DEVELOPMENT OF SCIENTIFIC STANDARDS

## EMERGING ISSUES



### Definition

“Emerging disease”: *means a new infection resulting from the evolution or change of an existing pathogenic agent, a known infection spreading to a new geographic area or population, or a previously unrecognized pathogenic agent or disease diagnosed for the first time and which has a significant impact on animal or public health.*

### Development/Update of new chapters

➤ Creation of *Ad hoc* groups, e.g. :

- on epidemiology
- on emerging zoonosis
- on vector borne diseases
- on surveillance on wildlife
- ...

=> standards and guidelines on specific diseases, surveillance, diagnosis.

# OIE EXPERTISE

## REF. LABs & COLLABORATING CENTRES

- 177 Reference Laboratories
- in 32 Countries
- covering 95 diseases or topics

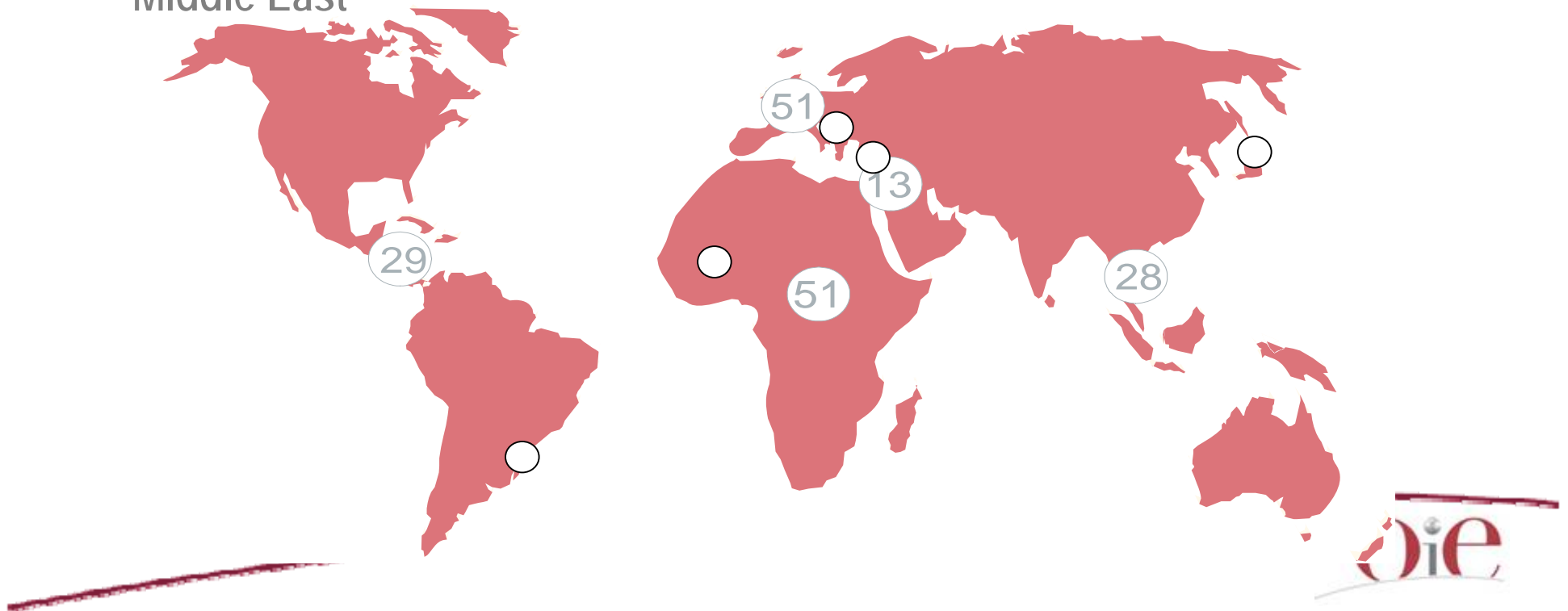


- 29 Collaborating Centres
- in 18 Countries
- covering 27 topics

# OIE NETWORK

## REGIONAL REPRESENTATIONS

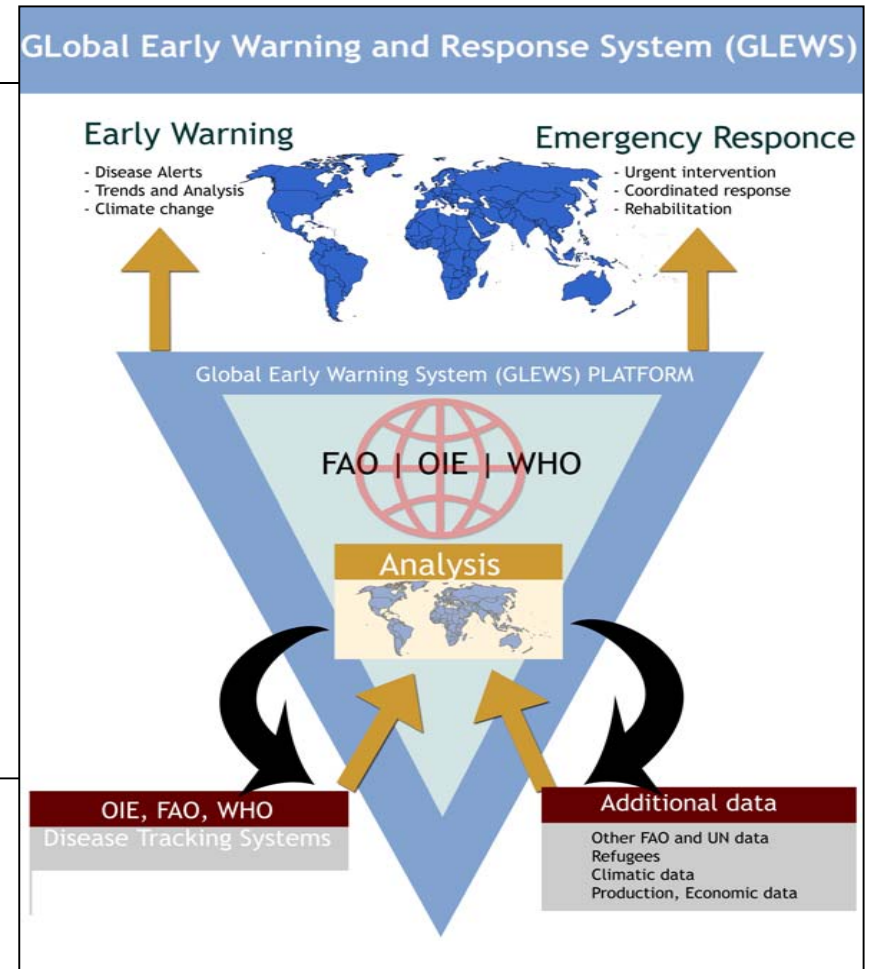
- **Five permanent Regional Representations:** Bamako, Buenos Aires, Tokyo, Sofia and Beirut
- **Four Sub-regional Representations:** Bangkok, Gaborone, Panama, Brussels
- **Five Regional Commissions:** Africa, America, Asia-Pacific, Europe and Middle East



# INTERNATIONAL COOPERATION

## Global Early Warning System (GLEWS)

- Joint **OIE / FAO / WHO** initiative
- Animal disease and zoonoses tracking
- Emergency response
- Trends analysis predictions
- Capacity building of Veterinary Services for surveillance and early warning and response (animal sector)
- **List of priority** animal diseases, zoonoses and emerging diseases



# INTERNATIONAL COOPERATION

## Concept of One World-One Health

=> A global strategy for managing risks at the animal-human interface

OIE's global partners:

- FAO
- WHO
- UNICEF
- World Bank



# INTERNATIONAL COOPERATION

## GF-TADs

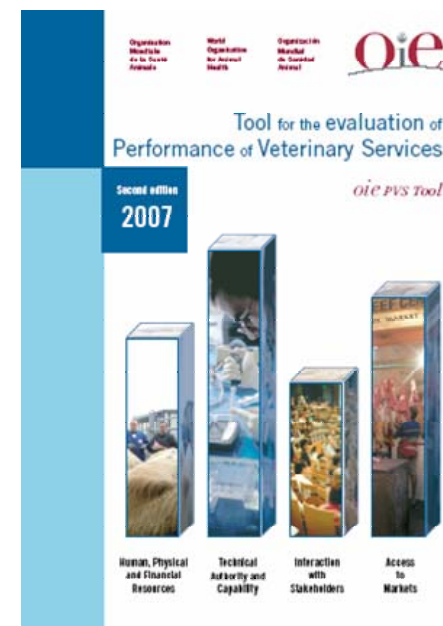
- **Joint OIE / FAO initiative** : Global Framework for the Progressive Control of Transboundary Animal Diseases
- **Based on Regional Support Units**
- Epidemiological analysis and Early Warning
- Rationalisation of Veterinary Services
- National and Regional capacity building for diagnosis and surveillance
- Laboratories/surveillance teams, through Networks:
  - Regional and National Laboratories
  - Regional and National Epidemiology Units
- Surveillance for primary endemic areas
- Pilot disease control programmes
- Design of National Projects/Advocacy Promotion

# STRENGTHENING VETERINARY SERVICES

## EVALUATION OF VS

### OIE Tool for the Evaluation of Performance of Veterinary Services

- Training and certification of OIE experts
- Mission under OIE auspices
- Report
  - Draft
  - OIE Peer Review
  - Final PVS Country Report
  - Acceptance by the country +/- public release
- Gap analysis and Investment proposal (national and international donors)



REGION	Official requests from countries	Missions completed	Gap Analysis requests
<b>TOTAL</b>	84	67	10

Through OIE World Animal Health and Welfare Fund

# STRENGTHENING VETERINARY SERVICES LABORATORY CAPACITIES



## Policies regarding Ref. Labs and Coll. C

### Enhance scientific influence

- necessity to audit and strengthen the OIE's Collaborating Centres and Reference Laboratories Network
- development of **twinning** procedures and of **specific projects** supporting laboratories

Through OIE World Animal Health and Welfare Fund



#### Introduction

The most effective way of detecting, diagnosing, controlling and responding to animal disease and zoonotic incursions, is to ensure good governance in Member Countries. Integral to good governance is the ability and capacity of all Member Countries to comply with the guidelines, recommendations and international standards of the OIE that are mandated by the World Trade Organisation (WTO).

The OIE has therefore embarked on a unique strategic initiative to develop an assessment and evaluation system to assist countries to identify weaknesses in their system that makes it difficult for them to comply with the minimum standards, guidelines and recommendations of the OIE. The evaluation system based on the performance, strategy and vision of a country to move towards compliance (commonly referred to as the PVS-strategy) is already in operation and applied successfully in a number of developing and in-transition countries. The assessment system considers critical aspects of veterinary service delivery such as technical capability, human and financial capital, interaction with the private sector and the needs and problems associated with access to markets. The OIE has, by linking this initiative to its overall aim to establish awareness and acceptance of the delivery of veterinary services as an international public good, elicited major financial support for this project from the World Bank and other donors, including some Member Countries of the OIE. Integral to the assessment process is also the identification of the need to establish scientific and technological expertise within these countries to enable them to become self-sufficient to early detect and diagnose diseases and to be able to provide the scientific justification for certification of animals and animal products for trade.

Although the international Committee of the OIE has already in 2002 adopted a Resolution to identify the need for support by OIE Reference Laboratories and Collaborating Centres to enter into partnership as advanced research institutes with developing and in-transition countries, the OIE also realises that substance to this ideal can only be given by actively moving towards scientific capacity building with the ideal to eventually establish focal points of expertise and more Reference Laboratories within developing countries. To enable the realisation of this ideal, the concept of twinning between laboratories was born to eventually ensure an even geographical distribution of expertise and Reference Laboratories for easier access to expertise for the rapid detection and diagnosis of disease.

The development and setting of OIE guidelines, recommendations and standards for both terrestrial and aquatic animals, are based on scientific principles and thereby also in support of the requirements of the Sanitary and Phytosanitary Agreement of the WTO that sanitary measures should be scientifically justifiable. The OIE standards are developed for application

# CONCLUSION

Crucial role of VS to address emerging and re-emerging diseases

=> Quality of Veterinary Services

“We must be prepared for the unexpected and be ready to respond rapidly”

# Thank you for your attention



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