OIE's roles and initiatives for rabies elimination

Launching meeting of OIE twinning project for rabies

Animal Health Research Institute (AHRI), Council of Agriculture, Republic of China

17th-18th, October, 2018

- **Introduction to the OIE**
- **Transparency**
- **Standards**
- **Expertise**
- **Solidarity**
- **OIE Laboratory Twinning**

Introduction to the OIE

World Organisation for Animal Health (OIE)

A scientific and technical intergovernmental organisation

182 Member Countries

Headquarters (Paris, France)

5 Regional Representations

7 Sub-Regional Representations & Offices

General Organisation of the OIE

World Assembly of Delegates
(highest authority, 182 member countries)

OIE Council (9 members)

Director General

Dr Monique ELOIT

Specialist Commissions (4)

Regional Commissions (5)

Regional Representations
(5)

Organisational Chart of OIE HQ

Dr Jean-Philippe DOP

Director General

Communication Unit

Deputy Director General
Institutional Affairs • Regional Activities

Deputy Director General
International Standards and Science

Dr Matthew STONE

Director of Finance

Regional activities Department

Events Coordination Unit

Legal Affairs & Partnerships Unit

Information Systems Unit

Human Resources Cell

Logistics Unit

Performance Management Cell

Documentation Cell

World Fund Unit

Budget Unit

Accounting Unit

WAHIAD Department

Standards Department

Status Department

Programmes Department

Science and New Technologies Department

Publications Unit

Regional and Sub-Regional Representations

OIE Specialist Commissions

Terrestrial Animal Health Standards Commission "Code Commission"

President
Dr Etienne Bonbon (France)

1st Vice President
Dr Gaston Maria Funes (Belguim)

2nd Vice President
Dr Masatsugu Okita (Japan)

Members
Dr Lucio Ignacio Carbajo Goni (Spain)
Dr Salah Hammami (Tunisia)
Dr Bernardo Todeschini (Brazil)

Scientific Commission for Animal Diseases "Scientific Commission"

President
Dr Cristobal Zepeda (USA)

1st Vice President
Dr Kris de Clercq (Belgium)

2nd Vice President
Dr Baptiste Dungu (UK)

Members
Dr Silvia Bellini (Italy)
Dr Mischeck Mulumba (South Africa)
Dr Zengren Zheng (China)

Aquatic Animal Health Standards Commission "Aquatic Animals Commission"

President
Dr Ingo Ernst (Australia)

1st Vice President
Dr Alica Gallardo Lagno (Chile)

2nd Vice President
Dr Edmund Peeler (UK)

Members
Dr Kevin William Christison (South Africa)
Dr Prof. Hong Liu (China)
Dr Atle Lillehaug (Norway)

Biological Standards Commission "Laboratories Commission"

President
Prof. Emmanuel Couacy-Hymann (Lanada)

1st Vice President
Dr Franck Berthe (USA)

2nd Vice President
Dr John Pasick (Canada)

Members
Prof. Ann Cullinane (Ireland)
Dr Joseph S. O'Keefe (New Zealand)
Dra. Ana Maria Nicola (Argentina)

The four pillars of the OIE

Improving animal health and welfare worldwide

TRANSPARENCY

of the world animal disease situation

including zoonoses

STANDARDS

for international trade of animals and animal products

under the mandate given by the WTO

EXPERTISE

Collection and dissemination of veterinary scientific information

animal disease prevention and control methods

SOLIDARITY

between countries to strengthen capacities worldwide

Capacity building tools and programmes

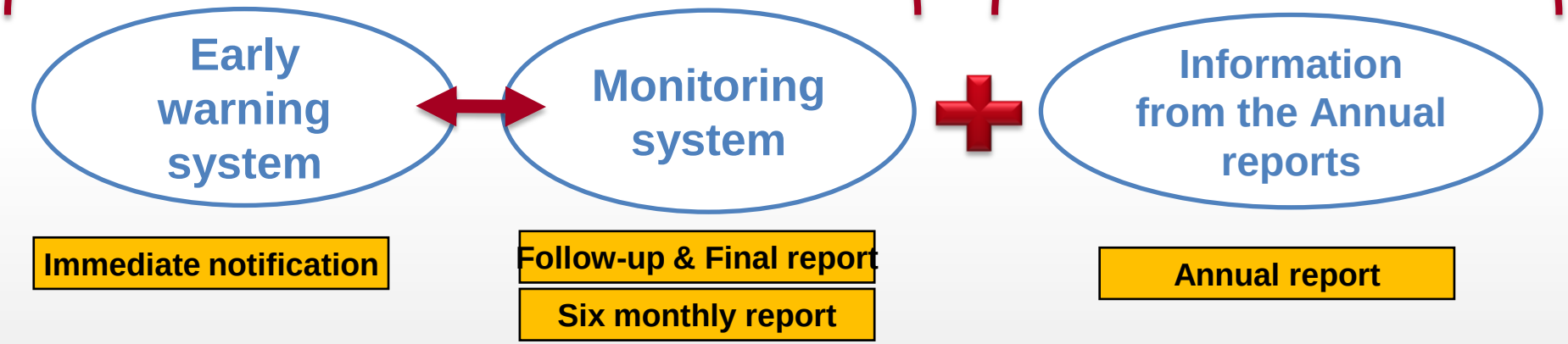
Transparency

- World Animal Health Information System –

Transparency

WAHIS/WAHID

180 countries on line



- Alert messages for specific epidemiological events & for **emerging diseases**

- Follow-up of outbreaks notified
- Information for 118 OIE-listed diseases twice a year

- Veterinary Services' capabilities
- Vaccine production
- National laboratories' capabilities
- Animal population figures
- Human cases for zoonoses

And non official information tracking system

Prevention

Veterinarians

Public

Countries

Communication

WAHIS

Notification

Oficial Veterinary Services

Confirmation

Laboratories confirmation

Early detection

Farmer

Veterinarian

Hunter

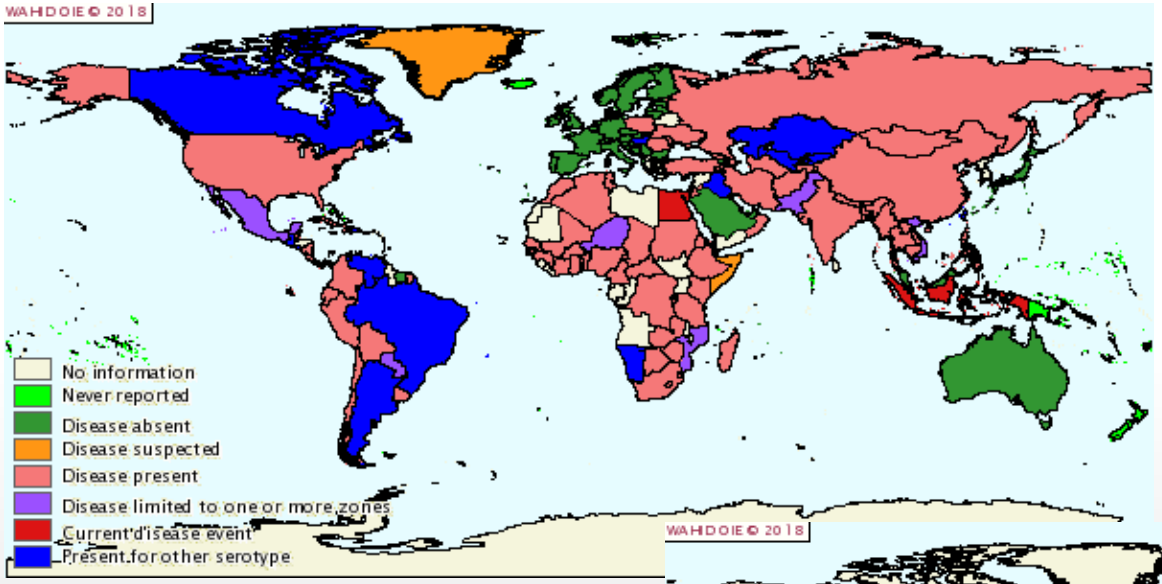
Ranger

Veterinarian

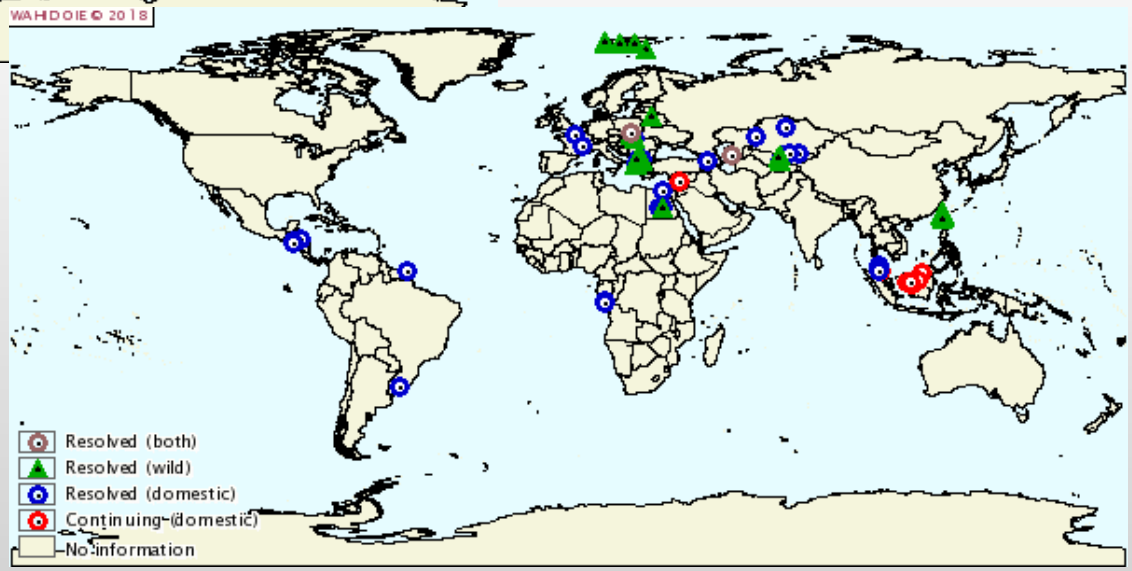
Angler

ion for mals, Pr

WAHIS data on rabies



Disease distribution map, Jan-June 2017



Disease outbreak map, Jan 2014- 2018

Standards

- OIE Code and Manual -

THE “3 SISTERS”

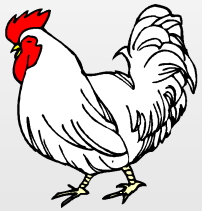
Standard-setting organisations

Food Safety

CODEX

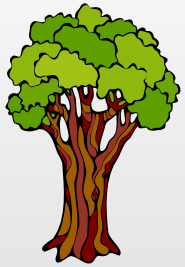
Animal Health and Zoonoses

OIE



plant health

IPPC



Codex = Joint FAO/WHO Codex Alimentarius Commission
OIE = World Organisation for Animal Health
IPPC = International Plant Protection Convention (FAO)

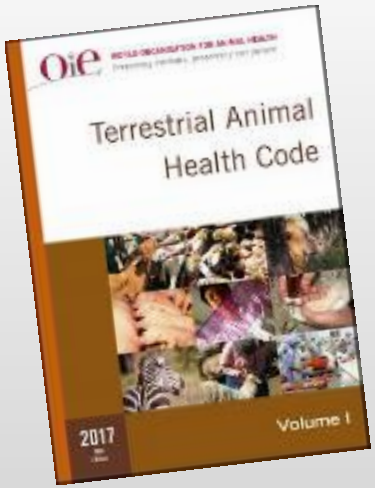
WTO SPS Agreement recognises OIE as **a reference organisation for international standards** on animal health including zoonoses

OIE INTERGOVERNMENTAL STANDARDS

OIE key publications

CODES

Health standards for trade in animals and animal products



MANUALS

Biological standards for diagnostic tests and vaccines

Standards to improve animal health and welfare and veterinary public health

OIE Int'l Standards on Rabies

Vertical

- Chapter 8.14 Infection with Rabies virus

- Chapter 5.11 Certificate

- Chapter 2.1.17 Rabies (Manual)

Horizontal

- Chapter 7.7 Stray dogs population control

- Chapter 1.1 Notification

- Chapter 1.4 Surveillance

OIE Code and Manual relevant to Rabies

Code

Manual

Conditions import (8.14.4-9)

Guidelines for Rabies control (8.14.2)

Criteria for Rabies freedom (8.14.3)

Model export certificates (5.11)

Surveillance for disease (1.1 and 1.4)

VS Governance, le gislation and Communication (3.1 to 3.4)

Standards for rabies diagnostic tests (2.1.17)

Stray dog population control (7.7)

Standards rabies vaccines production (2.1.17)

OIE Notification requirements regarding rabies

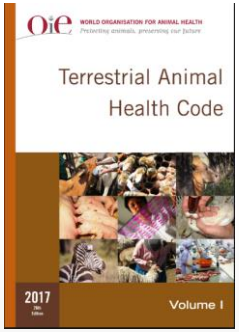
Terrestrial Animal Health Code : CHAPTER 8.14.

For the purposes of the Terrestrial Code :

- ✓ Is a notifiable disease
- ✓ Rabies is a disease caused by one member of the ***Lyssavirus*** genus : the Rabies virus & all mammals are susceptible to infection;
- ✓ A case is any animal infected with the Rabies virus species;

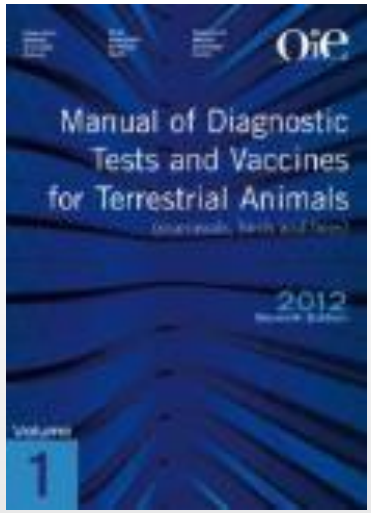
Terrestrial Code Chapter 8.14.
Infection with Rabies Virus

- Expert Group (Nov 2017) => endorsed by Scientific Commission (Feb 2018) => First round of comments
- What was proposed?
  - Dog-mediated rabies case definition
  - Criteria for country or zone free from dog-mediated rabies
  - Revised recommendation for importation of animals: e.g., Importation from infected countries requiring serology 1 month before shipment (instead of 3 months)
  - Endorsement of the National control programme
  - Surveillance articles



Current text: http://www.oie.int/fileadmin/Home/eng/Health_standards/tahc/current/chapitre_rabies.pdf
Proposed text:
http://www.oie.int/fileadmin/Home/eng/Internationa_Standard_Setting/docs/pdf/A_TAHSC_Feb_2018_Part_B.pdf

Terrestrial Manual Chapter 2.1.17 on Rabies



- Adopted in May 2018
  - Updated references
  - Updates on existing diagnostic tests
  - Include direct rapid immunohistochemistry test (dRIT)
  - Include PCR (Conventional and real-time)
  - Updated vaccine section
    - Injectable
    - Oral use (Wildlife, dog, baits)

http://www.oie.int/fileadmin/Home/eng/Health_standards/tahm/2.01.17_RABIES.pdf

Test methods available for the diagnosis and purpose

Method	Purpose					
	Population freedom from infection	Individual animal freedom from infection prior to movement	Contribute to eradication policies	Confirmation of clinical cases	Prevalence of infection – surveillance	Immune status in individual animals or populations post-vaccination
Agent identification						
DFA (antigen detection)	+++	n/a	+++	+++	+++	n/a
dRIT (antigen detection)	+++	n/a	+++	+++	+++	n/a
ELISA (antigen detection)	+	n/a	+	+	+	n/a
Cell culture (virus isolation)	+	n/a	+++	+++	+++	n/a
MIT (virus isolation)	n/a	n/a	+	+	+	n/a
Conventional RT-PCR (RNA detection)	+++	n/a	+++	+++	+++	n/a
Real-time RT-PCR (RNA detection)	+++	n/a	+++	+++	+++	n/a
Detection of immune response						
VN	n/a	+++	+++	n/a	n/a	+++
ELISA	n/a	n/a	+++	n/a	n/a	+++

Key:

+++ = recommended method, validated for the purpose shown

++ = suitable method but may need further validation

+ = may be used in some situations, but cost, reliability, or other factors severely limits its application

– = not appropriate for this purpose;

n/a = purpose not applicable.

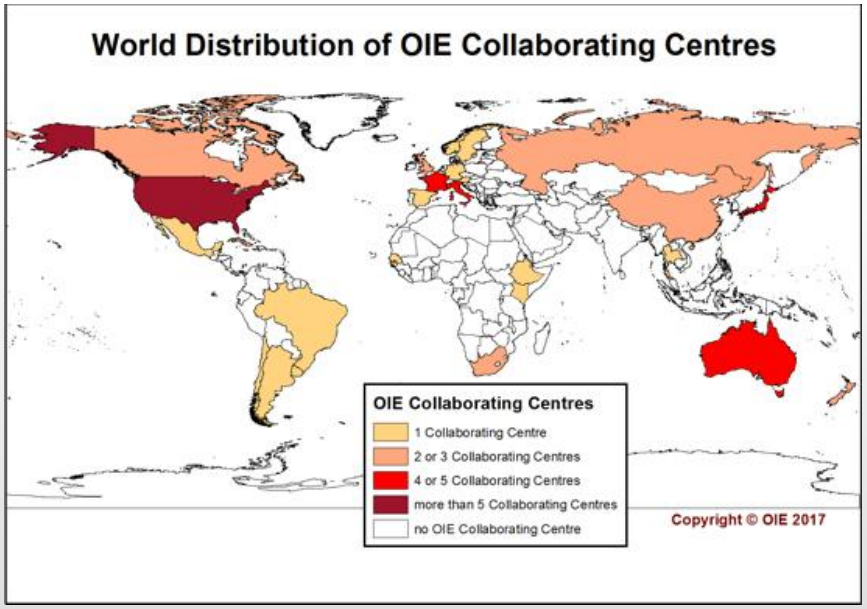
Expertise

- Scientific Network -

OIE Reference Centres

Collaborating Centre

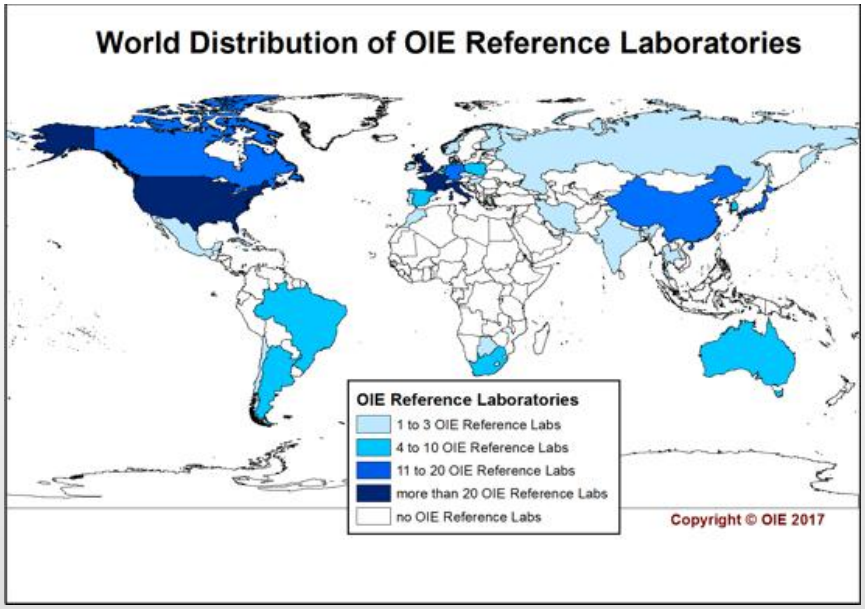
World centre of
research, expertise, standardization of techniques and dissemination of knowledge on a specialty



	World	Asia
CC	51	11
Topic	46	11
Country	26	5

Reference Laboratory

World reference centre of expertise on designated pathogens or diseases



	World	Asia
RL	260	48
Disease	119	38
Country	39	8

OIE Reference Laboratories for Rabies

- **Dr Christine Fehlner-Gardiner**
  Centre of Expertise for Rabies CFIA/ACIA
  Ottawa Laboratory Fallowfield
  Animal Diseases Research Institute
  CANADA

- **Prof. Changchun Tu**
  Diagnostic Laboratory for Rabies and Wildlife
  Associated Zoonoses, Department of Virology
  Changchun Veterinary Research Institute (CVRI)
  Chinese Academy of Agricultural Sciences (CAAS)
  CHINA (PEOPLE'S REP. OF)

- **Dre Florence Cliquet**
  Agence Nationale de Sécurité Sanitaire de l'Alimentation, de l'Environnement et du Travail (Anses)
  Laboratoire de la faune sauvage de Nancy
  FRANCE

- **Dr Thomas Müller**
  Institute of Molecular Virology and Cell Biology,
  Friedrich-Loeffler Institut,
  Federal Research Institute for Animal Health
  GERMANY

- **Dr Boris Yakobson**
  Kimron Veterinary Institute
  Veterinary Services and Animal Health
  ISRAEL

- **Dr Dong-Kun Yang**
  Animal and Plant Quarantine Agency
  KOREA (REP. OF)

- **Dr José Alvaro Aguilar Setién**
  Centro Nacional de Servicios de Diagnóstico en Salud Animal
  MÉXICO

- **Dr Claude Taurai Sabeta**
  Onderstepoort Veterinary Institute Rabies Unit
  SOUTH AFRICA

- **Dr Anthony Fooks**
  APHA Weybridge
  UNITED KINGDOM

- **Dr Ryan Wallace**
  Poxvirus and Rabies Branch
  Division of High-Consequence Pathogens and Pathology
  National Center for Emerging and Zoonotic Infectious Diseases
  UNITED STATES OF AMERICA

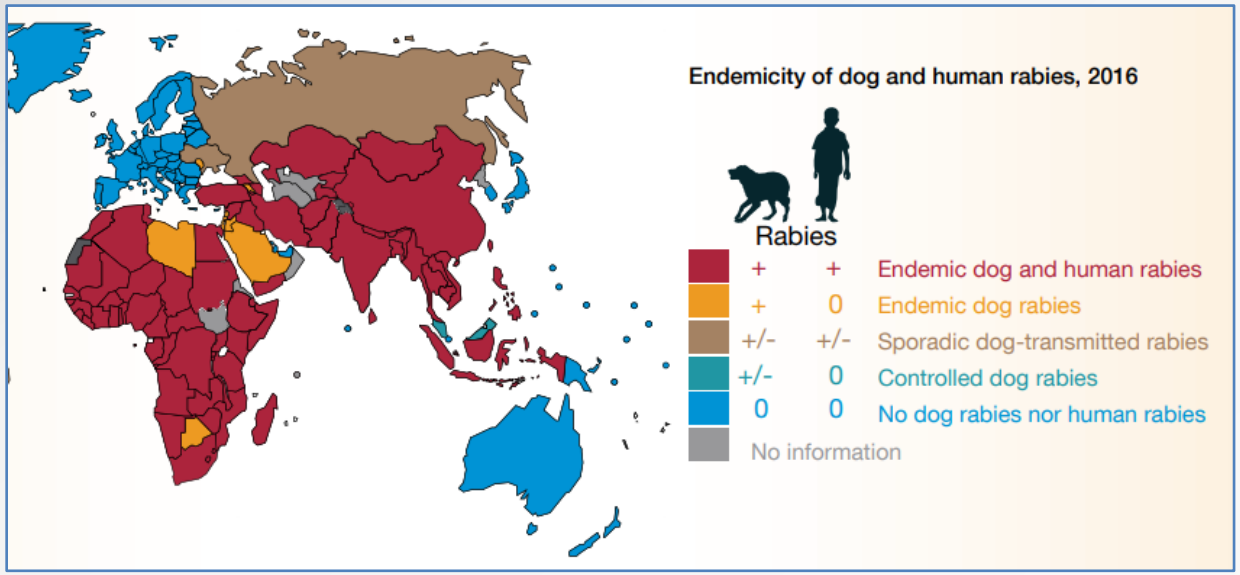
➢ Please contact the OIE Reference Laboratories for any further information on diagnostic tests, reagents and vaccines for rabies

Solidarity

- Global & Regional Initiatives for Capacity building -

Rabies is a neglected, vaccine-preventable disease

An indicator for impact on inequity



Our Goal:
Zero by 30

- 100% fatal
- ~60,000 deaths per year globally
- Dog bites cause ~ 95-99% of human cases
- Weak data and under-reported
- Mostly children
- Vaccine is a key component of the global plan and national programmes

Food and Agriculture Organization of the United Nations

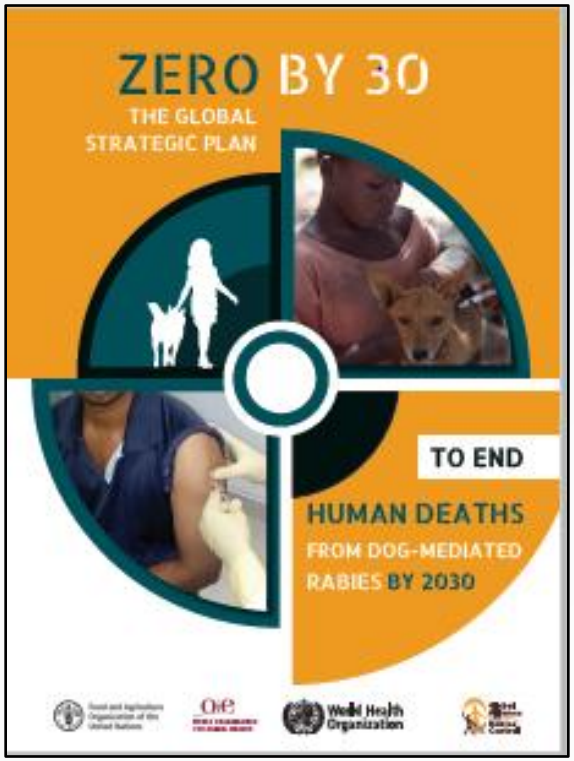
WORLD ORGANISATION FOR ANIMAL HEALTH

World Health Organization

United Against Rabies

Global Strategic Plan

- The Global Strategic Plan to end human deaths from dog-mediated rabies by 2030.
- Investing in rabies elimination saves lives and strengthens both human and veterinary health systems.
- The global strategic plan puts countries at the centre with renewed international support to act

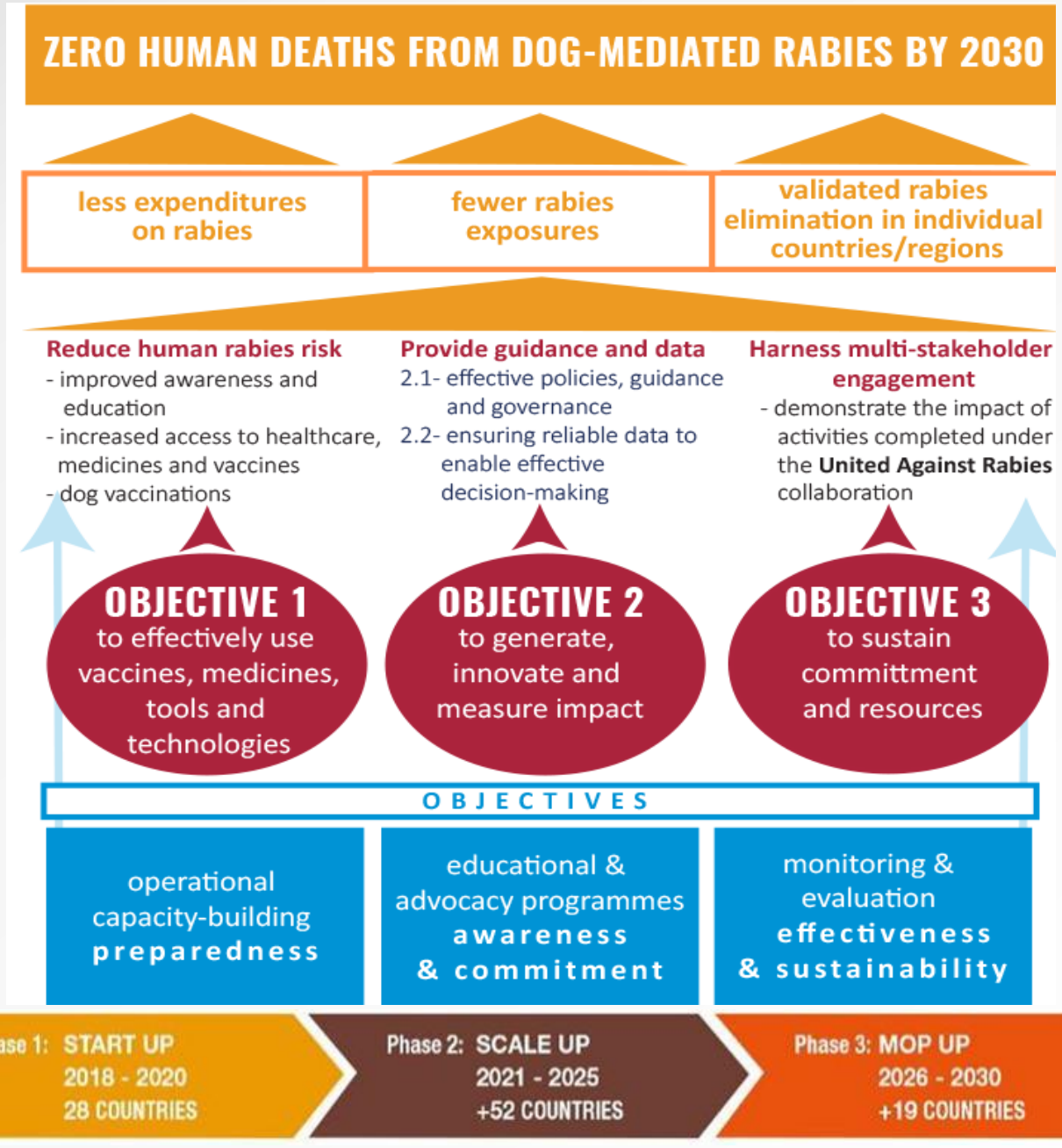


Food and Agriculture Organization of the United Nations

WORLD ORGANISATION FOR ANIMAL HEALTH

World Health Organization

The Global Strategic Plan



What needs to be done at policy level for rabies elimination

- Political will and inclusion in national plans with adequate resources
- Appropriate/customized outreach and education at community, national and subnational levels
- Motivating & coordinating different sectors/players to engage in comprehensive programme
- Enhanced disease reporting and surveillance
- Reaching 70% dog vaccination in at risk populations (roaming dogs included, supplementing with new technologies like oral rabies vaccine)
- Access to safe, efficacious vaccines, at affordable prices
- Promoting intradermal PEP administration in high incidence areas

Rabies control needs One Health approach

- Rabies control must follow the One Health approach
  - Rabies control often falls between the cracks as not sufficiently addressed by veterinary and public health services
  - It is a human health problem which can best be prevented by vaccination of dogs and responsible dog ownership
- *It is unacceptable to allow people to die of a preventable disease because "it falls between the cracks"*

The **One Health** concept addresses health risks at the animal, human and environmental interface in order to enhance human and animal wellbeing and welfare, and sustainable management of the environment.

Food and Agriculture Organization of the United Nations

OIE WORLD ORGANISATION FOR ANIMAL HEALTH

World Health Organization

OIE's Support to Member Countries

Performance of Veterinary Services (PVS) Pathways

- Sustainable improvement of a country's veterinary services (VS) in compliance with OIE standards.
- Assess Gaps and Recommendations to strengthen VS
- Legislation, Education, Laboratories, Public-private partnerships

Capacity building activities

- Strengthen animal disease surveillance, detection and rapid response, Important for improving animal health and public health and improving
- Regular training seminars for OIE Delegates and focal points

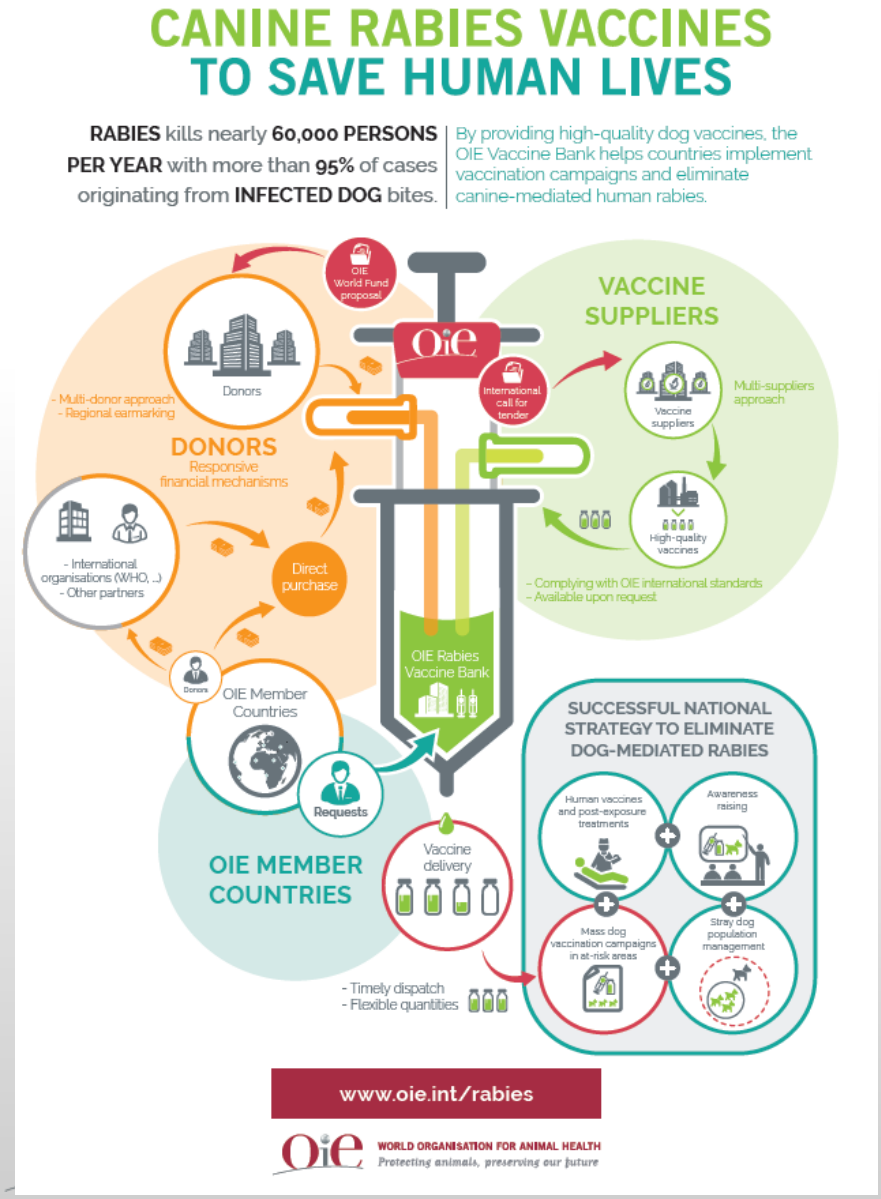
OIE Laboratory Twinning

- Improvement of laboratory capacity and expertise
- Activities of the Veterinary Services are an international public good and are consequently eligible for appropriate national, regional or international funding support.

Vaccine Banks

- Regional Vaccine Banks (Avian Influenza, Rabies, FMD)

OIE Rabies Vaccine Bank



- High quality vaccine with a lower cost
- Multiple donor involvement & regional approach

- **OIE orders or deliveries** with financial support from donors :

Afghanistan, Bangladesh, Bhutan, Indonesia, Cambodia, Gambia, Kenya, Haiti, Lao PDR, Mali, Myanmar, Namibia, Nepal, Philippines, Sri Lanka, Togo, Tunisia, Vietnam, Senegal, Eritrea, Côte d'Ivoire
5,432,200 doses

- **Direct purchase by Countries**:

Burkina Faso, Malaysia, Singapore, Mali and Chad, Ghana, Myanmar, Bangladesh, Tanzania
576,700 doses

- **WHO orders or deliveries**:

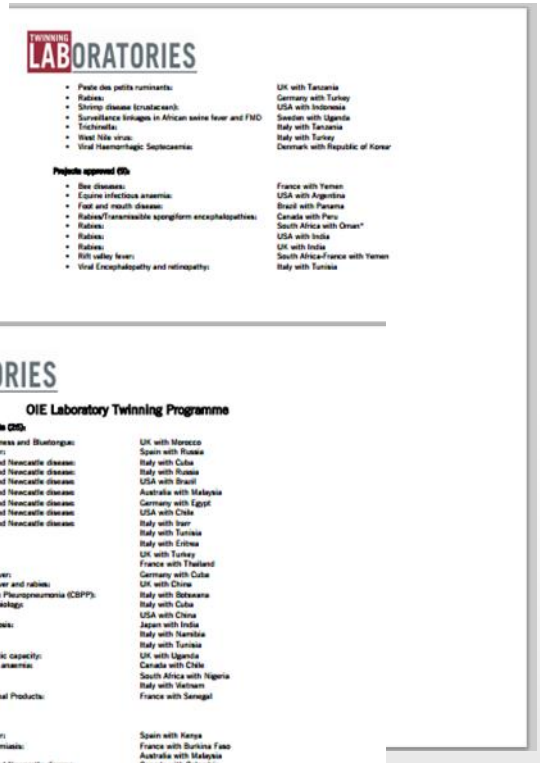
South Africa, Philippines, Tanzania, Central African republic, Pakistan
14,150,000 doses

Total of 20,158,900 doses of rabies vaccines
delivered to **30 Countries as of Aug 2018**

OIE Laboratory Twinning

Results (Project status - August 2018)

- 47 projects completed
- 31 projects underway
- 8 projects approved and waiting (‘in the pipeline’)
- Both Terrestrial and Aquatic animal diseases are covered by these projects

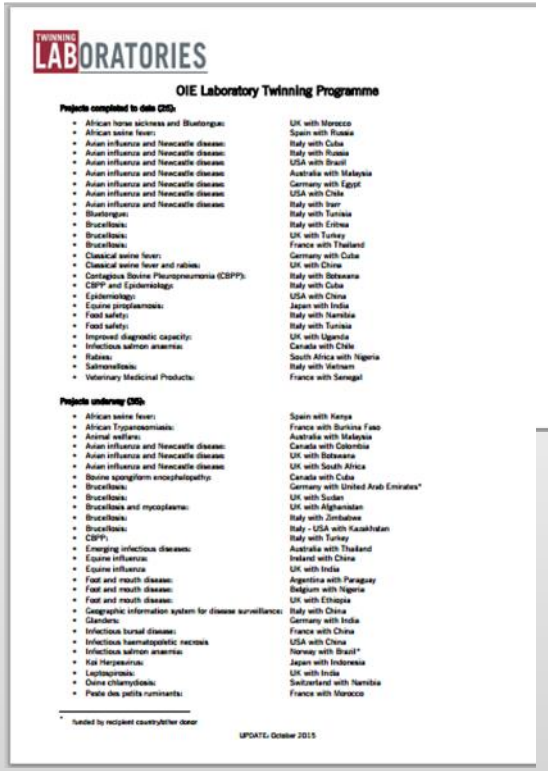


TWINNING LABORATORIES

- Peste des petits ruminants: UK with Tanzania
- Rabies: Germany with Turkey
- Shrimp disease (crustacean): USA with Indonesia
- Surveillance linkages in African swine fever and FMD: Sweden with Uganda
- Trichinella: Italy with Tanzania
- West Nile virus: Italy with Turkey
- Viral Haemorrhagic Septicaemia: Denmark with Republic of Korea

Projects approved (0):

- Bee diseases: France with Yemen
- Equine infectious anaemia: USA with Argentina
- Foot and mouth disease: Brazil with Panama
- Rabies/Transmissible spongiform encephalopathies: Canada with Peru
- Rabies: South Africa with Oman*
- Rabies: USA with India
- Rabies: UK with India
- Rift valley fever: South Africa-France with Yemen
- Viral Encephalopathy and retinopathy: Italy with Tunisia



TWINNING LABORATORIES

OIE Laboratory Twinning Programme

Projects completed to date (25):

- African horse sickness and Bluetongue: UK with Morocco
- African swine fever: Spain with Russia
- Avian influenza and Newcastle disease: Italy with Cuba
- Avian influenza and Newcastle disease: Italy with Russia
- Avian influenza and Newcastle disease: USA with Brazil
- Avian influenza and Newcastle disease: Australia with Malaysia
- Avian influenza and Newcastle disease: Germany with Egypt
- Avian influenza and Newcastle disease: USA with Chile
- Avian influenza and Newcastle disease: Italy with Iran
- Bluetongue: Italy with Tunisia
- Brucellosis: Italy with Eritrea
- Brucellosis: UK with Turkey
- Brucellosis: France with Thailand
- Classical swine fever: Germany with Cuba
- Classical swine fever and rabies: UK with China
- Contagious Bovine Pleuropneumonia (CBPP): Italy with Botswana
- CBPP and Epidemiology: Italy with Cuba
- Epidemiology: USA with China
- Equine piroplasmosis: Japan with India
- Food safety: Italy with Namibia
- Food safety: Italy with Tunisia
- Improved diagnostic capacity: UK with Uganda
- Infectious salmon anaemia: Canada with Chile
- Rabies: South Africa with Nigeria
- Salmonellosis: Italy with Vietnam
- Veterinary Medicinal Products: France with Senegal

Projects underway (30):

- African swine fever: Spain with Kenya
- African Trypanosomiosis: France with Burkina Faso
- Animal welfare: Australia with Malaysia
- Avian influenza and Newcastle disease: Canada with Colombia
- Avian influenza and Newcastle disease: UK with Botswana
- Avian influenza and Newcastle disease: UK with South Africa
- Bovine spongiform encephalopathy: Canada with Cuba
- Brucellosis: Germany with United Arab Emirates*
- Brucellosis: UK with Sudan
- Brucellosis and mycoplasma: UK with Afghanistan
- Brucellosis: Italy with Zimbabwe
- Brucellosis: Italy - USA with Kazakhstan
- CBPP: Italy with Turkey
- Emerging infectious diseases: Australia with Thailand
- Equine influenza: Ireland with China
- Equine influenza: UK with India
- Foot and mouth disease: Argentina with Paraguay
- Foot and mouth disease: Belgium with Nigeria
- Foot and mouth disease: UK with Ethiopia
- Geographic information system for disease surveillance: Italy with China
- Glanders: Germany with India
- Infectious bursal disease: France with China
- Infectious haematopoietic necrosis: USA with China
- Infectious salmon anaemia: Norway with Brazil*
- Koi Herpesvirus: Japan with Indonesia
- Leptospirosis: UK with India
- Ovine chlamydiosis: Switzerland with Namibia
- Peste des petits ruminants: France with Morocco

* funded by recipient country/ther donor

UPDATE: October 2015

Laboratory twinning process

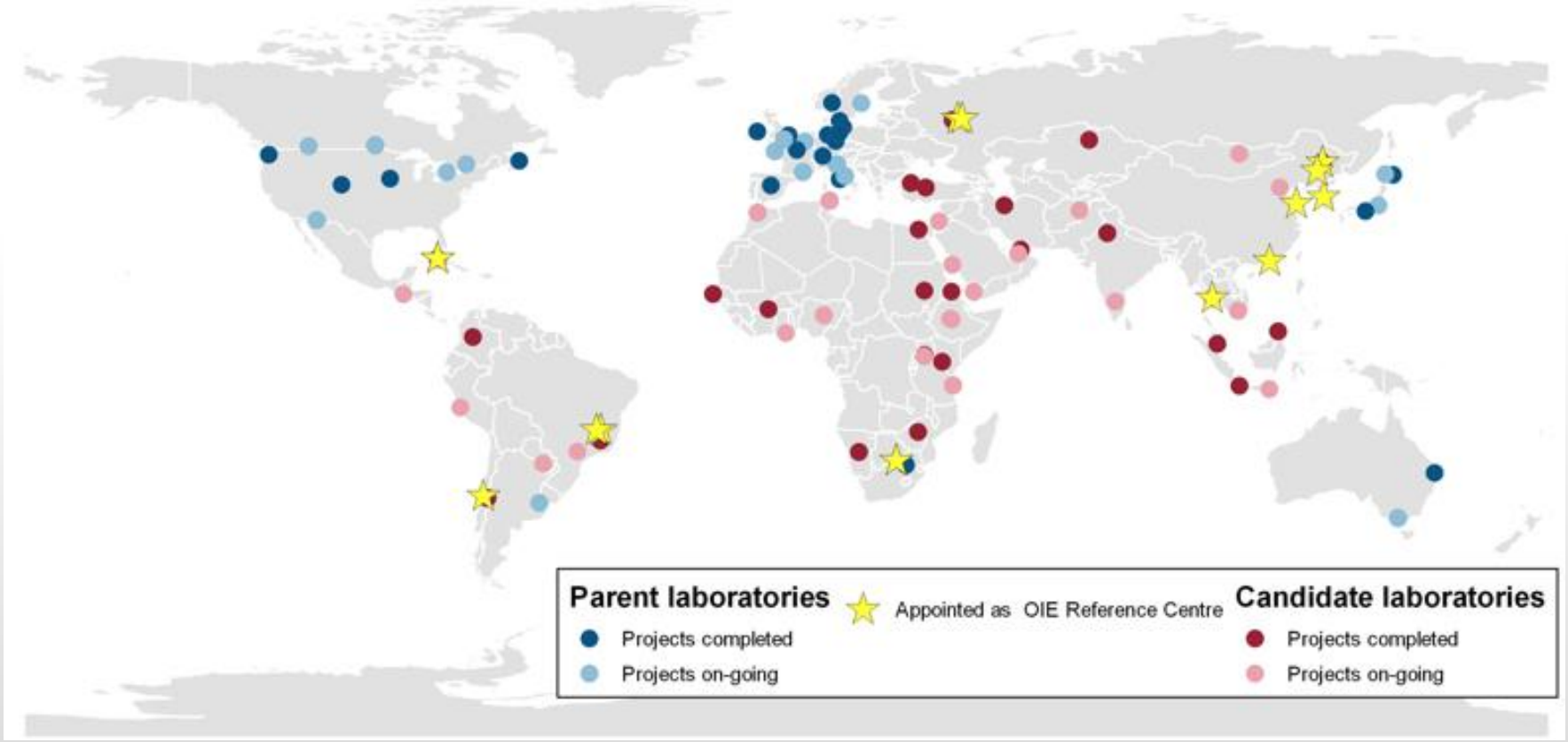
- Project initiation through Initial assessment of the laboratory in terms of equipment including the maintenance, quality assurance system, reagents availability, and training needs (Diagnostic and Vaccine units).
- Organization of technical training workshops including staff exchanges on diagnosis and quality assurance systems
- Training on serological, virological, bacteriological, molecular biological techniques and various other necessary scientific tools
- Training on biosafety, and quality management system
- International inter-laboratory proficiency testing and assessment of knowledge
- Guide scientifically and in compliance with the OIE international standards for national disease surveillance and control plans adapted to the country-specific epidemiological context
- Regular communication between partners through teleconferences/skype
- A closing meeting involving the surrounding countries of the candidate lab to inform the knowledge and experience gained through the twinning project and to invite for regional collaboration
- Project closure

Regional distribution of laboratory twinning projects

Both completed and ongoing (August 2018)

Disease	Asia	Africa	Middle East	Americas	Europe
AI	2	4	1	5	1
Brucellosis	2	3	2	-	1
FMD	1	3	-	1	-
PPR	-	1	2	-	-
Rabies	3	1	-	1	1
ASF	-	2	-	-	1
CSF	1	-	-	1	1
CBPP		1		1	1
Aquatic diseases	4	1	1	2	-
Equine diseases	4	-	1	-	-
Overall projects total	24	26	8	13	6

OIE Laboratory Twinning Projects



Contribution of twinning to OIE Reference Centre network

Adopted (May 2012)

- RABIES – Changchun Veterinary Research Institute, China (People's Rep. of)
- AVIAN MYCOPLASMOSIS – National Centre for Animal and Plant Health, Cuba
- CONTAGIOUS BOVINE PLEUROPNEUMONIA (CBPP) – National Veterinary Laboratory, Botswana

Adopted (May 2014)

- INFECTIOUS SALMON ANAEMIA – Aquaculture Pathology Laboratory, Chile
- OIE Collaborating Centre for VETERINARY EPIDEMIOLOGY AND PUBLIC HEALTH – China Animal Health and Epidemiology Centre (CAHEC), China (People's Rep. of)

Adopted (May 2016)

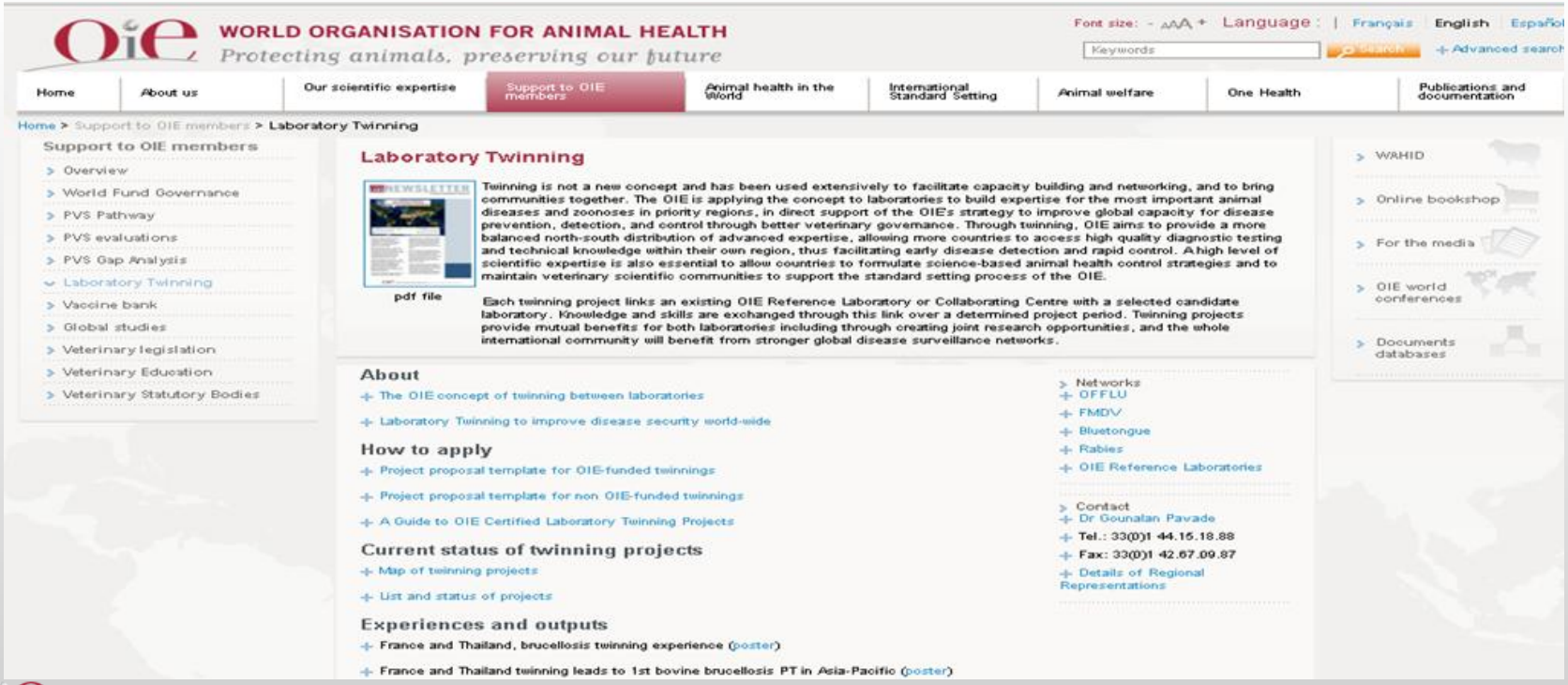
- BRUCELLOSIS – National Institute of Animal Health, Thailand
- AVIAN INFLUENZA – Laboratório Nacional Agropecuário em Campinas – Lanagro-SP, Brazil
- NEWCASTLE DISEASE – Laboratório Nacional Agropecuário em Campinas – Lanagro-SP, Brazil

Adopted (May 2018)

- INFECTIOUS BURSAL DISEASE – Harbin Veterinary Research Institute, Chinese Academy of Agricultural Sciences, Harbin, China (People's Rep. of)
- AVIAN INFLUENZA – Federal Centre for Animal Health (FGBI-ARRIAH), Vladimir, Russia
- NEWCASTLE DISEASE – Federal Centre for Animal Health (FGBI-ARRIAH), Vladimir, Russia
- INFECTIOUS HAEMATOPOIETIC NECROSIS - Animal and Plant Inspection and Quarantine Technical Centre, China (People's Rep. of)
- VIRAL HAEMORRHAGIC SEPTICAEMIA - Aquatic Animal Quarantine Laboratory, National Fishery Products Quality Management Service, Ministry of Oceans & Fisheries, Korea (Rep. of)

Conclusions

- Twinning concept is functioning well
- The laboratory Twinning Programme has made important contributions to improve the global disease control capacity for TADs
- Countries in all regions are benefiting
- OIE twinning is addressing the current bias in the geographical distribution of OIE RL/CC
- Both Terrestrial and aquatic diseases are addressed by OIE twinning projects
- Post twinning phase is very critical to achieve the OIE RC status



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Protecting animals, preserving our future

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