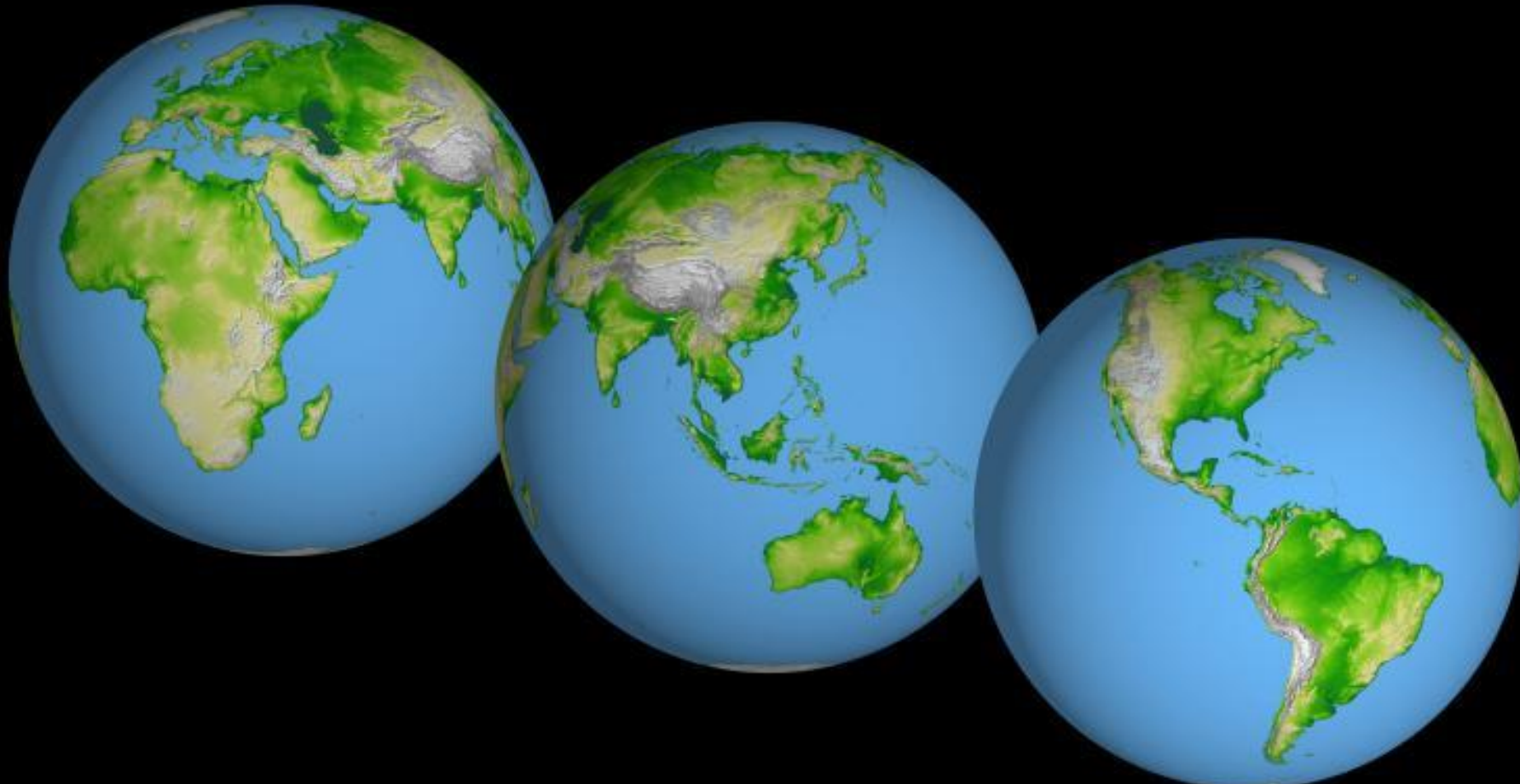


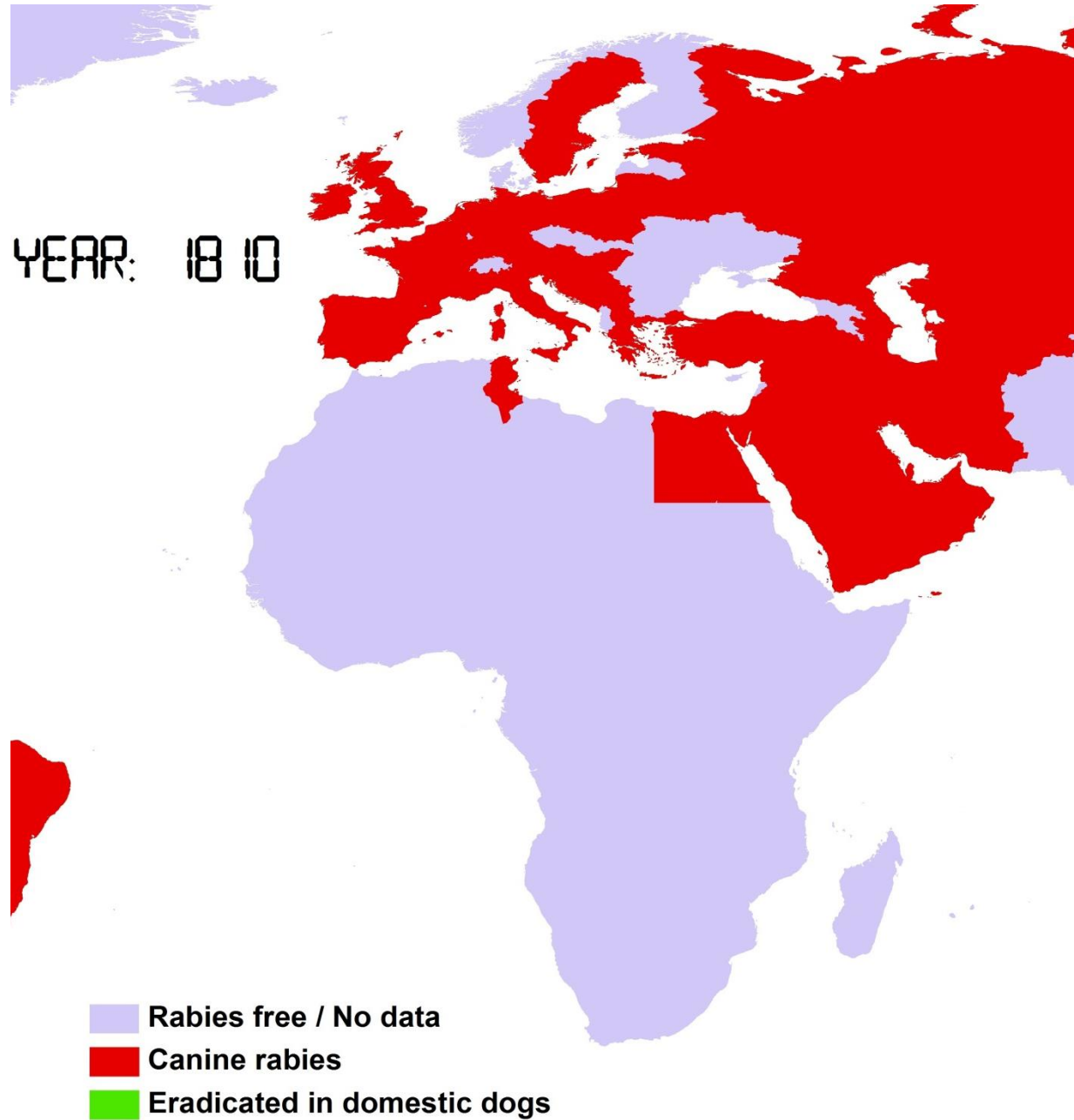
Elimination of dog-mediated human rabies by 2030 in Africa – national strategies, legal framework, tools to track the progress.

Prof Louis H Nel

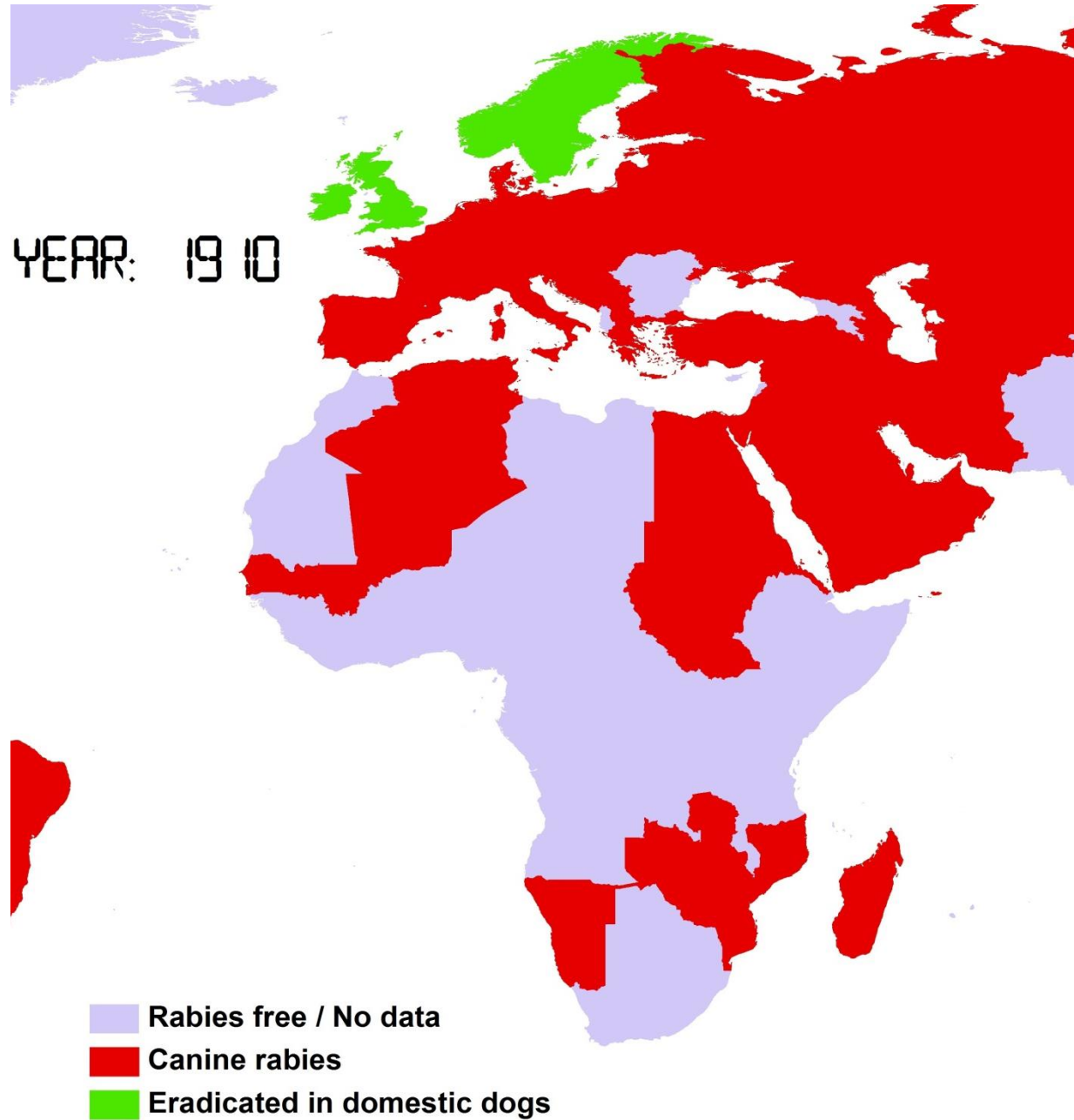
University of Pretoria, South Africa and Global Alliance for Rabies Control



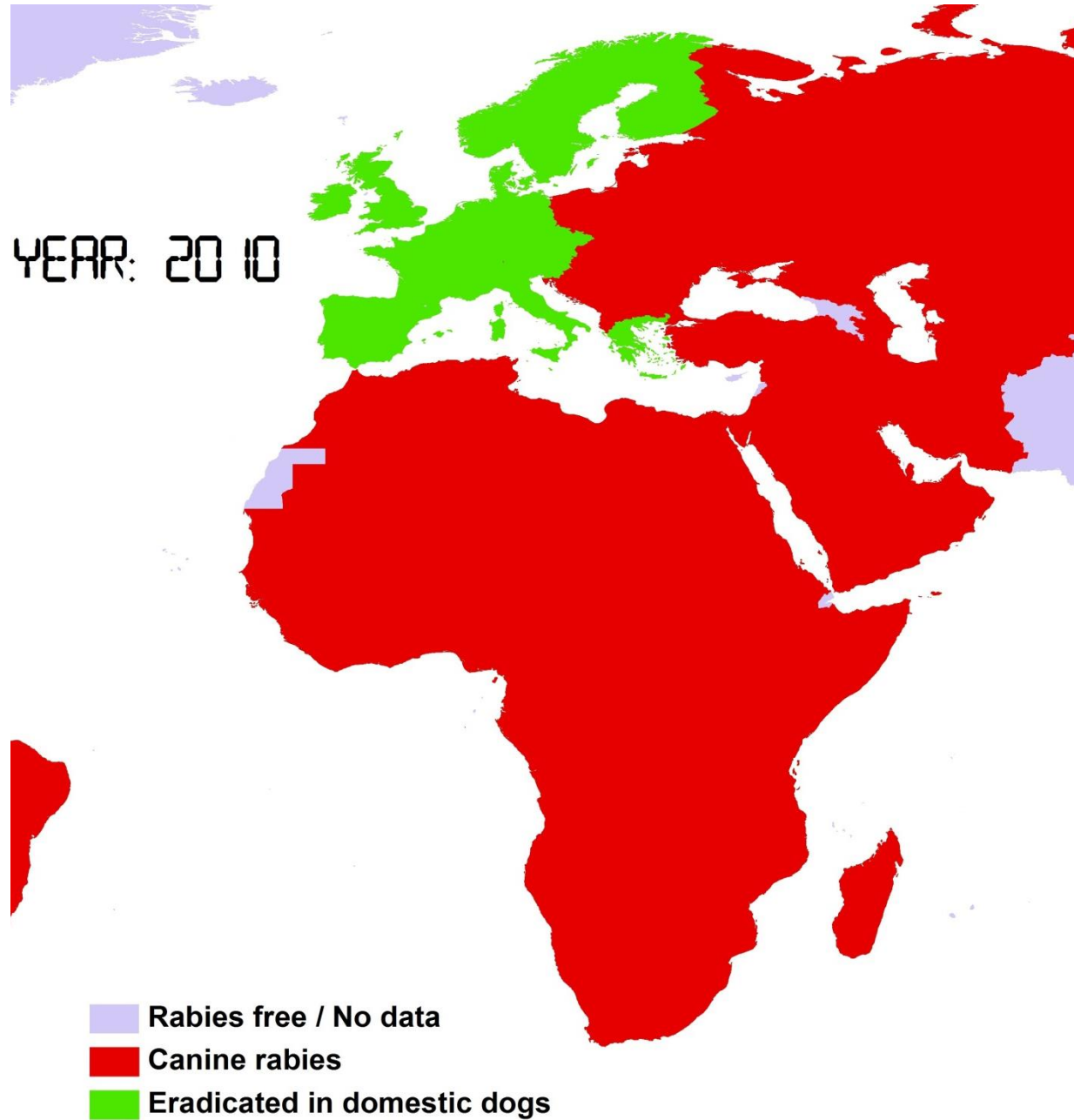
YEAR: 18 10



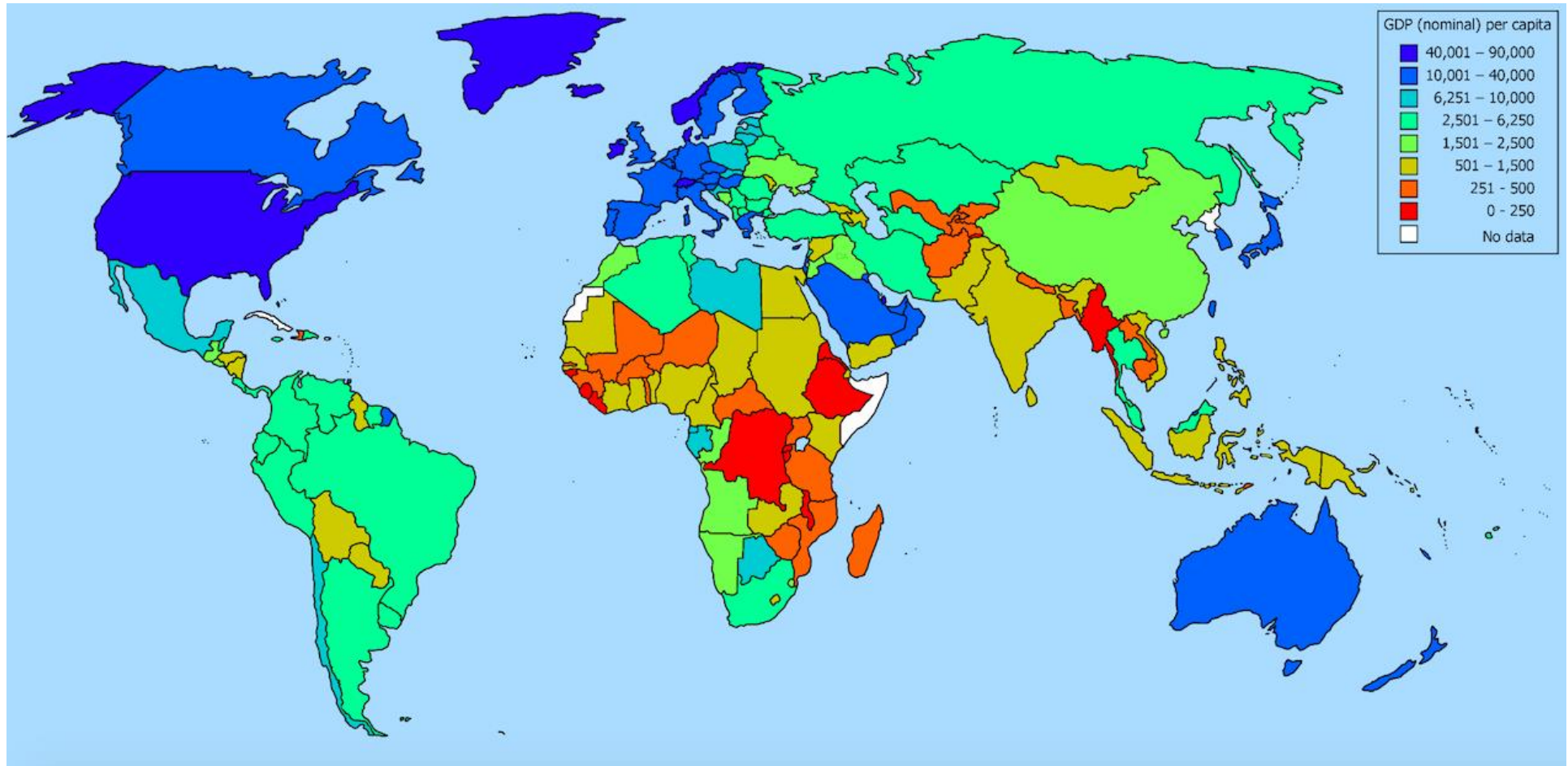
YEAR: 19 10



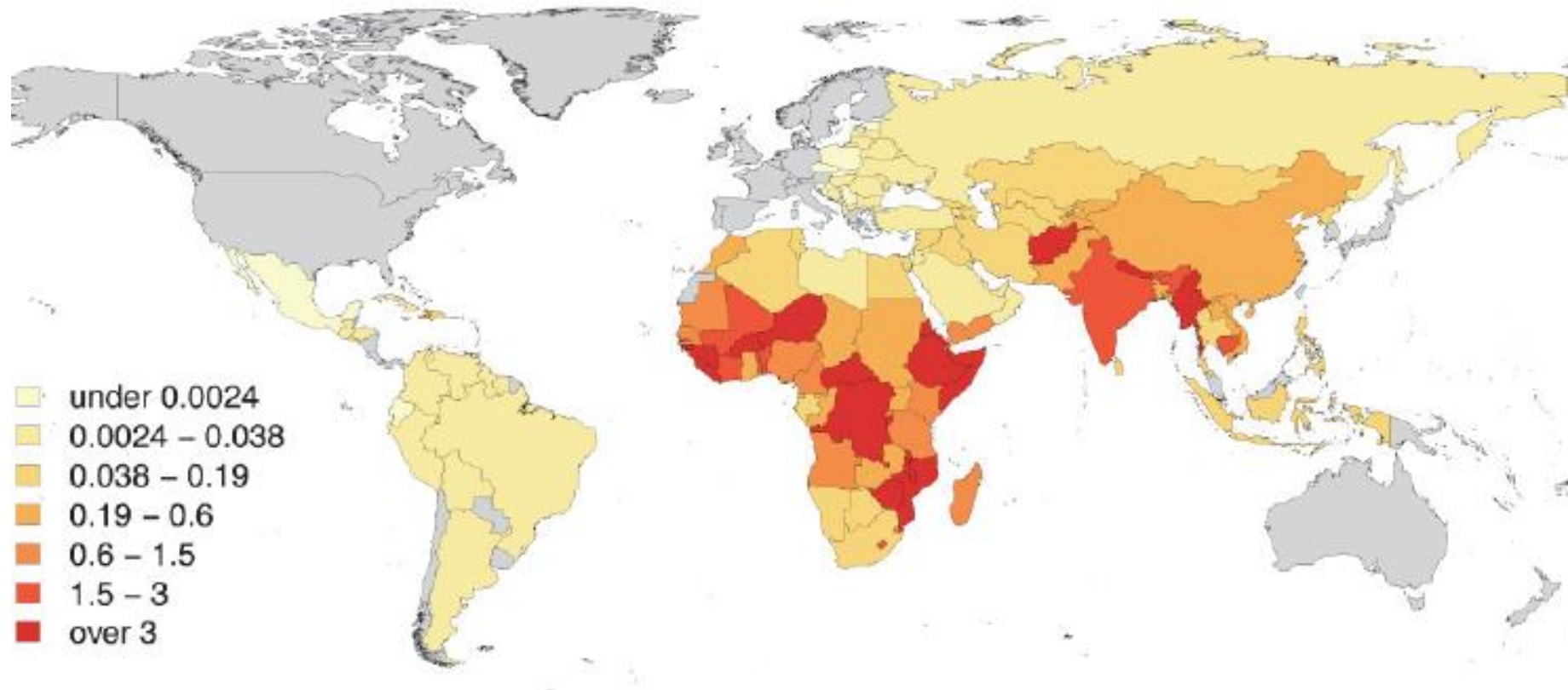
YEAR: 2010



Per capita nominal GDP



Per capita human death rates from canine rabies



Per capita costs of rabies prevention

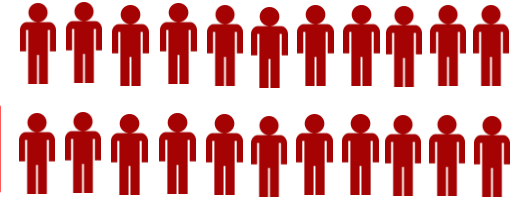
Dog vaccination coverage (%)

Human rabies deaths per million population

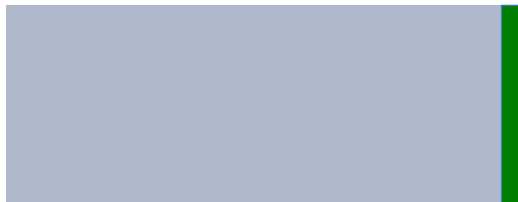
AFRICA



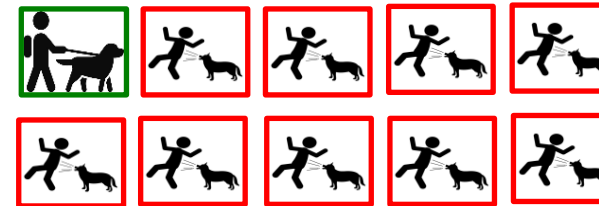
\$0.11



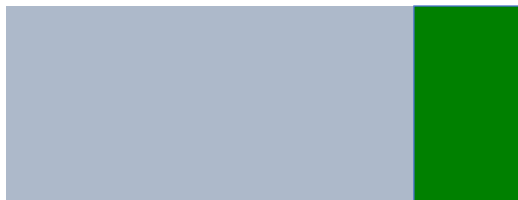
ASIA



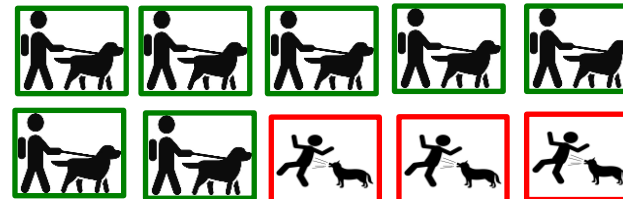
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LATIN AMERICA



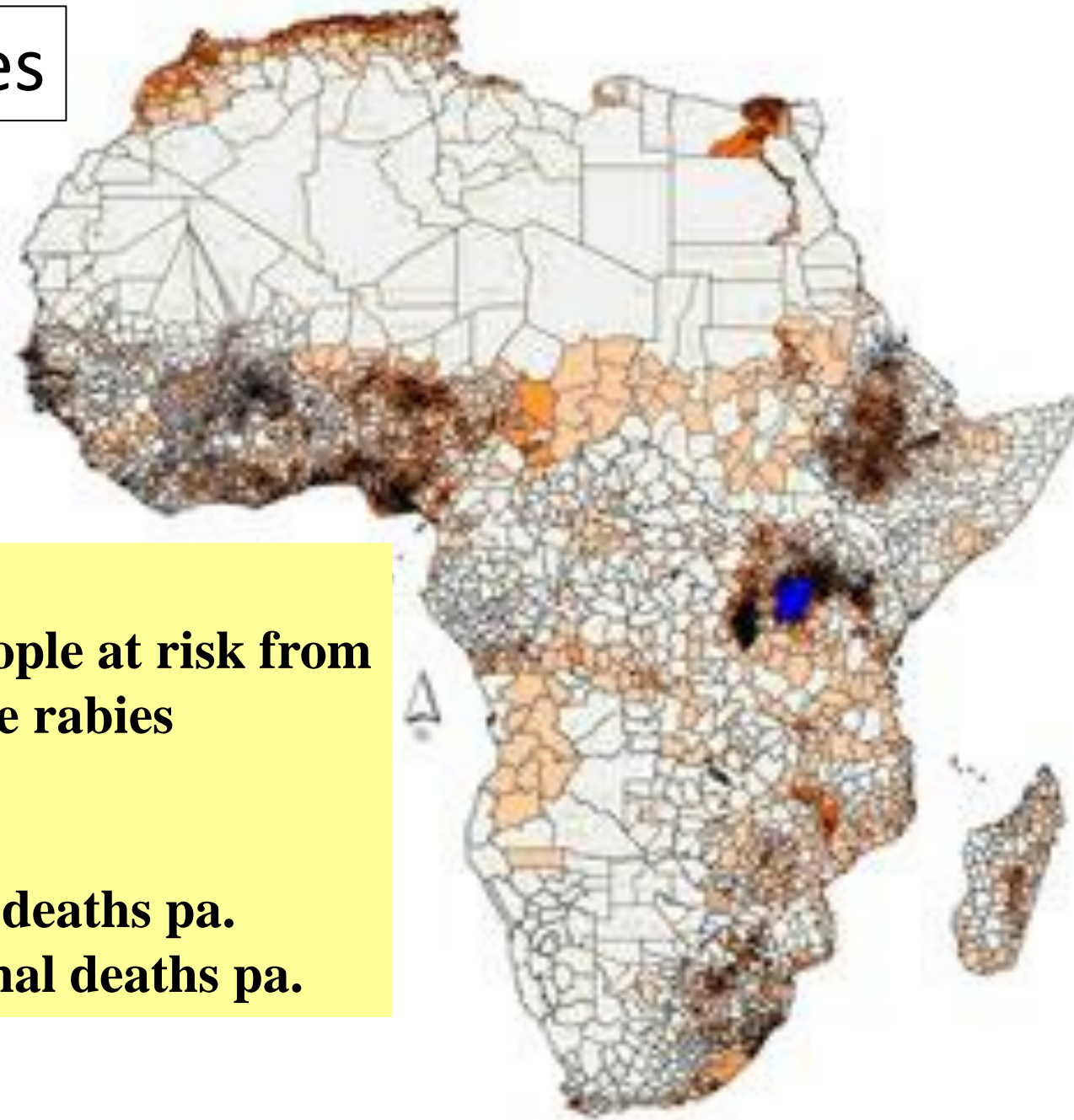
\$0.34



Human post-exposure prophylaxis

Dog vaccination

Canine rabies



Estimated:

- **634 million people at risk from endemic canine rabies**

Predicted:

- **24,000 human deaths pa.**
- **650,000 + animal deaths pa.**



Rabies:

- Most Fatal Disease
- Completely Preventable

Why Neglected?

Who is responsible?

1. Dogs not economically vital
2. Public health impact not appreciated

Veterinary neglect of free roaming dogs.

Underreporting:

Laboratory diagnosis non-existent and misdiagnosis common

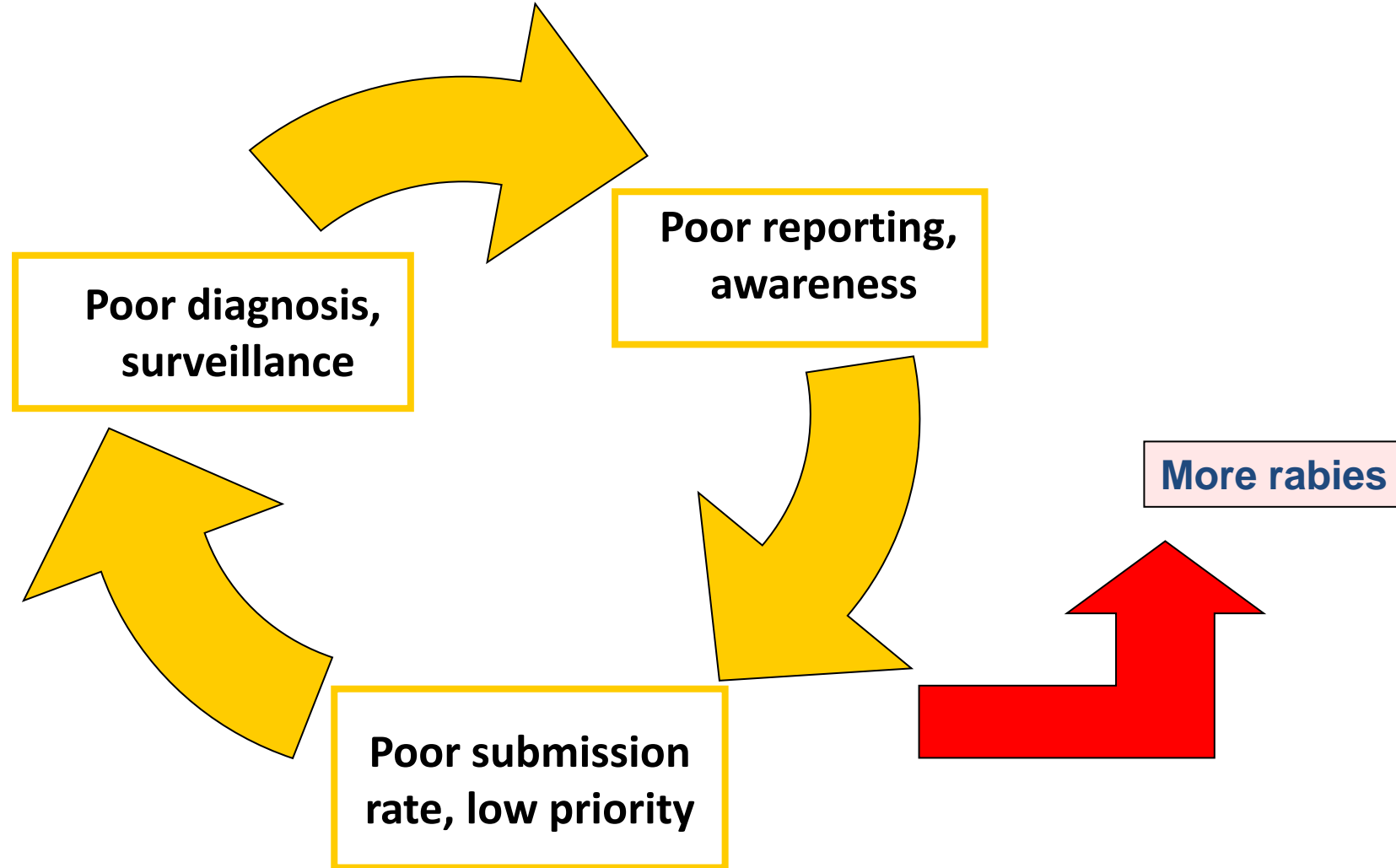
Global health agenda:
Dog rabies in developing world

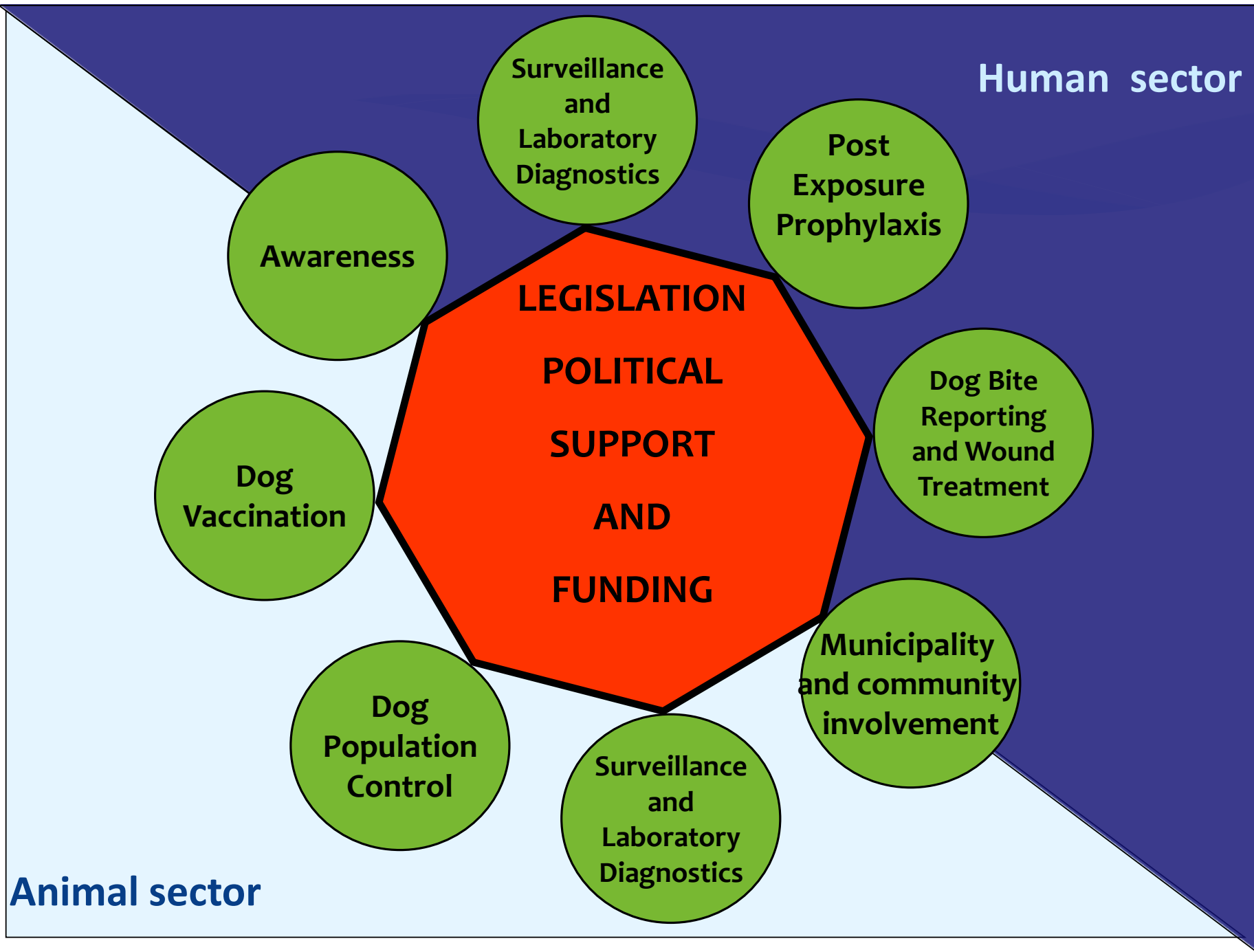
Less newsworthy than novel strains of influenza or coronaviruses etc.

Rural communities:

- Poverty
- Remote location
- Poor infrastructure
- Negligible health care

Lab diagnosis, surveillance and rabies: The circle of neglect





WRD 2013 Tripartite statement



Food and Agriculture Organization
of the United Nations

العربية 中文 English Français Italiano

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FAO, OIE and WHO unite for World Rabies Day to call for elimination of disease

Mass dog vaccinations and public awareness key to breaking cycle of transmission



Livestock can become infected with rabies by dogs or wildlife, resulting in economic losses and impacting food security.

27 September 2013, Rome - The Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE) and the World Health Organization (WHO) have issued the following joint statement on the occasion of World Rabies Day.

UNITED AGAINST RABIES

On World Rabies Day – 28 September – FAO, OIE and WHO unite in their goal to eliminate human rabies and control the disease in animals.

Pan-African Rabies Control Network



Global Alliance for Rabies Control

PARACON

Pan-African Rabies Control Network

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[PARACON Meetings](#)

[Rabies Epidemiological Bulletin](#)

[PARACON Partners](#)

PARACON meeting (2015)

9 June 2015 - 11 June 2015

South Africa



GLOBAL FRAMEWORK FOR THE ELIMINATION OF DOG-MEDIATED HUMAN RABIES

Dog-mediated human rabies kills tens of thousands of people every year worldwide. Freedom from dog-mediated human rabies is a global public good and is feasible with currently available tools.

In accordance with the consensus of the Global Conference (Geneva, 10-11 December 2015), this framework provides a coordinated approach and vision for the global elimination of dog-mediated human rabies. It is intended to harmonize actions and provide adaptable, achievable guidance for country and regional strategies.

The five pillars of rabies elimination (STOP-R)

1 SOCIO-CULTURAL

Rabies control involves a wide range of stakeholders including the general public. The socio-cultural context influences rabies perceptions and dog-keeping practices of at-risk populations. Understanding the context guides approaches to motivate behavioural change and plan feasible delivery of services.

Includes activities for:

- **Awareness:** build awareness of dog-mediated rabies as a preventable global public health problem including through participation in initiatives such as World Rabies Day and the EndRabiesNow campaign
- **Responsible dog ownership:** promote responsible dog ownership and dog population management practices, including dog vaccination, in accordance with OIE standards
- **Bite prevention and treatment:** develop and implement education programmes on bite prevention and first aid for both children and adults
- **Post-exposure prophylaxis:** increase awareness and understanding of post-exposure prophylaxis (PEP) imperatives and options including intradermal administration
- **Community engagement:** encourage community involvement and engagement in activities to eliminate dog-mediated rabies

2 TECHNICAL

Effective animal health and public health systems are required to eliminate dog-mediated human rabies. These systems must be strengthened and resourced appropriately, and gaps identified and filled.

Includes activities for:

- **Vaccination:** ensure safe, efficacious and accessible dog and human vaccines and immunoglobulins, and promote and implement mass dog vaccination as the most cost-effective intervention to achieve dog-mediated human rabies elimination
- **Logistics:** collect data on needs forecasts to inform the vaccine procurement system and to create and sustain the logistics and infrastructure required for effective delivery and implementation of mass dog vaccination programmes and PEP administration
- **Diagnostics:** ensure capacity and capability for rapid and accurate rabies diagnosis through accessible, well equipped laboratories and trained personnel
- **Surveillance:** support improved surveillance, sampling, reporting, and data-sharing
- **Technical support:** provide guidance and technical support for the development and tailoring of regional and national plans, including promoting the use of existing tools
- **Proof of concept:** support proof-of-concept programmes, and then scale up through leveraging of success

3 ORGANIZATION

The One Health approach of close collaboration is applied. Leadership, partnership and coordination for rabies elimination activities arise from the human health and animal health sectors and other stakeholders.

Includes activities for:

- **One Health:** promote the One Health approach and intersectoral coordination through national and regional networks
- **Good governance:** establish good governance, including clear roles, chain of command, measurable outcomes and timelines
- **Harmonization:** align work plans and activities with national and regional priorities and approaches fostering synergies among sectors
- **Coordination:** coordinate and combine human resources, logistics and infrastructure of other programmes and initiatives, as appropriate and feasible
- **Indicators and performance:** identify targets and their indicators to support performance measurement, including surveillance and validation data, to identify areas requiring attention or extra support
- **Monitoring and evaluation:** support monitoring and evaluation of national plans to ensure timely and cost effective delivery

4 POLITICAL

Success depends on political will and support for elimination of dog-mediated human rabies. Political will results from recognition of rabies elimination as a national, regional and global public good.

Includes activities for:

- **Political support:** political support is essential and most relevant during and following country instability (political upheaval, natural disasters, etc.)
- **International support:** encourage countries to request a resolution on dog-mediated human rabies elimination through the World Health Assembly (WHO) and the General Assembly of Delegates (OIE)
- **Legal frameworks:** establish and enforce appropriate legal frameworks for rabies notification and elimination
- **Demonstrating impacts:** demonstrate the compelling case for mass dog vaccination programmes and their impact on protecting and saving human lives
- **Regional engagement:** support active national and regional engagement and cooperation to commit to a rabies elimination programme and promote the exchange of lessons learnt and experiences to leverage resources and engagement

5 RESOURCES

Rabies elimination activities frequently span several years and therefore require sustained, long-term support.

Includes activities for:

- **Case for investment:** promote the case for investment in dog-mediated human rabies elimination to persuade countries, policy makers and donors of the feasibility, merit and value of investing in rabies elimination strategies
- **Business plans:** prepare business plans based on the Global Framework for Dog-mediated Human Rabies Elimination
- **Investment:** encourage different forms of investment and partnerships (private and public investment) to leverage resources and engagement

CRITICAL SUCCESS FACTORS

- Long-term political and social commitment
- Community engagement
- Sustainable vaccination of 70% of the at-risk dog population
- Proof of concept: start small, scale up
- Sufficient resources, logistics and infrastructure
- Promote vaccine banks and other strategies for acquisition of rabies immunologicals to ensure sufficient supply of quality-assured rabies vaccines and human immunoglobulin
- Reach remote, rural and at-risk populations
- Conduct performance measurement at all levels
- Maintain trained and motivated implementation personnel

STRATEGIC VISION: zero human deaths from dog-mediated rabies by 2030 in participating countries

THE GLOBAL STRATEGIC PLAN
TO END HUMAN DEATHS FROM
DOG-MEDIATED RABIES BY 2030

ZERO BY 30



Four industrial revolutions through the ages

- 1. Coal**
- 2. Petroleum and Gas**
- 3. Electronics and Nuclear**
- 4. Internet and Renewable Energy, AI**



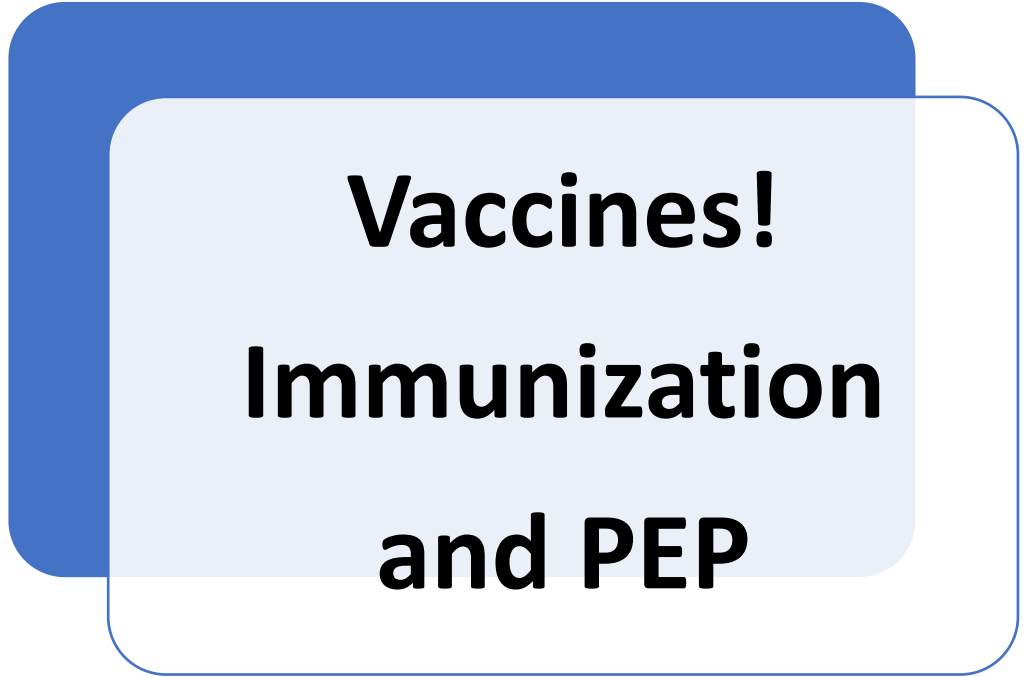
The first RABIES revolution



Before vaccines



The second RABIES revolution



**Vaccines!
Immunization
and PEP**



The third RABIES revolution

**Concept of dog
vaccination to
prevent human
rabies**

Elimination of human rabies by dog vaccination

- “For the removal of rabies – would it be feasible to vaccinate all the dogs?” Nocard, 1885
- Despite Pasteur’s intentions,
5 decades went by without major dog vaccination campaigns

Elimination of human rabies via dogs

- Japan – 1920's
- Ether-inactivated vaccine
- Japan – dog rabies free by vaccination – 1956
- Improved vaccines – by the 1970's – dog vaccination campaigns became more common



The fourth RABIES revolution



**One Health and
the Global
Strategic Plan,
Zero-by-30**

WHY ELIMINATE RABIES ?

Investment in eliminating rabies at its source is the most cost-effective and equitable approach to human rabies prevention



1

Because rabies kills

Once clinical signs appear, rabies is fatal

A deadly and terrifying disease which claims tens of thousands of lives globally every year



2

Because rabies is preventable

Global elimination of dog-mediated rabies is feasible and cost-effective

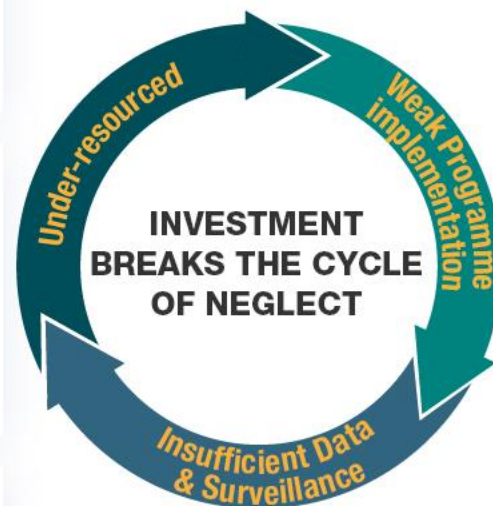
Proven effective solutions exist for prevention of rabies. This has also been demonstrated by proof of concept programs in several countries (refer Annexure 1)



3

Because rabies affects the world's most vulnerable
Disproportionately burdens poor rural communities

Rabies is a disease of poverty. Treatment for human rabies is much more expensive and often inaccessible than the cost of programmes for control and prevention



4

Because eliminating rabies strengthens health systems
Investment in rabies maximizes impact of each dollar

Investment in well integrated rabies elimination program implies an infrastructure capable of reaching the world's most vulnerable thereby improving overall access to healthcare for the disadvantaged



5

Because rabies is a model for 'One Health' collaboration
An effective showcase for 'One Health' in action for other existing and emerging zoonosis

Control of rabies requires effective collaboration between human and animal health sectors



6

Because the world wants to correct neglect and inequality
Investment in rabies elimination will make a significant contribution towards realizing the SDGs.

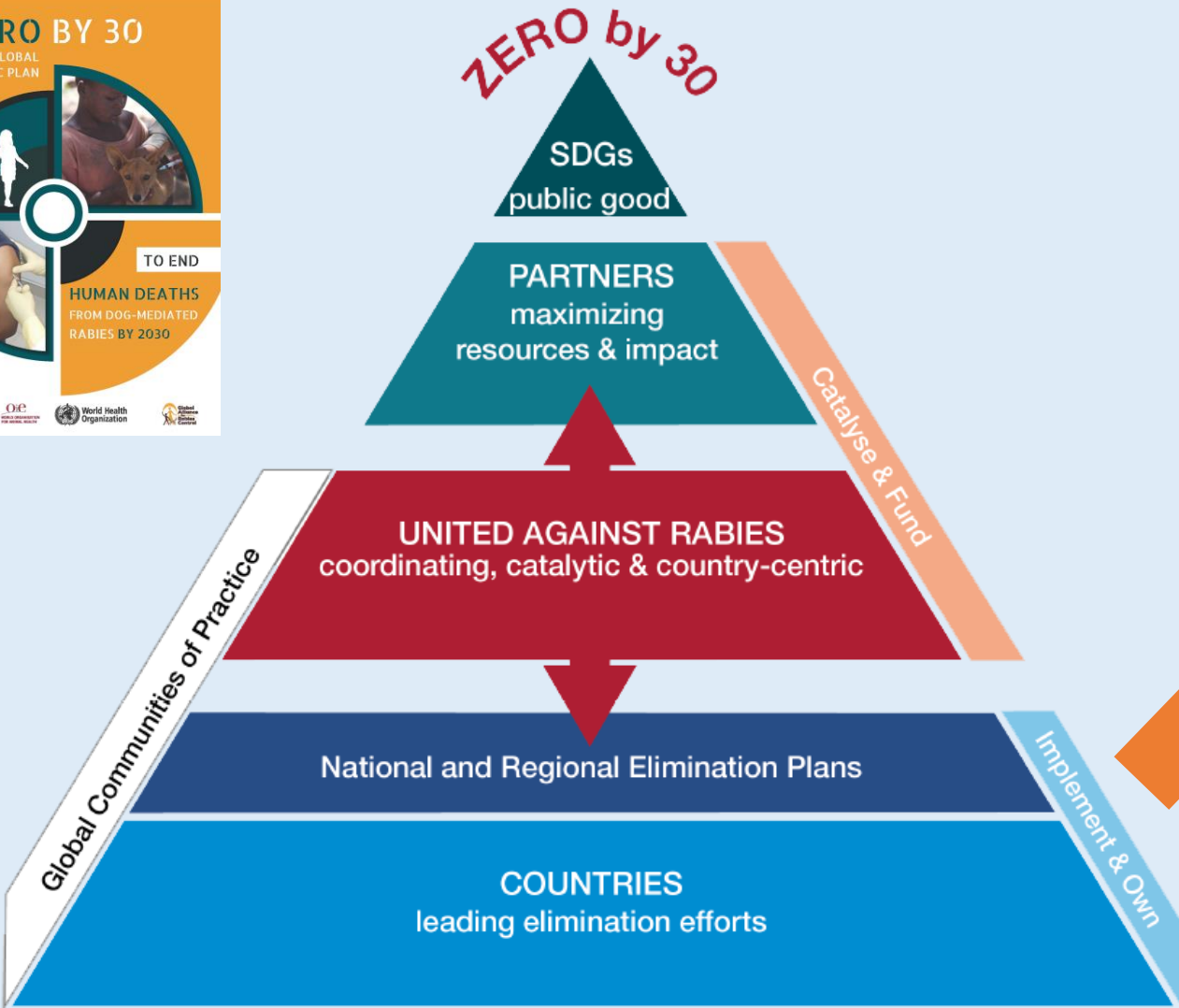
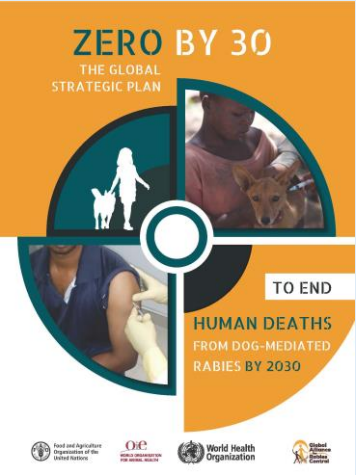
The goal is aligned to SDG 1 & SDG 3

3.3 "by 2030, end the epidemics of ...neglected tropical diseases"

3.8 "achieve universal health coverage ... and access to safe, effective, quality and affordable essential medicines and vaccines for all"

SDG 1 – "end poverty in all its form and "leave no one behind"

Zero by 30 and the Global Strategic Plan



**Countries lead the way,
support from the Global
Community.**

HOW WE WILL REACH ZERO BY 30

Our global strategic plan prioritizes the societal changes needed to reach Zero by 30 into three objectives:

OBJECTIVE 1

to effectively use
vaccines, medicines,
tools and
technologies

Reduce human rabies risk

- improved awareness and education
- increased access to healthcare, medicines and vaccines
- dog vaccinations

OBJECTIVE 2

to generate,
innovate and
measure impact

Provide guidance and data

- effective policies, guidance and governance
- ensuring reliable data to enable effective decision-making

OBJECTIVE 3

to sustain
commitment
and resources

Harness multi-stakeholder engagement

demonstrate the impact of activities completed under the **United Against Rabies** collaboration

Global Coordination: United Against Rabies Forum



- Established September 2020 to implement ‘Zero by 30’
- An inclusive network of stakeholders from a range of sectors
 - 45+ organisations
 - Includes veterinary health, human health sectors, economists, communication experts
 - International organisations, regional networks, government ministries, NGO’s, academia, research institutions, pharmaceutical companies
- Common vision for achieving **zero human deaths from dog-mediated rabies by 2030**
- Steering Group and three action-focused Working Groups
 - Effective use of vaccines, medicines, tools and technologies
 - Strategic and operational support
 - Advocacy and resource mobilisation

Key outputs

Rabies – The Global Challenge

Rabies Roadmap and Resources

Events and Courses



The Rabies Roadmap

Resources

© World Animal Protection

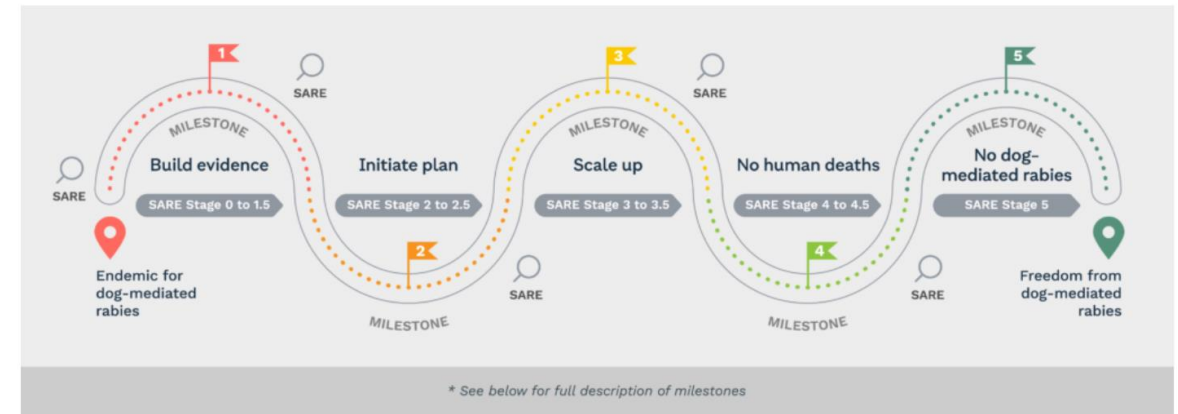
1 every 9 minutes

1 person dies from rabies every 9 minutes and almost half of them are children.

99%

Up to 99% of human rabies infections are caused by a bite from a rabid dog.

The Rabies Roadmap



- ❖ Aligns with WHO and WOAHP milestones, and SARE scores
- ❖ Links countries to specific tools and resources to help progress national control programme

r.tidman@woah.org

The United Against Rabies "Roadmap"

Rabies – The Global Challenge

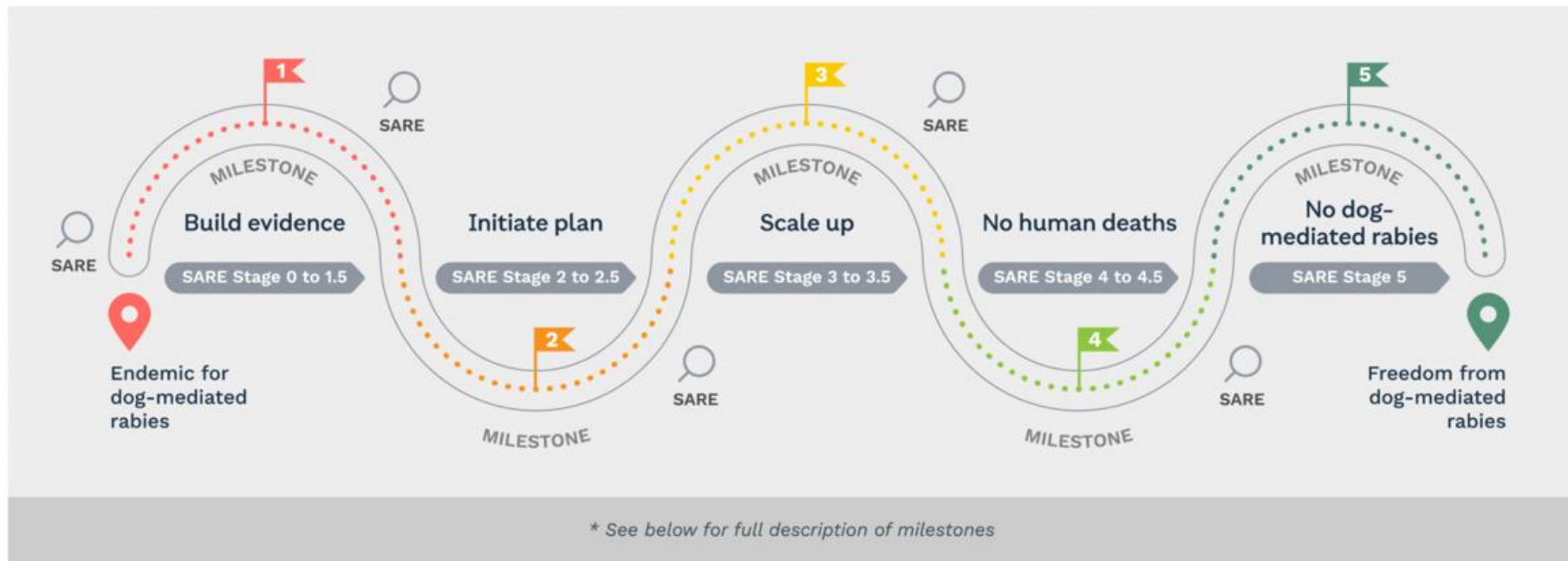
Rabies Roadmap and Resources

Events and Courses

News and Case Studies

About

The Rabies Roadmap



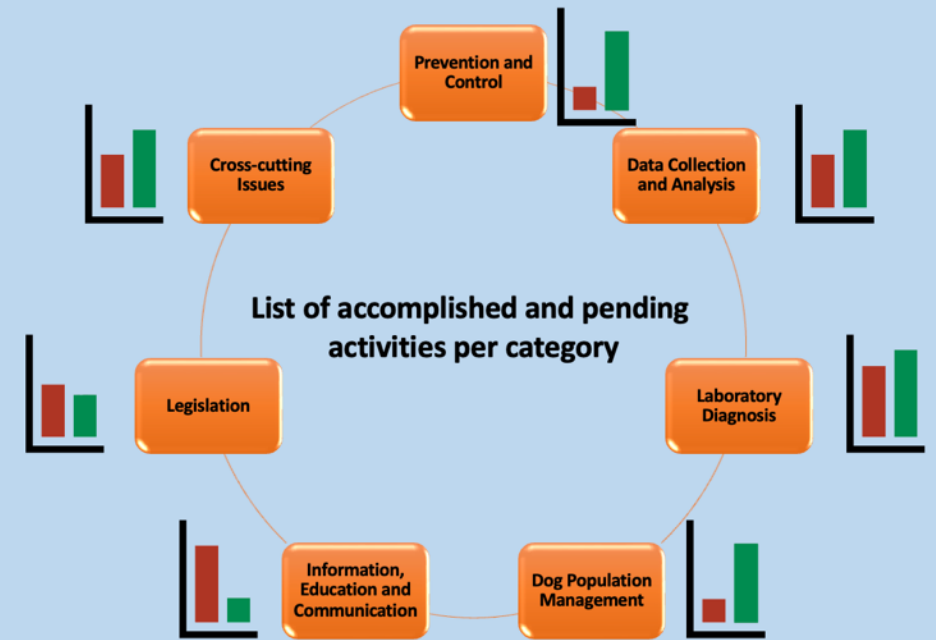
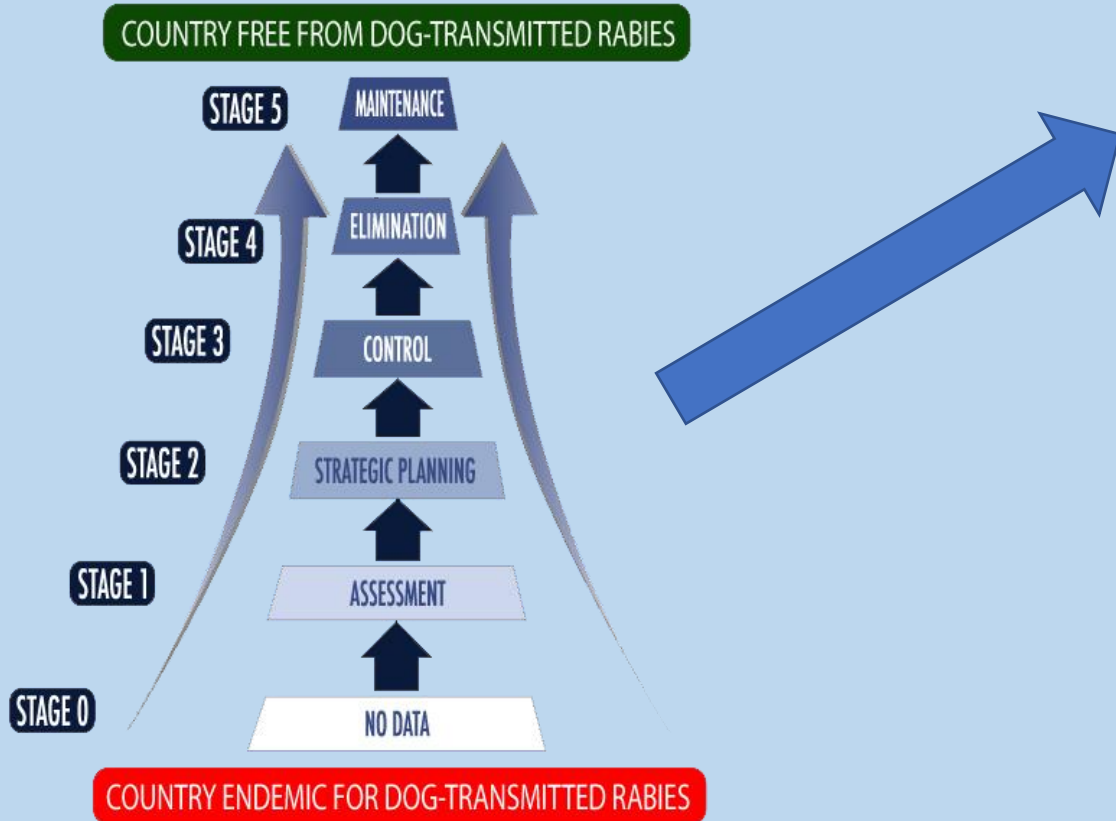
The Rabies Roadmap is a flexible wayfinder to assist anyone involved in planning and implementing rabies control strategies.

The United Against Rabies “Roadmap”

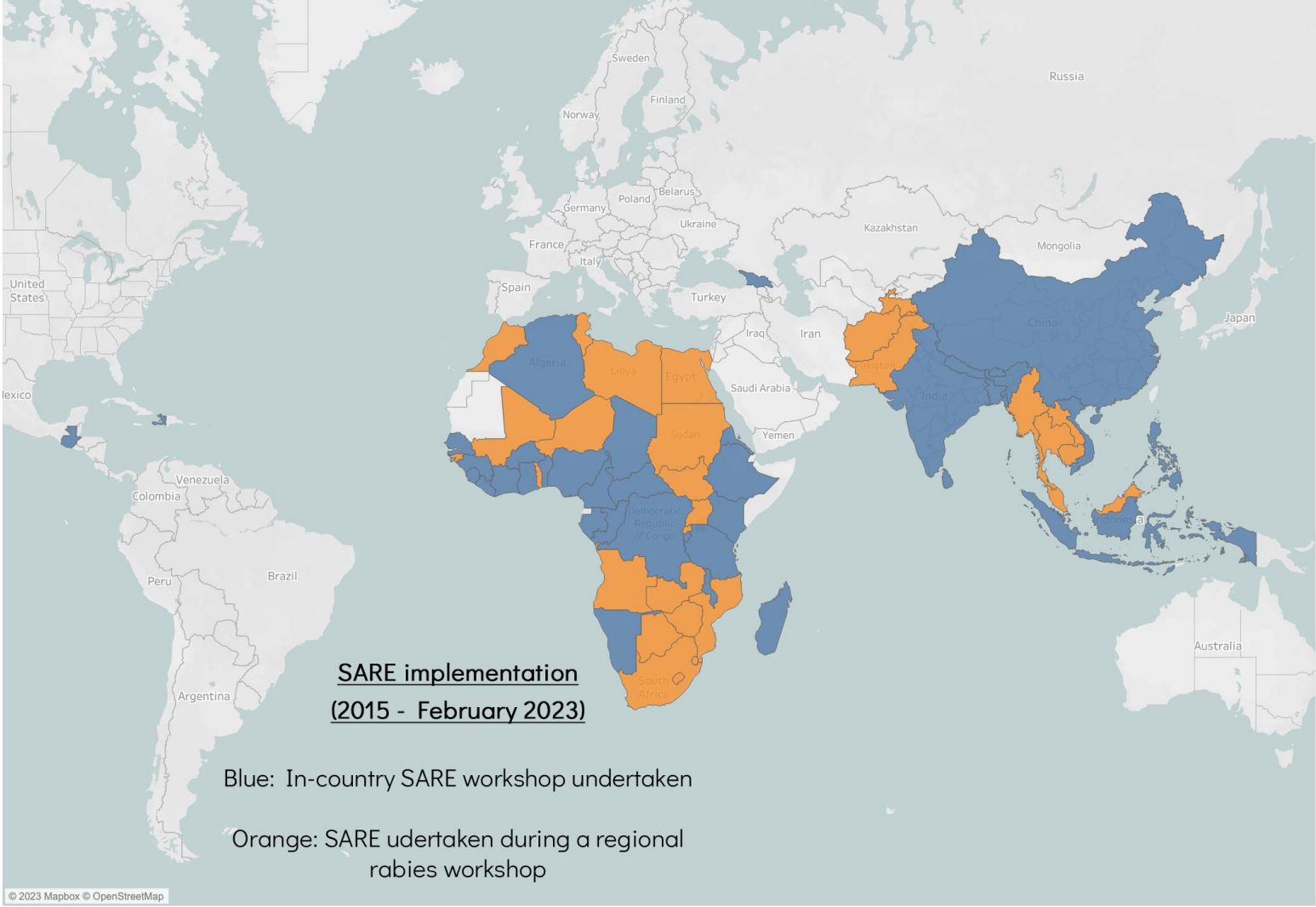
- The Roadmap is enables Members to:
 - Align their efforts with Zero-by-30 by **developing and implementing their national plans**, while
 - **using the tools, structures, resources, and experiences** from the global community.

The role of the SARE in the Roadmap – measuring progress

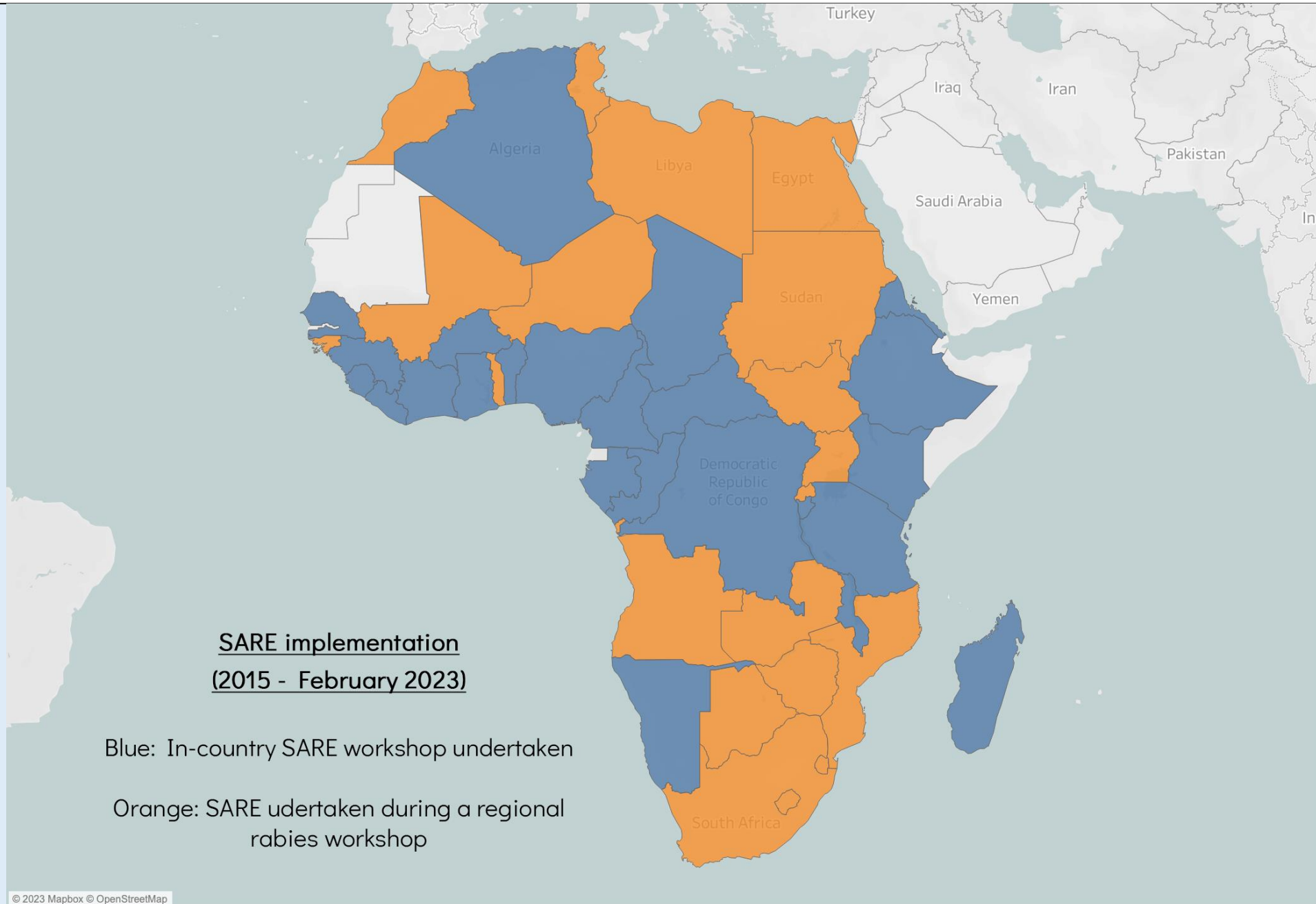
Assess rabies control and elimination program's strengths and weaknesses.



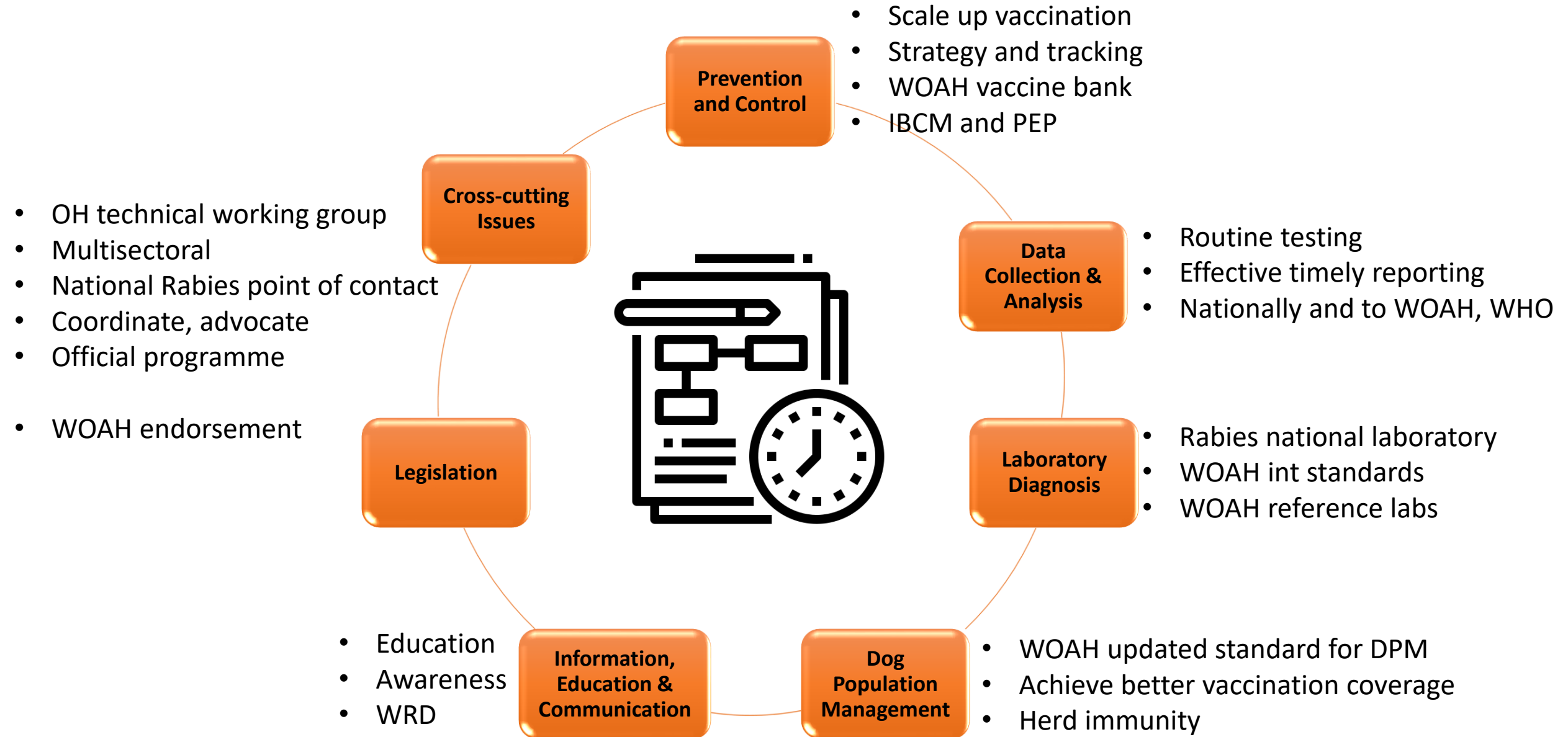
Global implementation of the SARE



Implementation of the SARE, PARACON

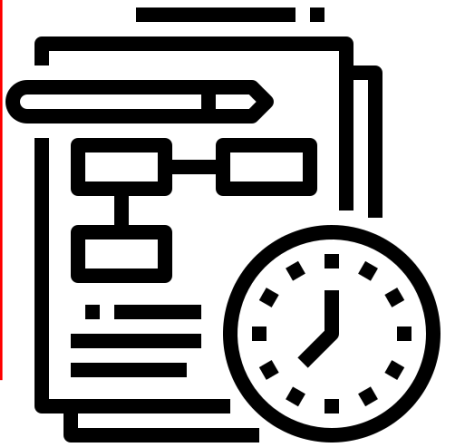


UAR Forum, Roadmap and SARE



One Health, national rabies focal point, coordination, official

- OH technical working group
 - National Rabies point of contact
 - Multisectoral
 - Coordinate, advocate
- Cross-cutting Issues**
- Official programme
 - WOAHA endorsement
- Legislation**



Prevention and Control

- Scale up vaccination
- Strategy and tracking
- WOAHA vaccine bank
- IBCM and PEP

Data Collection & Analysis

- Routine testing
- Effective timely reporting
- Nationally and to WOAHA, WHO

Laboratory Diagnosis

- Rabies national laboratory
- WOAHA int standards
- WOAHA reference labs

Information, Education & Communication

- Education
- Awareness
- WRD

Dog Population Management

- WOAHA updated standard for DPM
- Achieve better vaccination coverage
- Herd immunity

Surveillance

Education

ENVIRONMENTAL HEALTH



Climate change

Geographic barriers

Dog population

PEP and PrEP

ONE HEALTH



HUMAN HEALTH



ANIMAL HEALTH

Bite prevention

Dog vaccination

Livestock

Responsible dog ownership



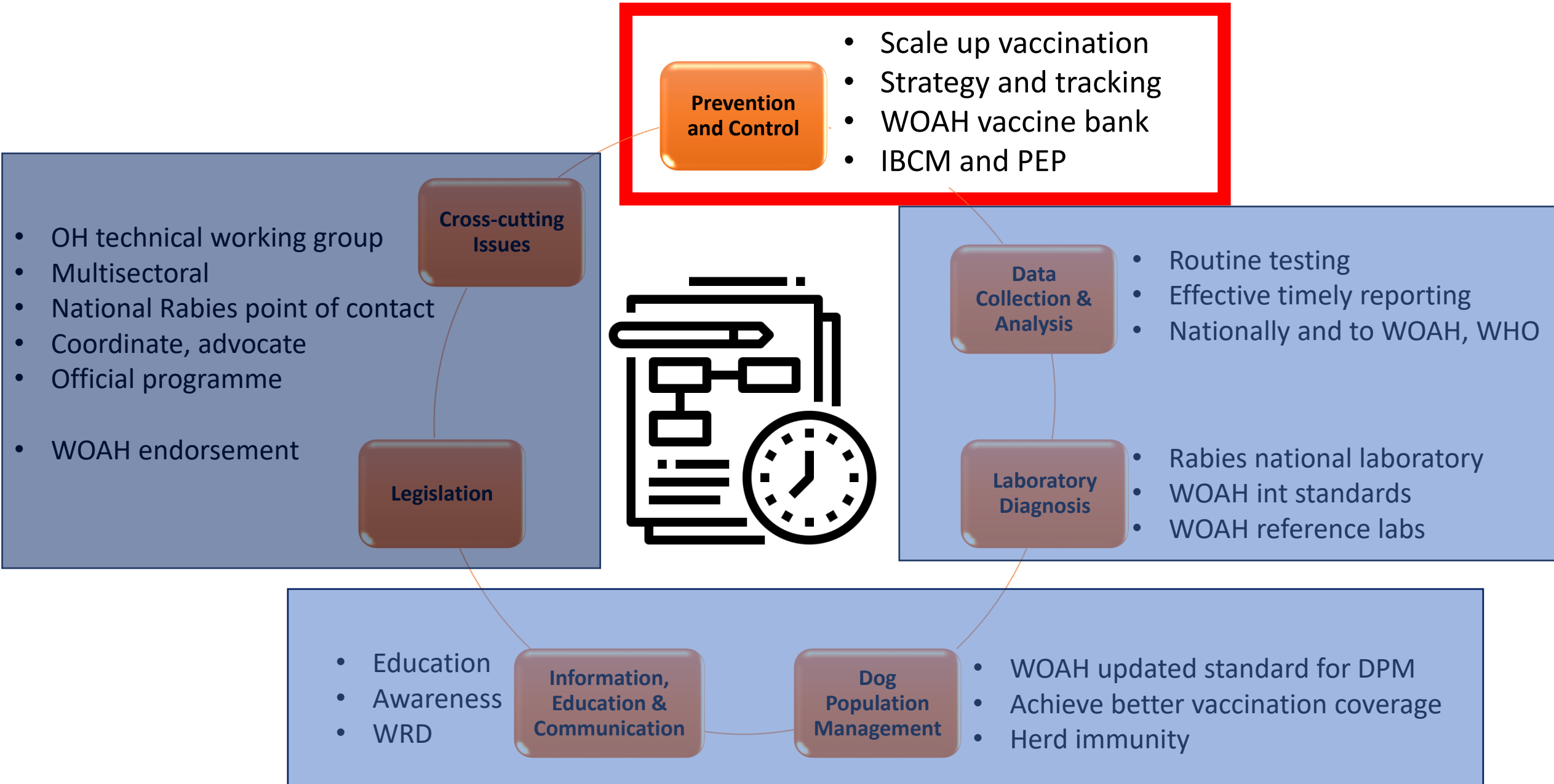
By Thddbfk - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=81872126>

The PVS-Rabies specific content mission



- Evaluate entire veterinary domain's capacity to control DOG-MEDIATED rabies
- The evaluation team includes one **rabies PVS specialist**
- The preparation considers existing material (SARE evaluation)
- The mission is prepared, conducted and reported as a generic PVS mission –45 CCs (1-5)-
- Rabies aspects are supplementary to generic mission
- Rabies annex as stand-alone document (29 CCs)

Prevention and control, vaccination campaigns



Why has rabies not been eliminated?

Simply not enough focus on dog vaccination.

- 122 countries endemic for dog rabies:
 - 536 million dogs live in rabies-endemic countries (78% of global population)
 - 130 million dogs were vaccinated globally in 2015 (24%)



**± 4 million dogs vaccinated in
Africa in 2015.**

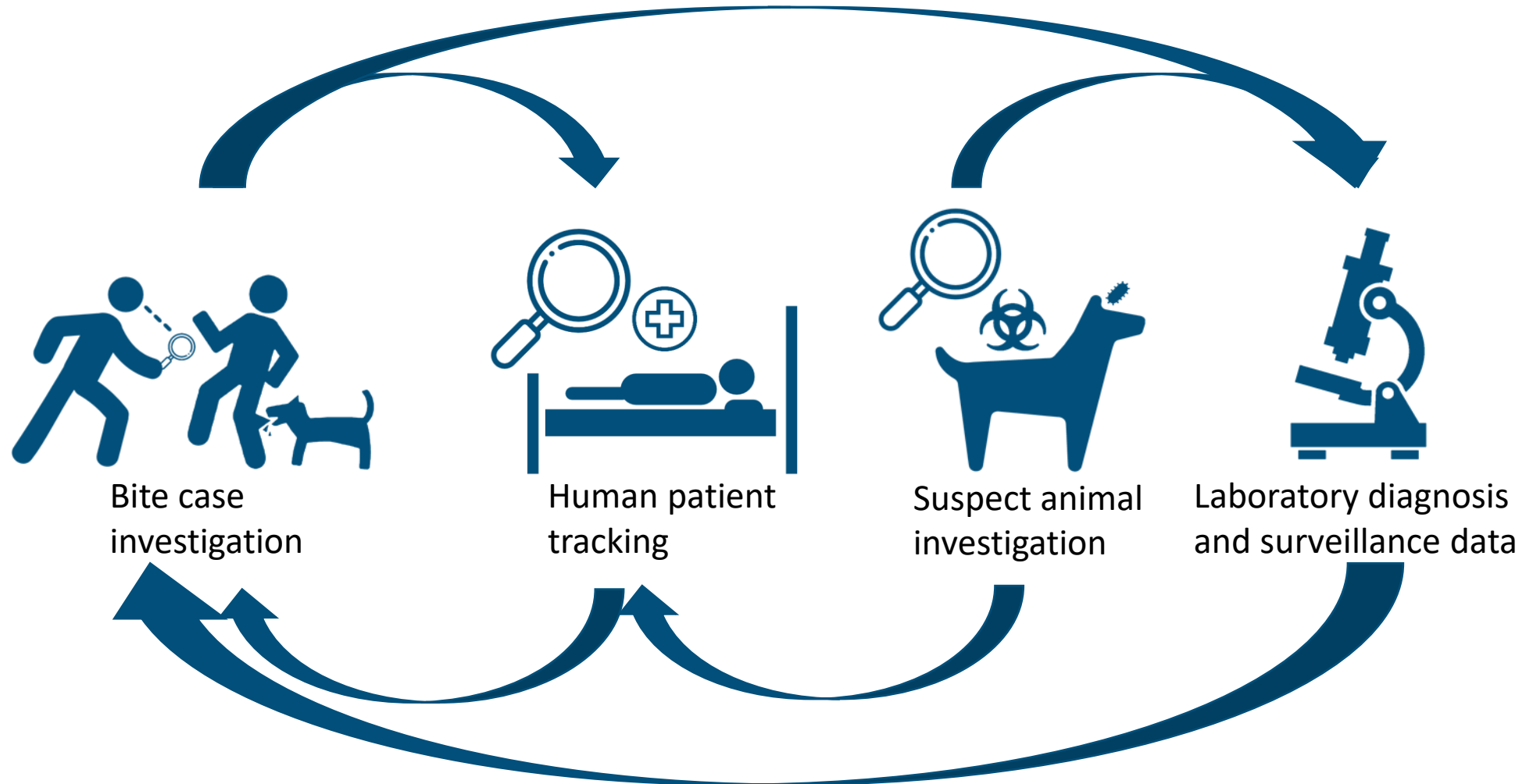
3%

WOAH Rabies Vaccine Bank

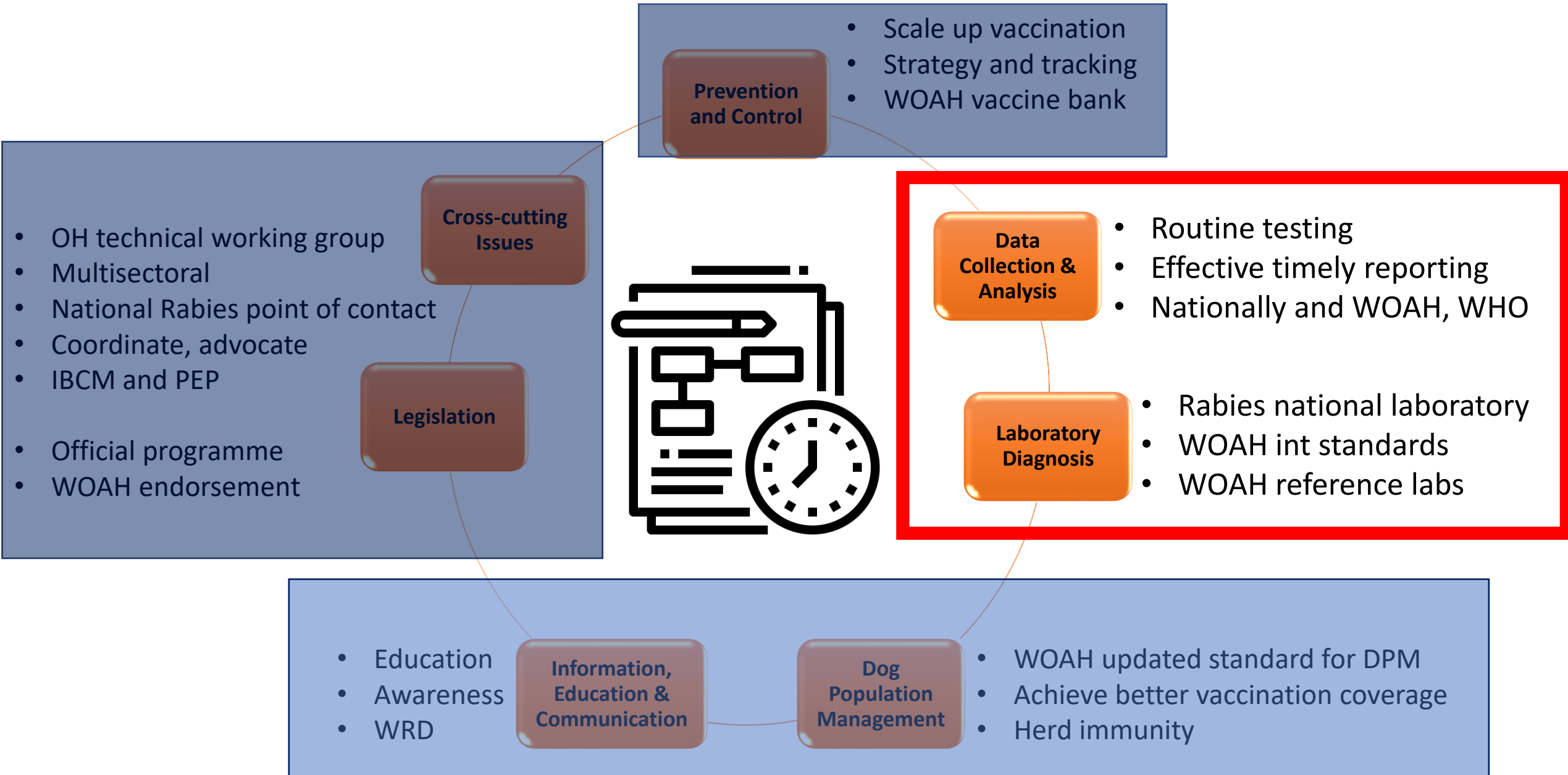


1. Facilitates **rapid** access to **high-quality dog vaccines** to help countries implement dog vaccination campaigns
2. Pre-established low, fixed price
3. Catalyst for countries to design and implement national rabies elimination strategies
4. Countries must show strong political will and plan for implementing rabies control
5. Request must be submitted to WOAHP via the Chief Veterinary Officer

IBCM: Sharing information with both animal and human health investigators.



Surveillance, laboratories, standards



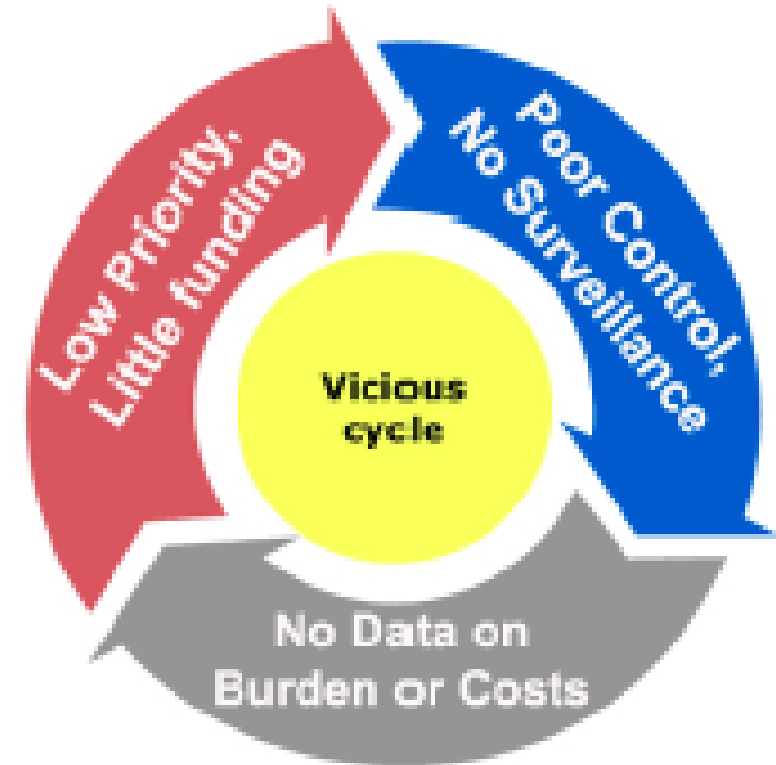
Poor rabies data reporting contributes to:

Poor control efforts

Inadequate access to vaccine

Continued cycle of neglect – primarily driven by an ongoing lack of political will and interest.

There is a need for timely, accurate data that is shared with all of the relevant stakeholders in a real-time manner for immediate action

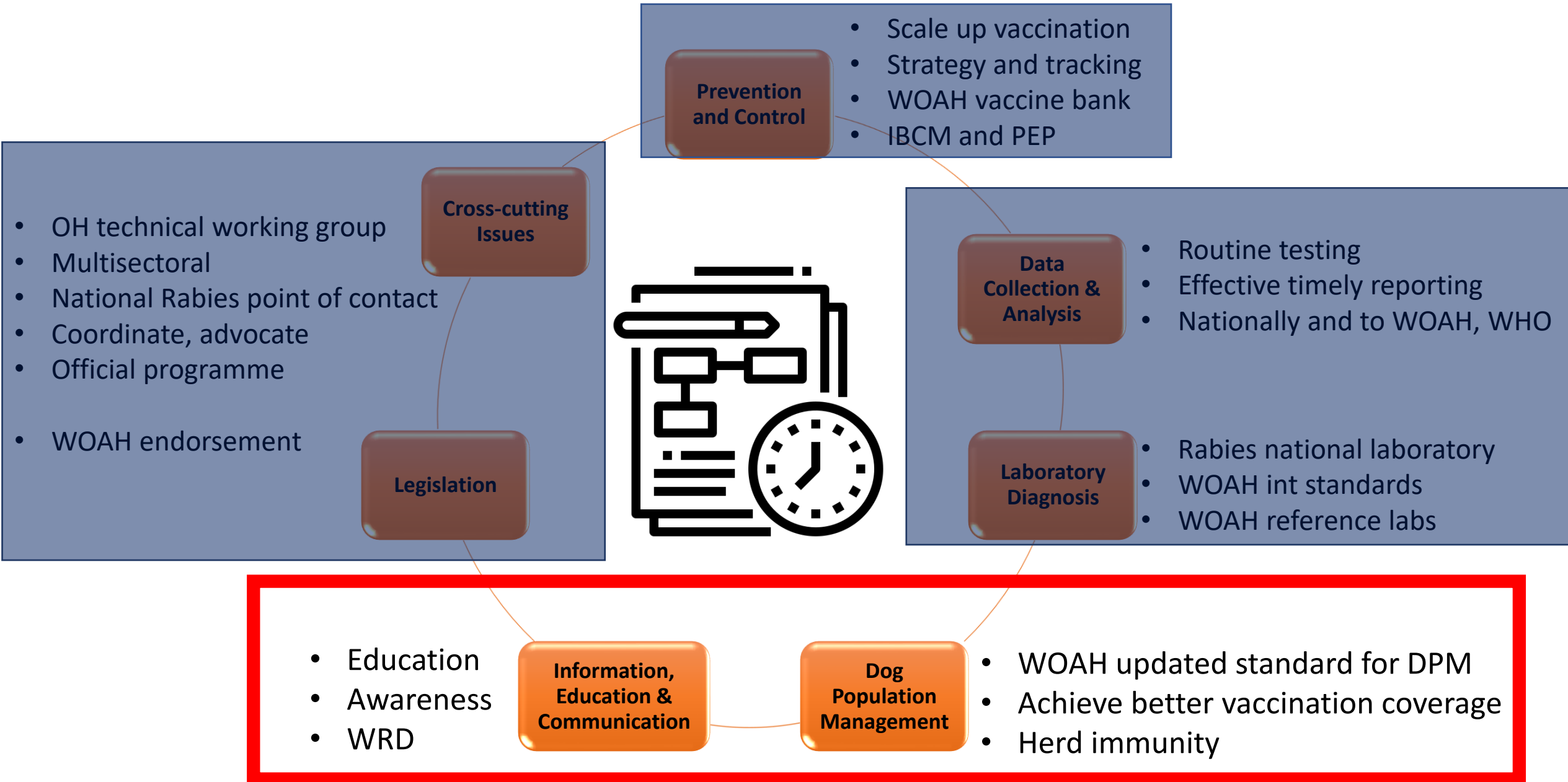


Measuring the impact of dog vaccination events

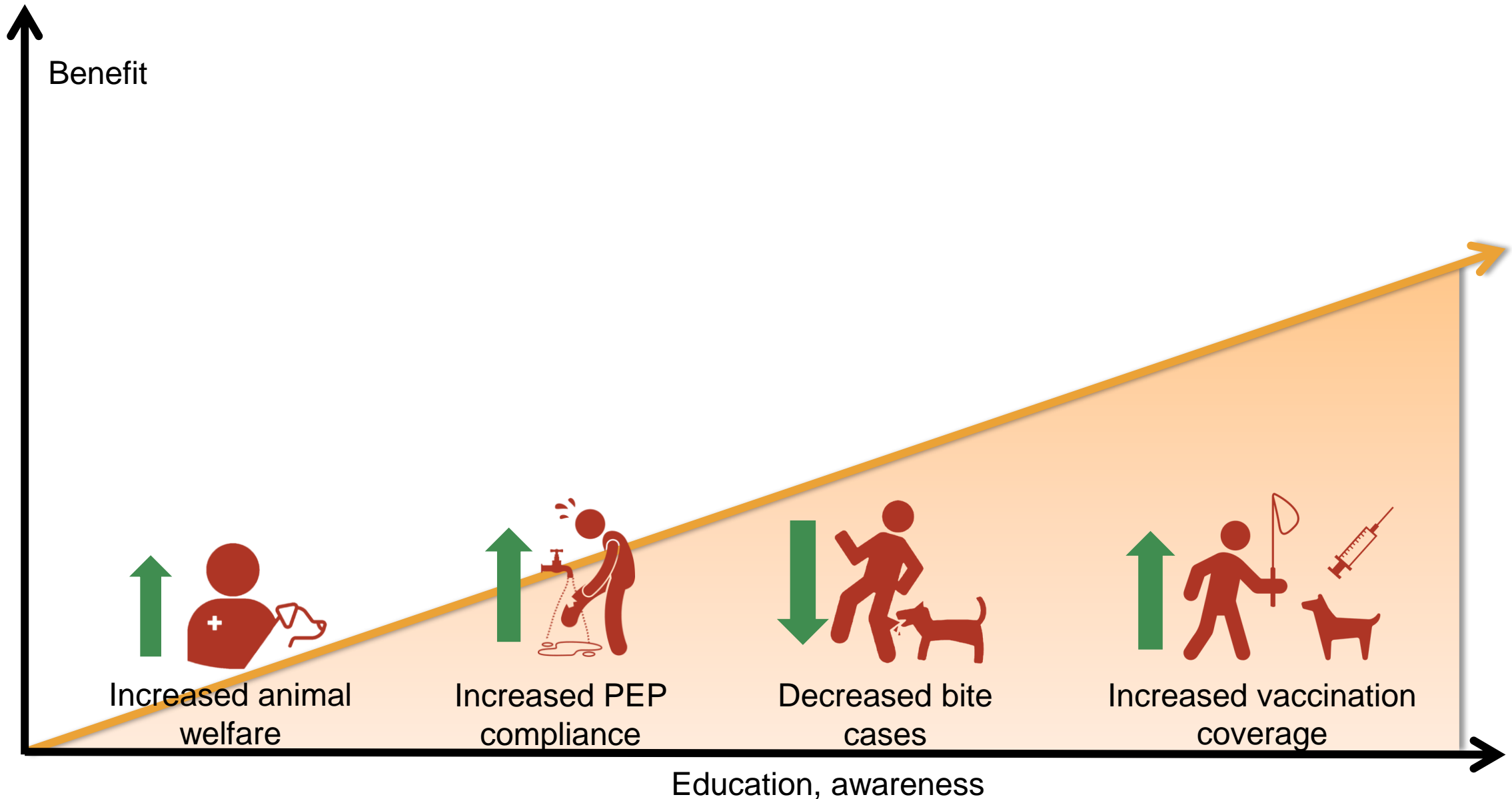
- **Successful dog vaccination campaigns** result in a decline in rabies cases
- **Good real-time surveillance** relies on rapid and up-to-date reporting and notification



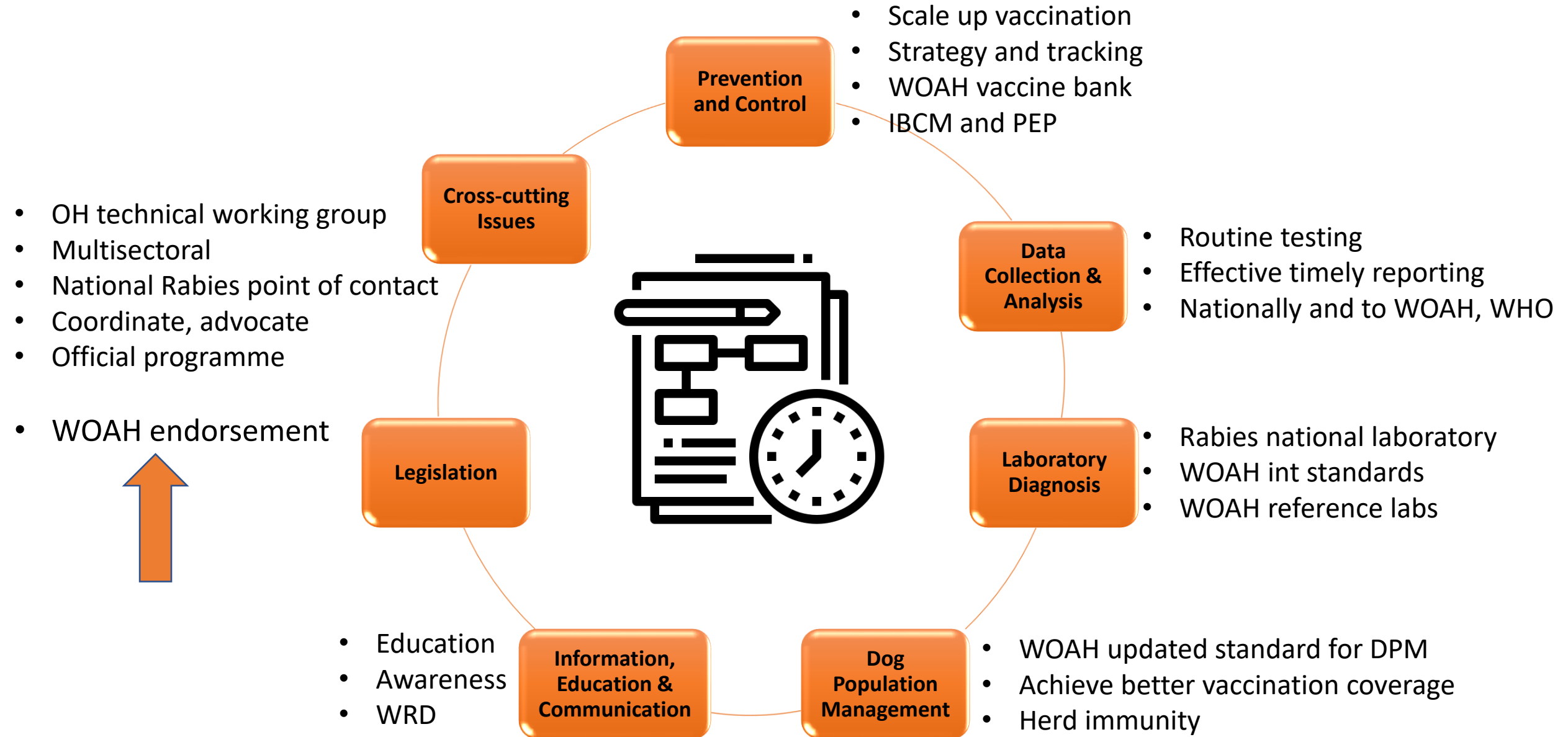
Education, communication, responsible dog ownership and DPM



Benefit of education, communication and awareness for rabies control



Endorsement



Guidelines and standards:

Endorsement of official control programmes

A generic template for developing a national strategic plan to eliminate dog-mediated rabies



The World Health Organization (WHO), World Organization for Animal Health (OIE), the Food and Agriculture Organization of the United Nations (FAO) and the Global Alliance for Rabies Control (GARC) have formed a new partnership-known as United Against Rabies (UAR) to support countries in the elimination of dog-mediated rabies. This collaboration published a Global strategic plan to end human deaths from dog-mediated rabies by 2030 in 2018.

1. National Strategic Plan
 - Framework with targets and measurable deliverables
 - Testifies government commitment to *Zero by 30*
 - Template now available from United Against Rabies Forum
2. Endorsement an important milestone in rabies elimination → paves the way to self-declare freedom from dog-mediated rabies
 - Namibia and Philippines received endorsement in 2021
3. Improved access to international and national resources and expertise
4. Links to the United Against Rabies Forum Roadmap

Process

WOAH endorsement of official control programmes for dog-mediated rabies

WOAH freedom from dog-mediated rabies

WOAH freedom from dog-mediated rabies

WOAH freedom from infection with rabies virus

Summary of recommendations (1)

One Health/Legislation

- Nominate National Rabies Point of Contact . Oversee national strategic plan.
- One Health technical working group, multisectoral, coordinate, advocate, execute.
- Update national strategic plan, utilising UAR forum and WOAHA tools and support.
- WOAHA endorsement for control plan encouraged.

Prevention and Control

- Scale up vaccination and promote responsible dog ownership.
- Vaccinate strategically and track vaccination towards reaching 70% of at-risk population.
- Coordinate towards Integrated Bite Case Management, including PEP where indicated.

Summary of recommendations (2)

Surveillance, laboratories and standards

- Establish robust routine surveillance, sample collection
- Strengthen National Rabies Laboratory, routine diagnostic testing
- Follow WOAHA international standards, seek support from WOAHA Ref Labs as needed
- Regular reporting of animal and human cases nationally and to WOAHA and WHO

Information, education and communication

- Commit to multidisciplinary OH partnerships inside and outside government.
- Regular meetings to monitor progress. Build OH capacity through PVS with rabies specific content, national bridging workshops and SARE monitoring and evaluation.
- Observe World Rabies Day and execute coordinated information/awareness campaigns.



Thank you!