



The Caribbean Animal Health Network

“One Caribbean, One Animal Health”

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CIRAD UMR CIRAD-INRA CMAEE

“control of exotic and emerging animal diseases”

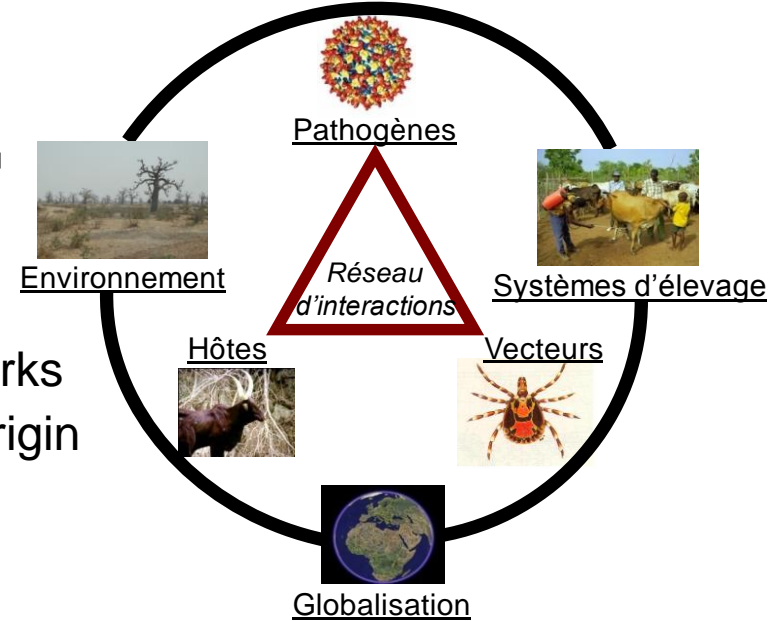
French focal point REPIVET

www.caribvet.net

Health risk in the Caribbean

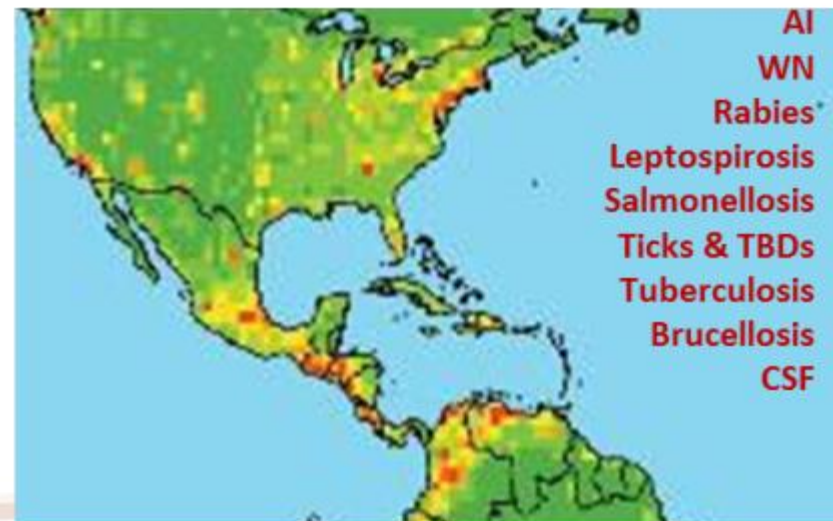
➤ Background

- ❑ Factors of vulnerability and surveillance networks
- ❑ Human emerging diseases mainly of animal origin
- ❑ Vector-borne diseases, sensitive to changes



➤ The Caribbean, at risk of emergence

- ❑ 32 countries/territories, scattered and diverse
- ❑ Human, animals and animal products movements
- ❑ Challenging environnement



Jones et al, 2008. Nature. Global trends in emerging infectious diseases

How to manage/mitigate these risks?

➤ **Detecting and responding to emerging diseases is challenging**

- ❑ Drivers of emergence & spread result from complex interactions between biological, genetic, ecological, political and social factors

➤ **What to do?**

- ❑ Early detection
- ❑ Improved diseases knowledge, surveillance & control

➤ **Opportunities**

- ❑ Diagnostic: improved techniques and standard
- ❑ Communication → Information technology
- ❑ Knowledge → Disease modelling
- ❑ “One health” initiative

Regional approach:

**Sharing information
Effectiveness**

Harmonization/coordination

➤ **The Caribbean Animal Health Network (CaribVET) is a collaboration network involving:**

- ❑ Veterinary services
- ❑ Research institutes
- ❑ Regional/international organizations

Structured
Network



➤ **Objectives of CaribVET: improve animal and veterinary public health in all the countries &/or territories of the Caribbean**

- ❑ Structure, reinforce and harmonize **national surveillance networks**;
- ❑ Improve and harmonize the **control of animal diseases** and implement an **early warning system**;
- ❑ Reinforce the **technical skills** and support the development of tools necessary for surveillance and control including diagnosis capacity;
- ❑ Improve the **knowledge on animal diseases** and their distribution.

➔ **Regional strategy**

Building of CaribVET

1995-2005

➤ Origin and development of CaribVET

- ❑ Technical regional projects (Caribbean Amblyomma Programme)
- ❑ Sanitary crisis: CSF reintroduction in Hispaniola
- ❑ Trainings and meetings in epidemiology

2006

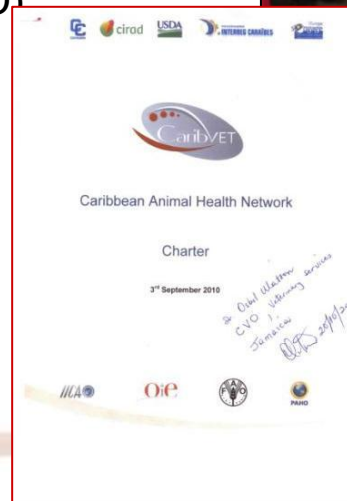
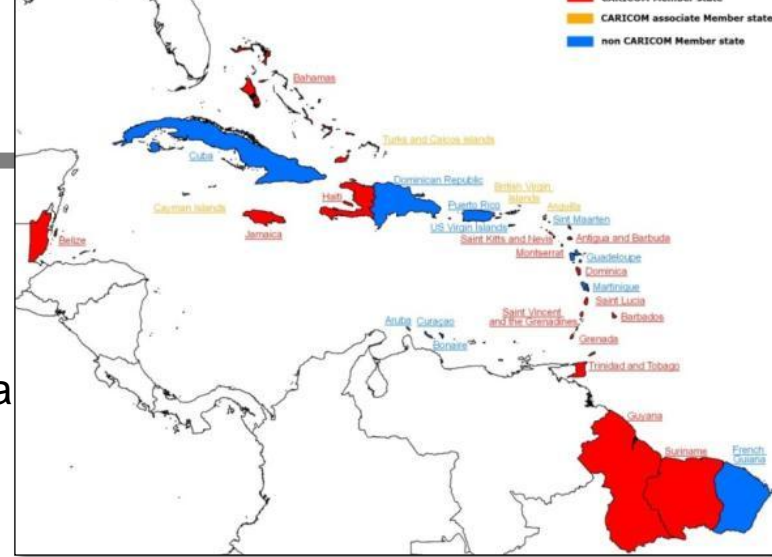
➤ Adoption of CaribVET

- ❑ Institutional adoption by 20 CVOs and international organizations
- ❑ Political adoption by CARICOM Council for Trade and Economic Development (COTED)

2010 - 2012

➤ A well-established network

- ❑ 32 countries and territories members
- ❑ Validation of the Charter
- ❑ Cooperation agreement OIE, FAO



STEERING COMMITTEE



1 meeting/year
Recommendations
Co-planning of the strategy

FUNDING



CVOs

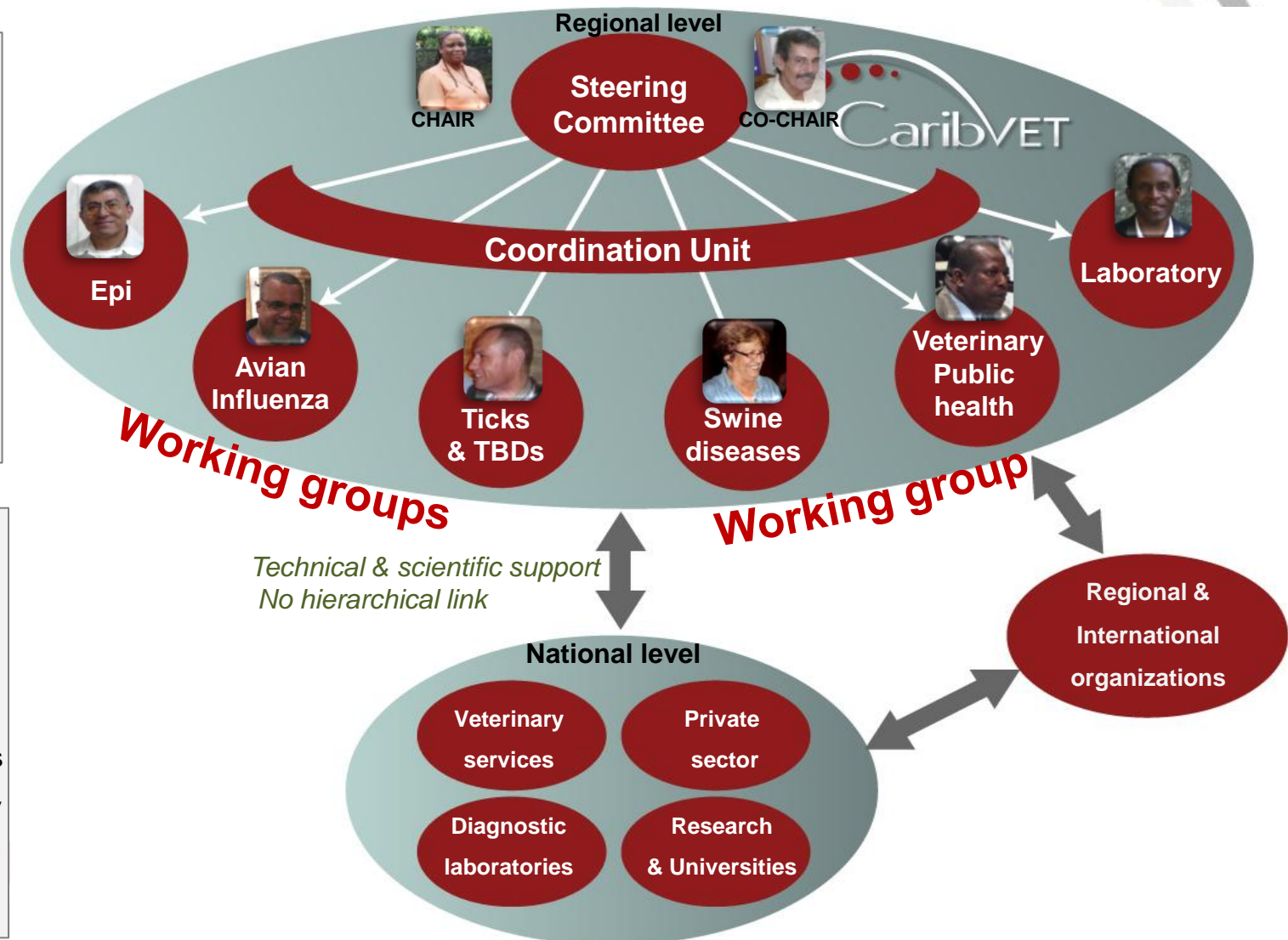
of 32 countries/territories
membres of CaribVET

COORDINATION UNIT



+ chairs WGs

Activities coordination
Application of the SC recommendations
Communication
Fund raising



WORKING GROUPS

4 diseases specific WGs
2 Transversal WGs

Provide regional expertise
Work out harmonized plans
Improve diagnosis capacity
Define regional emergency plans

CaribVET operation and activities



CaribVET Steering Committee:
countries & organizations
Sustained collaboration
Regional strategy
Structured collaboration

Epidemiology
working group
**Surveillance protocols
for priority diseases**
Risk assessment

**Evaluation of
surveillance systems**
Surveillance Network
Assessment Tool (SNAT)

Data flow
Databases
Syndromic surveillance
Disease specific

**Sharing of
information**
Reporting
www.caribvet.net

**Improve
regional
surveillance
& control of
animal diseases**

**Disease
knowledge**

Research & expertise

(technical WG & research institutes):
surveys, disease modeling

**Diagnostic
capabilities**

Inter-laboratory assays

Assurance quality

Regional laboratories with
research capacities

Provide technical & scientific support for Caribbean members



➤ Support on specific diseases

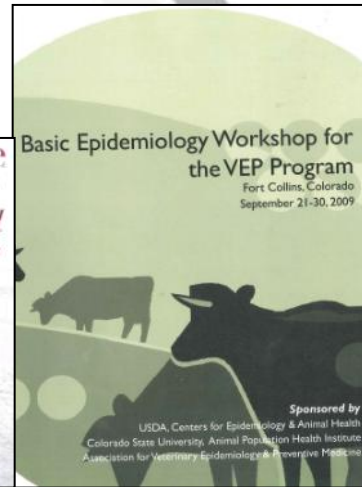
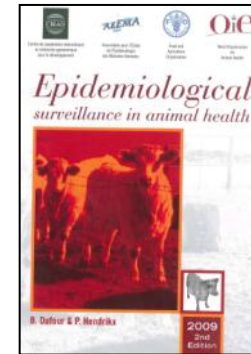
- Disease knowledge
- Surveillance/control of a disease
- Research performed in the region/country

➤ Technical tools

- Surveillance guides: methods standardization
- Epidemiology books, databases,...

➤ Laboratory Working Group: toward a Caribbean laboratory network

- Lab database on the website
- Evaluation of the CARICOM laboratories in 2009
- Recommendations for development of quality assurance



Reinforcement of national surveillance networks.



➤ Set of criteria for the identification of priority diseases

(countries and region)

➤ Evaluation of surveillance activities in the Caribbean, a basis for improvement

- SNAT: Surveillance Network Assessment Tool complementary to OIE PVS
- 2 or 3 trained epidemiologists visiting all surveillance stakeholders of a country
→ identify strengths, weaknesses and key points for intervention

➤ Qualitative risk assessment

- Tools development
- Adaptation/validation in different countries & language speaking
- To enable CVO assessing the risk of introduction of diseases in their countries

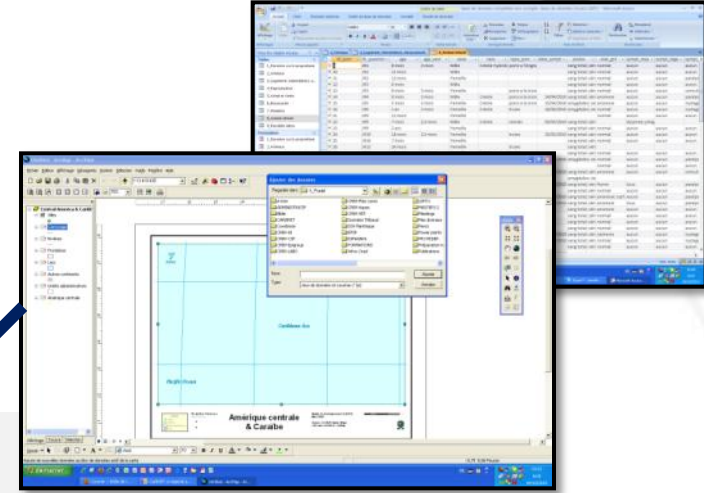
Capacity Building: benefits for the national surveillance networks



LAB



GIS, Databases



Harmonization, improvement and reinforcement of national surveillance systems

Surveillance Systems, Emergency response

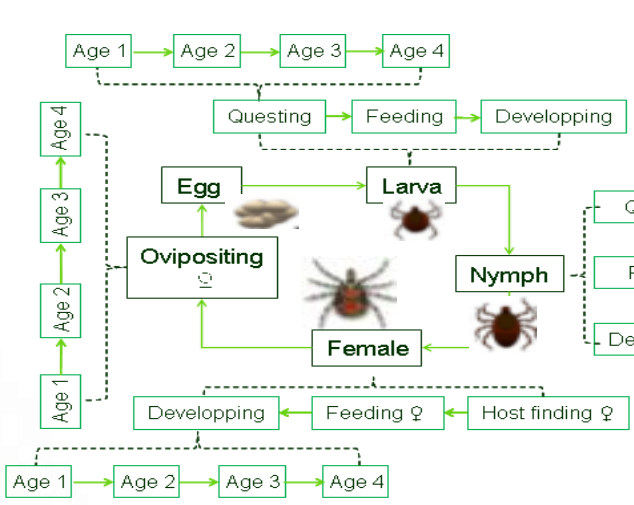
Vets & technicians



Epidemiology, questionnaire validation, data interpretation,...

Integrated approach research-surveillance

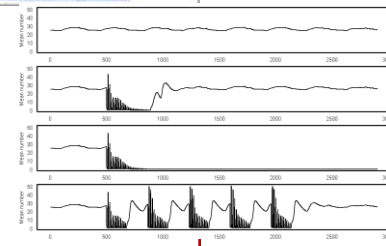
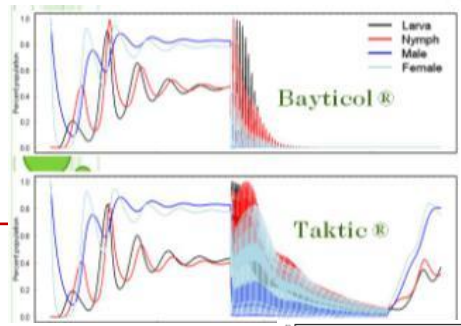
Modelling and surveillance & control strategies



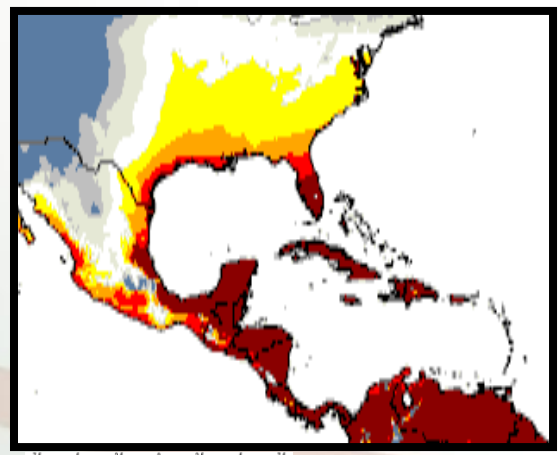
Tick biology
(field and experimental data)
+ climatic data

↓

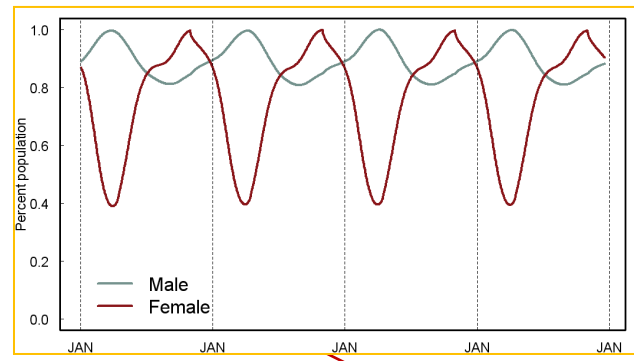
Mathematical modelling



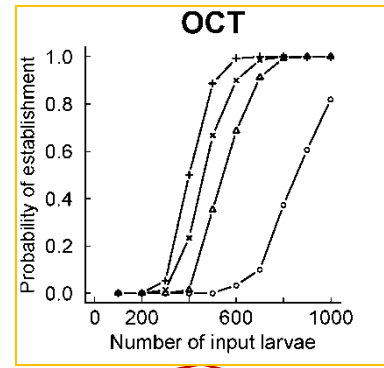
Suitable area



Seasonal dynamics



Introduction



↓

Surveillance strategies

↓

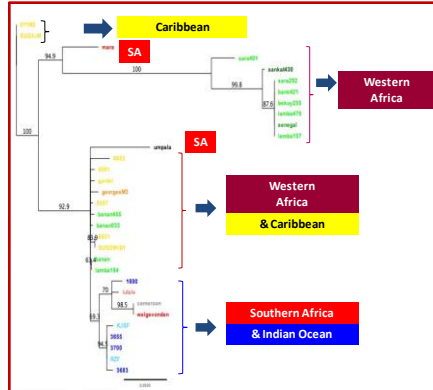
Control strategies

Integrated approach research-surveillance

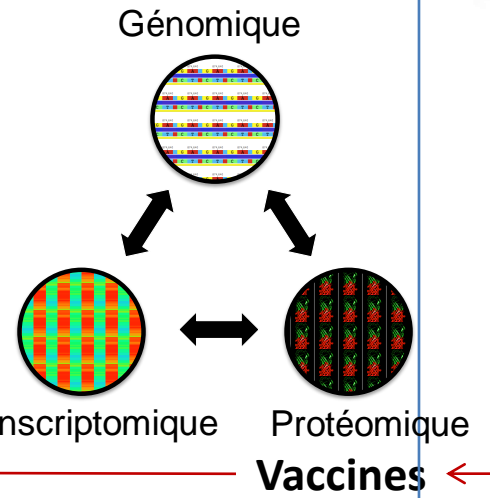
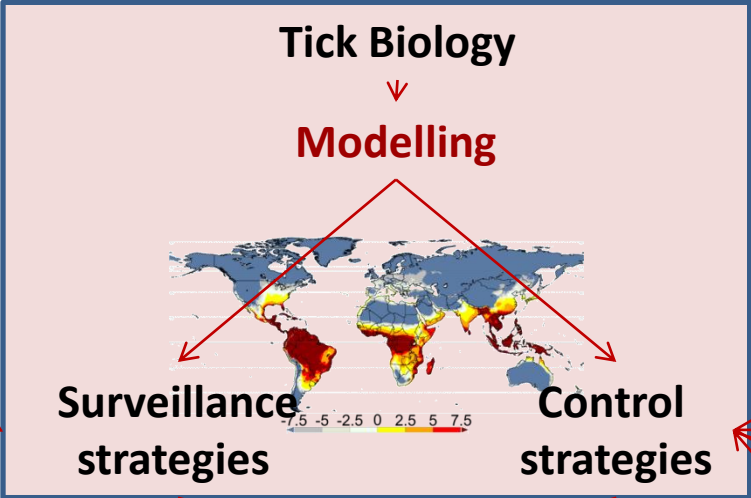
Modelling and surveillance & control strategies

**CIRAD GUADELOUPE laboratoire de référence OIE
diagnostic et recherche sur tiques et maladies transmises**

Biology *Ehrlichia ruminantium*



Diagnostic



Origin of reinfestation ← **Tick Genomics**

**Working group
Ticks and TBDs**

Updated situation
National objectives

Action plan
Recommandations

**Steering committee
CaribVET**

**National Veterinary
services**

Expertise &
training

Research subjects

Collaboration, communication and management of health information



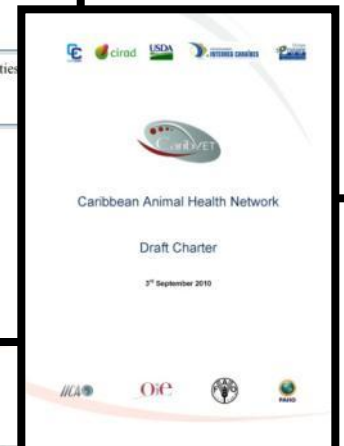
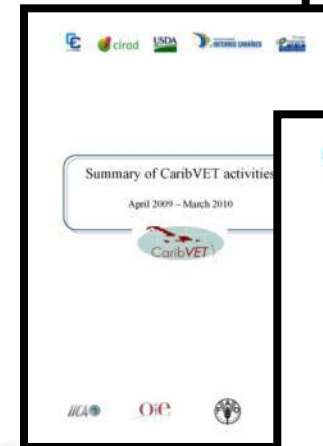
➤ Collaboration

- ❑ Dialogue among partners
 - Annual meetings
 - Strengthen human links (mutual trust)
 - Formalise decision-making
 - Informal exchange



➤ Exchange of information and data

- ❑ Formal documents
 - Charter of CaribVET
 - Minutes of all meetings (WG, trainings...)
 - Protocols of projects
- ❑ Surveillance data
 - VEP project
 - Surveillance valorisation → research



Collaboration, communication and management of health information



➤ The participative website www.caribvet.net

- ❑ Communication and information tool
 - Trilingual, forum
 - Information on diseases existing in the region
 - Priority disease: regional activities and bibliography
 - Information on Livestock, surveillance system...
 - Activities of CaribVET (meetings, trainings, projects)
- ❑ Diseases control and management tool
 - Laboratory database
 - Surveillance system database
 - Disease database: TickINFO, Dési...
- ❑ Role of WG in the moderation of the content



➤ Information bulletin

- ❑ Editorial team
- ❑ Since June 2010, 2- 3 issues/year
- ❑ Corner on CaribVET members, WG, VEP, OIE, laboratories, universities ...
- ❑ Announcements: trainings, conference,...

➔ **Strengthen the community of CaribVET**

Lessons of CaribVET & perspectives



➤ **Development of CaribVET**

- Bottom-up process and technical/scientific activities
- CaribVET is built to be a sustainable Network, not a Project
 - Funded by several sources: FSP, Interreg IV Caraïbe programme, USDA, FAO...
- Gather veterinary services, research institutes, and international/regional organisations for a co-programmation and cost effective activities

➤ **A great involvement of all members for its sustainability**

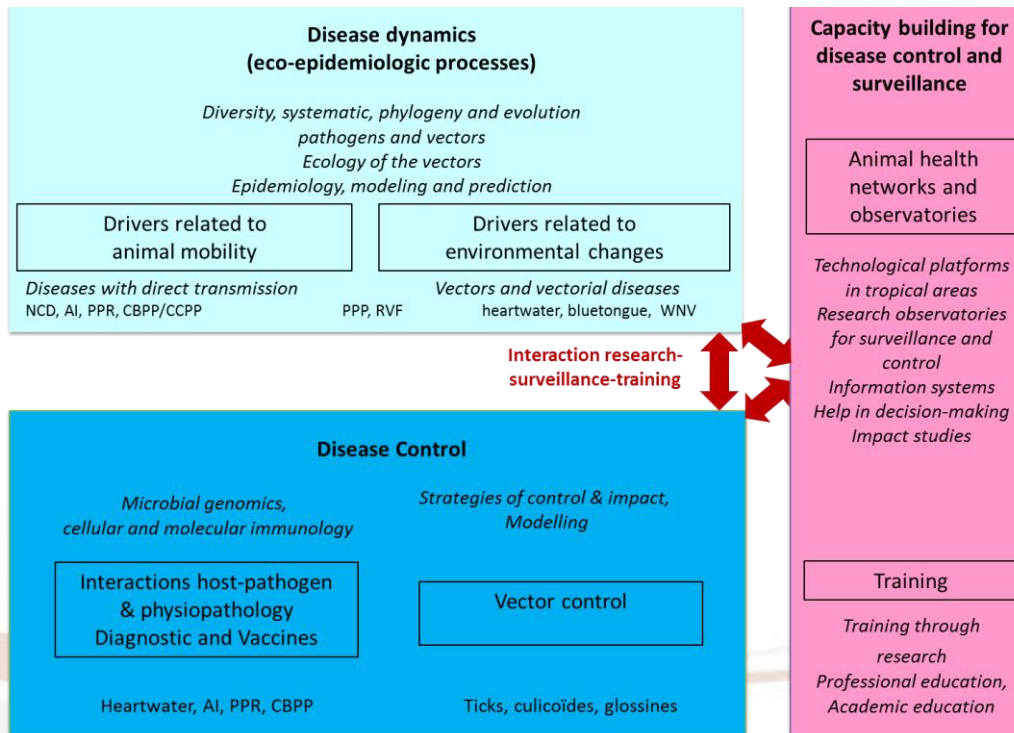
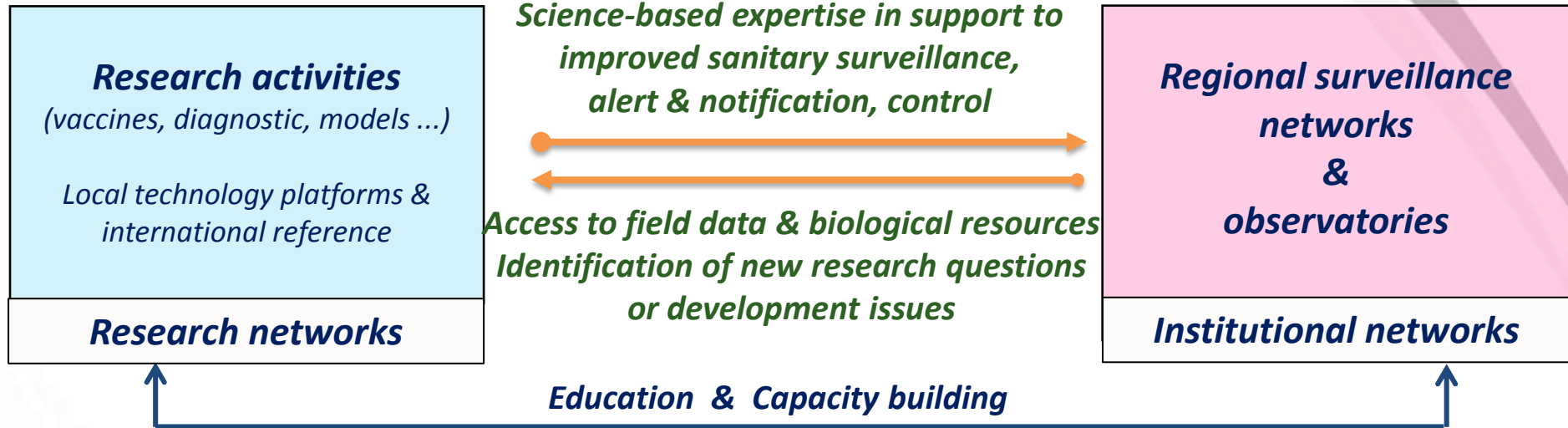
- Improved coordination between WGs
- Autonomy and initiatives of members and WG chairs
- OIE Letter of Understanding
- A charter up to a legal statut
- Research development within the network and international recognition

➤ **To be improved**

- Impact-oriented communication (for country ministers and funders)
- Formalisation of the network: towards quality assurance for the network (traceability, action plan, databases, performance indicators...)
- Funding by members

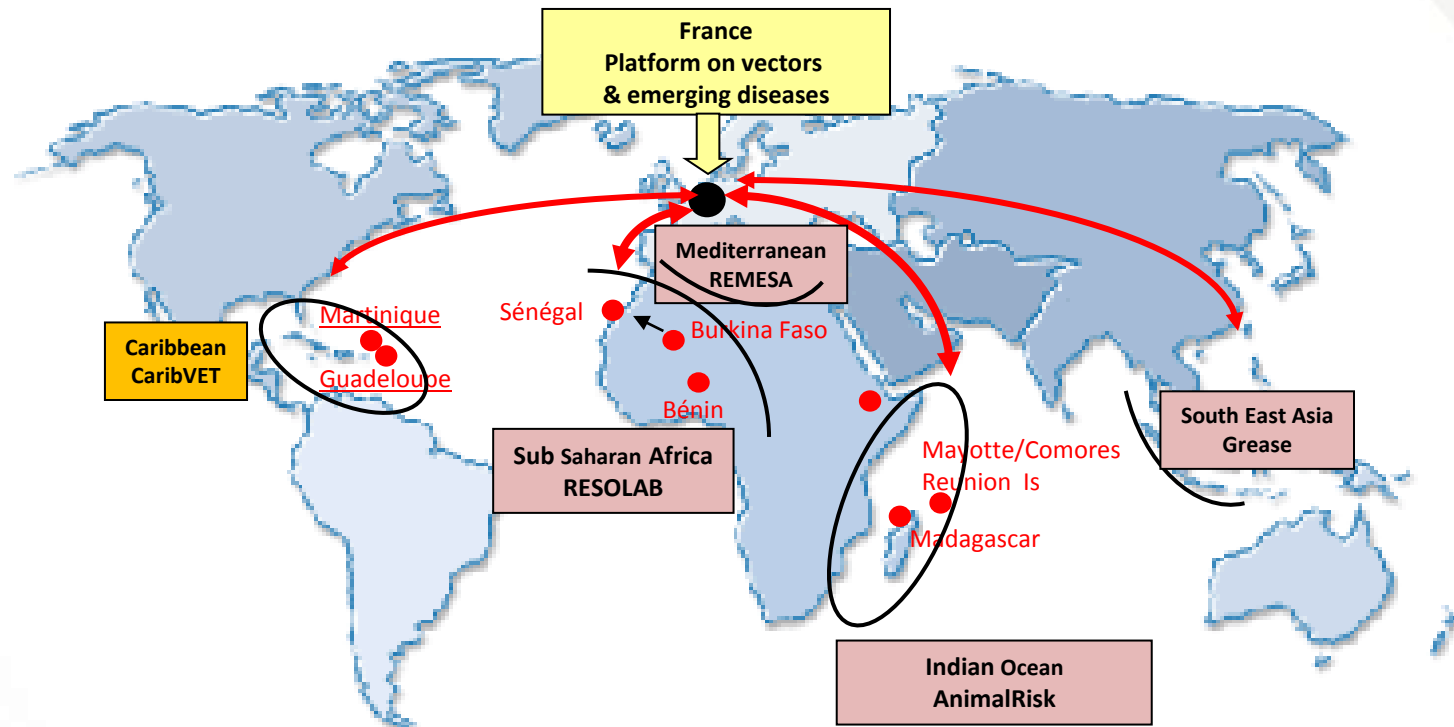
Lesson for CaribVET-Concept for CIRAD

Link between surveillance and research



CIRAD CMAEE
Research project

Regional animal health networks



Regional approaches made global through interactions between networks for the surveillance and control of animal diseases in tropics/sub-tropics/Mediterranean

- **Partnerships** within and with the South (emergence areas)
- **Regional (global) impact** of the delivery of tools & methods
- Strong research <-> surveillance **interactions**
- Access to the field and to **biological resources for better research**

Proposed project to link research and surveillance in the Mediterranean

European project FP7 -KBBE.2013.1.3-01: Emerging viral vector borne diseases
Call: FP7-KBBE-2013-7 – single stage

Context of the call

- Global changes increase emergence of animal and zoonotic diseases especially vector-borne diseases with major economic or public health impact.

Needs

- Better anticipation and prediction of disease emergence and spread
- Better surveillance adapted to new tools available
- Associate veterinary services and research institutes
- Develop a shared strategy between Europe, northern Africa, and the Middle East

Objective of the project

- Integrated multidisciplinary approach to study risks disease emergence and spread,
- Two main categories of arthropods
 - Mosquitoes: RVF, WN and other Flaviviruses, Alphaviruses...
 - Culicoides biting midges: Orbiviruses, Orthobunyaviruses...
- Known to transmit important animal and zoonotic diseases in the Mediterranean

Proposed project to link research and surveillance in the Mediterranean

Activities and expected outputs

Study of virus and microbial communities by NGS methods in vectors to

- role of microbial and environmental ecology in virus emergence and transmission
- new pathogens and innovative diagnostic methods for surveillance

Characterize vector competence mechanisms

mosquitoes / RVFV + *Culicoides* / Schmallenberg and Orbiviruses

Develop better maps of vector distribution, disease transmission, high-risk areas, emergence and spread

Design new surveillance frameworks accounting for these new diagnostic methods, new knowledge and risk assessments

Improve intervention strategies against vector-borne diseases including new vaccines for RVFV, SBV and other possible new pathogens identified by NGS

Proposed project to link research and surveillance in the Mediterranean

Partners

Northern research partners

France: CIRAD, ANSES (FR)

Spain: CRESA

Italy: ICT (ex IZS Teramo)

+ UK: PI (ex IAH), NL: CVI, Germany: FLI

Southern partners

REMESA countries: Morocco, Tunisia, Mauritania, Egypt...

+ Senegal + Turkey + Lebanon

SMEs

Euro-AEGIS (BE)

SME on NGS / bioinformatics

Associated partners

FAO

OIE

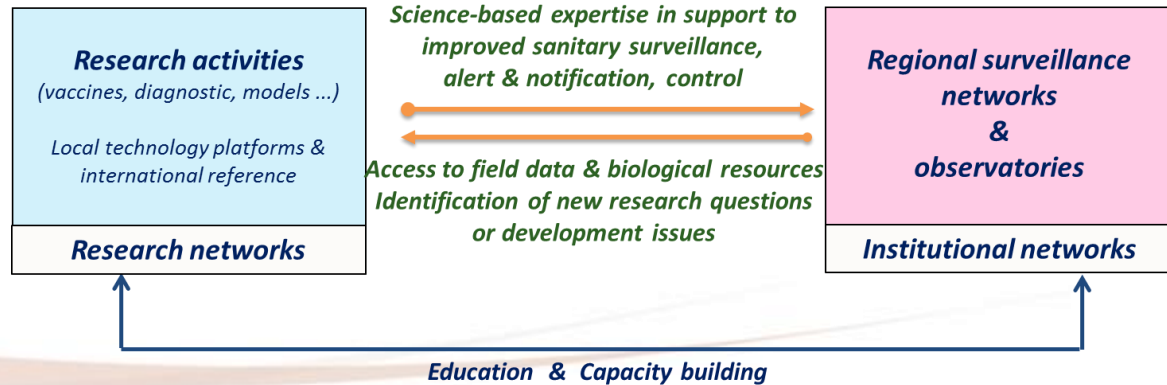
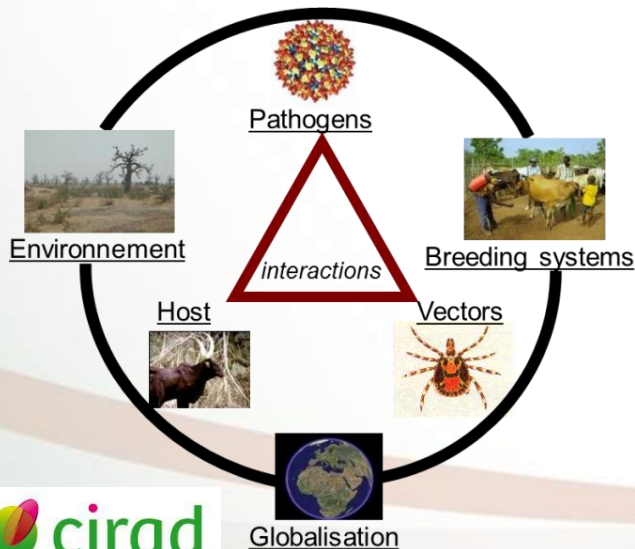
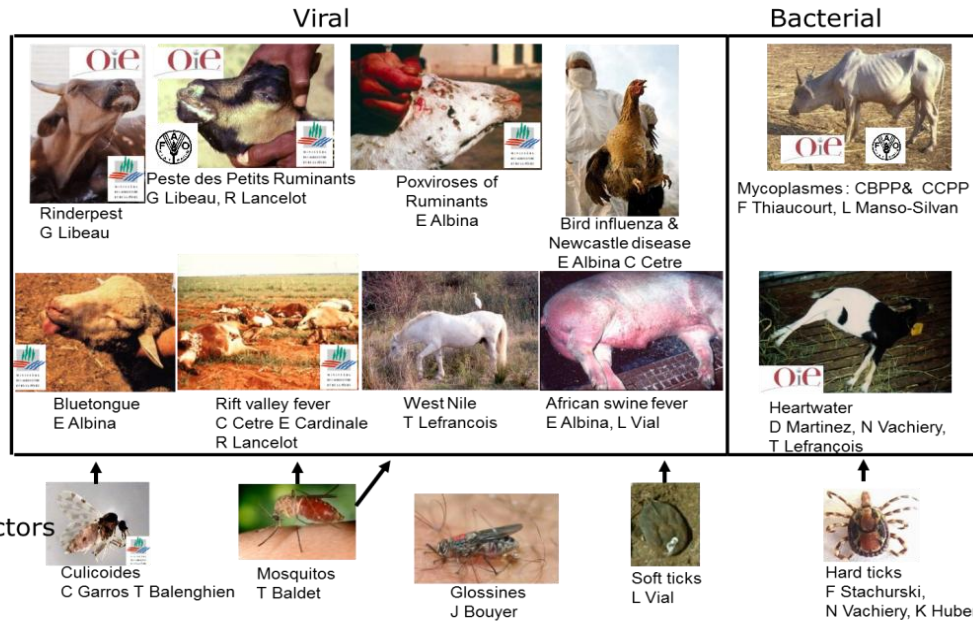
RVC (UK)

Conclusions

from
bilateral cooperations & expertise

to
regional collaborations & activities

= Interaction research-surveillance-capacity building
through project developments



CaribVET Partners



“Coordination Unit”

CIRAD Guadeloupe team + chair CaribVET, chairs of the working groups + USDA + CARICOM



Caribbean CVOs + members of the WG



CaribVET Members

Anguilla	Guadeloupe
Antigua and Barbuda	Guyana
Aruba	Haiti
Bahamas	Jamaica
Barbados	Martinique
Belize	Montserrat
Bermuda	Nevis
Bonaire	Puerto Rico
British Virgin Islands	St Kitts
Cayman Islands	St Lucia
Cuba	St Vincent & the Grenadines
Curacao	St Maarten
Dominica	Suriname
Dominican Republic	Trinidad and Tobago
French Guyana	Turks and Caicos Island
Grenada	US Virgin Island