ON GUARD: CaribVET and the Caribbean prepare for Porcine Epidemic Diarrhea

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CaribVET: Caribbean Animal Health Network

A collaborative network of veterinary services to improve Animal Health and veterinary public health in 33 Caribbean countries / territories

CaribVET objectives
- Reinforcement of lab/epi capacities
- Structure & reinforcement of national networks
- Improve diseases control
- Set up an early system
- Support tool development
- Improve diseases knowledge

CaribVET Members
- 33 Veterinary Services & Diagnostic labs
- 6 Organisations: reg/international
- 2 Universities (UWI, UG)
- 2 Research organisms & ref. labs
The Caribbean, a diverse island Region, challenging for surveillance of infectious diseases

Heterogeneous Countries/Territories
- 4 official languages, variety of political status and levels of socio-economic development
- Density of human and animal Population

Diversity of Animal Production systems, and of diseases priorities
- Traditions, Production systems, industry organisation: heterogeneous according to the islands
- Animal owners & backyard production >> professional breeders & organized professional industries

Intensification of human, animal & products exchanges
- Legal, informal or illegal movements
- Development of tourism

Risk of diseases/vectors Introduction/spread

Sensitivity of tropical island systems
- Natural Disasters, extreme weather events
- Habitats fragmentation → Modification of Hosts, Vectors, Pathogens contacts

→ General lack of some competences/resources, variable performance of health infrastructures, Veterinary Diagnostic Laboratories especially.

→ Challenges for island states: identify diseases, fortify borders against diseases incursion, establish adequate disease surveillance systems.
CaribVET’s Origins

1995-2005

• Origins and development of CaribVET
  – Sanitary Crisis: CSF, TBT
  – Regional projects: improve **Laboratory capacities/capabilities & epidemiology**

2006

• **Adoption/endorsement of CaribVET**
  – Institutional, by the 20 CVOs and International organizations
  – Political, by CARICOM and the COTED

2010-Present

• **A well-established Network**
  – Trilingual Charter formalizing the Network
  – Cooperation Agreements: OIE, FAO (ongoing)
  – **A Caribbean Network of Laboratories and Lab WG**

Countries initiatives
Support by organisations
A structured network to achieve together regional objectives

• Structured according to regional priorities; identification of common needs, co-development of research questions & strategy; development of generic tools/protocols/guidelines
• Continuous improvement: Quality System Management of Network

Steering Committee
Strategy, recommendations

Coordination Unit
- Global Coordination,
- Communication,
- Quality Management

Working Groups
- Regional Expertise,
- Harmonized protocols,
- Regional Surveys
- Science-based recommendations

In agreement with international regulation
« organisations » member of CaribVET SC

<table>
<thead>
<tr>
<th>Country</th>
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<tbody>
<tr>
<td>Anguilla</td>
<td>Guadeloupe</td>
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<tr>
<td>Antigua and Barbuda</td>
<td>Guyana</td>
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<tr>
<td>Aruba</td>
<td>Haiti</td>
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<tr>
<td>Bahamas</td>
<td>Jamaica</td>
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<tr>
<td>Barbados</td>
<td>Martinique</td>
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<tr>
<td>Belize</td>
<td>Montserrat</td>
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<tr>
<td>Bermuda</td>
<td>Nevis</td>
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<tr>
<td>Bonaire</td>
<td>Puerto Rico</td>
</tr>
<tr>
<td>British Virgin Islands</td>
<td>St. Eustatius</td>
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<tr>
<td>Cayman Islands</td>
<td>St Kitts</td>
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<tr>
<td>Cuba</td>
<td>St Lucia</td>
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<tr>
<td>Curacao</td>
<td>St Vincent &amp; the Grenadines</td>
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<tr>
<td>Dominica</td>
<td>St Maarten</td>
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<tr>
<td>Dominican Republic</td>
<td>Suriname</td>
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<tr>
<td>French Guyana</td>
<td>Trinidad and Tobago</td>
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<tr>
<td>Grenada</td>
<td>Turks and Caicos Island</td>
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<tr>
<td>Guadeloupe</td>
<td>US Virgin Islands</td>
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</table>
Regional laboratories with research capacities

- **CENSA, Cuba**
  - **OIE reference laboratory** (*Avian Mycoplasma*), **OIE Collaborating Center** (reduction of risk of disaster in Animal Health). **Twining projects** on IA, ND, CSF.
  - **FAO collaborating center**: diagnostic & research on emerging diseases, Caribbean & Latin America.
  - High biosecurity level (BSL2, BSL 3).

- **CIRAD, Guadeloupe**
  - **OIE Reference Laboratory** for Heartwater, **OIE collaborating Center** for diagnostic & epidemiology of tropical diseases
  - **Regional diagnostic for the Caribbean region**: AI, pandemic H1N1, WN virus and tick-borne diseases in collaboration with reference laboratories (Ames, USDA)
  - High level biosecurity laboratories (BSL 2+, building of BSL 3 labs).

- **UWI, Trinidad and Tobago**

  Ideal training centres for organisation of regional training workshops on diagnostic, quality assurance and lab management
Tools to facilitate communication & exchange of information

Trilingual participative Website

✓ Sections
  o Event, Alert, Meetings, Trainings
  o Diseases control and management tools/database

✓ Participative website
  o Authorized: Steering & Coordination Unit members
  o Moderation of the content

✓ Continuous development of other sections related to projects, research, …

Information bulletin/newsletter

➢ Promotion of CaribVET activities
➢ 1-2 issues / year (bulletin)
➢ 3-5 issue/month (Newsletters)
Swine Production in the Caribbean

- Most Caribbean countries have a mixture of commercial and backyard production (90.9%)
- Some countries also have roaming/feral and/or wild populations of swine
- Swine production is considered of importance to some of the countries:
  - Cuba
  - Barbados
  - Dominican Republic
  - Haiti
  - Jamaica
  - St. Vincent and the Grenadines
  - Suriname
  - Belize
- Total swine population range from 200 to ~1,100,000 head per country/territory
- Swine industry represents an important sector and major source of income in the Caribbean region, most especially in the OECS
Background: Emergence of PED in the Western hemisphere since April 2013, further spread to Canada, Mexico, Colombia, and identification of novel Swine Enteric Coronavirus diseases (PEDv + PDCoV)
Dominican Republic reported PED to CaribVET

- **Date of start**
  - Rapid diagnostic test (PED Antigen), confirmation: NVSL Ames: qRT-PCR, viral isolation, histopathology
  - Similar strain to PED virus reported in China

- **Measures applied:**
  - Quarantine, movement control inside the country, disinfection of premises, symptomatic treatment of animals.
  - Ban on swine imports from USA & Canada
  - Increased biosecurity measures in farms, increase protection & vigilance

- **As of June 2014: 7 outbreaks reported** *(OIE Report 13/06/2014)*
  - Susceptible population: 308,177
  - Total nb of cases: 39,042, nb of death: 26,070 (CF rate: 66%)
  - Apparent morbidity & mortality rates: 12.7% & 8.5%

- **CVO from the DR Informed CaribVET Steering Committee:**
  - CaribVET encouraged the DR to notify to the OIE
  - **OIE notification**

**Estimated costs**

- **12 Nov. 2013**
- **21 March 2014**
- **06 May 2014**
- **13 June 2014**
1/ Inform & Raise Awareness

- **Swine Diseases & Epi WG**: discussed PED situation
- Article published on CaribVET website / USDA technical note
- CaribVET SC meeting recommendations
  - Affected countries to **notify the OIE**
  - All CVOs to **keep CaribVET updated** on the PED situation in their island
  - Swine Disease WG to **meet virtually asap & include PED** in their work plan
  - SDWG to work with Communication WG
  - Countries to **implement surveillance for PED** and have rapid detection test in place

**CaribVET preparedness planning: Make things happen!**

- The DR sent all information to SDWG
- The DR notified PED to the OIE
- Countries started to prepare: Jamaica, Belize…
2/ Planning and coordination

• Work organisation on PED in the network
  – SD WG: Urgent Virtual meeting 28 May 2014
  – Comm. WG: feedback on the SDWG decisions 29 May 2014
  – Monthly coordination Unit Meetings Jun, July, Aug., Sept
  – Meetings FAO Barbados / Com WG Chair 11 June 2014
  – Feedback meeting with FAO 11/06/2014
  – Regular wrap-ups on all activities: weekly to biweekly

• Action Plan for PED coordination of activities 19 June 2014
  – Organize tasks, responsibilities, deadlines
  – Eases follow-up & communication
  – Send to C.U for information / validation & update 20 June 2014

• ONGOING:
  – Follow-up & coordination Swine Diseases, Coordination Unit, Communication
  – Budget coordination / needs: to do (FAO, CIRAD, others, swine industries?)
  – Look for Synergies, avoid duplication
    • Contact all partner organizations (OIE, USDA, IICA, CENSA, UWI…)
    • Know their activities on PED & inform on ongoing CaribVET activities
    • Impart information regionally

Management tools developed during Interreg Project

Webex
WhatsApp + mail
Webex
Face-to-Face
E-mail
Skype
WhatsApp
E mails
Phone calls
Webex
Face-to-Face
3/ Communication, Press Release

• Information posted on CaribVET website
  – Brief to raise awareness (News & Alert section)
  – PED page created under « New emerging diseases »
  – Preparedness planning for the region
  – « Alert » section – Promed mails digest
  – Put all info, documents, materials, protocols on PED page

• Press release
  – Generic informative press release on PED to be tailored by CVOs
    • Translation to Spanish & French & proofreading
  – Dissemination to media houses (Caribbean) + partners/members
  – Further PR will be prepared according to situation/information/event

• Preparation of a CaribVET media contacts list Ongoing
  – Gather all media / press contacts (FAO, CIRAD, CARICOM, USDA...)
  – Organize mailing lists and definition of communication mechanisms

• Involved: Coord. Unit, CIRAD, FAO, Comm WG, SD WG
4/ Communication to key stakeholders

- **Target groups**: actors on the ground first!
  - Swine industries, farmers, feed companies, farmers supplies companies,
  - Field vets, Ministries, Veterinary Services, agriculture associations

- **Pilot Stakeholder meeting** in a Caribbean country (Barbados)
  - Raise awareness and preparedness planning
  - Obj: engaging all key stakeholders & use CaribVET materials (when developed)
  - Organize exchange of experience to encourage other countries in the region
  
  - **PED fact sheets**
    - Fact sheets: drafted by C.U, circulated to WG for comments
    - Translation to French & Spanish & proofreading
    - Testing and validation: Babados, SVG, Haiti, Martinique
      - Translation into Spanish, dissemination
  
  - **PED Poster** – illustrated decision tree.
  
  - **Dissemination of materials** to ground stakeholders through Ministries

Involves: Coord. Unit, CIRAD, FAO, Comm WG and several countries for testing
5/ Gather information from the Caribbean

- Preparation of a regional Survey.
  Objectives:
  - Know the activities & PED situation in the region,
  - Know the countries needs to better address those needs regionally
- Several sections
  - Swine production in the country/territory
  - Knowledge on PED
  - PED Surveillance and results
  - Country needs on PED
- Survey submitted to all CVOs / E-mail
- Preliminary data collection & analysis

NB: Information sharing, mutual trust and confidentiality of information, Trade interests, in agreement with OIE and all CaribVET members... a long process!

End Aug. 2014
10 Sept 2014
20 Sept 2014
Descriptive analysis of the Caribbean survey

13 (39.4%) countries / territories responded 1 week after survey submission
(7 OIE members, all political/geographic origins represented)
## Swine production importance among responders

<table>
<thead>
<tr>
<th>Variable</th>
<th>No.</th>
<th>%</th>
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<tbody>
<tr>
<td><strong>Swine production type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Backyard only</td>
<td>2</td>
<td>15.4%</td>
</tr>
<tr>
<td>- Backyard and commercial</td>
<td>11</td>
<td>84.6%</td>
</tr>
<tr>
<td><strong>Country/territory with major swine production</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Swine population range</td>
<td>7</td>
<td>53.8%</td>
</tr>
<tr>
<td>- 600 to 1,039,749</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Country/territory where swine production is not major</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Swine pop. Range</td>
<td>6</td>
<td>46.2%</td>
</tr>
<tr>
<td>- 60-100 to 5,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Know all swine producers (half are countries with large swine production)</strong></td>
<td>6</td>
<td>46.2%</td>
</tr>
</tbody>
</table>
Countries/territories having PED surveillance in place: 7 (53.8%) 6 (85.7%) countries with major Swine production have/plan to have PED surveillance.

Surveillance type
- Passive: 5
- Active: 1
- Early warning: 1

Countries with no PED surveillance

PED Surveillance:
- Planned: 2
- Not planned: 4
- Lack of Staff: 2
- Lack of funding: 1
- Swine prod. not important: 1
# PED Knowledge by CVO and the requested role of CaribVET

<table>
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<th>Variable</th>
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<th>%</th>
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<tbody>
<tr>
<td>Self assessment of PED knowledge (CVOs)</td>
<td></td>
<td></td>
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<tr>
<td>- Good knowledge</td>
<td>9</td>
<td>69.2%</td>
</tr>
<tr>
<td>- Not good, not bad</td>
<td>2</td>
<td>15.4%</td>
</tr>
<tr>
<td>- Poor knowledge</td>
<td>2</td>
<td>15.4%</td>
</tr>
<tr>
<td>CVOs of major swine production country with estimated good knowledge of PED</td>
<td>6</td>
<td>85.7%</td>
</tr>
<tr>
<td>CVOs of not major swine production country with estimated good knowledge of PED</td>
<td>3</td>
<td>50%</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Countries requiring CaribVET assistance</th>
<th>11</th>
<th>84.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factsheets, posters and PED updates</td>
<td>10</td>
<td>90.9%</td>
</tr>
<tr>
<td>Guidelines</td>
<td>11</td>
<td>100%</td>
</tr>
<tr>
<td>Diagnostic</td>
<td>9</td>
<td>81.8%</td>
</tr>
</tbody>
</table>
PED Surveillance Results

1 country reported PED suspicions and confirmations

- PED suspicions & confirmation
- No PED suspicion
- No information
- Not CaribVET Member
« Timely emergence » of PED

CaribVET was never so ready to face a disease emergence! > 10 years of prep

• CaribVET markedly strengthened during recent years (2008-2012)
  – Interreg IV Caraibe project coordination mechanisms and internal communication strengthened, Network formalisation, Quality Management, tools to assist with work organization, most groups reorganized
  – VEP project preparedness, increased capacities in epidemiology, emergency preparedness, regional simulation exercise, videoconferencing equipment
  – TCP H1N1 project simulation exercise, samples shipments,
    ➔ Mutual trust, good knowledge of all actors, used to work together, most groups were reorganized with clearer TORs, …

• However the lack of permanent human resources is impacting on responsiveness of the network, effectiveness of actions & quality of work, measurement of impact of our actions.

• No secured budget for regional emergency
Synergy between project, continuity & sustainability

INTERREG Caraïbes IV 2009-2012


« EPIGENESIS » Regpot, 7th FP 2013-2016

One Health, One Love, One Caribbean 2014-2017

REGIONAL COORDINATION

Cross sectorial collaborations
Veterinary services
Epidemiologists
Laboratories

Regional priority diseases
Vector Borne diseases
Zoonosis
Food security

Detection
Prevention
Surveillance
Control

Research potential
Early Warning
Preparedness
Communication

Coordination Unit
T&TBD Working Group
Regional Research Laboratory & Epigroup
Veterinary Public health working group
Lessons learnt & perspectives for the Caribbean

- **Encouraging Network development**
  - Real buy-in by the CVOs; exemplary collaborations
  - Investment of countries/territories: time, skills, other in-kind commitments
  - Willingness to be transparent and share: “One Caribbean One animal health”.

- **Main Challenges/Opportunities**
  - Since 2012 (end of 3 major funding sources), enhance coordination
  - Reinforcement of collaborations with organisations
  - Demonstrate economic benefits to get by-in of the countries

- **CaribVET perspectives**
  - Revision of regional priorities
  - Reinforce Quality management of Regional Networks / Coordination mechanisms
  - Conceptual modeling of Regional Health Network for cost benefits analysis
  - Develop the CaribVET Headquarter/Secretariat (Guadeloupe)
Thanks to all CaribVET members & partners

~ 130 persons in 7 Working Groups, Coordination Unit and Steering Committee