Member experience on prevention and control for Vector Borne Disease [New Caledonia]

DVM Coralie LUSSIEZ

Head of the biosecurity department of the Veterinary, Food and Phytosanitary Service (SIVAP)
Direction of Veterinary, Food and Rural Affairs (DAVAR)
WOAH Delegate

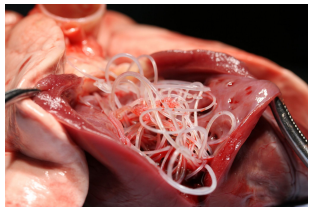
19 – 20 September 2024

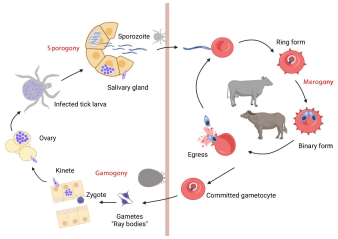
Tokyo, Japan

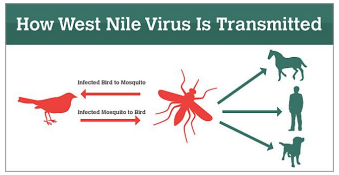
World Organisation for Animal Health
Founded as OIE

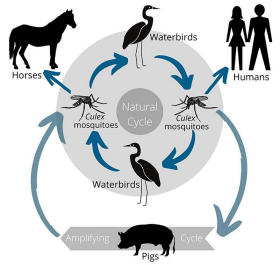
Vector Borne Disease situations

- Brief descriptions of the Vector Borne Disease situations which your country / territory is concerned about







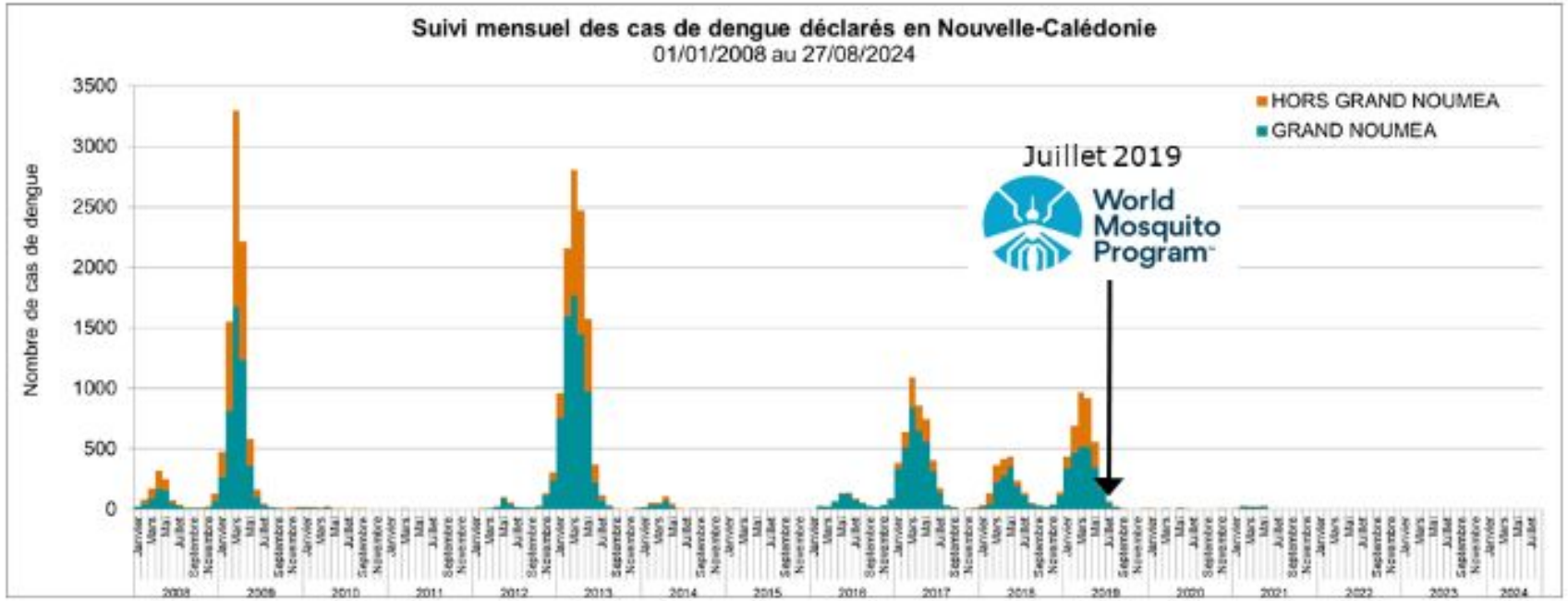


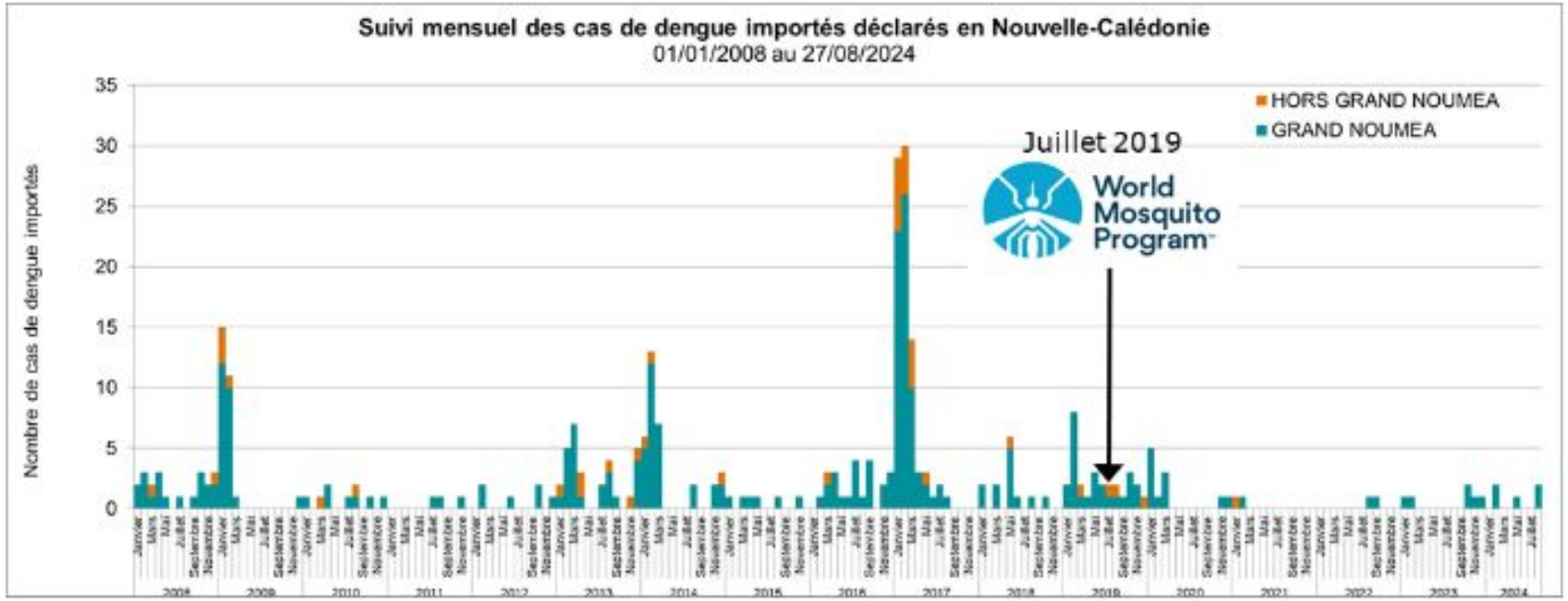
- **Animal health** :
  - **Dirofilariasis** (*Dirofilaria immitis*) very important disease for dogs (less for cats) (estimated prevalence : 60%). Each dog has to receive a prevention treatment each year and if not, the mortality rate within 3 to 7 years is high. It is also a zoonotic disease, but very few human cases.
  - **Bovine babesiosis** (*Babesia bovis*) introduction in 2007 with an import of vaccinated bovines (certification mistake). Eradication program which allowed to recover a free status for all the country except one specific zone where the access to the animal is very complicated due to customary land issues. Maintenance of sanitary police measures and surveillance to prevent the spread of disease.
- **Human health** :
  - **Dengue virus** present since a long time with a prevalence of 10% and several hospitalization cases or mortality. But thanks to the introduction of the bacteria *wholbachia* in 2019, it has almost disappeared (no more epidemic), with only few imported cases.
  - New Caledonia is free from **West-Nile virus** and J**apanese encephalitis virus** but health authorities are worried about these disease and surveillance is implemented

World Organisation for Animal Health
Founded as OIE

Re

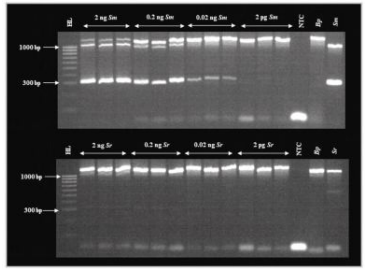
orld Organisation
r Animal Health
unded as OIE


Suivi mensuel des cas de dengue déclarés en Nouvelle-Calédonie
01/01/2008 au 27/08/2024
Nombre de cas de dengue
3500
3000
2500
2000
1500
1000
500
0
HORS GRAND NOUMEA
GRAND NOUMEA
Juillet 2019
World Mosquito Program
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024


Suivi mensuel des cas de dengue importés déclarés en Nouvelle-Calédonie
01/01/2008 au 27/08/2024
Nombre de cas de dengue importés
35
30
25
20
15
10
5
0
HORS GRAND NOUMEA
GRAND NOUMEA
Juillet 2019
World Mosquito Program
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024

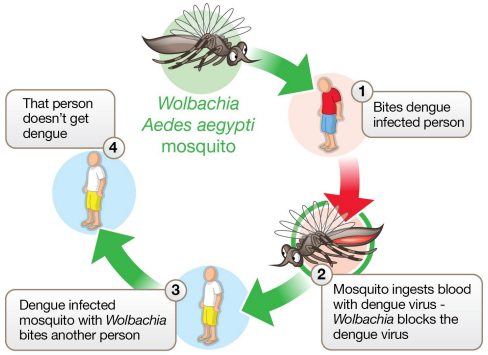
Detection capacity

- A brief description of surveillance and laboratory diagnosis capacity for Vector Borne Diseases
  - Surveillance, diagnostic capacity and type of diagnostic tests :
    - **<u>Animal health</u> :**
      - **Dirofilariasis** : no specific surveillance, only testing on unmonitored animals to see if preventive treatment can be implemented. Rapid serological test (snap tests) realized directly by the vet.
      - **Bovine babesiosis :** Notifiable disease with specific surveillance, especially in the contaminated area with blood samples of all the registered animals every months + passive surveillance on all the country. Serology ELISA and quantitative PCR (public vet laboratory) on blood or brain.
    - **<u>Human health</u> :**
      - **Dengue virus :** notifiable disease. Monitoring of dengue-like syndromes through the New Caledonia sentinel network and Notification of suspected cases through the mandatory reporting form. Serology ELISA or RT-PCR following the clinical history (human laboratory of the public hospital) on blood, urine, cerebrospinal fluid…
      - **West-Nile virus and Japanese encephalitis virus :** Test for potentially suspicious human cases but difficult because often asymptomatic or mild symptoms. Vector monitoring in areas identified as at risk (migratory birds...) with biomolecular tests. Survey in animal health. Serology ELISA at the public vet laboratory (careful with some false WNV positives on horses with dengue or zika antibodies), possible molecular xenomonitoring MX on vectors, but not routinely (budget).



World Organisation for Animal Health
Founded as OIE

Response to Vector Borne Diseases

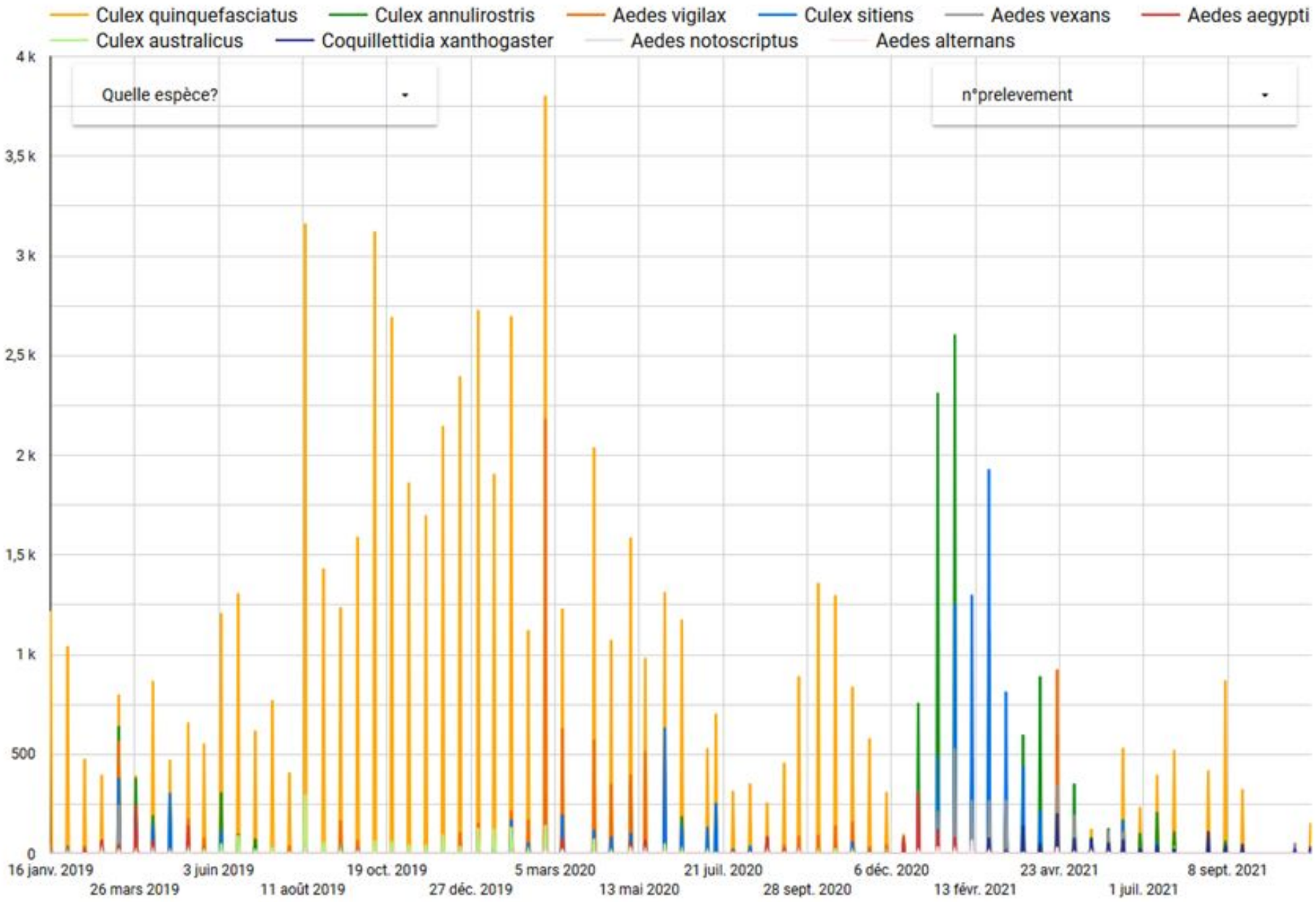


- A brief actions such as:
  - **Surveillance (animal and vector surveillance) :**
    - trapping and identification of mosquitoes or other vectors on specific sites like entry point (port and airport for example). Possible molecular xenomonitoring (MX) on specific actions.
    - Investigation of all outbreaks in the animal population thanks to the private vet network and identification of vectors if new one are detected on animals (like ticks)
  - **Responses and control**
    - Prevention treatments for dogs
    - Mosquito repellent spraying until 2020 during the resurgence period
    - Introduction of wolbachia bacteria in mosquitoes
    - Ticks treatments on bovines, killing if a new case of bovine babesiosis is detected, sanitary police measures (with isolation, killing and/or treatments) if a new VBD is detected

  - **Preventive measures to avoid introduction**
    - imposed insecticide treatments for imports of at risk live plants, systematic treatment of planes
    - Specific import conditions for concerned live animals
    - Quarantine station

  - **Vaccination (if applicable)**
    - not applicable for the concerned disease
  - **Contingency plans :** general one is available

World Organisation for Animal Health
Founded as OIE

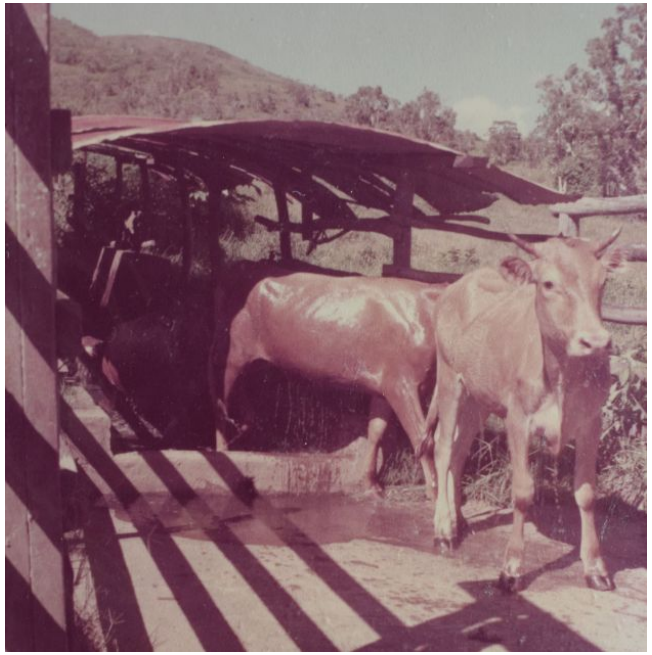


World Organisation for Animal Health
Founded as OIE

Impact of the actions

- A brief description of the impact of risk mitigation measures implemented to prevent and control Vector Borne Diseases

  - Example of wolbachia bacteria for dengue
  - Example of bovine babesiosis gestion with imidocarb and acaricides
  - Example of canine dirofiliariasis with preventive treatment



Challenge and possible solutions

A brief description of challenges in implementation of VBD surveillance activities and control programmes and your actions/ideas to overcome these challenges

- **Dirofilariasis** : problem of the marketing authorization respect, follow-up of the treatment by the owners, all the stray dogs without treatment… → awareness campaign for vets and owners
- **Bovine babesiosis :** Access difficulties to customary lands with feral cattle → political support of the veterinary services (awareness campaign)
- **Vector surveillance (principaly mosquitoes) :**
  - difficult accessing areas
  - Seasonal fluctuations of mosquitoes populations, requiring long-term monitoring
  - Heterogeneous distribution of mosquitoes populations
  - data exploitation
  - Lack of human and financial resources → political support of the veterinary services (awareness campaign)

Collaboration with other sectors under One Health approach

- Brief description of collaboration experience with other sectors to prevent or control Vector Borne Disease (If any)

  - One health network in place with information sharing about literature monitoring
  - Integrating some human VBDs in animal health survey
  - Coordination with research organisms to work on adapted surveillance programs
  - Co-writing of contingency plans

Challenge and possible solutions to strengthen the collaboration

- A brief description of challenges to strengthen the collaboration with other sectors and your actions/ideas to overcome these challenges

- Formalization of the New-Caledonia one health network with monthly meeting
- More information sharing
- More shared zoonoses simulation exercises
- Pooling resources in entomology
- Develop molecular xenomonitoring for vector surveillance with specific traps
- National bridging workshop with WOAH
- Organizing WOAH zoonoses workshops with animal and human health sectors

Thank you

World Organisation for Animal Health
Founded as OIE

Expectations for the VBDs workshop (Not Included in the Presentation)

- Please share your expectations for the VBDs workshop
- What specific information about VBDs you expect to obtain from experts
- What disease experience you expect to gain from member countries/territories

Improve VBDs surveillance through animal health

Obtain more information about possible collaboration with human health sector and research

Develop environmental surveillance

Improve vector knowledge and vector control