

Latin America and the Caribbean Scientific Data Management Workshop

Cross-border epidemiological data integration and harmonization Application to malaria in the cross-border area between French Guiana and Brazil



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Malaria

- **Global scale**

Significant decrease between 2000 and 2015

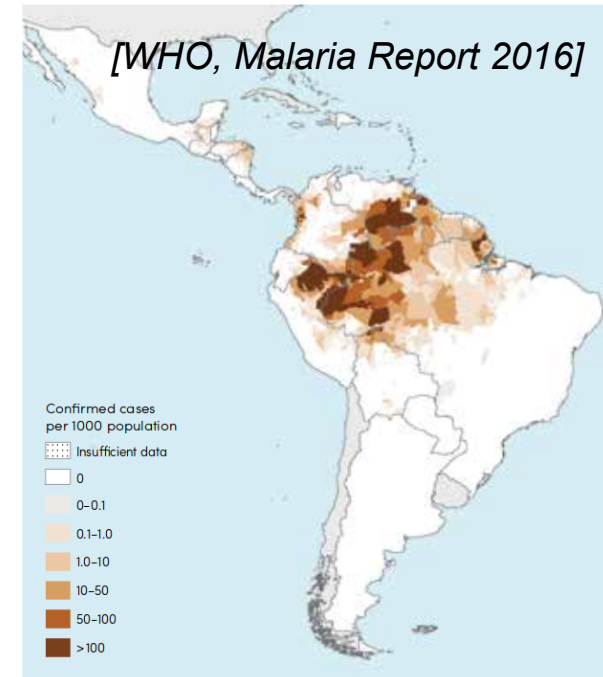
↳ 58% mortality rate

↳ 37% incidence rate

➔ **Elimination (by 2030)**
(UN post-2015 Sustainable Development Goal 3.3)

BUT 2016 : 216 M cases, 445 000 deaths (WHO, 2017)

A. Confirmed malaria cases per 1000 population, 2015



- **National Scale**

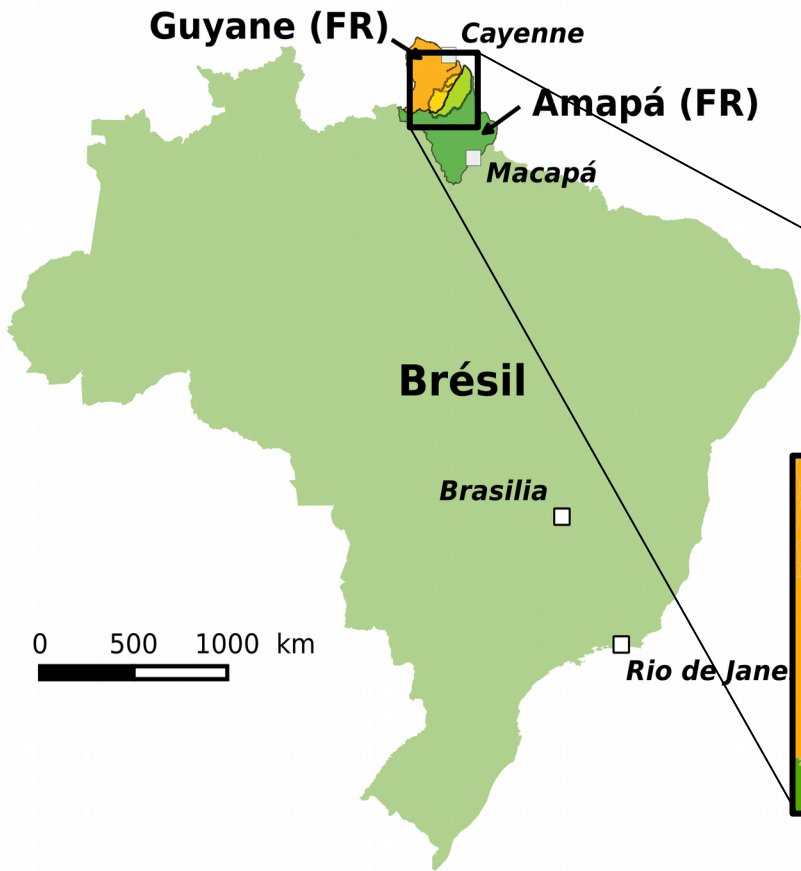
Brazil: ↳ >50% of mortality and incidence rates between 2010 and 2015

➔ **Elimination plan (by 2030)**

French Guiana: ~3500 cases in the 2000s, ~450 (no death) in 2014 and 2015

➔ **Pre-elimination plan (by 2018)**

Cross-border contexts

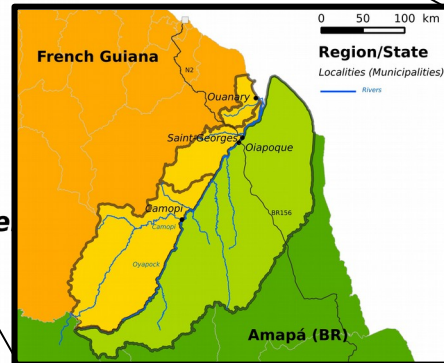


Cross-Border Malaria: A Major Obstacle for Malaria Elimination

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[Wangdi et al., *Advances in Parasitology*, 2015]

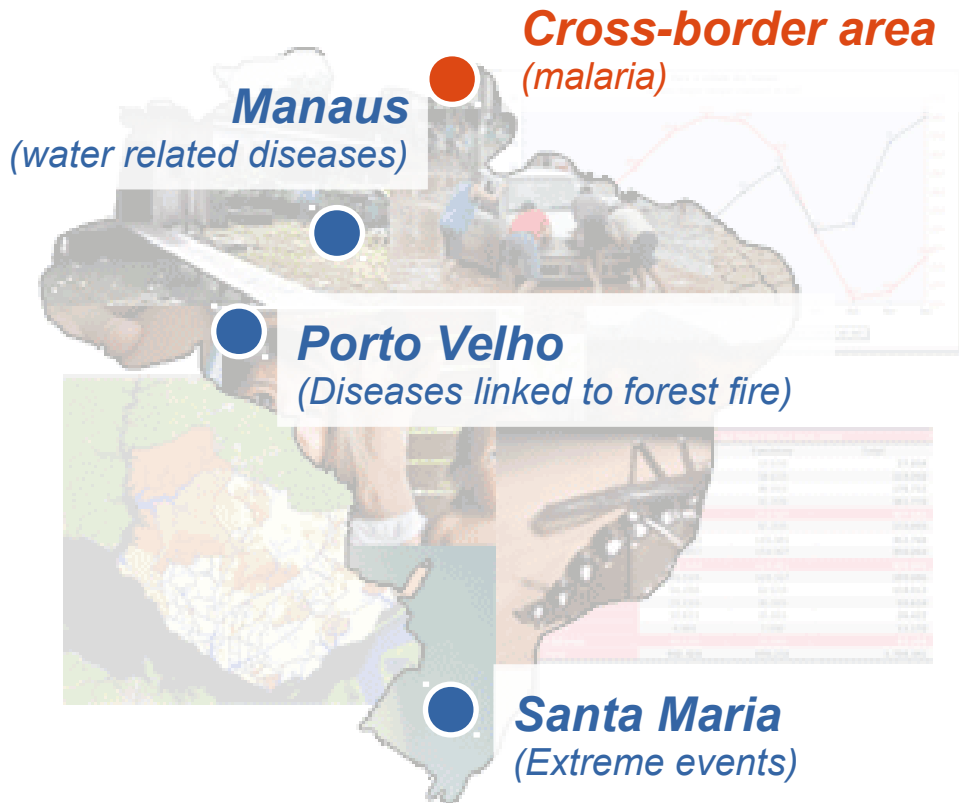


- High **vulnerability** of the local populations (poor offer and access to care, health education, etc.)
- **Heterogeneity and lack of sharing** of protocols, data and information from one side of the border to another
- **Non controlled circulation of parasites** (mobile populations difficult to follow up)
- Treatment **resistance risks**

[Wangdi et al., 2015, Peiter et al., 2007]

Perspectives

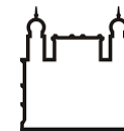
Malaria cross-border sentinel site of the Brazilian Climate and Health Observatory (C&HO)



At local scale

- Understand processes
- Parametrize models for regionalization
- Make recommendations for prevention and control

[Roux, Barcellos et al., ENVIBRAS, 2014]



Ministério da Saúde

FIOCRUZ

Fundação Oswaldo Cruz

At regional scale : C&HO (FIOCRUZ/ICICT)

Gather and combine multi-disciplinary and multi-sources information in order to facilitate studies on climate and health relationships

[Barcellos, Roux et al., Pan American Journal of Public Health, 2016]

Climate & Health Observatory

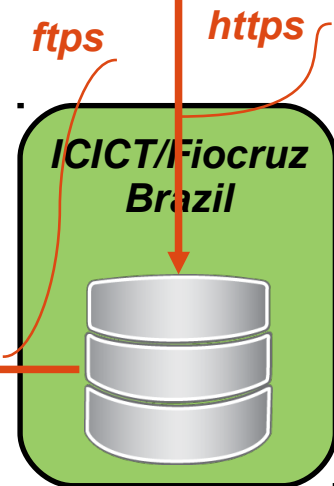
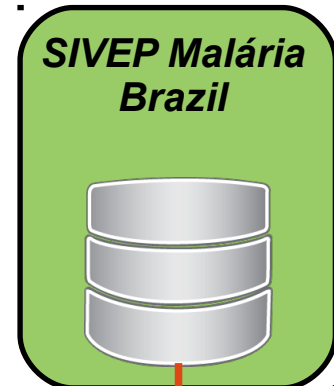
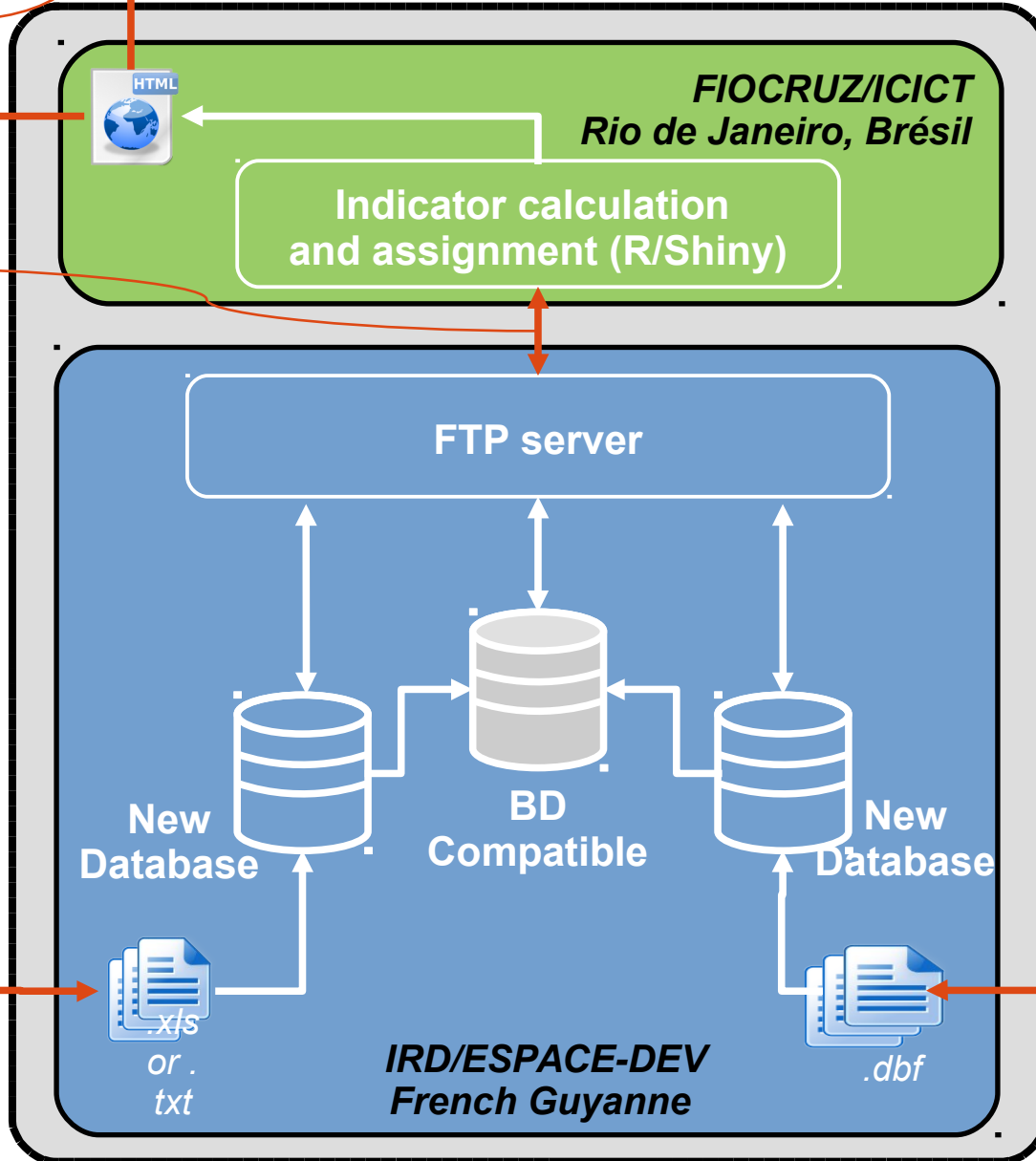
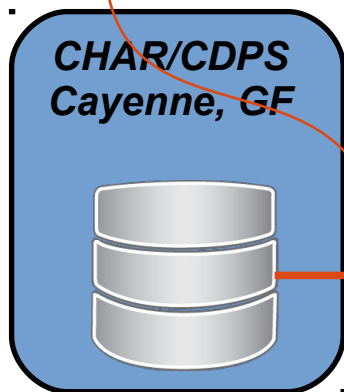


Https
Differential access according to users (authentication and password)

Automatic data treatment

Data requirement via SFTP

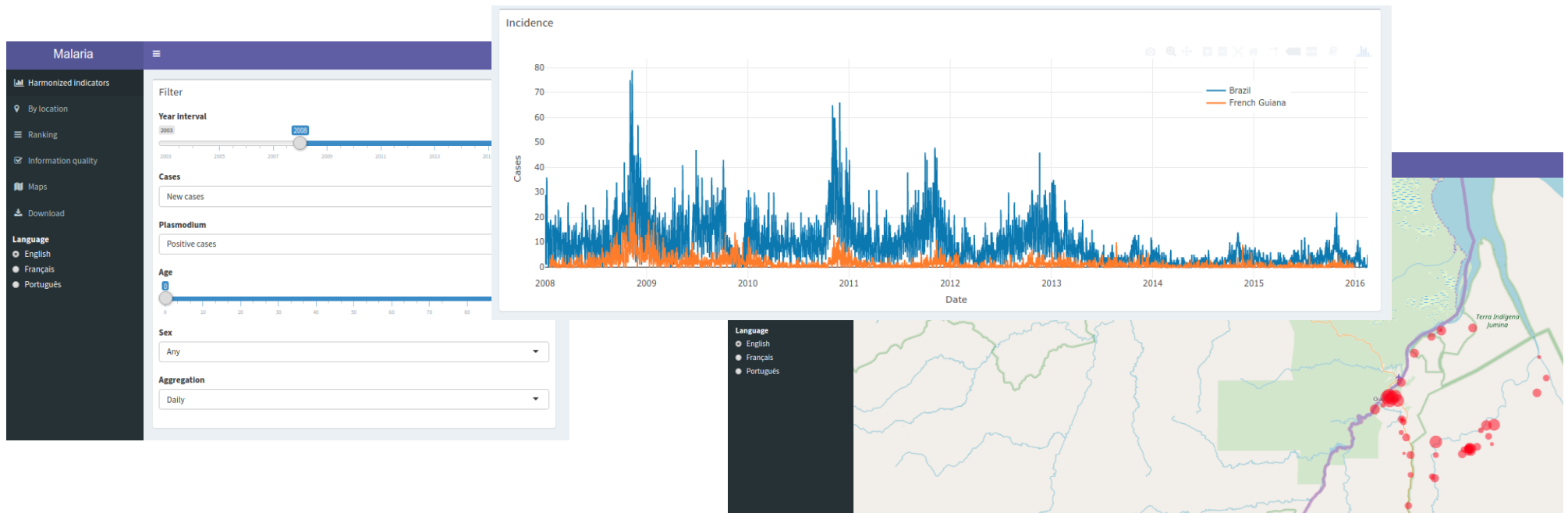
.xls files transmitted and protected by password or encrypted



ftps *https*

Employed technologies

- Multi-platform to **Extract Transform Load (ETL)** tools (TALEND®)
 - **Compatibilization** rules based on **expert knowledge** in epidemiology and parasitology
- **Web services** for data online publication
- **Web application (R-Shiny)** for online data visualization



Developers and sponsors



BILL & MELINDA
GATES foundation

GCE18 - Investment ID OPP1171795



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Observatório
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