MALADIES INFECTIEUSES ÉMERGENTES

The ANRS|MIE network in Africa & the AFROSCREEN project, a multi-institutional capacity building project in Africa

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ERINHA – November 5th, 2021

ANRS|MIE

A BRIEF HISTORY

International Health Context

1851: first international sanitary conference
1892: International Sanitary Convention (3 diseases)
1951: International Health Regulations (6 diseases)
1976: identification of the Ebola Virus
1981: emergence of an unknown epidemic in the USA
1983: identification the Human Immunodeficiency Virus
2000: enactment of the GOARN
2000s: growing importance of NTDs
2005: IHR enlargement (Annex 2)
2003: emergence of SARS and H5N1 influenza
2014-2018: Ebola epidemics in Africa
2019: emergence of COVID-19
2021: re-emergence of Marburg in Guinea

ANRS|MIE Evolution

1988: creation of the ANRS to evaluate, stimulate, coordinate and finance research on HIV/AIDS

1998: opening to LMICs to support national public health policies

1999: Hepatitis C enters the scope of the agency

2005: Hepatitis B enters the scope of the agency

2019: STDs and TB enter the scope of the agency

2021: transformation of the agency into the ANRS|Emerging Infectious Diseases, ANRS|MIE

ANRS|MIE
MISSIONS

The ANRS|MIE, autonomous Inserm agency, has **four core missions**:

Financing	The agency is economically autonomous and finances, every year, research projects all over the world
Evaluation	The agency has a scientific autonomy to define its research priorities. It evaluates scientific projects before funding
Animation	Thanks to a variety of working groups and task forces the agency built a constant dynamic of reflexion and information
Coordination	The agency plays the role of promoter and supports research teams in carrying out their studies

ANRS|MIE

WORKING FRAMEWORK

Research types

- Fundamental
- Translational
- Vaccine
- Clinical
- Epidemiological
- Public Health
- Social Sciences
- Capacity strengthening
- Preparedness and response

Research themes

- HIV/AIDS
- Viral Hepatitis
- STDs
- TB
- EIDs & rEIDs

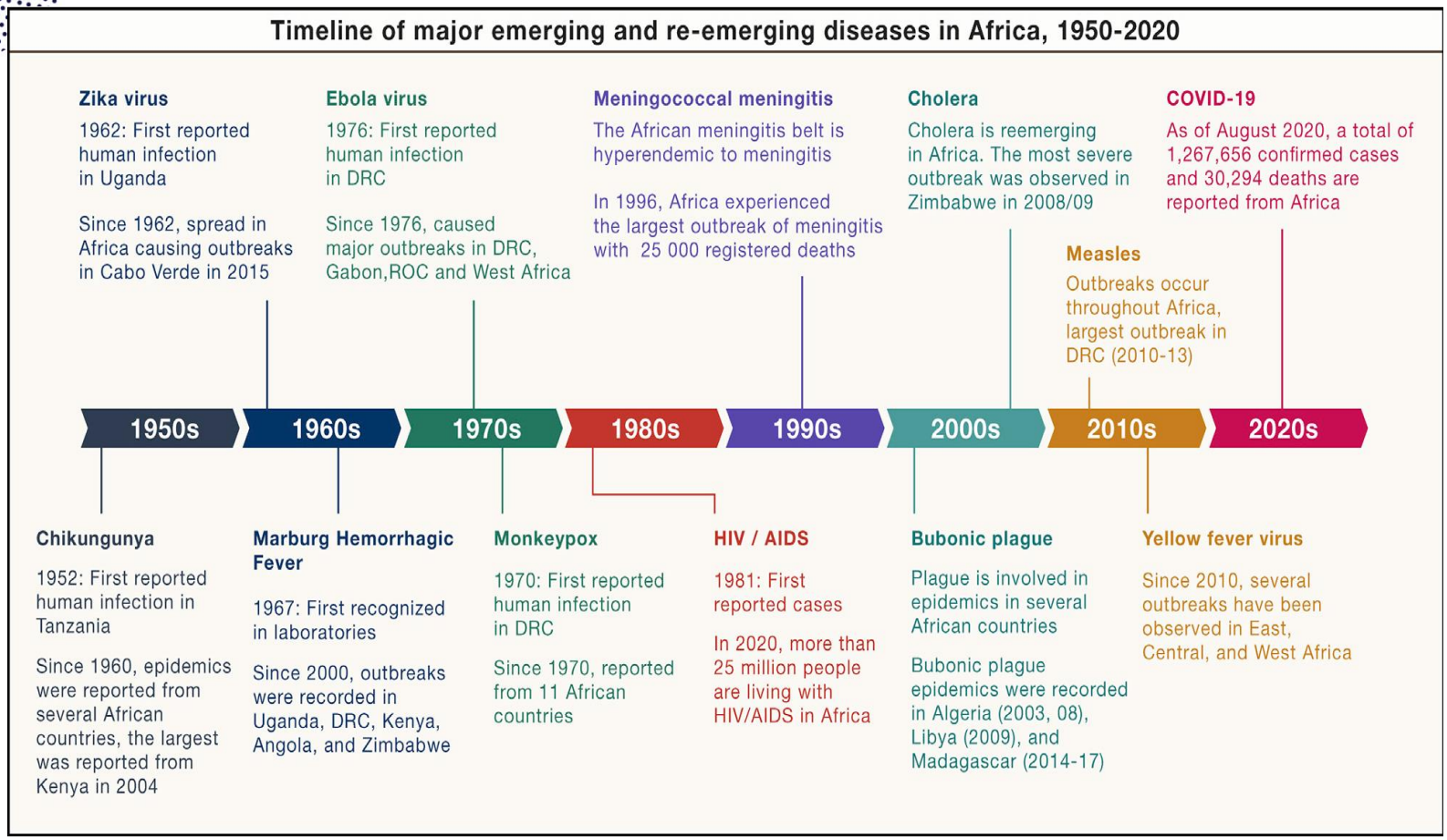
Stakeholder involvement

- International organisations
- International funders
- States
- Research institutes, laboratories
- NGOs
- Patients' association
- Civil society

One Health Approach

CONTEXT

EIDs IN AFRICA



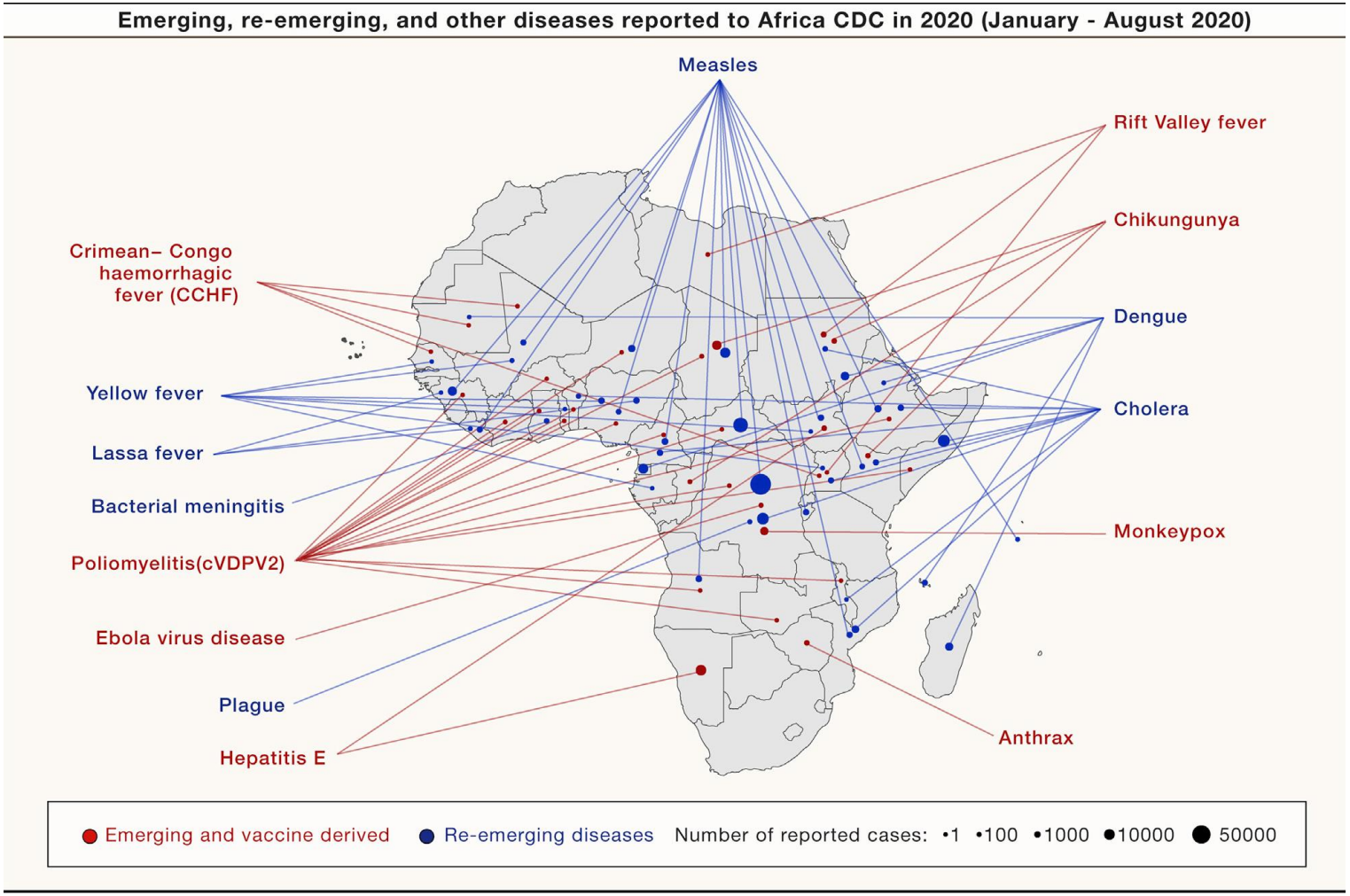
John N. Nkengasong[1,*] and Sofonias K. Tessema[1]
[1]Africa Centres for Disease Control and Prevention, Addis Ababa, Ethiopia

Cell *183*, October 15, 2020

- **2021** Marburg — Guinea
- **2020** COVID-19 — Continental
- **2018** Ebola — DRC
- Lassa — Nigeria
- **2017** Lassa — Togo
- Plague — Madagascar
- Marburg — Uganda
- **2014** Ebola — West Africa

CONTEXT

EIDs IN AFRICA



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The ANRS|MIE network in Africa

OVERVIEW

INTERNATIONAL NETWORK

- Since its creation, the ANRS|MIE has build a **strong, rich and dense network** of international partners all over the world, especially in Africa.

- Countries with ANRS|MIE partner sites
- Countries collaborating to research with ANRS|MIE funding and/or sponsoring

NETWORK

PARTNER SITES

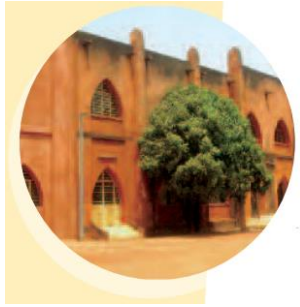

Cambodia

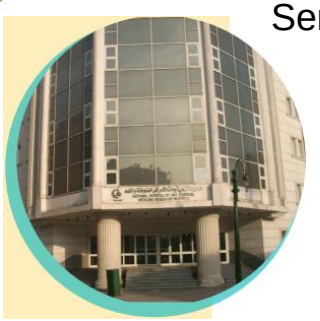

Ivory Coast

Cameroun


Brazil


Senegal


Burkina Faso


Egypt


Vietnam

- Collaboration agreements
- Coordination
- Physical or virtual sites
- Budget
- Activities

COLLABORATIONS


Mali

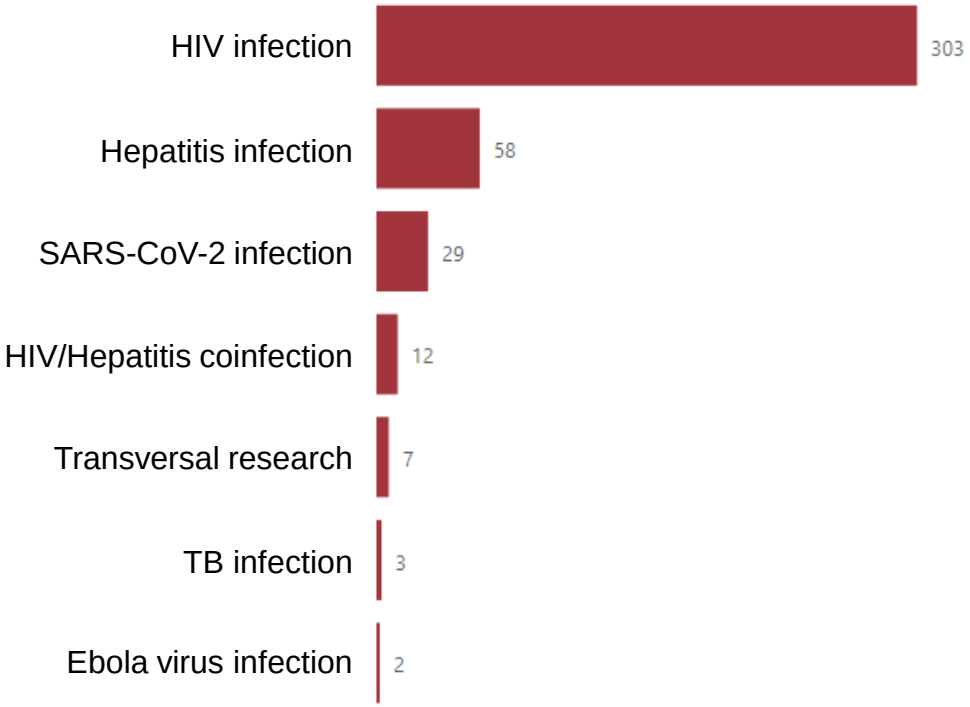

Guinea


DRC

OVERVIEW

AFRICAN PROJECTS

- Since its creation, the ANRS|MIE has contributed to almost **415 projects in Africa** on **various themes and research areas**.
- It is currently involved in around **60 active projects**.



OVERVIEW

FINANCING COVID-19 RESEARCH

- Since 2020, the agency has invested on **COVID-19 research** projects by launching two urgency grants for a total of **8.6 M€ (40 projects)** of which **6.2 M€ for 26 projects** across **Africa**.

- The ANRS|MIE has also financed **5 project extensions** for COVID-19 research for a total of 1.9 million euros.

The AFROSCREEN project

A multi-institutional capacity building project in Africa

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MALADIES INFECTIEUSES EMERGENTES
IRD Institut de Recherche pour le Développement FRANCE
INSTITUT PASTEUR
AFD AGENCE FRANÇAISE DE DÉVELOPPEMENT

Background

SARS-CoV-2 genomic sequencing for public health goals

Interim guidance
8 January 2021

World Health Organization

- Sequencing programmes still require substantial investment.
- Countries are encouraged to rapidly deposit SARS-CoV-2 sequences in a public database in order to share them with the scientific community for public health purposes.
- Resilient, high-quality global sequencing programmes [will serve] for the detection and management of other outbreak pathogens in the future.

Guidance for surveillance of SARS-CoV-2 variants

Interim guidance
9 August 2021

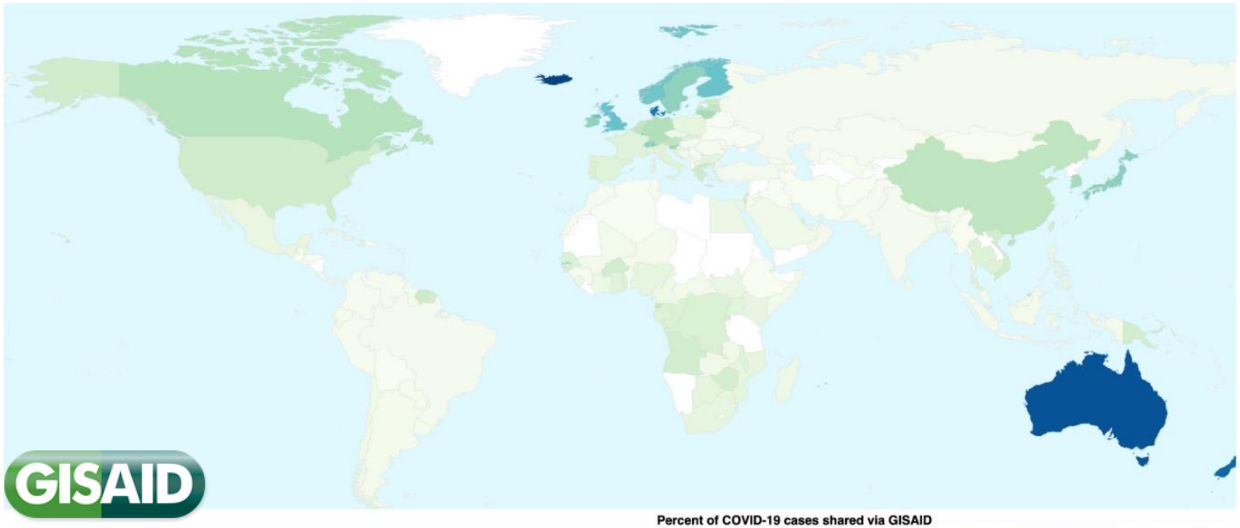
World Health Organization

- Routine genetic sequencing is critical to follow the emergence and impact of VOIs and VOCs.
- **Prompt sharing of information around SARS-CoV-2 variant genomic sequences in public databases is integral to the global understanding and control of SARS-CoV-2.**

Background

African Union | AFRICA CDC Centres for Disease Control and Prevention — Safeguarding Africa's Health

8476312	217483	7868860	75984845
Cases	Deaths	Recoveries	Tests



Oct 27th, 2021

- **Worldwide: 4 616 355 sequence** entries with complete collection information via GISAID
- **Africa: 48 932** (<1% of total COVID-19 cases on the continent)

Context

AFROSCREEN

2020

3 projects funded by AFD

Inserm/ANRS|MIE
APHROCOV

Initiative **« Health in Common 1 »** around laboratory capacity strengthening in 13 African countries to detect SARS-CoV-2

Supporting hospital preparedness in the operational response to the COVID-19 pandemic

IRD
ARIACOV

Research/Action project to support the African response to the COVID-19 pandemic

Institut Pasteur

Supporting institutes of the Pasteur Network in Africa

The AFROSCREEN project

10 M€

24 months

AFD – Agence Française de Développement

Consortium

ANRS – Maladies Infectieuses Émergentes

Inserm

Pasteur Network

IRD – Institut de Recherche pour le Développement – France

& African Partners

Objective

Respond to surveillance needs for SARS-CoV-2 and emerging pathogens

Geographical distribution

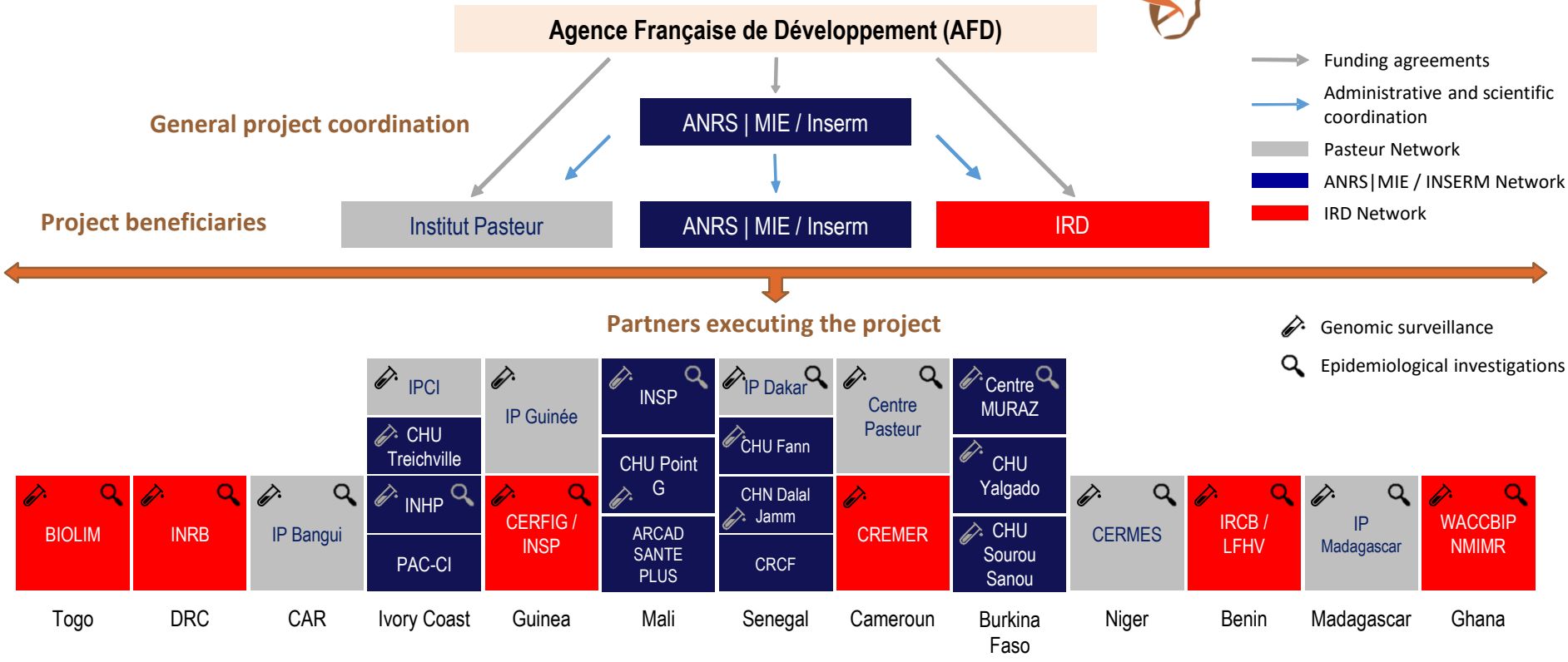
Multi-stakeholder project in West and Central Africa and Madagascar
13 countries – 22 Laboratories and reference centers

Coordination

General coordination and scientific coordination handled by ANRS|MIE
Articulation with Africa CDC *(MoU in preparation)*

Organization and Coordination

AFROSCREEN



National partners beneficiaries of generated data

- MoH of participating countries
- Emergency Response Operation Centers (CORUS)
- National Public Health Institutes (NPHI)
- Regional reference laboratories
- Reference laboratories for influenza and respiratory viruses

International partners beneficiaries of generated data

- Africa Centers for Disease Control and Prevention (Africa CDC)
- World Health Organization (WHO) and WHO African Office
- West African Health Organization (WAHO)
  Organization of Coordination for the Control of Endemic Diseases in Central Africa (OCCEDCA)

Objectives

AFROSCREEN

General Objectives

Sequencing capacity strengthening in laboratories within 13 African countries for surveillance of SARS-CoV-2 and other emerging pathogens

Monitor the evolution of SARS-CoV-2 and other emerging pathogens integrating into each country's national system

Specific Objectives

To train, equip and reinforce sequencing capacities or PCR screening in targeted laboratories

To detect emerging variants and follow their spreading dynamics in populations

To alert rapidly health authorities and the international community in case of emergence of a variant of interest (GISAID)

To investigate epidemiological characteristics of SARS-CoV-2 variants of interest in Africa

To improve the response to the COVID-19 crisis and **to prepare** countries to respond to future emerging pathogens on the African continent

Work Packages

- **WG 1: Biology – SARS-CoV-2 viral surveillance**
  - Laboratories capacity strengthening (equipment and infrastructures rehabilitation)
  - Reinforce competencies in laboratory teams
  - Implement a routine laboratory monitoring activity
  - Implement molecular epidemiology activities

- **WG 2: Public Health & Epidemiology – surveillance of SARS-CoV-2 variants of concern**
  - Investigate clusters of variants of interest
  - Undertake institutional integration to ensure the optimal use of sequences and the surveillance of their propagation in the general population

- **WG 3: Communication**
  - Raise awareness about the project
  - Ensure the visibility of the network of laboratories and reference centers in the 13 countries
  - Ensure the visibility of the different members of the consortium and their partners

Perspectives

- Sharing of molecular data → Deposit of sequences in GISAID
- Epidemiological investigations
- Use of data from sequencing and epidemiological investigations by public health authorities → Public health measures
- Consolidate technological platforms that will enable the surveillance of other emerging pathogens

Articulation with international initiatives

AFROSCREEN

African Union

AFRICA CDC
Centres for Disease Control and Prevention
Safeguarding Africa's Health

CEDEAO ECOWAS WAHO

West African Health Organization
Promoting better health through regional integration

World Health Organization
REGIONAL OFFICE FOR Africa

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MALADIES INFECTIEUSES EMERGENTES

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AGENCE FRANÇAISE DE DÉVELOPPEMENT

EMERGEN: French consortium for surveillance and research on EMERging infectious pathogens via the microbial GENomics

Plateformes de virologie + séquençage à haut débit

CNR Virus des infections respiratoires

INSTITUT PASTEUR

HCL HOSPICES CIVILS DE LYON

CNR-LE Appui au séquençage du SARS-CoV-2

AP-HP. Hôpitaux universitaires Henri-Mondor

Hôpitaux Universitaires de Marseille ap hm

Appel à manifestation d'intérêt

Santé publique France

Coordination

Santé publique France

ANRS Maladies infectieuses émergentes

Inserm

Laboratoires de virologie + séquençage de proximité

ANRS

Réseau Virologues Hospitaliers (AC43)

ars

Laboratoires de biologie médicale (n=12)

CNRGH Centre National de Recherche en Génomique Humaine

ifb Institut Français de Bioinformatique

Inserm Instituts thématiques

Technologies pour la Santé

Faculté des sciences médicales et paramédicales

Unité des virus émergents (UMR UVE)

Sentinelles Réseau Sentinelles

anses

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Thank you for your attention