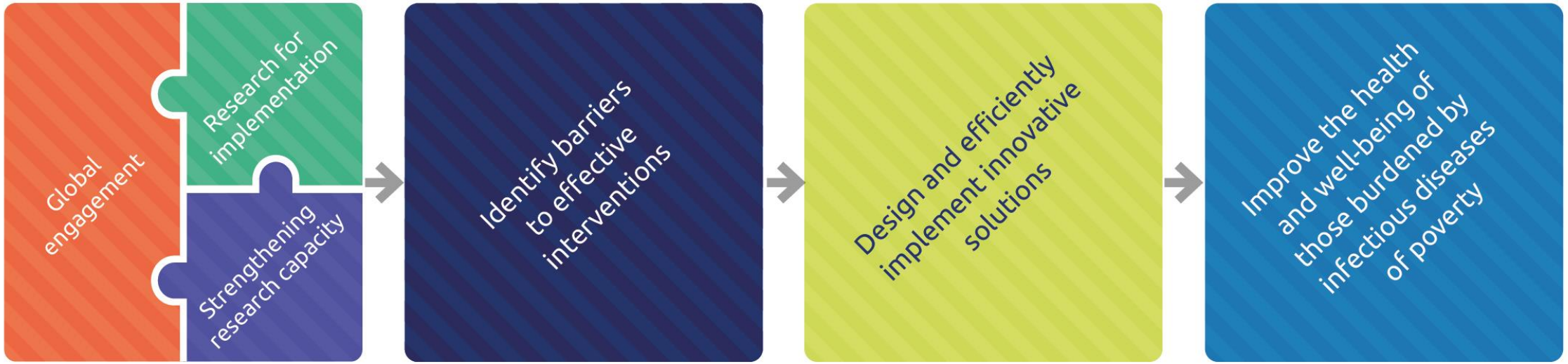
Initiatives from the TDR/WHO Special Programme for Research and Training against Tropical Diseases *regarding the vectors of arboviruses in LMICs*

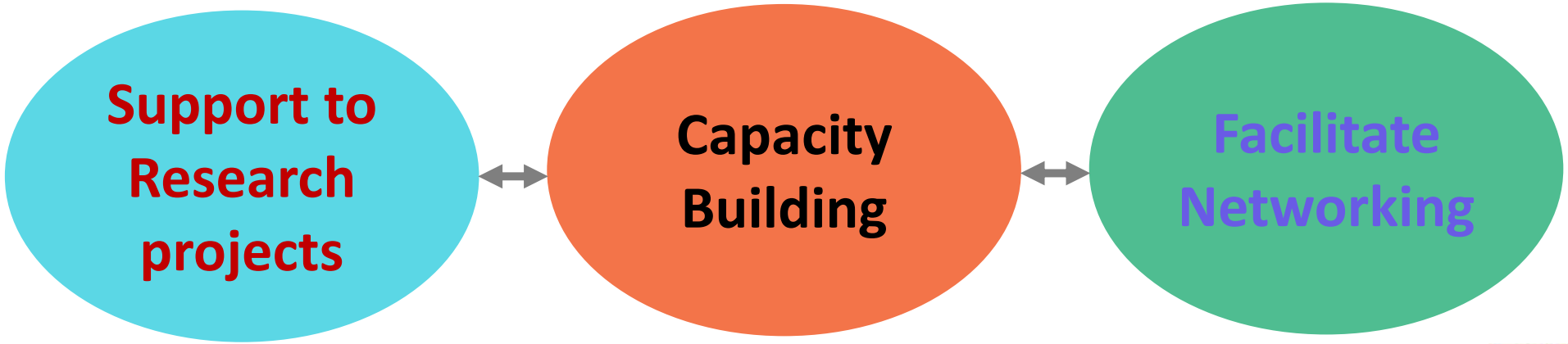
***Florence Fouque** TDR/OMS*

TDR/IAEA/NTD/WHO- SIT Guidance Framework working group in the field, Mexico, 2019

Symposium on "*Research and Innovation for the control of vectors of emerging arboviruses*", 14 February 2023, Montpellier, France

TDR's Priorities and Activities





TDR For research on diseases of poverty
UNICEF • UNDP • World Bank • WHO

TDR Activities are supporting the WHO Global vector Control Response

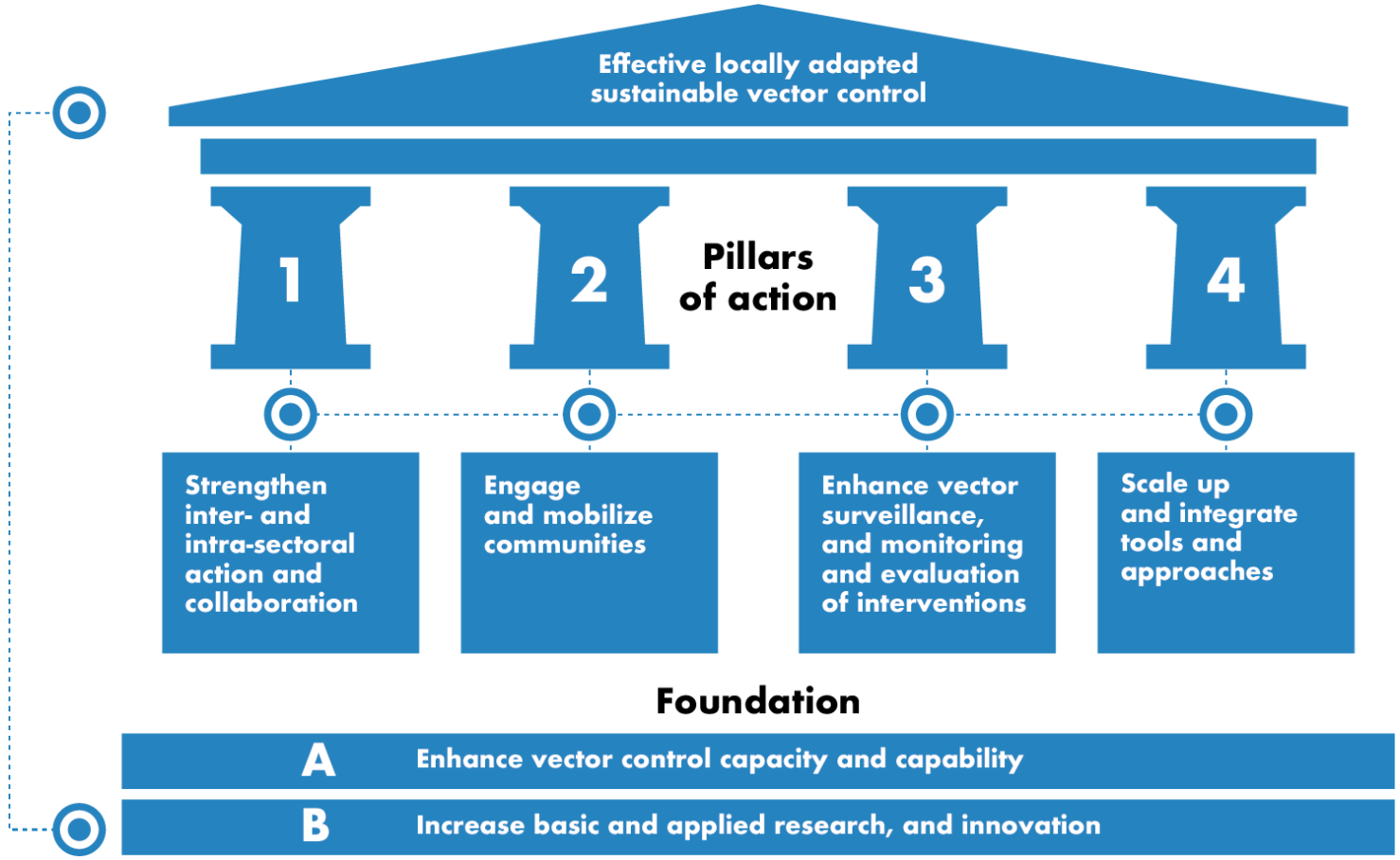
REDUCE THE BURDEN AND THREAT OF VECTOR-BORNE DISEASES THAT AFFECT HUMANS

ENABLING FACTORS

Country leadership

Advocacy, resource mobilization and partner coordination

Regulatory, policy and normative support

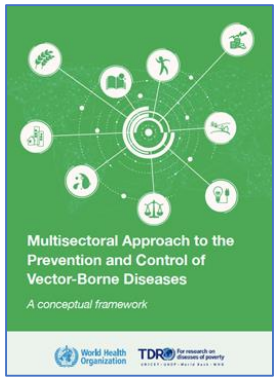


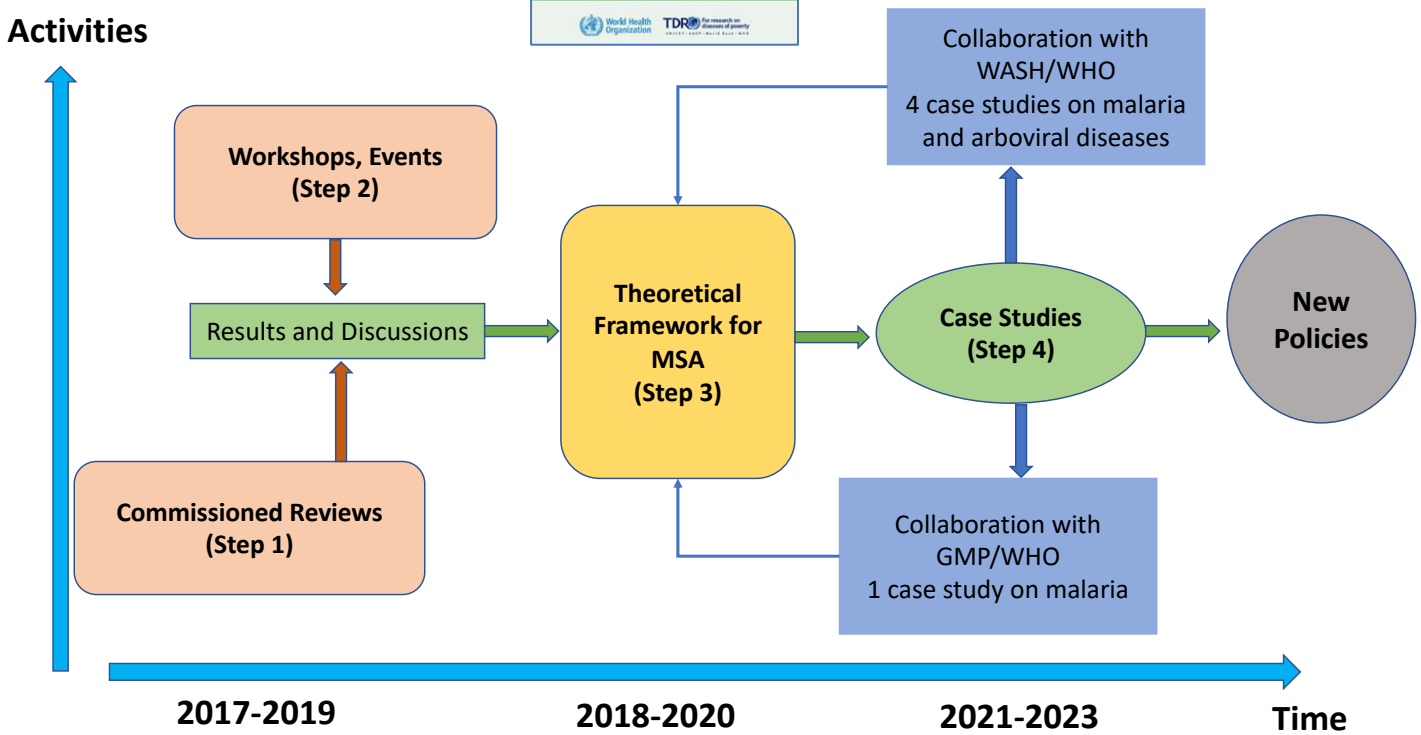
TDR For research on diseases of poverty
UNICEF • UNDP • World Bank • WHO

TDR Research Activities on Vectors since 2014

TDR For research on diseases of poverty
UNICEF • UNDP • World Bank • WHO

Multisectoral Approach for Prevention and Control of VBDs





Multisectoral proposal in Mali-Benin-Burkina Faso and Nigeria

Figure 1: Rice plots showing water supply and release.

Multisectoral proposal in Cambodia and Vietnam

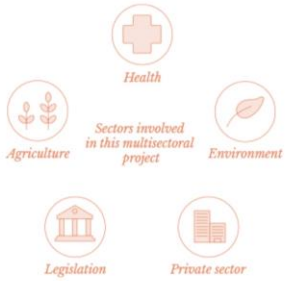
Multisectoral proposal in Brazil

Case Study on MSA against Malaria with a focus on the WASH sector in Mali, Burkina Faso, Benin and Nigeria

The aim

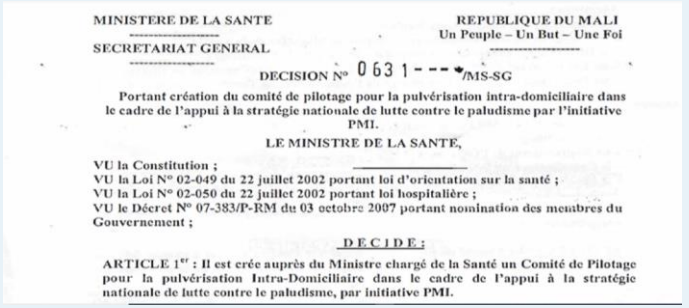
This project aims to address residual malaria with a new **holistic multisectoral approach (MSA)**.

It will bring together partners from different sectors and communities, to foster the sharing of human, infrastructural and financial resources to develop approaches that can effectively prevent and control vector-borne diseases, like malaria.



Mitigation of agriculture insecticide

Multisectoral Committees



MINISTERE DE LA SANTE
SECRETARIAT GENERAL

REPUBLIQUE DU MALI
Un Peuple – Un But – Une Foi

DECISION N° 0631 ---/MS-SG

Portant création du comité de pilotage pour la pulvérisation intra-domiciliaire dans le cadre de l'appui à la stratégie nationale de lutte contre le paludisme par l'initiative PMI.

LE MINISTRE DE LA SANTE,

VU la Constitution ;
VU la Loi N° 02-049 du 22 juillet 2002 portant loi d'orientation sur la santé ;
VU la Loi N° 02-050 du 22 juillet 2002 portant loi hospitalière ;
VU le Décret N° 07-383/P-RM du 03 octobre 2007 portant nomination des membres du Gouvernement ;

DECIDE :

ARTICLE 1er : Il est crée auprès du Ministre chargé de la Santé un Comité de Pilotage pour la pulvérisation Intra-Domiciliaire dans le cadre de l'appui à la stratégie nationale de lutte contre le paludisme, par initiative PMI.

FEDERAL MINISTRY OF HEALTH
DEPARTMENT OF PUBLIC HEALTH
NATIONAL MALARIA AND VECTOR CONTROL DIVISION

OFFICE ADDRESS:
Abia House, Near Adamawa Plaza,
First Avenue, Abuja
Tel: 09-6712135

NMEP/IVM/1159/S.174/T2
Ref No:
28th March, 2022
Date:

Special Programme for Research & Training in Tropical Diseases (TDR)
World Health Organisation,
Avenue Appia 20
1211 Geneva 27
Switzerland

Re: A Pilot Multisectoral Intervention for Controlling Malaria Vectors, Mitigating Insecticides Resistance and Assessing WASH facilities at health Care Units in Selected Coastal and Sahelian West African Countries

Letter of Support

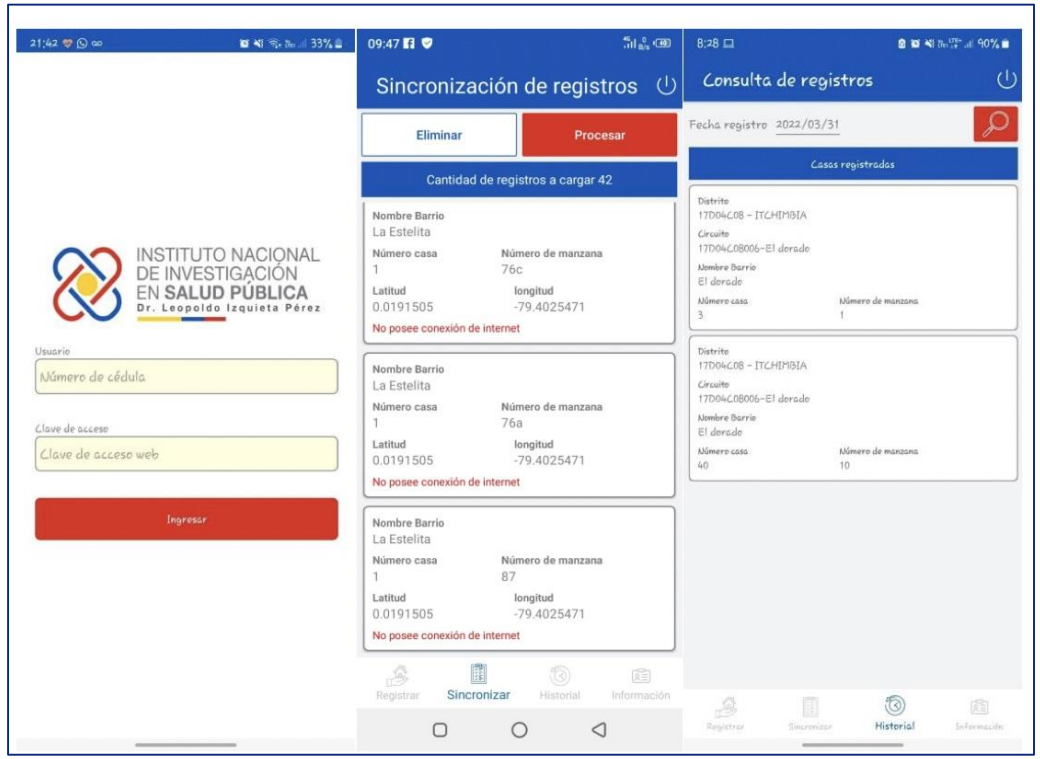
I write in respect of the ongoing pilot study on multisectoral intervention for controlling malaria vectors, mitigating insecticides resistance and assessing WASH facilities at health care units in selected coastal and Sahelian West African countries which is being implemented by the Nigerian Institute for Medical Research (NIMR) in Nigeria.

2. The National Malaria Elimination Programme (NMEP) is pleased to collaborate with NIMR in this laudable project as the outcomes will likely inform policy decisions in malaria vector control based on local evidence. NMEP also welcomes the proposal to establish the multisectoral advisory task force to address malaria vector resistance to insecticides and malaria transmission problem leveraging on the already existing Integrated Vector Management Sub-committee of the NMEP.

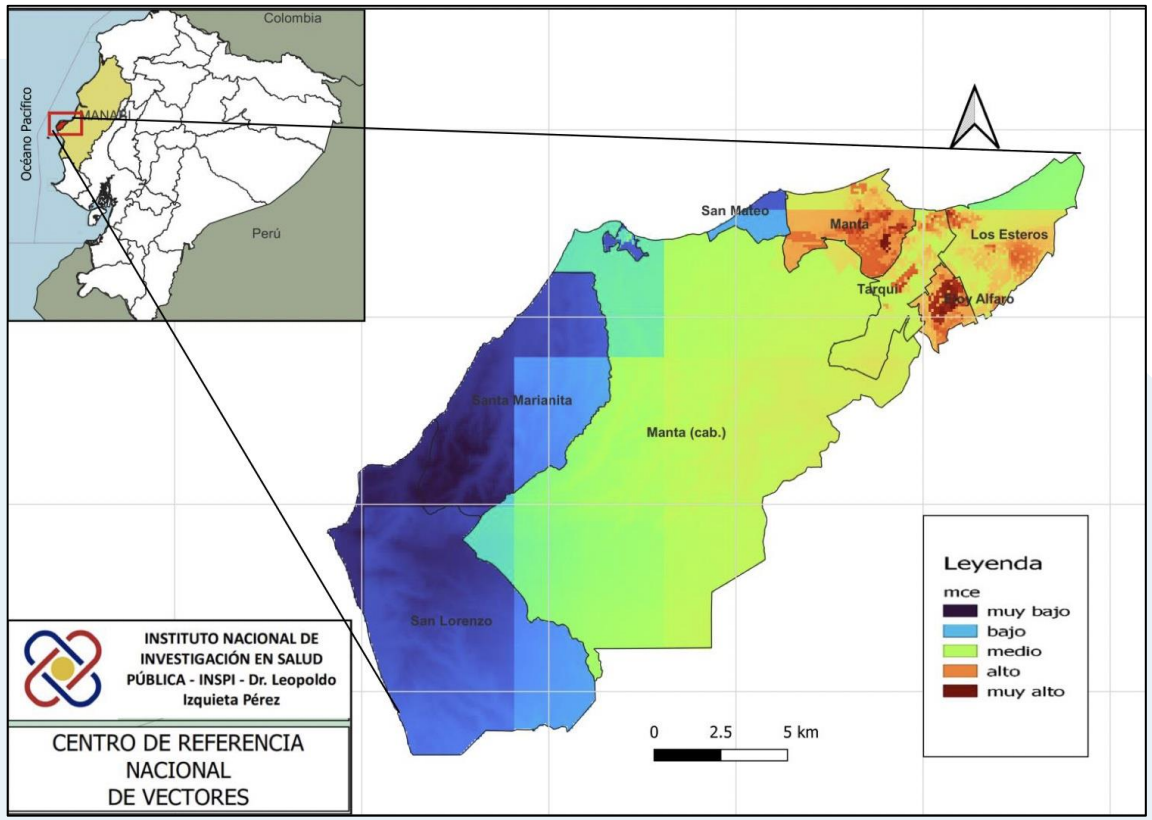
3. Please accept the assurances of my esteemed regards.

Dr. Perpetua Uhomoibhi
National Coordinator

Case Study on MSA against Arboviral Diseases with a focus on the WASH sector in Ecuador



Citizen Science with Mobile Application for reporting on mosquitoes



Risk Map of Arboviral Diseases in Manta, Ecuador

Multisectoral Collaboration between sectors of HEALTH, WATER AND SANITATION, and ENVIRONNEMENT achievements:

- Establishment of a map of risks.
- Development of a mobile Application for community participation.

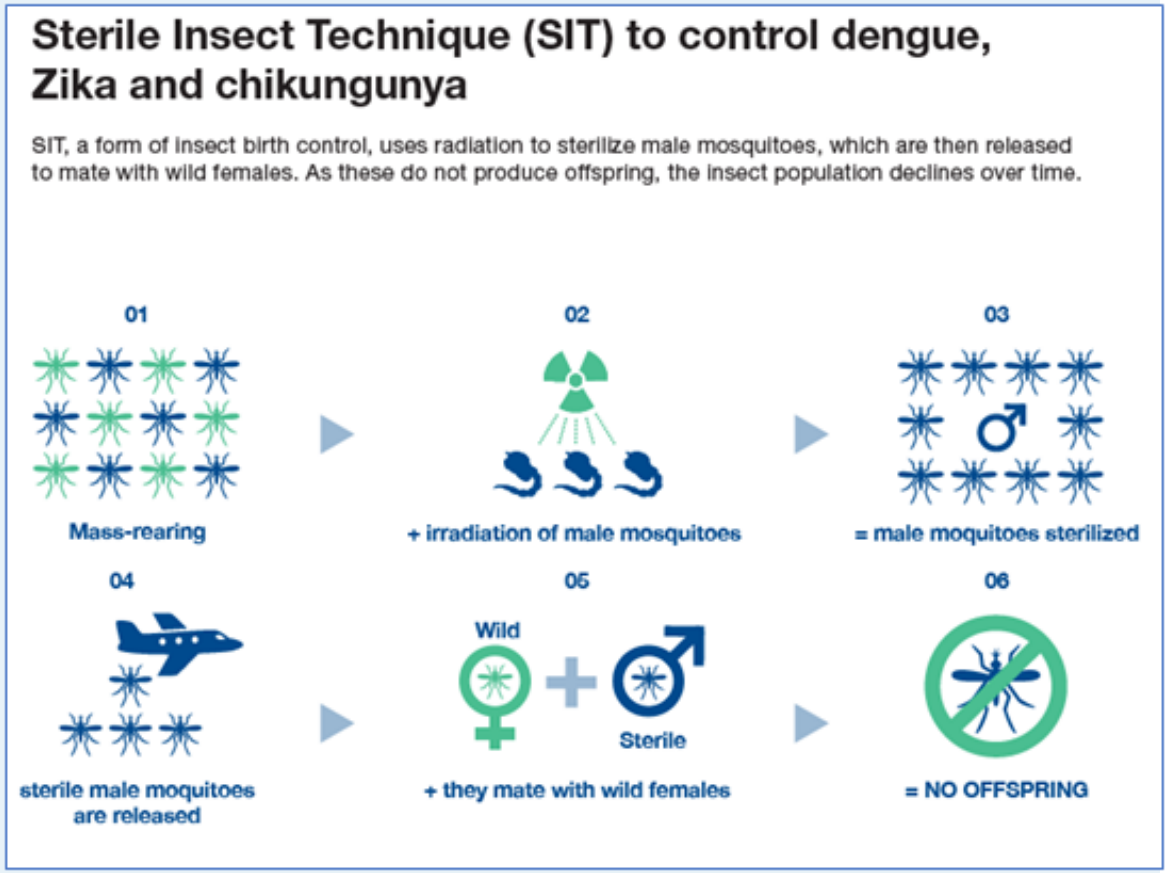
Case Study on MSA against Arboviral Diseases with a focus on the WASH sector and the Poverty context in Brazil

Estructural City in Brasilia, Brazil
hosted for almost 60 years the largest open dump in Latin America and the Second largest in the world
1960-2018

Deliverable 1: Research evidence about *Ae. aegypti* frequency and density in a very poor city in Brasilia, Brazil which hosted the largest open dump in Latin America.
Milestone 1.1 Ae. aegypti frequency and density records in 400 homes during 14 months of monitoring in two areas of *Estrutural* city: Area A: with no sanitation and Area B: with sanitation.
Success indicator 1: positive houses and trap egg density and number of mosquitoes aspirated per man / hour
Deliverable 2: New strategic approach to identify mosquitoes of interest in public health
Milestone 2.1 Stock image of species of culicidae (12 months)
Milestone 2.2 Development of a new app for identification of Culicidae in Android and iOS system
Success indicator 2: Trained scientists and professionals of the public service in Federal District to use this App
Deliverable 3: Health education activities for water storage, garbage disposal and installation of a voluntary waste delivery station.
Milestone 3.1 Installation of a voluntary waste delivery station.
Success indicator 3: Increase of good habits of trash disposal and water storage
Deliverable 4: Understanding population experiences regarding water and vectors and the intersection of the two.
Milestone 4.1 Create educational programs or interventions based off qualitative data, quantitative data, theoretically supported by the Health Belief Model. Development of a guideline for solid waste management.
Success indicator 4: Apply major themes from qualitative research to educational programs or interventions to improve population outcomes.

Testing the Sterile Insect Technology Against *Aedes*

- **Provide countries and stakeholders up-to-date guidance** on how to test new vector control technologies, with a focus on the **Sterile Insect Technology** (SIT)
- **Support the testing of SIT into field conditions** and **develop indicators** to evaluate the impact.
- Enhance the development of related tools for **capacity building**, **vector surveillance** and **implementation framework**.
- **Allow new recommendations and policies** and full deployment of new validated vector control tools.



Plan for testing the Sterile Insect Technology

January 2019
April 2020

- **Phase 1**: Development and production of a guidance document for countries on how to test SIT against *Aedes* mosquitoes, vectors of arboviral diseases.

September 2019
February 2020

- **Phase 2:** Selection through an open call of multi-countries consortiums to test SIT against *Aedes* in different countries.

February 2021
October 2022

- **Phase 3:** Funds raising, establishment of an Ad Hoc Review Committee, update of the proposal and contract.

November 2022
August 2024

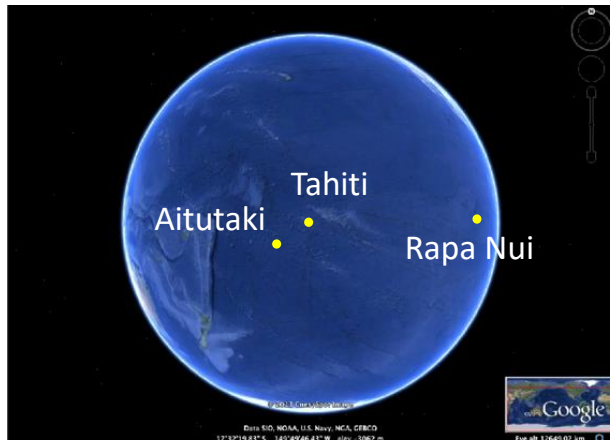
- **Phase 4:** SIT field trials through CDC DFs (until August 2024) and SIT Training Workshop in WPRO in 2023.

February 2023
December 2024

- **Phase 5:** **Engagement with the WHO Vector Control Advisory Group (VCAG) for recommendation** on epidemiological evaluation and deployment.

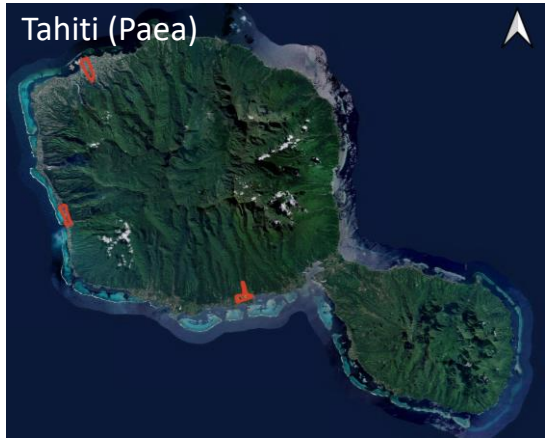
Research Project for testing SIT in the field

Pacific consortium for testing the efficiency of the Sterile Insect Technique to control Vector Borne Diseases



Cook Islands

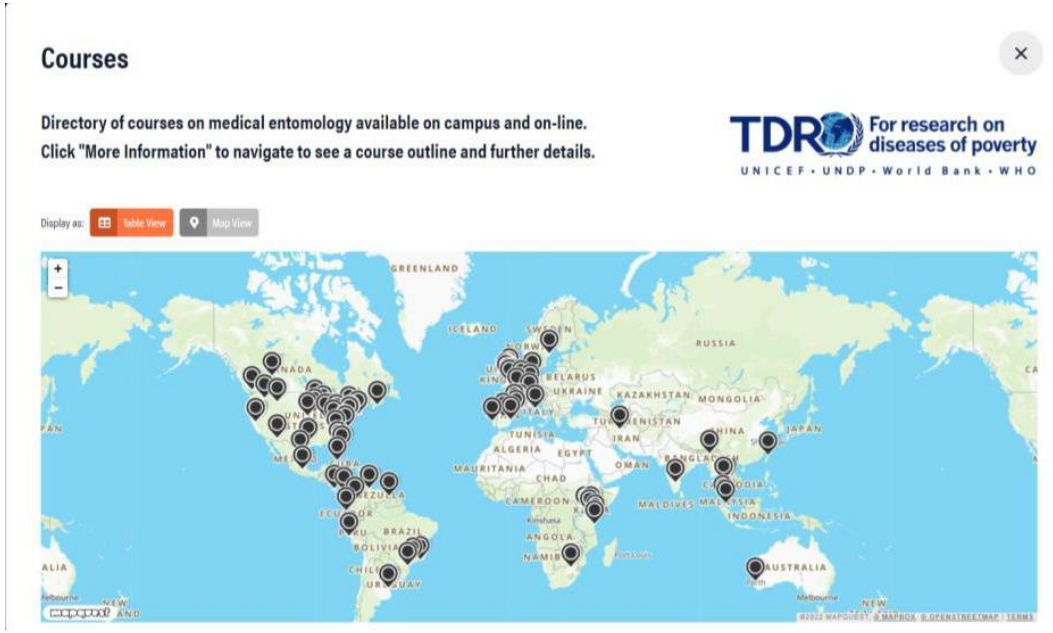
French polynesia



Chile

Building Capacity in Medical Entomology: a collaboration with the Global Vector Hub

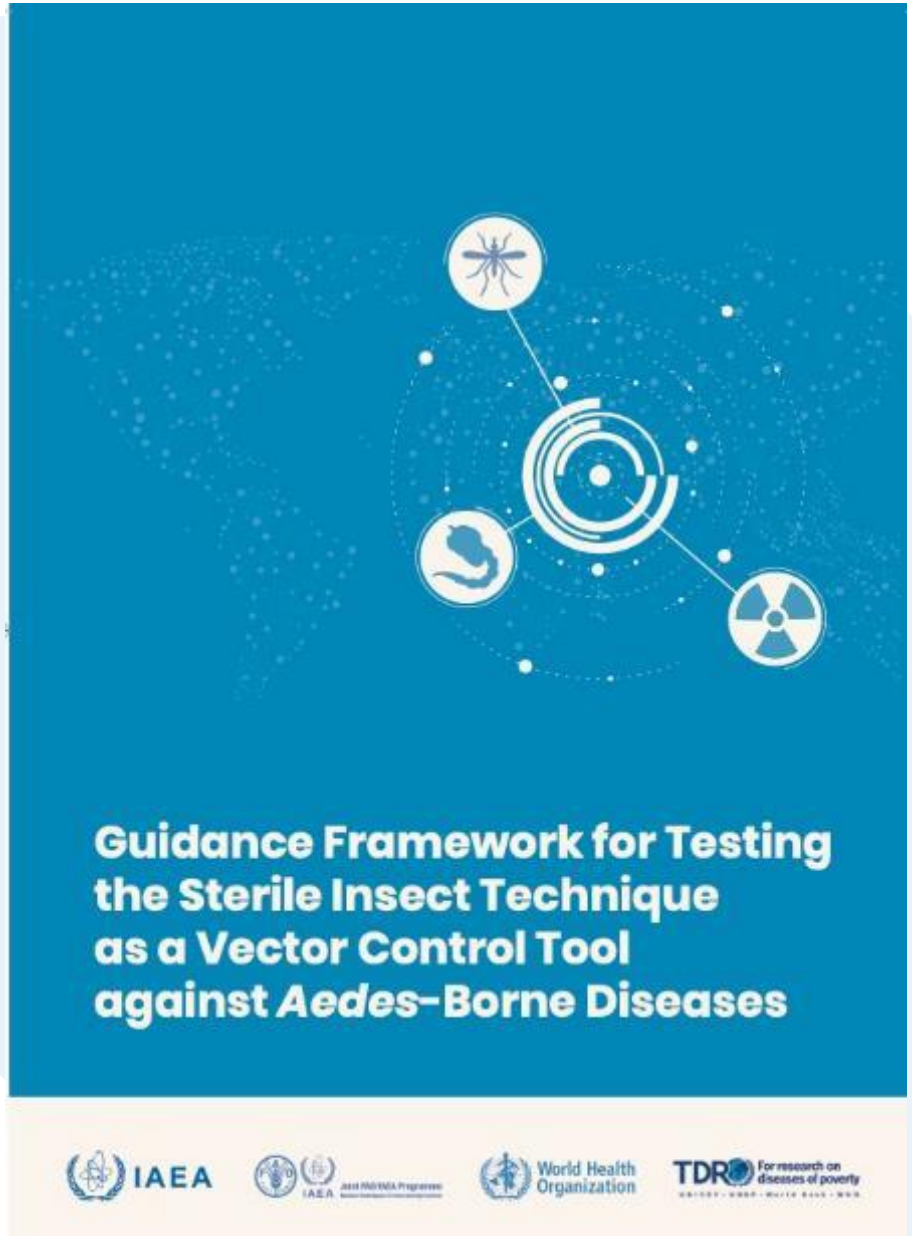
The Directory on courses of medical entomology was released online in January 2021, through the Global Vector Hub platform, hosted by the LSTMH (UK). This directory include 147 courses in June 2022. The Directory is updated twice by year and can be accessed freely after free registration at the following link: https://globalvectorhub.lshtm.ac.uk/



Building Capacity on Multisectoral Approaches: *MOOC in development*

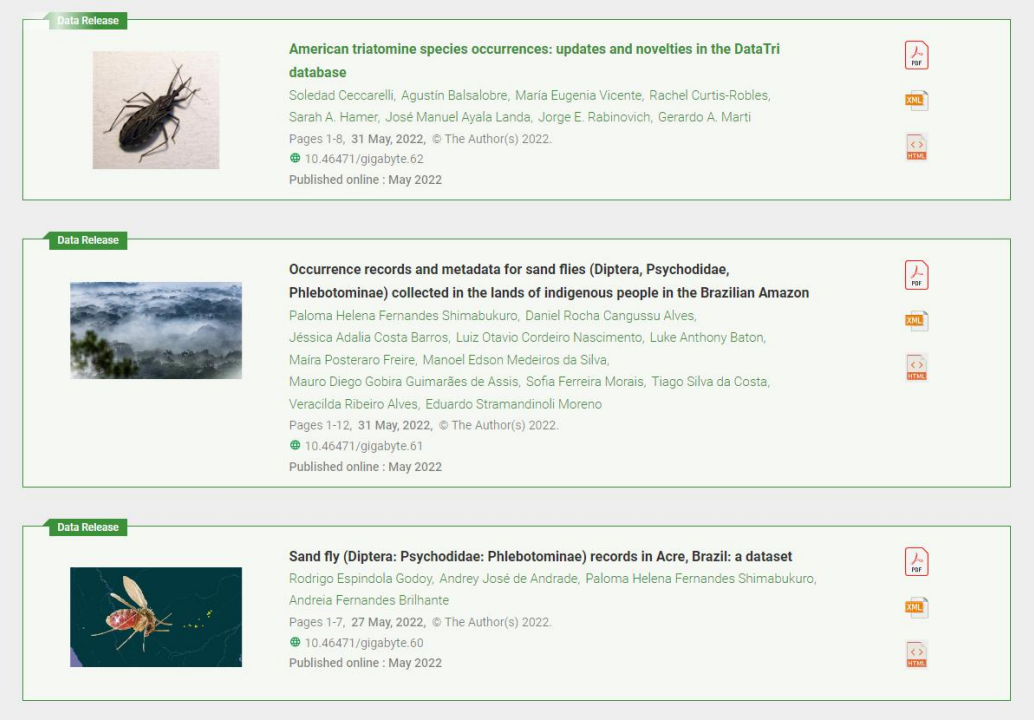
Capacity Building for SIT
The Guidance Framework

Released in April 2020:
https://www.who.int/tdr/publications/year/2020/guidance-framework-for-testing-SIT/en/



Building Capacity for data sharing: *Collaboration with the Global Biodiversity Information Facility (GBIF)*

Data sharing on vectors through GBIF Platform with release of a First Special Issue in Gigabyte Journal, including 11 papers in June 2022 and Second Call currently out until April 2023.



Data Release

American triatomine species occurrences: updates and novelties in the DataTri database

Soledad Ceccarelli, Agustín Balsalobre, María Eugenia Vicente, Rachel Curtis-Robles, Sarah A. Hamer, José Manuel Ayala Landa, Jorge E. Rabinovich, Gerardo A. Marti

Pages 1-8, **31 May, 2022,** © The Author(s) 2022.

10.46471/gigabyte.62

Published online : May 2022

Data Release

Occurrence records and metadata for sand flies (Diptera, Psychodidae, Phlebotominae) collected in the lands of indigenous people in the Brazilian Amazon

Paloma Helena Fernandes Shimabukuro, Daniel Rocha Cangussu Alves, Jéssica Adalia Costa Barros, Luiz Otavio Cordeiro Nascimento, Luke Anthony Baton, Maira Posteraro Freire, Manoel Edson Medeiros da Silva, Mauro Diego Gobira Guimarães de Assis, Sofia Ferreira Morais, Tiago Silva da Costa, Veracilda Ribeiro Alves, Eduardo Stramandinoli Moreno

Pages 1-12, **31 May, 2022,** © The Author(s) 2022.

10.46471/gigabyte.61

Published online : May 2022

Data Release

Sand fly (Diptera: Psychodidae: Phlebotominae) records in Acre, Brazil: a dataset

Rodrigo Espindola Godoy, Andrey José de Andrade, Paloma Helena Fernandes Shimabukuro, Andreia Fernandes Brilhante

Pages 1-7, **27 May, 2022,** © The Author(s) 2022.

10.46471/gigabyte.60

Published online : May 2022

Call for data papers describing datasets on vectors of human diseases

Deadline: 30 April 2023

TDR, GigaScience Press and GBIF are partnering on a second special issue focused on publishing new datasets that present biodiversity data for research on vectors of human diseases

GIGAbYte Publishing at the Speed of Research

English

Home About Articles Editorial Board Series

GBIF

Papers published : 11

Sort by : Published date (New)

Vectors of human disease series

Vector-borne diseases account for about one quarter of all infectious diseases. Although there has been significant progress for malaria, this progress is currently halting. Other diseases, such as those caused by arboviruses like dengue, chikungunya, yellow fever and Zika are expanding, with an increased number of cases and fatalities. There is a great need for data mobilization campaigns to improve data coverage to help research on these vector-borne diseases and human health. To address this need here we present collected series of Data Release papers with relevance for research on vectors of human vector-borne diseases. GigaScience Press has partnered with GBIF and supported by TDR, the Special Programme for Research and Training in Tropical Diseases, hosted at the World Health Organization to publish these papers. Data presented has all been shared to GBIF.org with high-quality data and metadata to improve data coverage to help research on vector-borne diseases and human health. For more see:

http://gigasciencejournal.com/blog/vectors-of-human-diseases-series/

DOI 10.46471/GIGABYTE_SERIES_0002

TDR For research on diseases of poverty

UNICEF • UNDP • World Bank • WHO

TDR, the Special Programme for Research and Training in Tropical Diseases hosted at the World Health Organization, GigaScience Press and GBIF announce the second edition of a call for authors to submit Data Release papers on vectors of human disease in a thematic series to be published in *GigaByte* Journal.

Networking on emerging arboviruses: *CariVecNet*

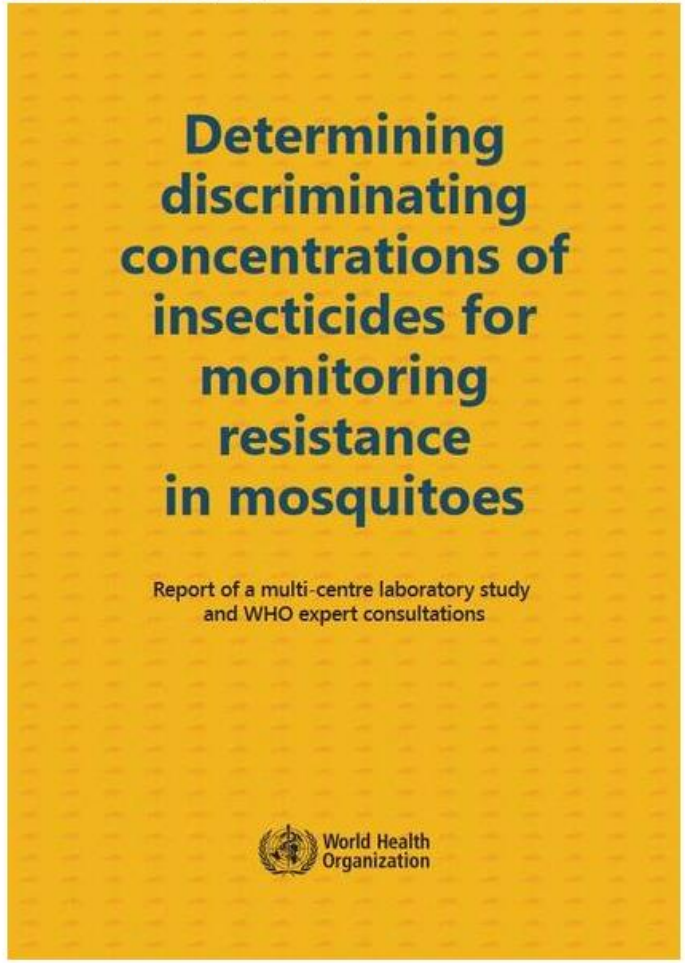
- **Objective of the Network: E**stablishment of partnerships on control of arboviral diseases in the region.
- **Leadership: CARPHA.**
- **Partners:** 30 Countries
- **Formalization of the Network:** Official launch August 2017**.**
- **Financial support leveraged** from CDC, CARICOM, France, EU (more then 5 millions euros).
- **Working groups established** on surveillance, diagnostics, case management and vectors

Network on *Insecticide Resistance for vectors or arboviral diseases: WIN*

Who we are

19 research partners across the world including 6 Low- and Middle-Income Countries, LMICs (Brazil, French Guiana, Iran, India, Mali, Thailand) with complementary expertise in insecticide resistance (from vector biology and control to resistance diagnostic tools and spatial modeling).

Determining discriminating concentrations of insecticides for monitoring resistance in mosquitoes: report of a multi-centre laboratory study and WHO expert consultations. World Health Organization.



https://apps.who.int/iris/handle/10665/352616

THANK YOU VERY MUCH

For your attention and collaboration

Core contributors providing overall Programme support in 2021

Contributors who provided support to specific projects in 2021