

# ESTABLISHING A MULTISECTORAL STRATEGY TO PREVENT TRANSMISSION OF *Aedes*-BORNE DISEASES IN THE COASTAL CITY OF MANTA, ECUADOR

*This project will design and implement response strategies with a multisectoral approach in which the health, water, sanitation, environment, and education sectors will be involved.*



## SUMMARY

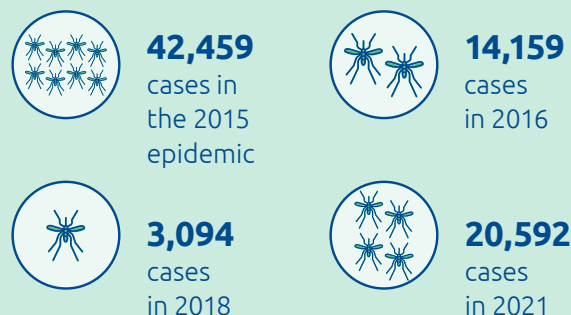
In Ecuador, Dengue is a priority public health concern. A large number of cases have been reported in recent years with the permanent circulation of dengue virus posing a high risk to exposed populations, particularly **those living with limited access to basic sanitation and health services**. Risk is increased by conditions and behaviours that facilitate the reproduction of the principal arbovirus vector, the *Aedes aegypti* mosquito.

In this context, it is important to design and implement **preparedness and response strategies using a multisectoral approach**. Involvement of the health, water, sanitation, environment and education sectors is required to adequately adapt to the impacts of climate change on the distribution of the vector and circulation of *Aedes*-borne diseases.

This will be achieved through the establishment of a multisectoral consortium at a chosen location in the city of Manta. **Participating sectors will work collaboratively to reduce the population density of *Aedes aegypti*** through enhanced entomological surveillance, chemical vector control, risk mapping and communication, and through the improvement of environmental factors such as solid waste management, safe water and sanitation management, water supply and storage, hygiene, human mobility and urban planning.

Further collaboration will be encouraged through community involvement and the engagement of the private sector.

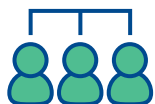
### Recorded dengue cases in Ecuador are as follows:



# OBJECTIVES AND METHODS

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*The overall aim of this work is to reduce the environmental risks that increase the incidence of Aedes-borne diseases in Ecuador. Specific objectives include the following:*



1

**Conducting a situation** analysis of the current management of waste, water and health in a high-risk area of the city of Manta.



2

**Establishing a multisectoral working group** to outline and explore required comprehensive approaches to environmental health issues, vector surveillance and control strategies.



3

**Improving water, waste and health management** in this area, in order to reduce transmission of *Aedes*-borne diseases.



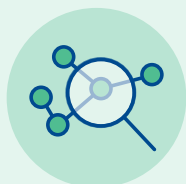
4

**Promoting community participation and social empowerment** in the prevention of *Aedes*-borne diseases. This will be achieved through the implementation of so-called educommunication strategies aimed at the citizen health committee and residents of the chosen pilot location.

**The project has been initiated in Manta, one of 22 cantons of the province of Manabí in Ecuador. It is located on the central Pacific coast and constitutes an important tourist, maritime and fishing port.**



# PROPOSED APPROACH



## Gather and share data on dengue areas in the city of Manta

- **A three-day meeting** will be held in the city of Manta for all members of the consortium to share baseline information and to generate maps, documentation and action proposals.
- **A survey will also be conducted through house-to-house visits and interviews** to establish socioeconomic, cultural, health, environmental, knowledge and practice variables in the area.



## Strengthen entomological surveillance and vector control procedures

**To obtain information on mosquito breeding sites in real time, a mobile application will be designed** for citizens to anonymously report the locations and upload photos of breeding sites in their neighbourhood. The app will then alert consortium members so action can be taken. It will also share educational messages and recommendations to prevent the formation of mosquito breeding sites.



## Establish multisectoral action guidelines to prevent arboviruses

**Participatory workshops will be held** for all members over four days in the city of Manta. Multisectoral operational guidelines have not yet been developed as the support of all participants will be required. This activity will be implemented in the execution phase of the project.



## Use chemical control to reduce mosquito populations

Where no other type of control can be used and the water supply is deficient, **chemical control will be applied with pyriproxyfen**. This will also be applied in mosquito breeding sites, following which the presence of dengue and insecticide resistance in vectors will be monitored.



## Launch communication campaigns

- **Workshops will be held** to promote community participation and social empowerment.
- **Communication campaigns will also be launched** to inform the population about the transmission cycle of dengue and how to control the vector.

# FINAL RESULTS

- 1 A local baseline was identified through the situation analysis in Manta Canton, and **local attitudes, knowledge and practices towards arboviruses were clarified** through surveys. In addition, risk maps were created to help clarify the dynamics of arbovirus transmission at the local level.



- 2 Based on continuous entomological, epidemiological and environmental monitoring, **the appropriate moments for implementing control actions were identified and institutional collaborations were established for eliminating mosquito breeding sites**. Control activities were limited to the use of insecticides, with alternative control activities being promoted, such as adequate water storage and destruction of mosquito breeding sites at the community level.



- 3 **Essential epidemiological alert systems were used to report any new cases of arboviruses**. Although none were reported at the study site, a case of dengue was reported municipality of Eloy Alfaro during 2022. No cases were reported in this area in 2023.



- 4 **A successful prevention and control campaign was launched with the participation of civil society, schools and colleges and the community**. This included community surveillance activities using a mobile phone app and the dissemination of messages about prevention, signs and symptoms of arboviral disease. During these outreach activities, community knowledge, attitudes and practices were assessed for improvement.



- 5 A results socialization workshop was held with members of the consortium to the civil society. At the event, **study results were presented and the importance of multisectoral work, including institutions of water, sanitation, health, education, environment, research, universities, and private enterprise, was highlighted to reduce the risk of arbovirus transmission**.



This research brief summarises the planned interventions of the research project: *Establishing a multisectoral strategy to prevent transmission of Aedes-Borne diseases in the coastal city of Manta, Ecuador*.

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