E4WARNING

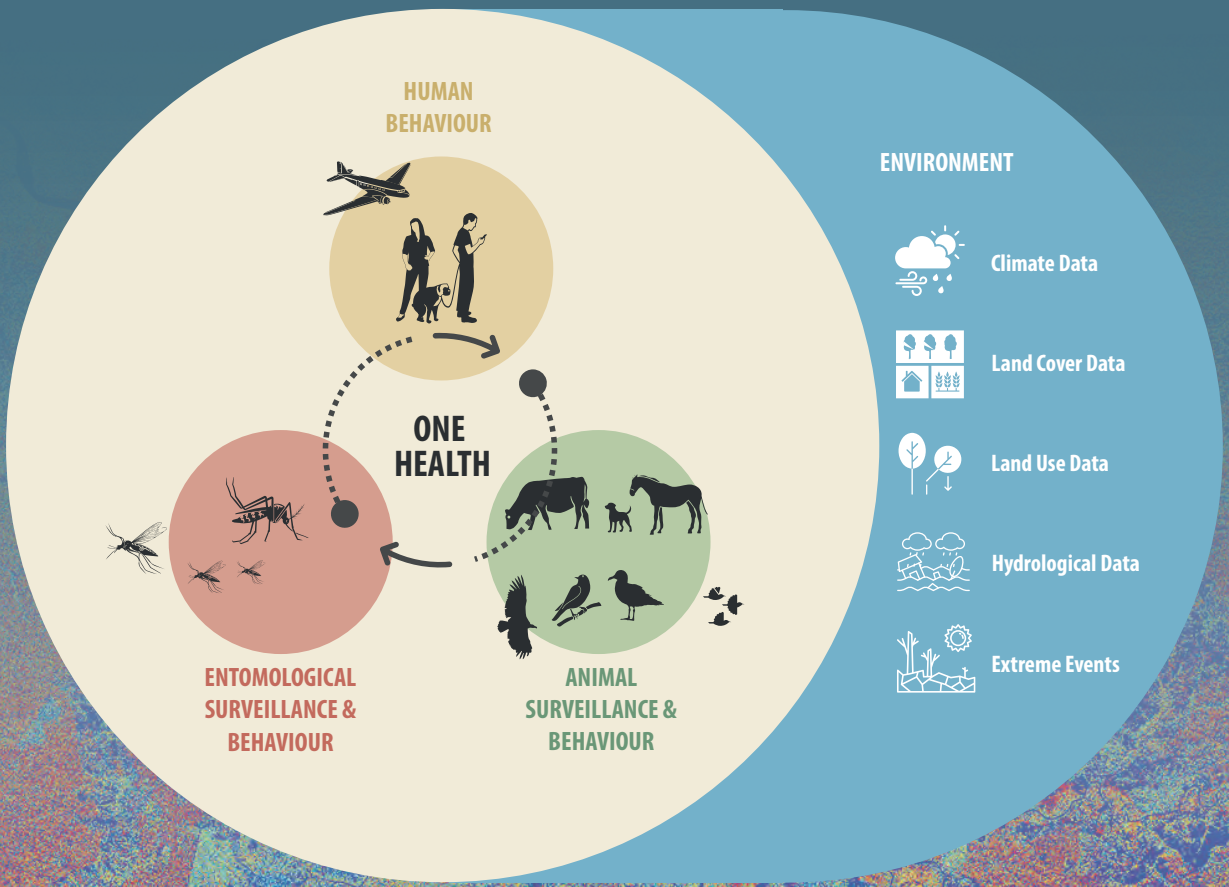
Eco-Epidemiological Intelligence for Early Warning and response to Mosquito-borne disease risk in Endemic and Emergence Settings

Funded by the European Union

E4WARNING

E4Warning is an holistic approach to improve our understanding of the interplay between humans, mosquitoes, reservoir species and the environment for a better disease intelligence capable of anticipating and identifying mosquito-borne diseases epidemic risk and outbreaks.

To address the complexity of **Mosquito-borne diseases** (MBDs), like dengue and West Nile fever, the E4Warning consortium is made up of an interdisciplinary and innovative team from 12 European organisations with experience in entomology, movement ecology, epidemiology, Earth Observation science, sensor engineering, sociodemography and spatial statistic modelling.



The project has received funding from the European Union's Horizon Europe programme (HORIZON Research and Innovation Actions) under Grant Agreement 101086640.

UK Research and Innovation

Swiss Confederation

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CHALLENGES

Increasing Prevalence & Spread of Mosquito-Borne Diseases (MBDs)

Rising incidence and geographical spread of diseases like Dengue, Chikungunya, West Nile, and Usutu viruses.

Complex Interplay Between Vectors, Hosts, and the Environment

Understanding the interaccion between humans, mosquitoes, birds, and the environment to disrupts transmission pathways.

Need for Better Diseases Intelligence and Early Warning Systems

Necessity for early detection and prevention to manage and mitigate disease outbreaks.

Challenges in Monitoring and Prediction

Developing operational frameworks for near-real time monitoring and seasonal forecastings of MBSs risk.

Scalability and Cost of Surveillance

Reducing the costs and labour associated with traditional surveillance methods.

Integration and Harmonization of Data and Tools

Ensuring interoperability and effective integratiion of data and tools for better decision-making and policy development.

Need for Open Science and Community Engagement

Promoting open science practices and engagin community to enhance project impact and legacy.

SOLUTIONS

Real-Time Vector Surveillance & Early Warning Detections (WP2 - WP3)

- Implementing citizen-based data collection
- Networked smart traps

Novel Data Processing & Integration (WP4)

- Earth Observation
- Hydroclimate models
- Vectors & Hosts suitability maps

Movement Ecology (WP5)

- Vector active & passive dispersion
- Hosts dispersion
- Human mobility

Early Warning Systems – One Health Forecasting (WP6 - WP7)

- Dengue disease models in endemic settings
- Emerging risk models in Europe

Opens Science Practices & Community and Stakeholder engagement (WP1 - Wp8)

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Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

The E4WARNING consortium partners

CSIC

Barcelona Supercomputing Center
Centro Nacional de Supercomputación

Universitat Pompeu Fabra Barcelona

MAX PLANCK GESELLSCHAFT

hr wallingford

AVIAGIS

irideon innovation partners

Benaki Phytopathological Institute

Scuola universitaria professionale della Svizzera italiana
SUPSI

E·R·G·O Environmental Research Group Oxford

UNIVERSITY OF OXFORD

CSB Consorci Sanitari de Barcelona

Agencia de Salut Pública

12 partners

6 countries

4 years

Jan. 2023
Dec.2026

4,9M euros budget