

From Prediction to Prescription

The dual architecture of Dengue.IA Cali

How AI and expert knowledge unite to anticipate and combat dengue

PREDICTIVE MODEL

WHERE and WHEN will outbreaks occur?

Alert a possible outbreak in the territory

Currently predicts:

3 weeks ahead

PRESCRIPTIVE MODEL

WHAT actions should we take?

Turns alerts into action plans

54 Indicators

19 Strategies



Machine Learning



Satellite Data

Conversion of satellite data to 1km² microterritory level



Historical Incidence

Cases from 4 weeks ago (key predictor)



Granularity

363 neighborhoods, 22 communes in Cali, and 174 sub-municipalities of 1km²

Challenge Solved:

Low-quality local climate data → Solution using satellites



Delphi Process (e-Delphi)



Predictive Forecasts

Input from previous model



54 Indicators and 19 Strategies

Specific territorial context



Panel of 14 Experts

Health, entomology, epidemiology, environment, and surveillance

Challenge Solved:

No historical effectiveness data → Expert knowledge encoded



Integrated Cycle: Collective Intelligence



Surveillance
Updated data



Predictive
Where and when?



Prescriptive
What do we do?



Intervention
Action in the field