Asia-Pacific Economic Cooperation

APEC PERU 2024

Favorable Environmental Conditions Forecast for the Incidence of Crop Pest Using AI

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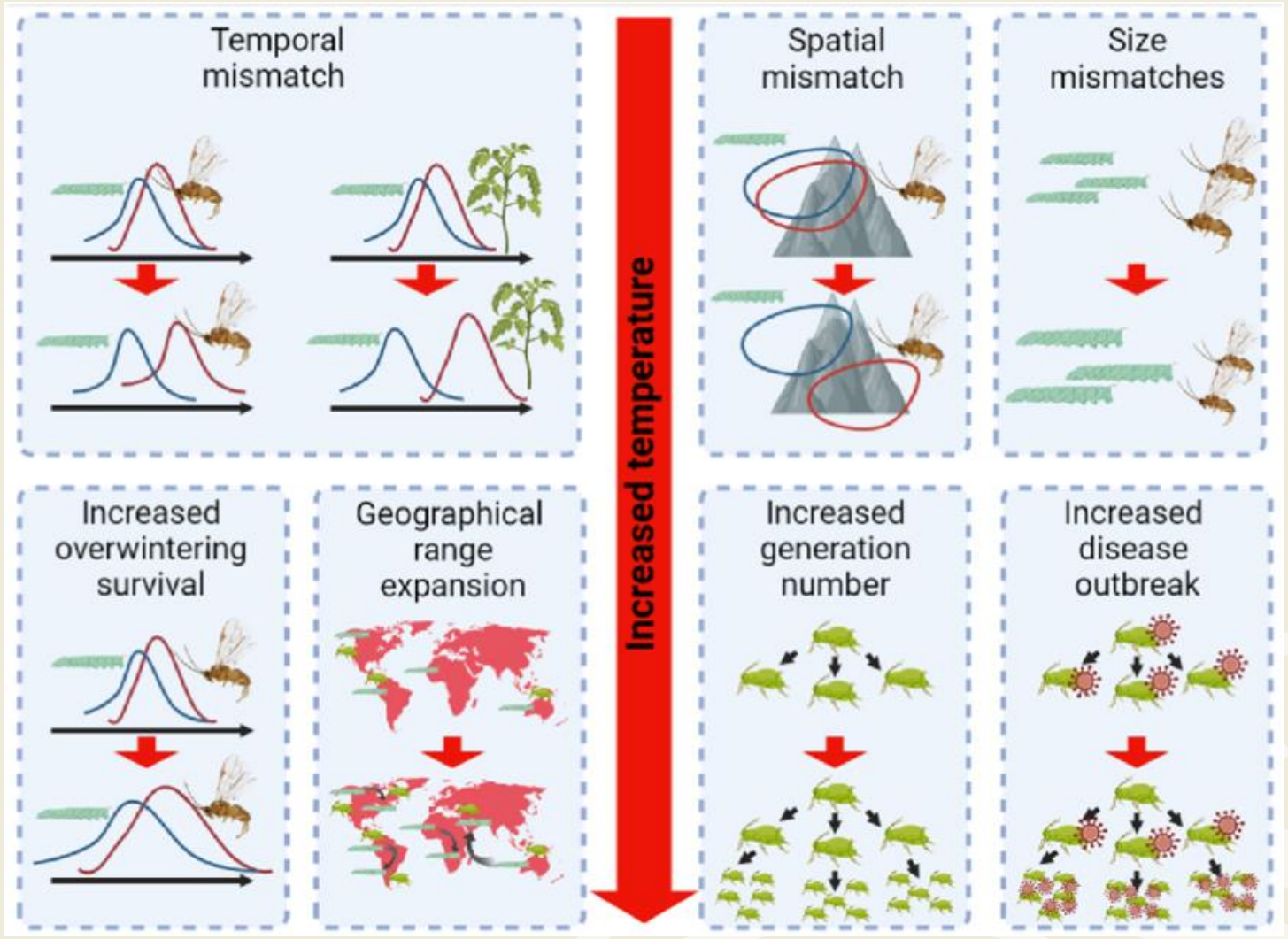
Directory of Agrometeorology

Why do we study insect pests?

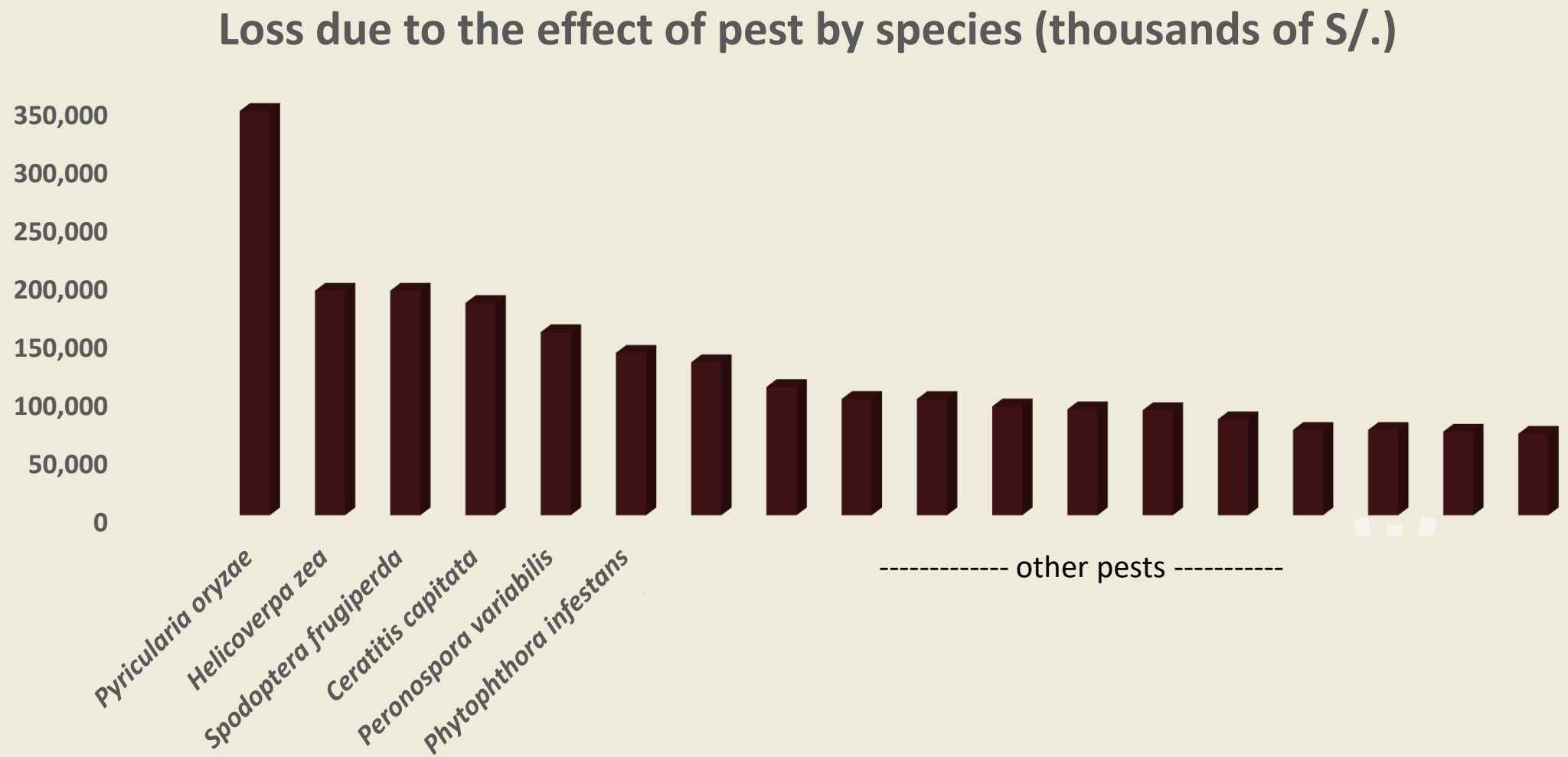
Crop **pests** and diseases are responsible for losses of **20%** to **40%** of annual global food production.
Source: FAO 2019

Effect of increased temperature on insect pests



Source: Subedi *et al*., 2023

Impact of pests on economy



Source: **MIDAGRI 2015**

How are pests monitored and evaluated?

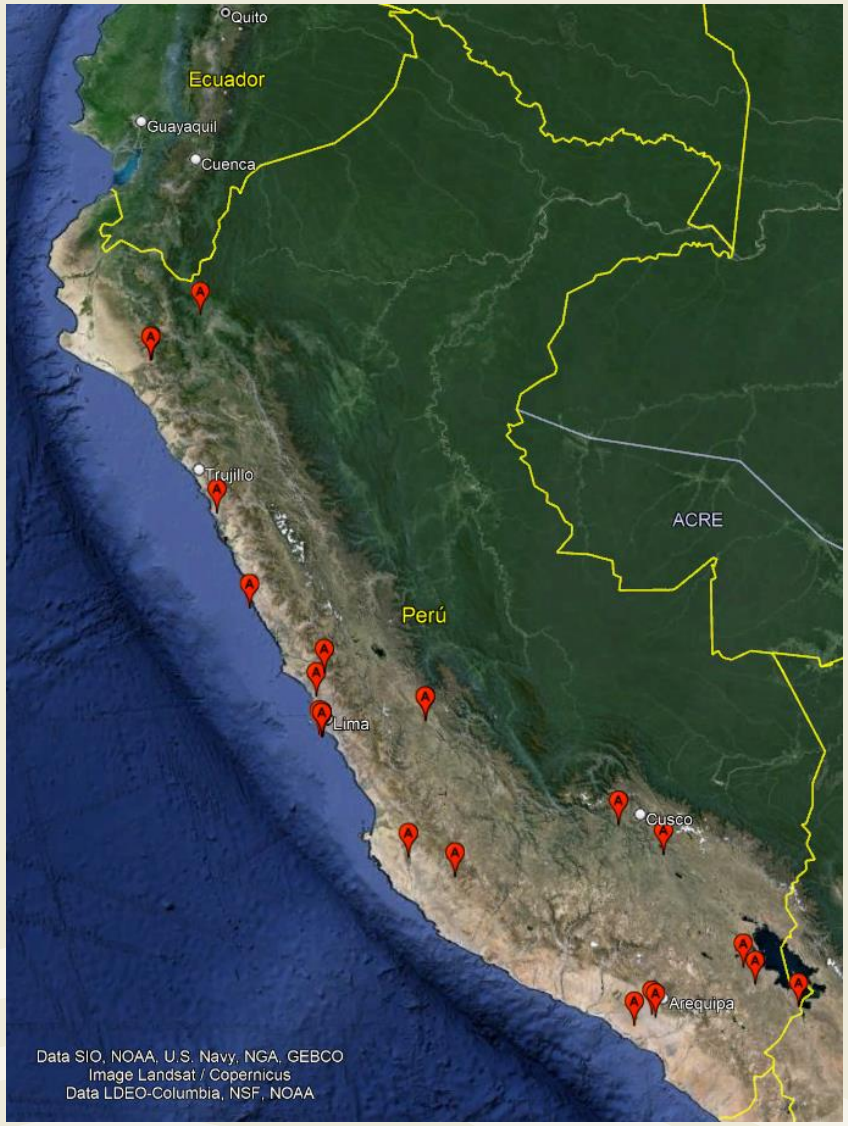
CONVENTIONAL EVALUATION

How are pests monitored and evaluated?

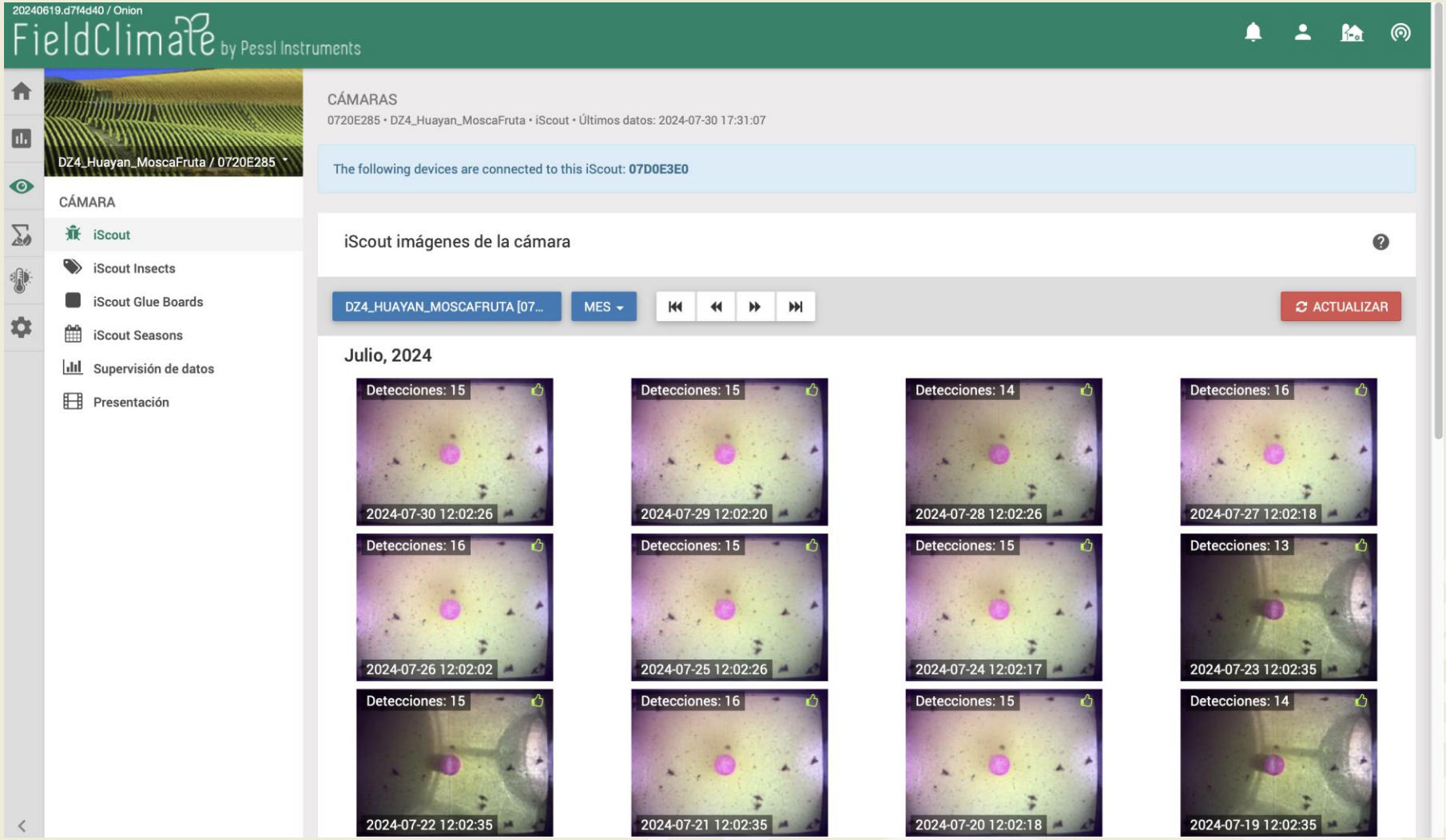
SMART INSECT TRAPS

Remote pest monitoring

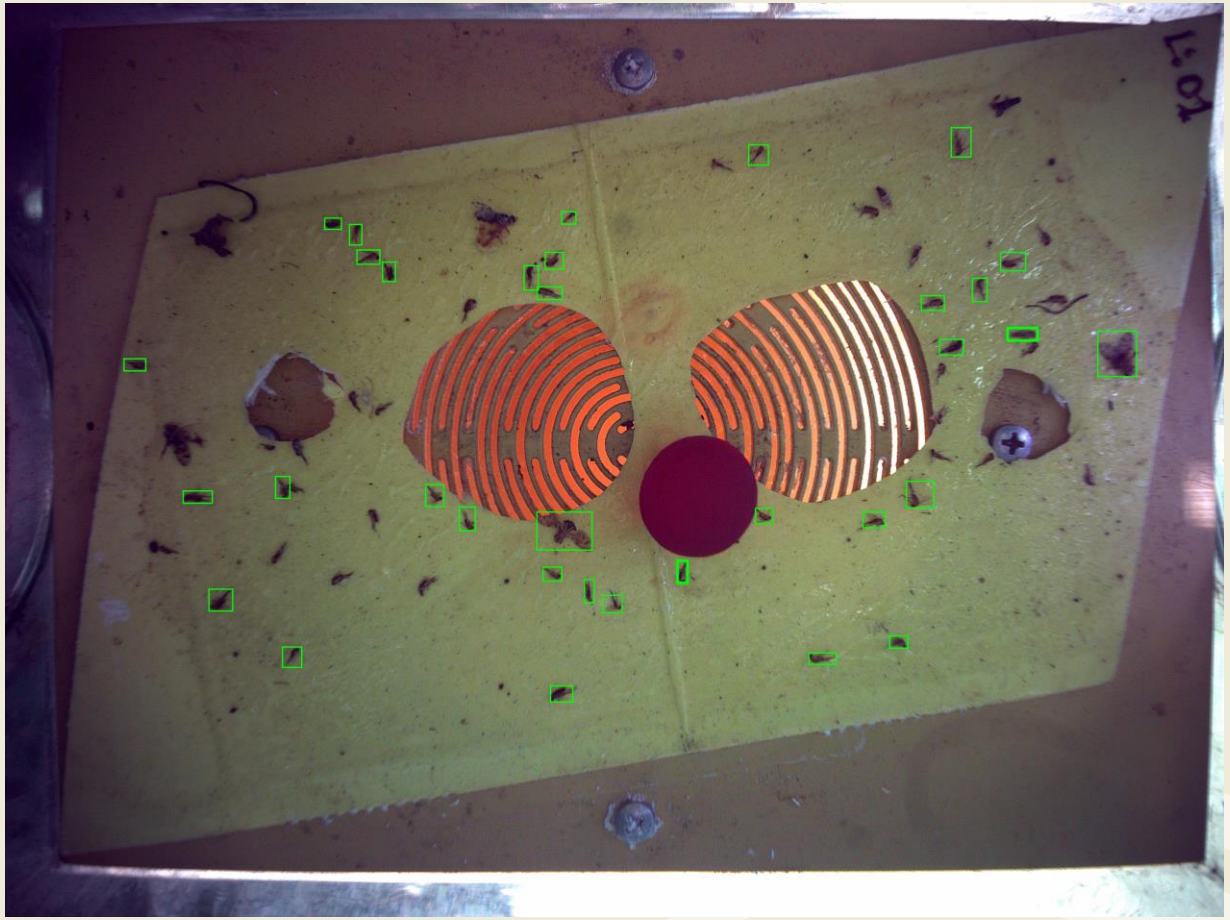
Smart insect traps located in coastal and andean region of Perú.



Remote pest monitoring

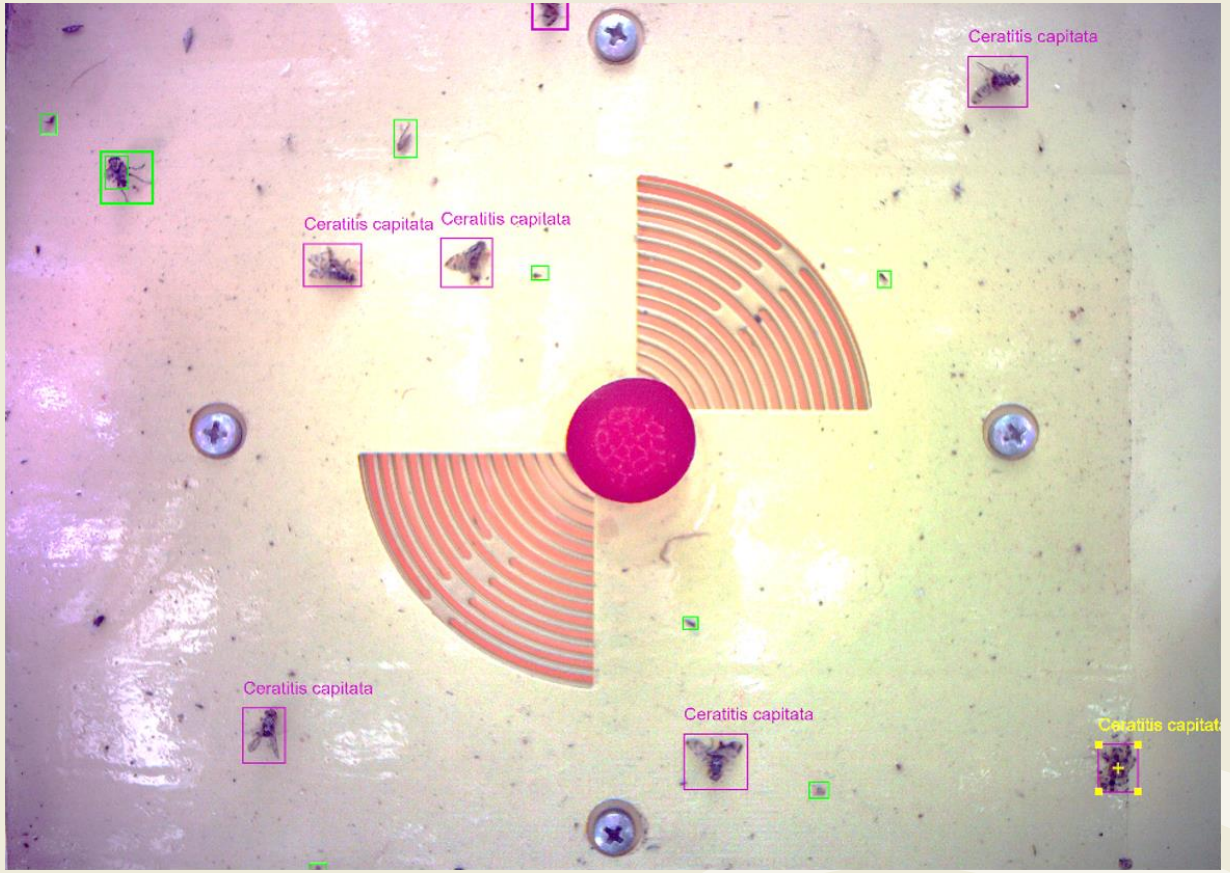


Pest identification using AI



Motupe - Lambayeque

Pest identification using AI



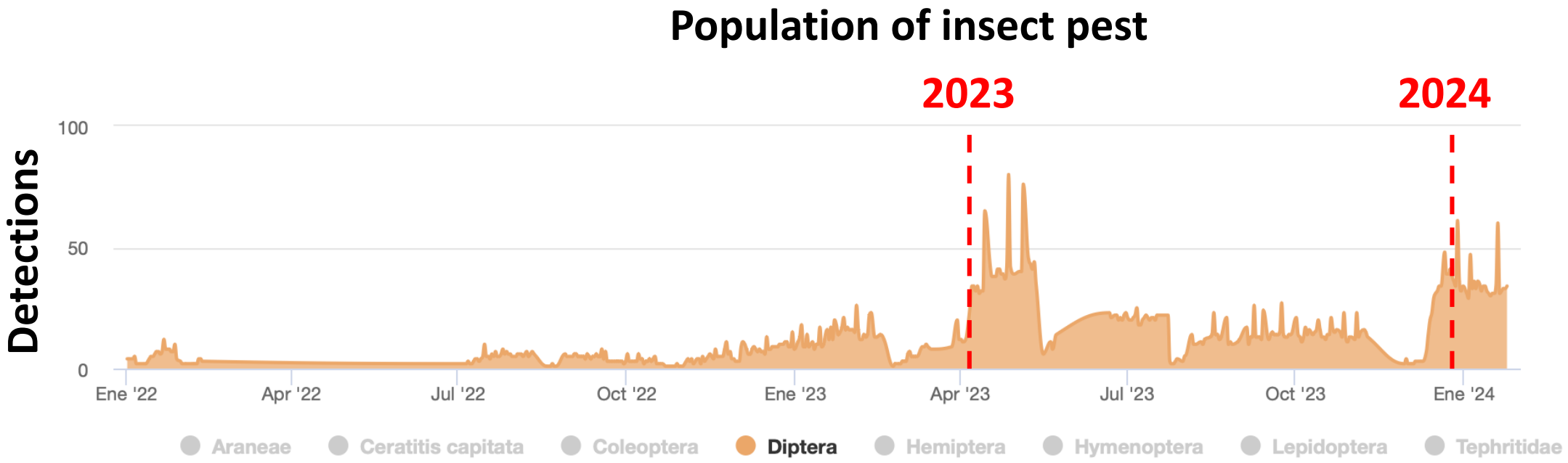
Huayan - Lima

Pest identification using AI

Illpa - Puno

Insect Pest Population Dynamic

January 1, 2022 – January 25, 2024



Monitoring for Mediterranean fruit fly

Fruit fly (*Ceratitis capitata*) can cause damage to more than **250** fruit and vegetable species and cause more than **40%** of production losses; in addition to restricting access to international markets.

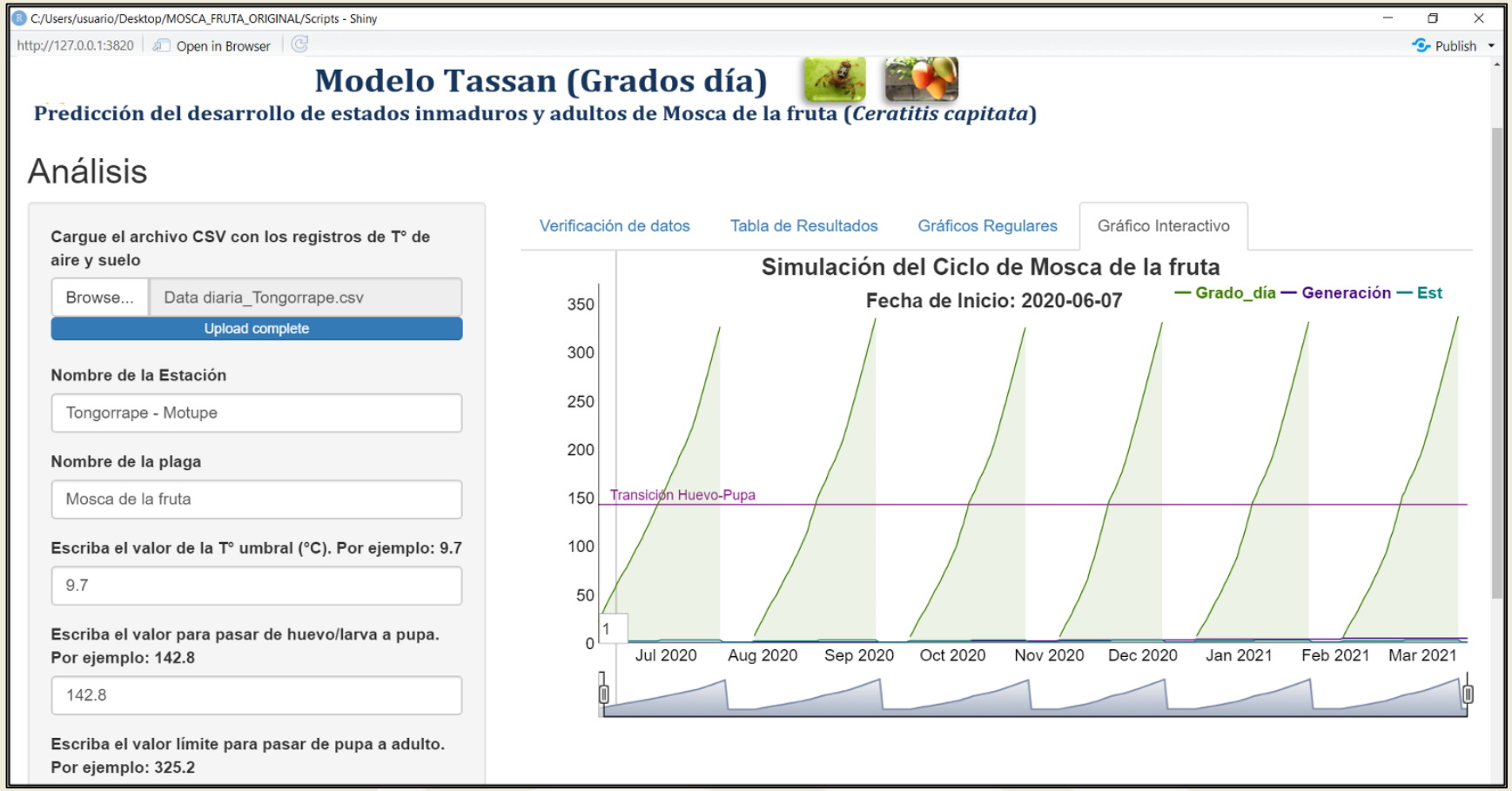
Workflow for fruit fly forecasting

1) Pest monitoring and agrometeorology data

Workflow for fruit fly forecasting

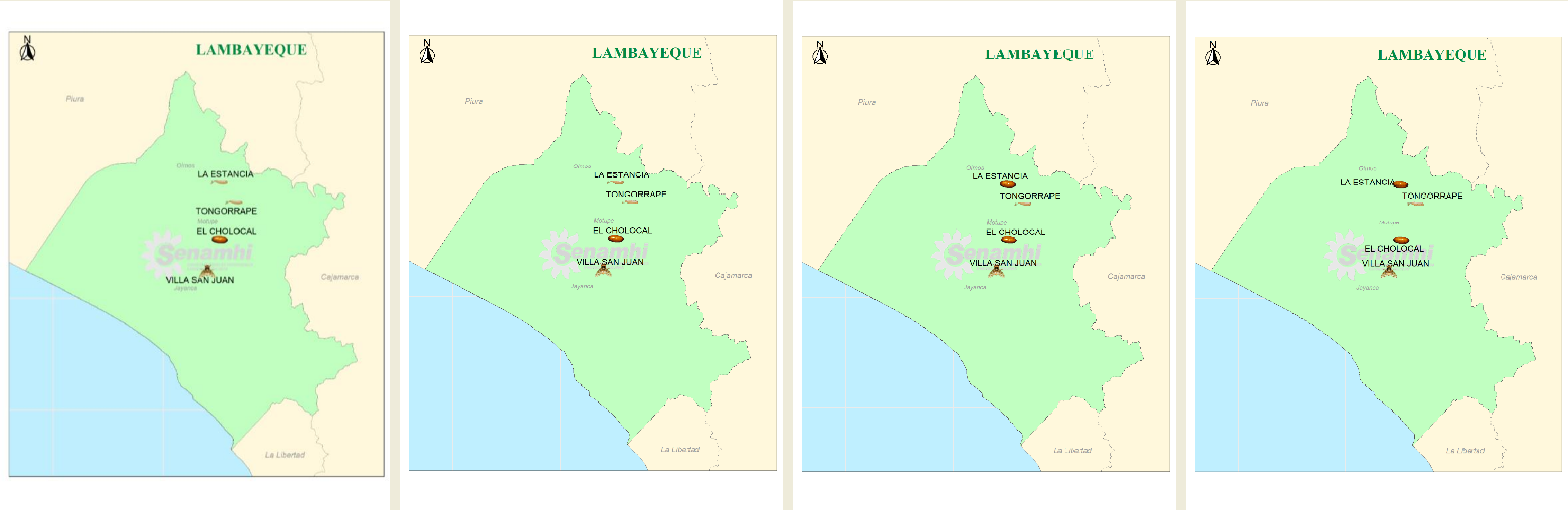
2) Process data and apply the model

Degree days model based on Tassan et al., 1982



Workflow for fruit fly forecasting

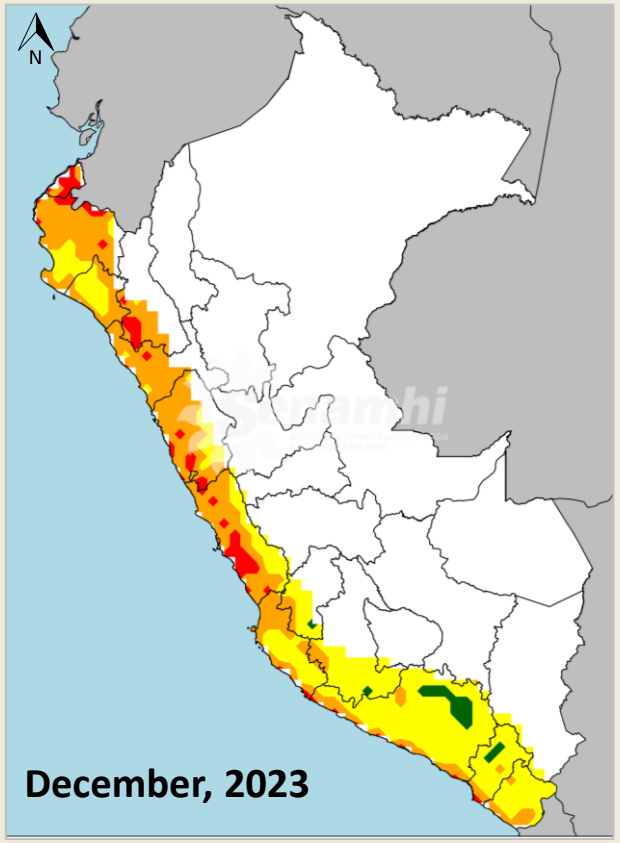
3) Daily Risk Maps

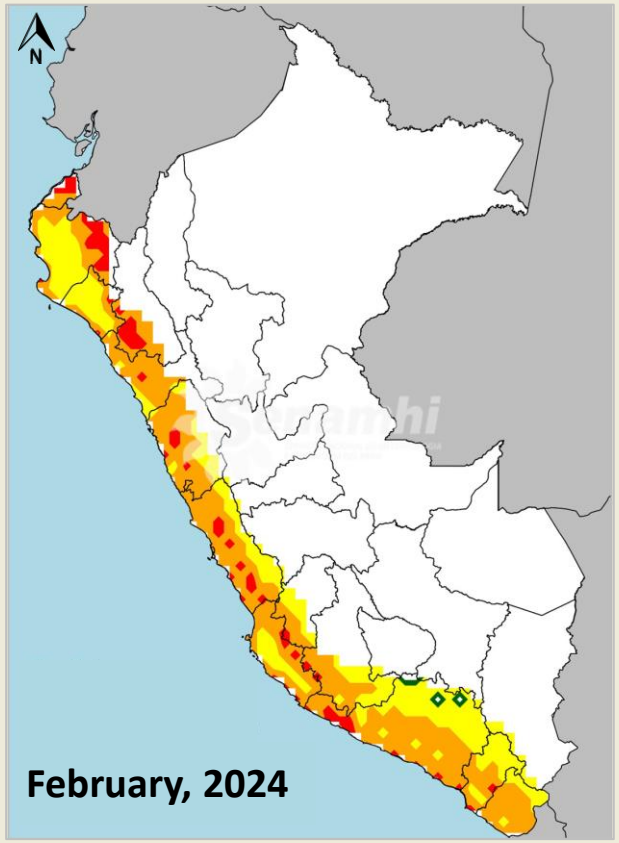


Adults **Pupae** **Larvae**

Workflow for fruit fly forecasting

3) Spatial Risk Maps





Based on Bodemheimer 1951

Publication in different platforms

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