Thinking Earth

USE CASE 3

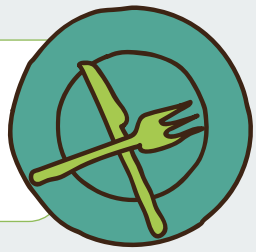
CAUSAL INFERENCE FOR FOOD INSECURITY ANALYSIS

University of Valencia and the World Food Programme

GAPS

Designing effective humanitarian interventions in resource-limited settings is urgent - but difficult.

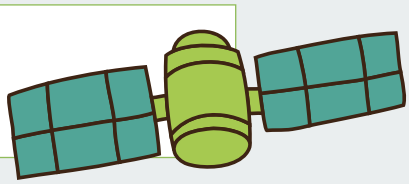
- Funding gaps vs. growing needs
- Financial solutions : Effective, but hard to evaluate
- Lack of standardised methods & best practices
- Food insecurity driven by climate change, conflict, and economic issues



The Role of Earth Observation (EO)

Advancements in EO and machine learning help us:

- Monitor climate impacts on food insecurity
- Use Copernicus data + socioeconomic indicators
- Apply causal inference to link cause and effect



ThinkingEarth's Solution

Advancements in EO and machine learning help us:

1. Data Learning

Use satellite, climate,and social data to track key indicators:

- Integrated Food Security Phase Classification (IPC)
- Reduced Coping Strategies Index (rCSI)

2. Root Causes

Apply causal AI to reveal how climate and social pressures drive food insecurity.

- Understand not just what is happening, but why

3. Guide Decisions

Predict the impact of aid interventions—even where on-the-ground surveys aren't possible.

- Enable faster, smarter humanitarian response

Project Goals and Future Impact

- New methods to understand key food security metrics
- Apply causal Machine Learning to identify climate & economic drivers
- Improve accountability & transparency in interventions
- Enable evidence-based and targeted humanitarian action

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WFP World Food Programme

This project has received funding from the European Union's Horizon Europe Research and Innovation Program under Grant Agreement number 107130544

Funded by the European Union