

Climate & Nutrition

**Forecasting malnutrition with DHIS2 and Chap in Uganda,
Malawi, and Sri Lanka**

Climate's nutrition impact is massive yet indirect

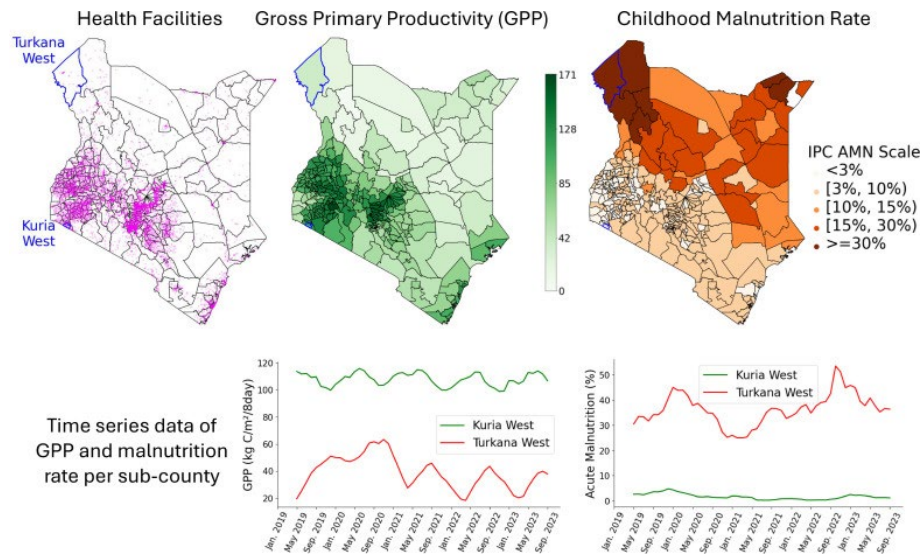
“By 2050, the risk of hunger and malnutrition could rise by 20 percent.. Majority of child deaths as a result of climate change will be due to malnutrition”

- WFP

Climate affects nutrition through food systems and health access:

Drought and erratic rainfall -> lower yields and higher prices -> poorer diets -> acute malnutrition.

The climate-nutrition signal is indirect, confounded, and lagged - it needs longer modelling and validation than heat, malaria or dengue.



Tadessa et al, 2025, [Forecasting acute childhood malnutrition in Kenya using machine learning and diverse sets of indicators](#)

Uganda: forecasting acute malnutrition

Patrick Omiel, HISP Uganda

3-month district-level forecasts on Chap, with a DHIS2 dashboard.

Combines climate (rainfall, temp, humidity), a food-availability proxy (GPP), clinical signals (malaria, pneumonia, anaemia, diarrhoea, low birth weight), and prior caseload. Aligning with IPC definitions.

Priority: Karamoja and refugee settlements; children <5 and pregnant/breastfeeding women.

NORMAL - Routine monitoring

ALERT - Increase surveillance

ALARM - Deploy resources

EMERGENCY - Activate response



Similar recipe, different stages

Sri Lanka

Dr Priyanga Senanayaka, MoH Sri Lanka

Ruvinda Jayewardena, HISP Sri Lanka

Dedicated DHIS2 instance for climate research at the Family Health Bureau; health data from eRHMS; climate data (CHIRPS, ERA-5) via the Climate App.

*Exploratory associations before operationalizing
Chap models for preventive actions*

Malawi

Tiwonge Manda, HISP UNIMA

EWARS in four districts already integrates climate data; Health NAP with heatwave advisories in local languages.

*Advancing a foundational architecture for the
acute-malnutrition modelling.*

Routine data + climate data + Chap + a DHIS2 dashboard that classifies risk and prompts action.