Can domestic staple crop production meet the demand in Burkina Faso?

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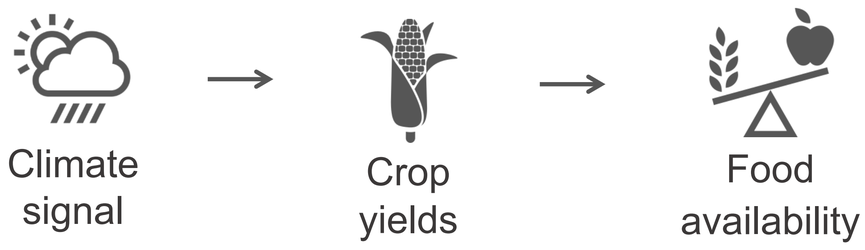
Background

Climate change adds **risks to crop yields** with potentially detrimental effects for **food security.**



A forecast of crop production can help governments to anticipate looming food crises, by e.g.:

- Adjusting food imports and exports
- Asking for food aid

→ Early warning systems can potentially **improve food security.**

Methodology

- Statistical crop model driven by climatic influences for maize, sorghum and millet
- Production forecast 1 month prior to the harvest based on a crop yield model and harvest area trend estimation
- Comparison of the historic demand for maize, sorghum and millet with produced calories from these staples

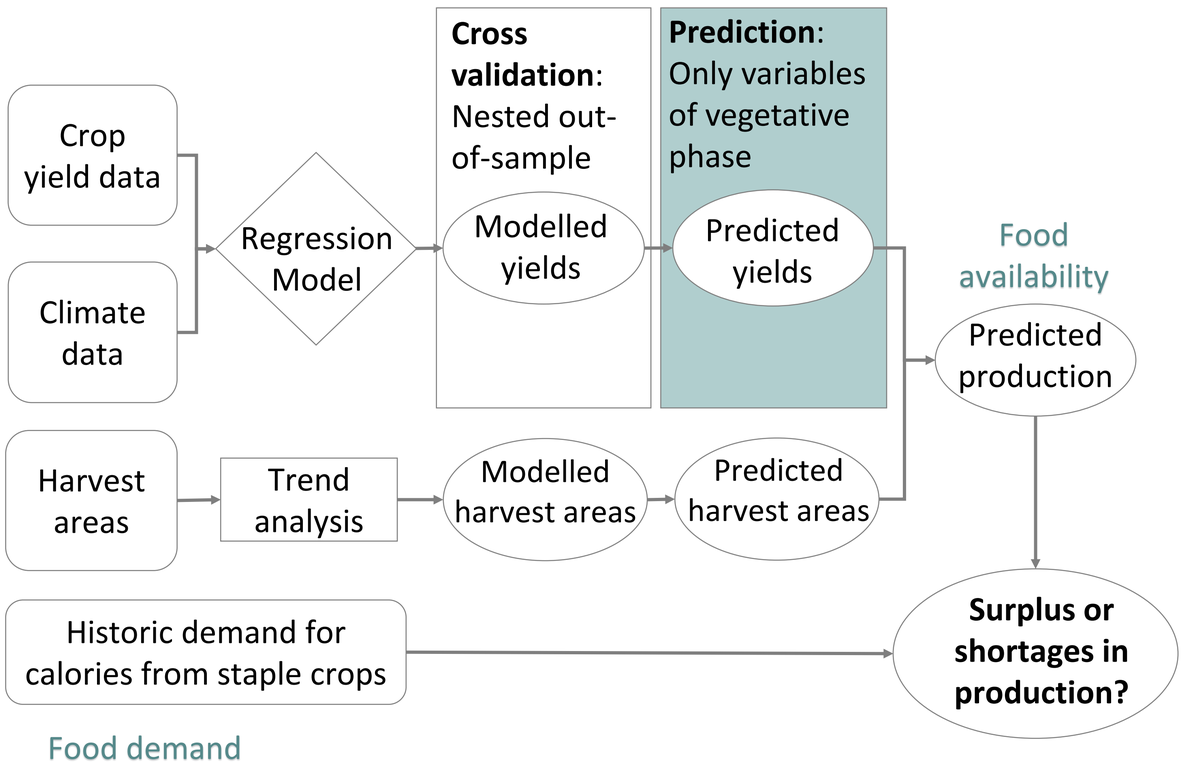


Figure 1: Work flow

Results I

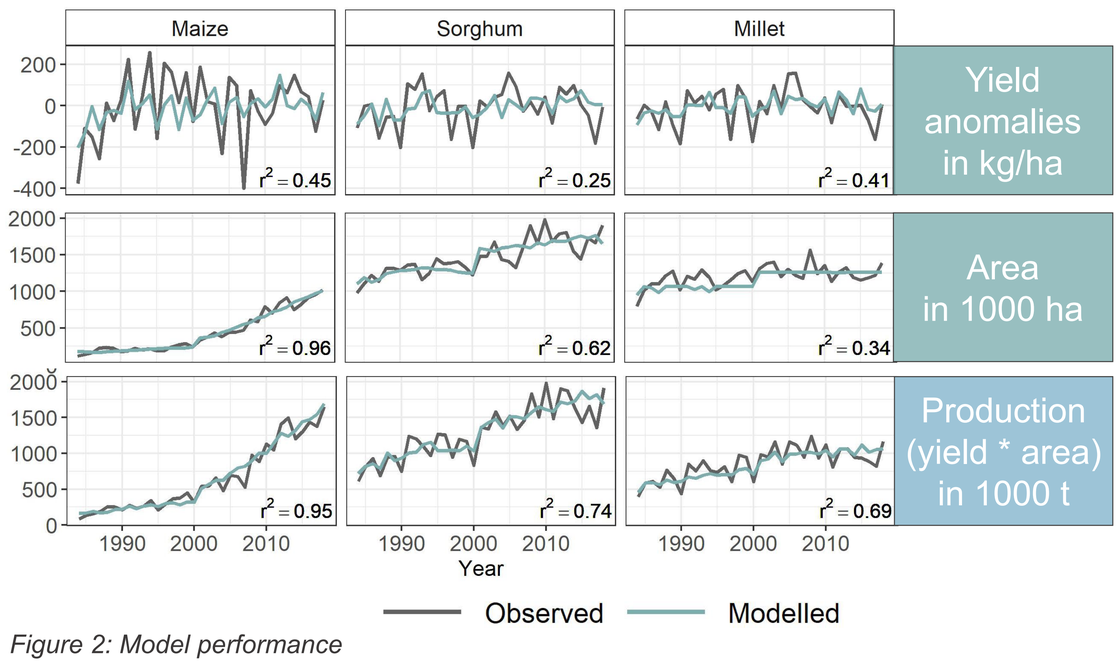


Figure 2: Model performance

Results II

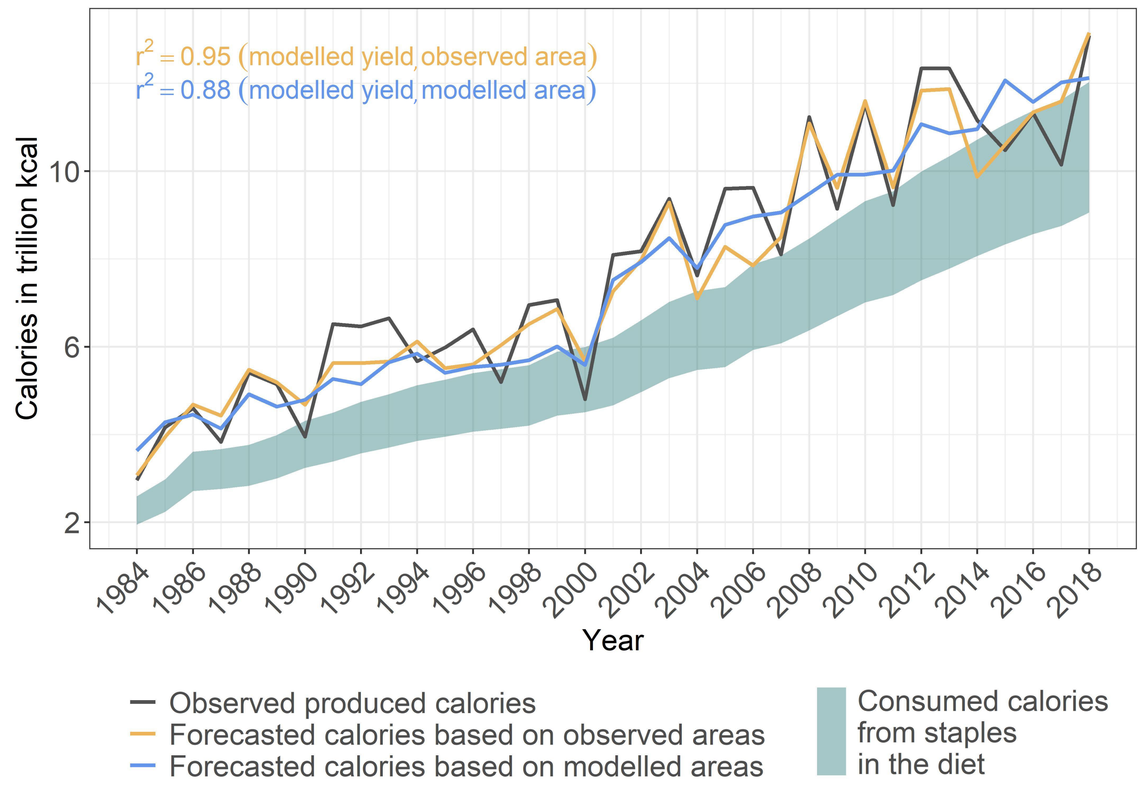


Figure 3: Forecasted produced calories from staples compared to the historic demand in Burkina Faso

Despite a **surplus in produced calories** from staples for most years, **food insecurity prevails for 48%** of the population in Burkina Faso.

→ Food availability alone cannot explain the high degree of food insecurity.

Outlook

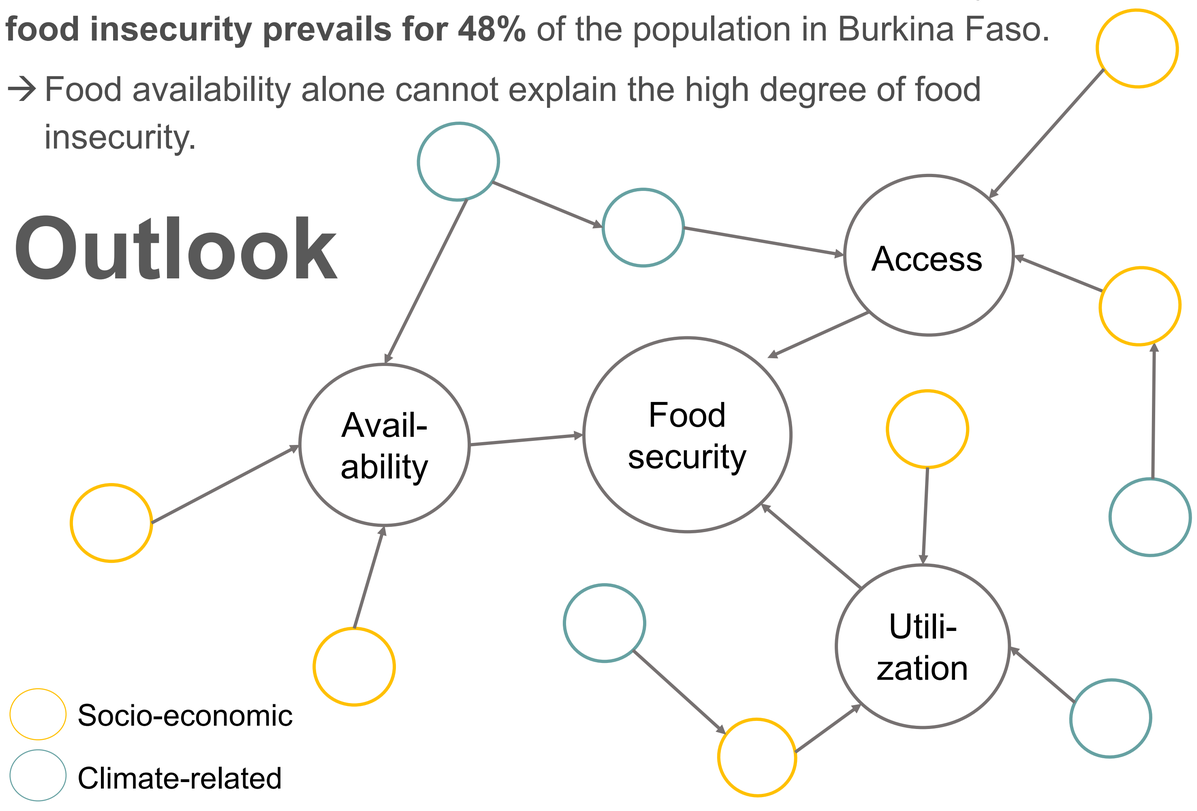


Figure 4: Example of an acyclic directed graph of a Bayesian Belief Network that analyses relations of food security

→ The other pillars of food insecurity need to be integrated for a comprehensive assessment.

Laudien, Schauberger, Waid, Gornott, 2022: A forecast of staple crop production in Burkina Faso to enable early warnings of shortages in domestic food availability, *Nature Scientific Reports*, Volume 12.

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