The effects of drought on food (in)security in the context of climate change: a multifaceted relationship

Final RECEIPT Meeting
17.10.2023

Domenico Bovienzo
Sepehr Marzi
Letizia Monteleone
Jeremy Pal
Jaroslav Mysiak

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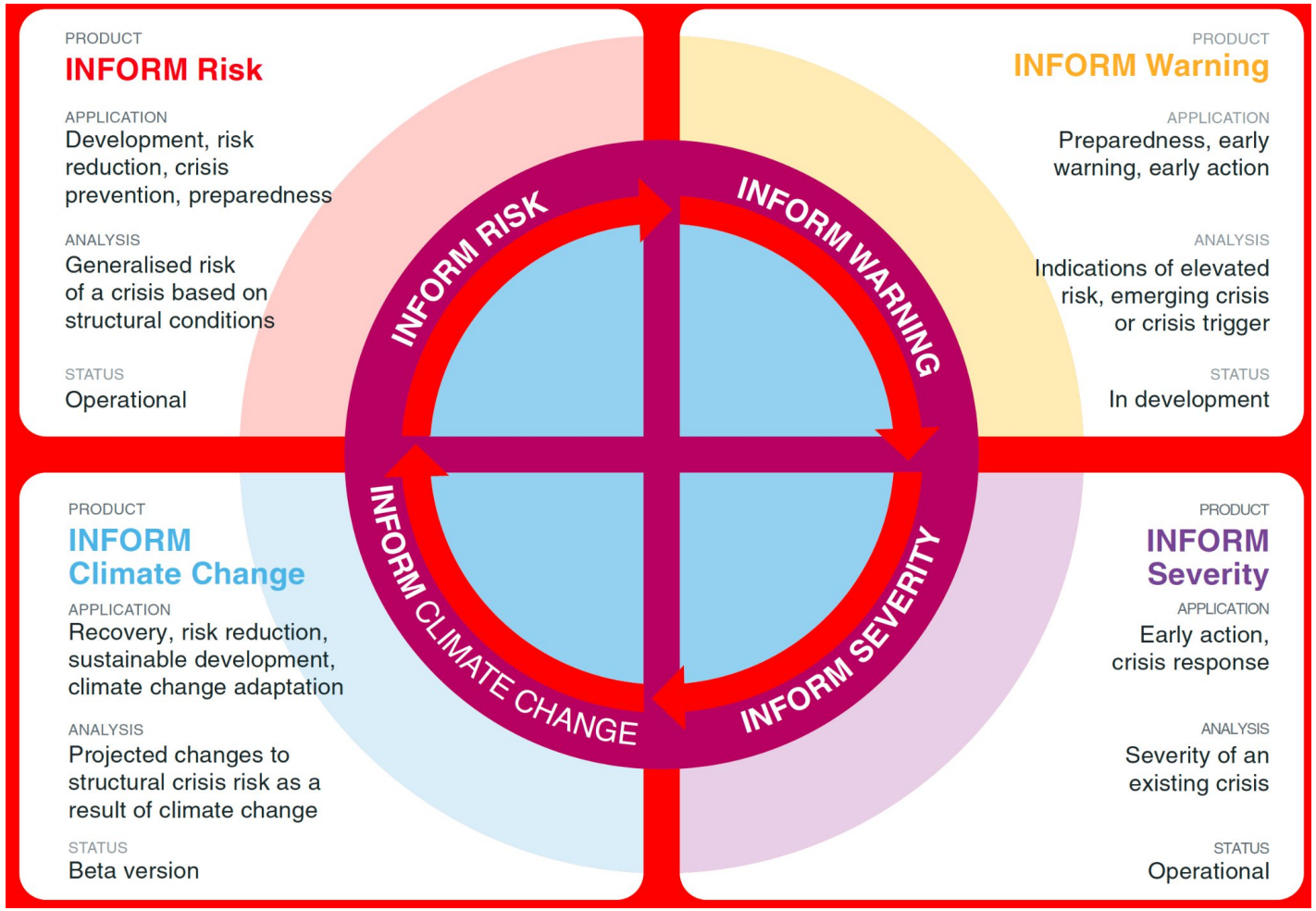
INFORM Initiative

INFORM is a multi-stakeholder forum for developing shared quantitative analysis relevant to humanitarian crises and disasters.

- INFORM Risk
- INFORM Climate Change
- **INFORM Severity**
- INFORM Warning (In development)



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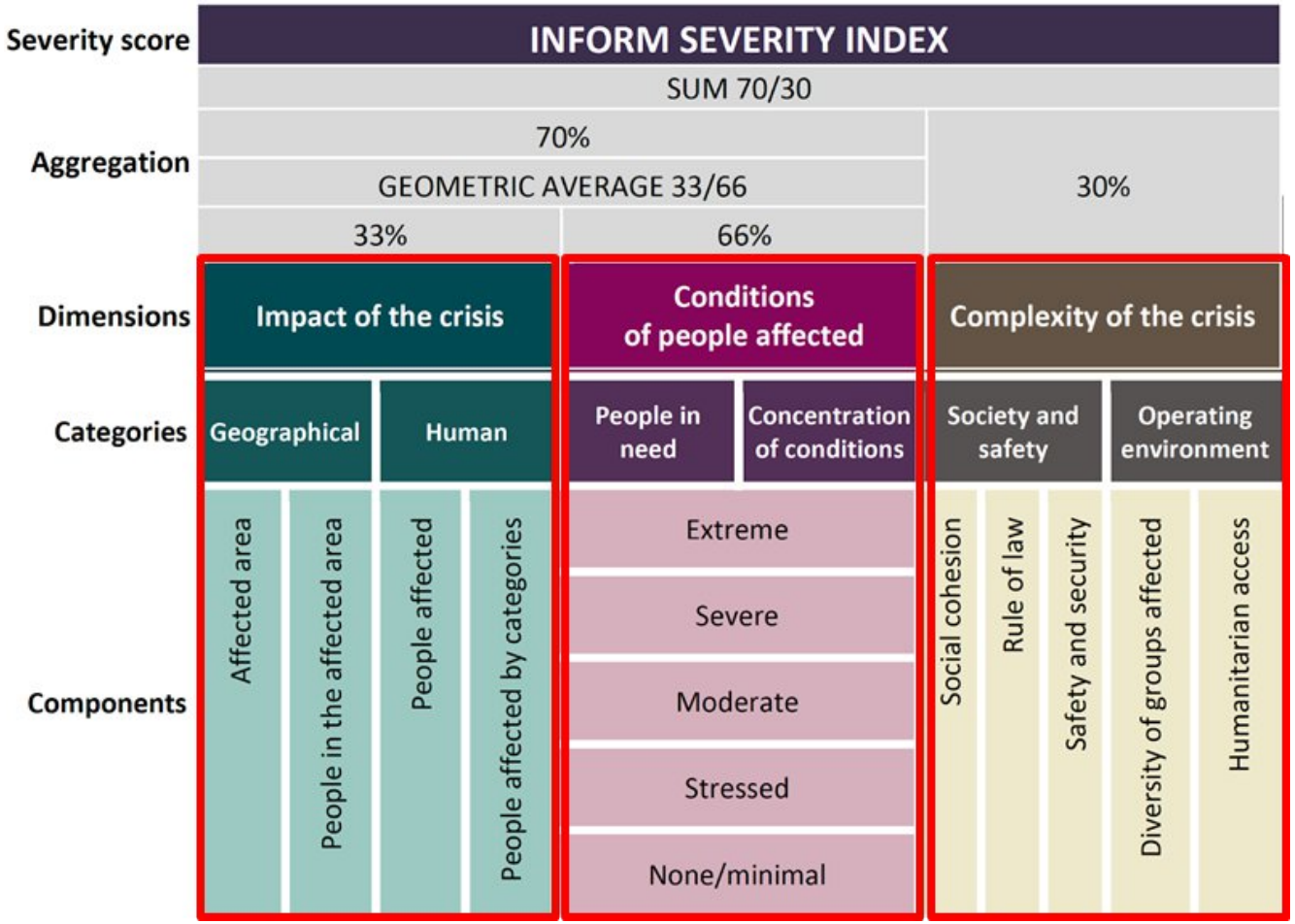
INFORM Severity Index

Led by a technical working group (CMCC, ACAPS, US Centers for Disease Control and Prevention, DFID, European Commission Joint Research Centre, IDMC, Karolinska Institute, UN OCHA)

- Composite indicator: 1 (very low) to 5 (very high)
- Measures the severity of humanitarian crises.
- Aids decision making process in resource allocation for a crisis.
- Regularly updated and easily interpreted model to assist decision-makers
- Contributes to improved effectiveness and coordination in humanitarian action.



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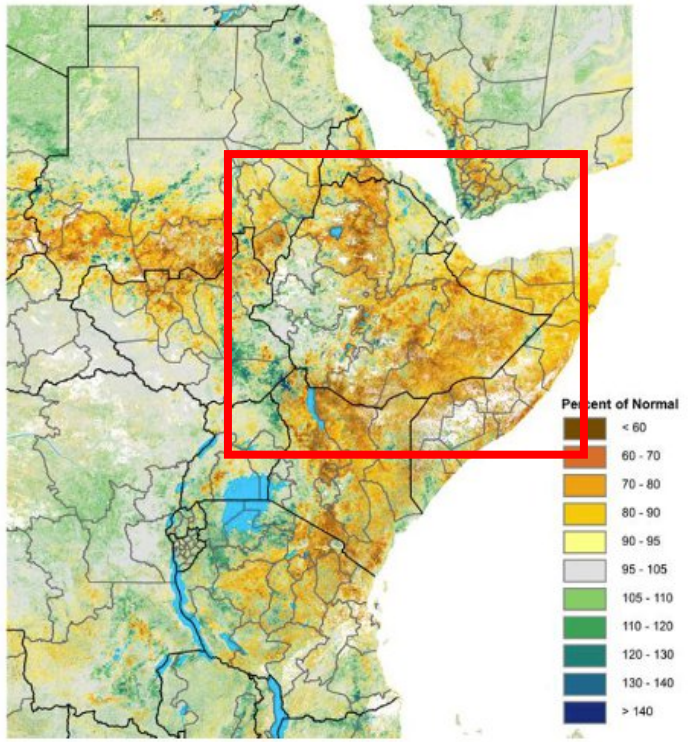
Drought and Food (in)security in Ethiopia

Climate & Population Change: Drought

Humanitarian Access: War in Ethiopia

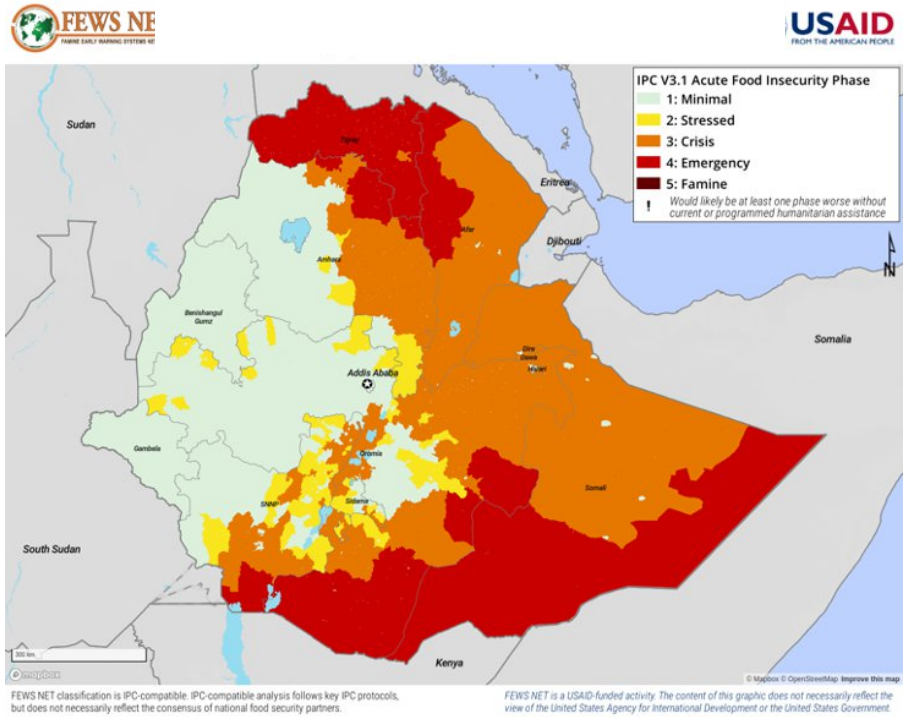
Compound Crisis: Drought, War in Ukraine, COVID

Figure 5. Percent of Mean NDVI, 1-10 July 2022

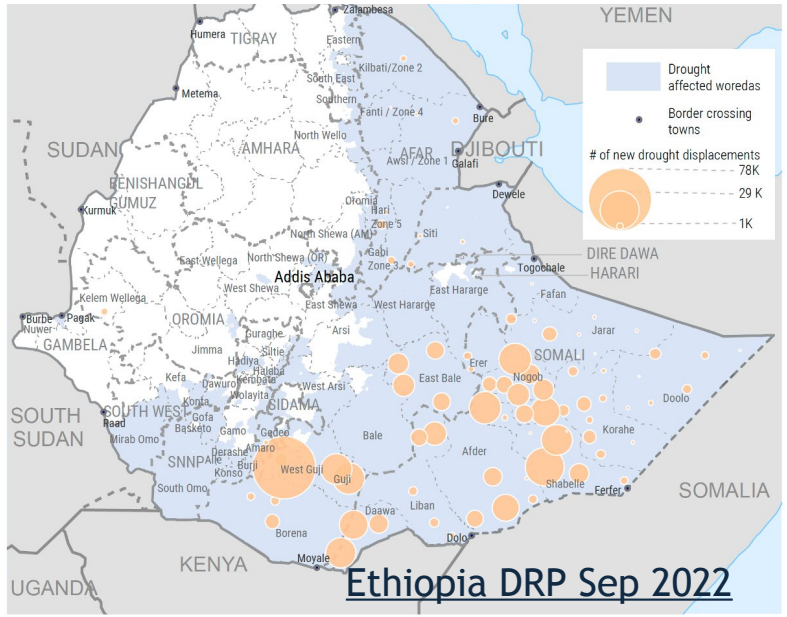


Source: FEWS NET/USGS

Acute Food Security Phase
No. 2 FAO WFP Hunger Hotspot



New Drought Displacements



Ethiopia DRP Sep 2022

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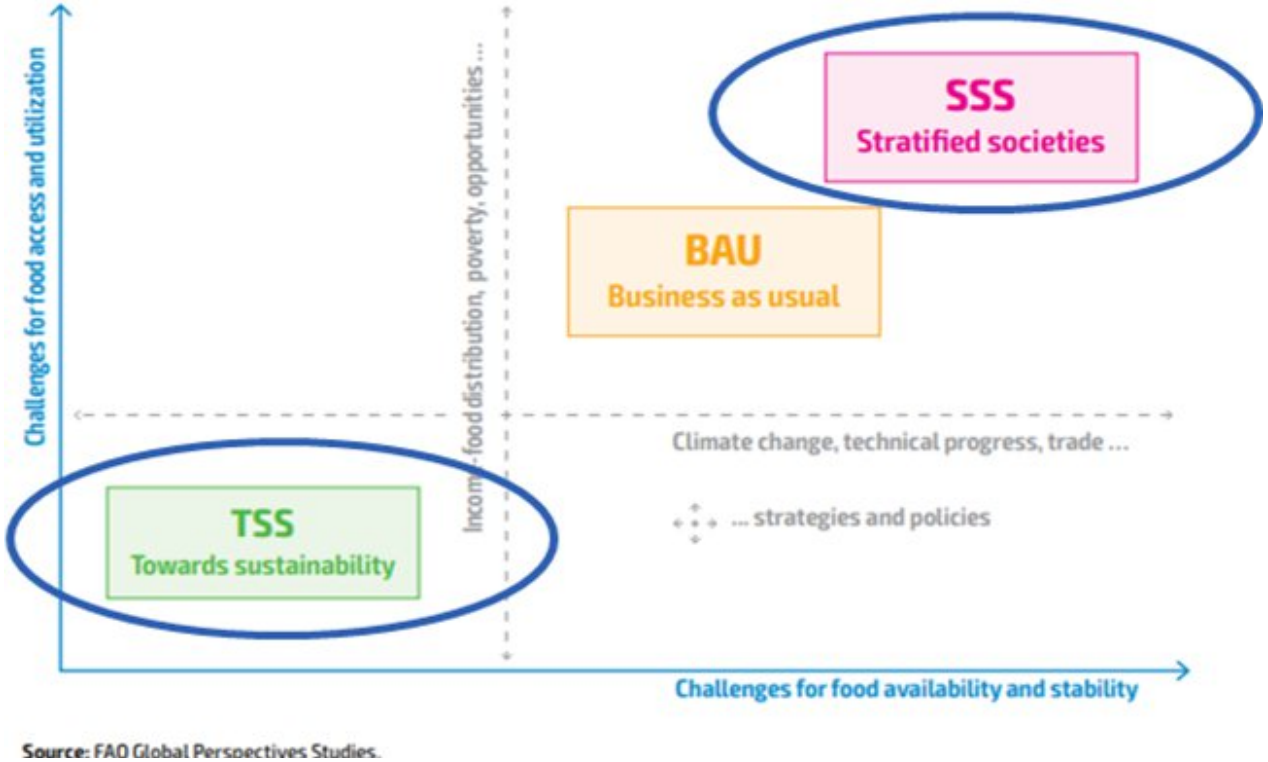
Drought and Food (in)security in Ethiopia

Figure 2.3 Challenges to food and agricultural systems and key scenario drivers



Source: FAO Global Perspectives Studies.

- The **SSS scenario** , which is coupled with RCP 8.5, emphasises the effects of leaving the current and future challenges facing food and agricultural systems unattended.

- The **TSS scenario**, which is coupled with the climate change projections associated with RCP 4.5, envisages more equitable societies in which multiple SDG targets are nearly universally achieved and agriculture moves toward sustainability.

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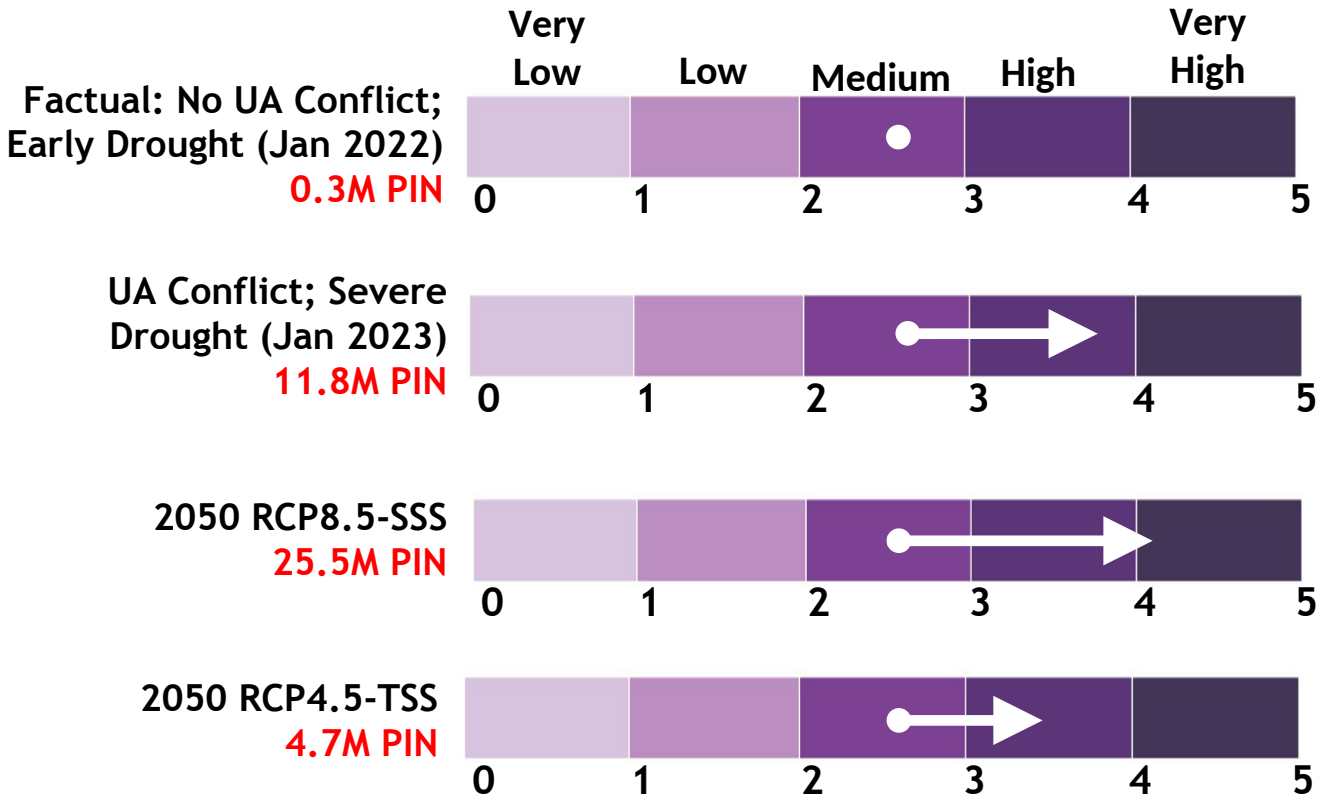
Food Insecurity Storyline INFORM Severity Index



Scenario	Displaced (M)	INFORM Severity
Factual January: No UA Conflict Drought	0.3	2.7 (Medium)
UA Conflict Severe Drought January 2023	0.8	3.7 (High)
2050 RCP 8.5 – SSS UA Conflict Severe Drought	1.8	4.0 (High)
2050 RCP 4.5 – TSS UA Conflict Severe Drought	0.34	3.4 (Medium)

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INFORM REPORT 2023

Severity

INFORM Severity

INFORM SEVERITY

Assesses the **severity of a crisis** (Methodology: min. 2 years duration).

People in Need (PIN)

PIN levels 3-5, representing the **moderate, severe and extreme** humanitarian conditions.

Research example: Quantifying future crisis severity in Ethiopia

Increasing drought-related humanitarian needs

The current drought in Ethiopia, the worst since 1984, coupled with the Russian invasion of Ukraine are estimated to have increased the number of food insecure in the drought-affected regions from 0.3M people in February 2022 to 12M in February 2023. The resulting 2022 Humanitarian Response Plan (HRP) had 3.09B USD in requirements, about double the amount allocated in each of the past 5 years. The Drought Response Plan (DRP), which represents 1.66B USD of the HRP, targeted 17M people, of which 9.9B were facing Crisis, Emergency, or Famine (High acute malnutrition or higher). About 98 USD is allocated per person facing high acute malnutrition or higher.

RECEIPT project and storylines

The European Union Horizon 2020 funded project RECEIPT (Remote climate effects and their impact on European sustainability, policy and trade) acts to assess remote climate change impacts on a variety of European risks including those related to agriculture and food production, finance, foreign cooperation and development, global manufacturing chains, and coastal infrastructure. These risks in RECEIPT are assessed using a concept called storylines, i.e., physically self-consistent cause-effect pathways of past events or plausible future events to evaluate the effects of a wide variety of factors, including those related to climate change hazards, climate change adaptation measures, and socioeconomics.

Storyline development and the INFORM Severity Index

In this storyline, a team from the Risk Assessment and Adaptation Strategies division at the Euro-Mediterranean Center on Climate Change explored the extent to which food crises may become more severe under future climate change is explored with the aim to understand how food crises can be prevented by food security policies and European development co-operations and development aid. The role of climate and population change is considered using FAO food security projections (RCP4.5-TSS and RCP-8.5-SSS) and UN population projections. The number of food insecure people is integrated into the INFORM Severity framework which can be used to provide guidance for decisions regarding humanitarian aid.

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Conclusions

- The current drought in Ethiopia, the worst since 1984, coupled with a series of **compound events** are estimated to have increased the number of food insecure in the drought-affected regions.

- In this storyline, the extent to which **food crises may become more severe under future climate change** is explored with the aim to understand how food crises can be prevented by food security policies and European development co-operations and development aid.

- The role of climate and population change is considered using FAO food security projections (RCP4.5-TSS and RCP-8.5-SSS) and UN population projections. The number of food insecure people is integrated into the INFORM Severity framework which can be used to provide **guidance for decisions regarding humanitarian aid.**

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