Building Resilience to Climate Change in Ethiopia

Exploring options for action

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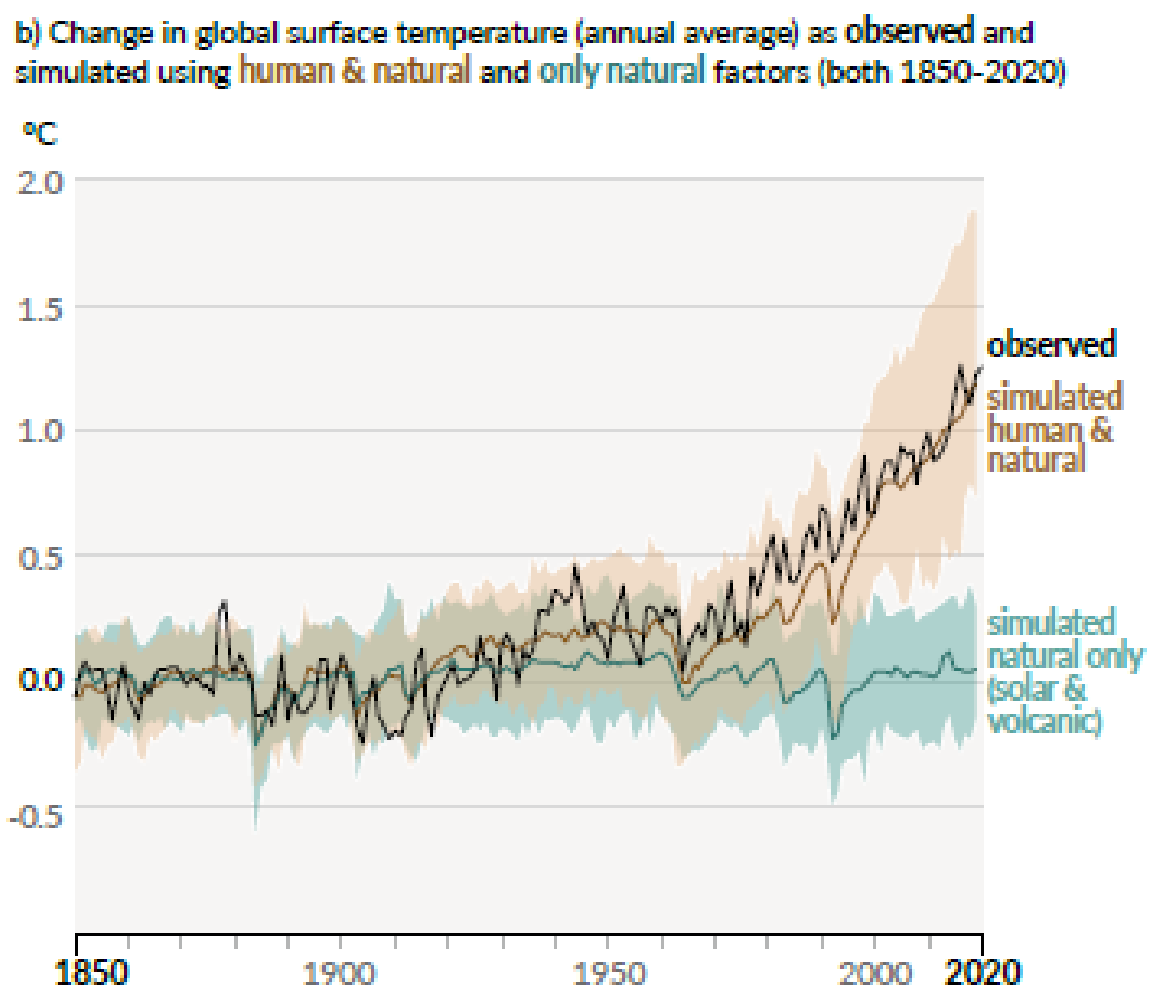
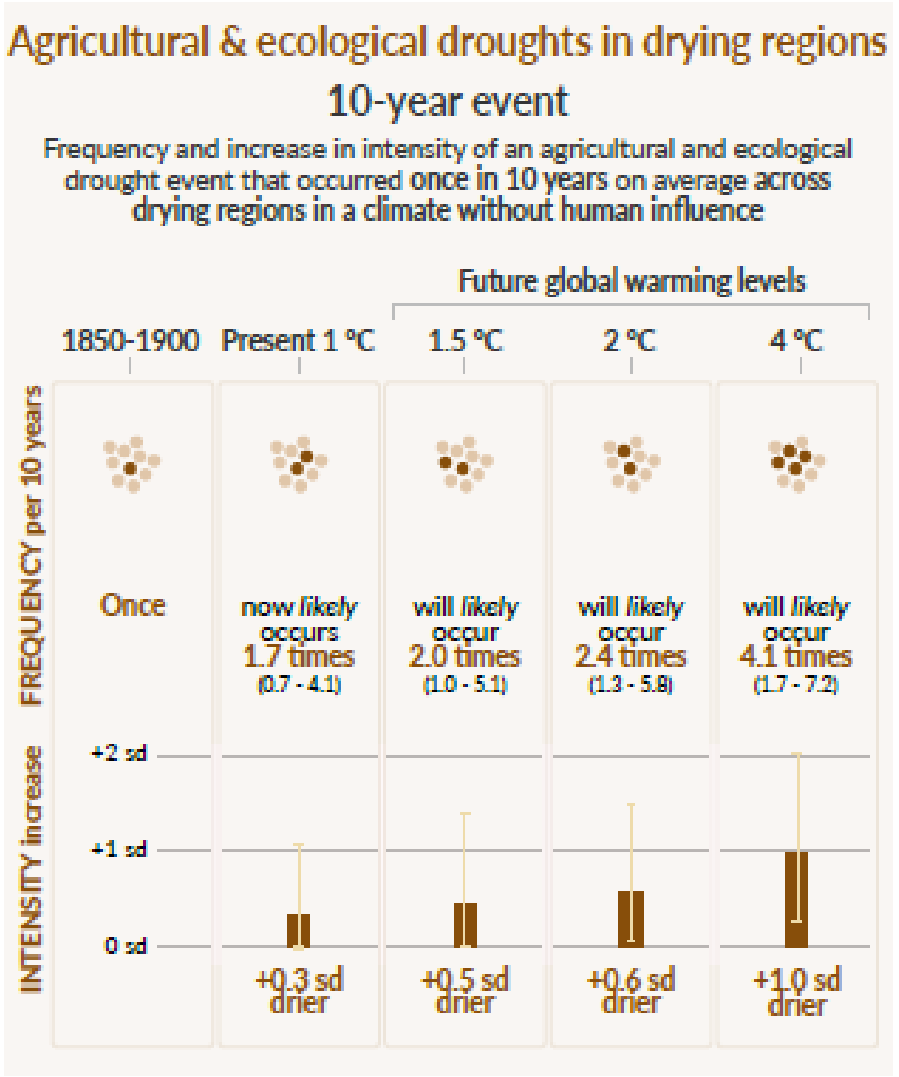
Introduction

- The UN Intergovernmental Panel on Climate Change warns that "**climate change is now contributing to humanitarian crises**" and that "**consequences will get worse, sooner than we thought**" (IPCC, 2022).
- Furthermore, "**adaptation gaps are unevenly distributed and largest in low-income settings**".

- Sustainable Development Goal 13: Take urgent action to combat climate change and its impacts:
  - Target 1: "**Strengthen resilience** and adaptive capacity to climate-related hazards and natural disasters in all countries".

Climate change impacts (IPCC Sixth Assessment Report)





Climate change in Ethiopia

Source: http://www.climatecentre.org/ipcc/

- Ethiopia has endured 10 major droughts, and average temperatures have increased 0.37 degrees C per decade since 1980 (Reliefweb).
- In 2015-2016 the country experienced one of the worst El Niño-induced droughts in decades, with below-average rainfall leading to 50–90% harvest failure affecting millions of people
- Eighty-five per cent of Ethiopia's population of ~115 million live in rural areas, and most rely on subsistence farming for survival and therefore vulnerable to climate shocks.
- Climate change could reduce Ethiopia's GDP by 8-10% compared to benchmark in 2050 (Irish Aid, 2018) and increase Gini-coefficient by 20 % (Mideksa, 2009)

Policy commitment and previous studies

- **Policy commitment**
  - There is increasing commitment from the Government made explicit through the launch of the Climate Resilience and Green Economy (CRGE) strategy, in 2011; the second Ethiopia Growth and Transformation Plan (GTP II) gave special attention to implementation of CRGE initiatives.
- **Earlier studies on building resilience to climate change in Ethiopia**
  - Have received limited academic attention; large gaps exist in the literature when it comes to evaluating the effectiveness of agricultural technologies and practices.
  - The existing evidence is for the most part "static" in nature, focusing on the choice of coping strategies during drought periods (Hassan, 2010; and Belay, Beyene and Manig, 2005).
  - In contrast, resilience is a "dynamic" concept, the speed and degree of which is affected by the options for action before, during and after the shock.

What do we mean by resilience?

Definition:

- "The ability of a system and its component parts to anticipate, absorb, accommodate or recover from the effects of a hazardous event in a timely and efficient manner" (IPCC, 2012)

Three types of resilience:

- **Absorptive**: the ability to minimize exposure to shocks and recover quickly when exposed
- **Adaptive**: the ability to make informed choices about alternative livelihood strategies based on changing conditions
- **Transformative**: system-level enabling conditions, or lasting resilience

(Smith and Frankenberger, 2017)

Project overview: Inception

Building Resilience to Climate Change in Ethiopia: Exploring Options for Action

- Collaboration between Policy Studies Institute (PSI) and the University of Copenhagen Development Economics Research Group (UCPH-DERG)
- Started in 2019 and approved for 5 years until 2024
- Funded by Danida/the Ministry of Foreign Affairs (administered by Danida Fellowship Centre – DFC).
- Focus on research and capacity building

Project overview: Collaboration

Complementary skills:

- Team members in Addis have deep knowledge about the agricultural sector, impacts of climate change, and the economy of Ethiopia.
- Team members in Copenhagen are experienced with development, econometrics, and the use of satellite data

Note: the connection between Ethiopia and UCPH-DERG goes well beyond the current project.

Project components

- Review of existing knowledge
- Capacity building
  - Collaboration
  - PhDs at Addis Abeba University
- Identifying resilient households using survey and satellite data
- Data collection
- Impacts of government flagship programmes on resilience
  - Agricultural Growth Project (AGP)
  - Sustainable Land Management Programme (SLMP)
  - Productive Safety Net Programme (PSNP)
- Innovative actions

Project milestones

2019: Kick-off and review studies

2020: Adapting to work-from-home, virtual meetings and workshops

2021: Field work (by local team), data analysis, and more virtual meetings

2022: RCC survey launch, in-person meetings, research, visits to Copenhagen

2023: Second survey round, research papers

2024: Dissemination

Examples of new insights and ongoing work

- Satellite climate data can be combined with household surveys to calculate measure of resilience
- Sustainable Land Management Programme (SLMP) watersheds are greener and more drought resistant than control areas (work in progress)
- New studies on the role of Productive Safety Net Programme (PSNP) participation on nutrition
- A portfolio of ex-post coping strategies may harm resilience (World Development)
- Academic outputs so far:
  - 3 published journal articles, 2 submitted
  - 2 working paper publications
  - ~12 manuscripts in preparation, many due this year.

SLMP site in RCC survey