

Assessing Climate Change Impacts in the Greater Horn of Africa Using the Community Capitals Framework

2014 Community Capitals Framework Institute

Jake Petr

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Quick Introduction About Me

- Student at the University of Nebraska-Lincoln
- Meteorology-Climatology and Global Studies Major
- Cornhusker Marching Band, American Meteorological Society, Cultural Ambassadors
- Traveling, Music, Storm Chasing, Photography, Art



UCARE Research

- The Undergraduate Creative Activities and Research Experiences Program, funded by the Pepsi Endowment, provides funding for undergraduate researchers to work alongside faculty members and participate in research activities on campus.

- The purpose of my research is to utilize the Community Capitals Framework (CCF), to identify and measure climate change resilience in the Greater Horn of Africa.
- Goal was to create a project that bridges the gap between my two majors

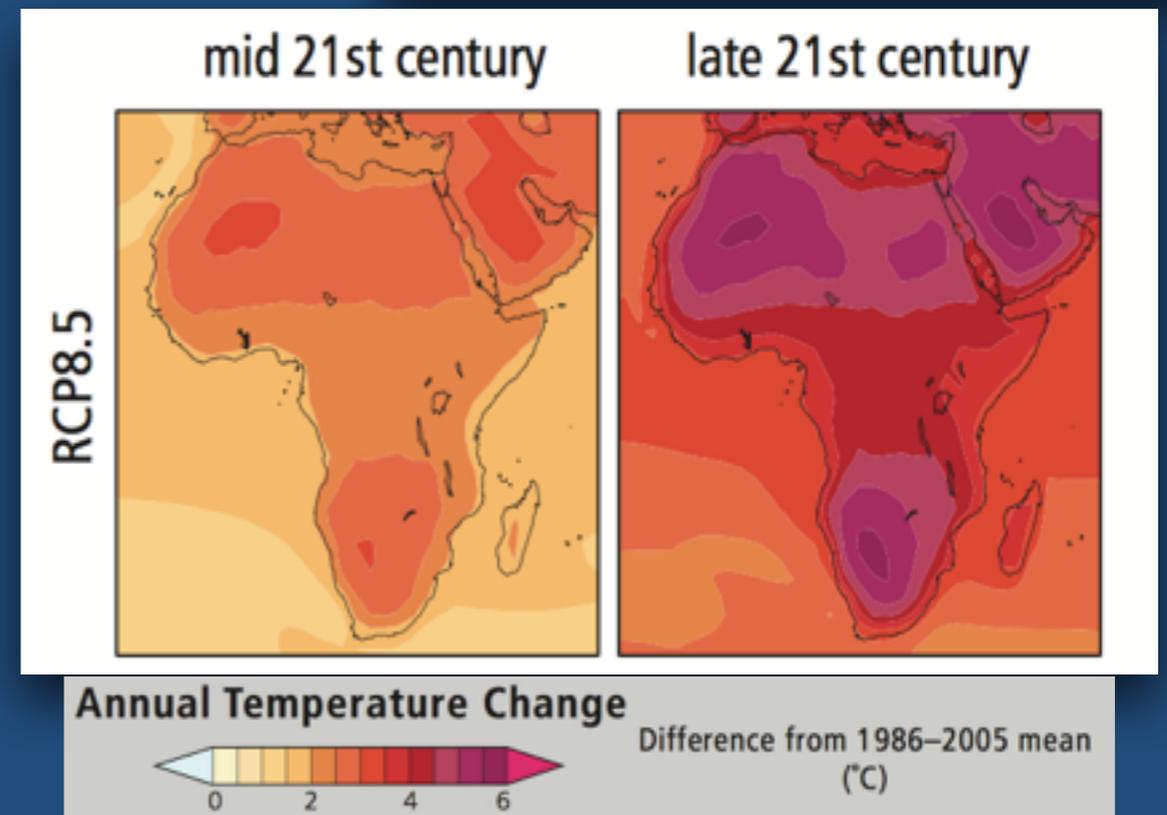


My research proposes to answer the following questions:

- 1) How do the documented impacts in the scientific literature compare to local perceptions of climate change?**
- 2) What capitals have been most susceptible to the negative impacts of climate change?**
- 3) Are there capitals that can be leveraged to increase resiliency to climate change?**

So... Why Africa?

- Opportunity to Travel to Ethiopia in August 2014
- Evidence of Climate Change
- Population is vulnerable to climate change impacts
- Interested in learning more about the region



NASA-IDS Workshop

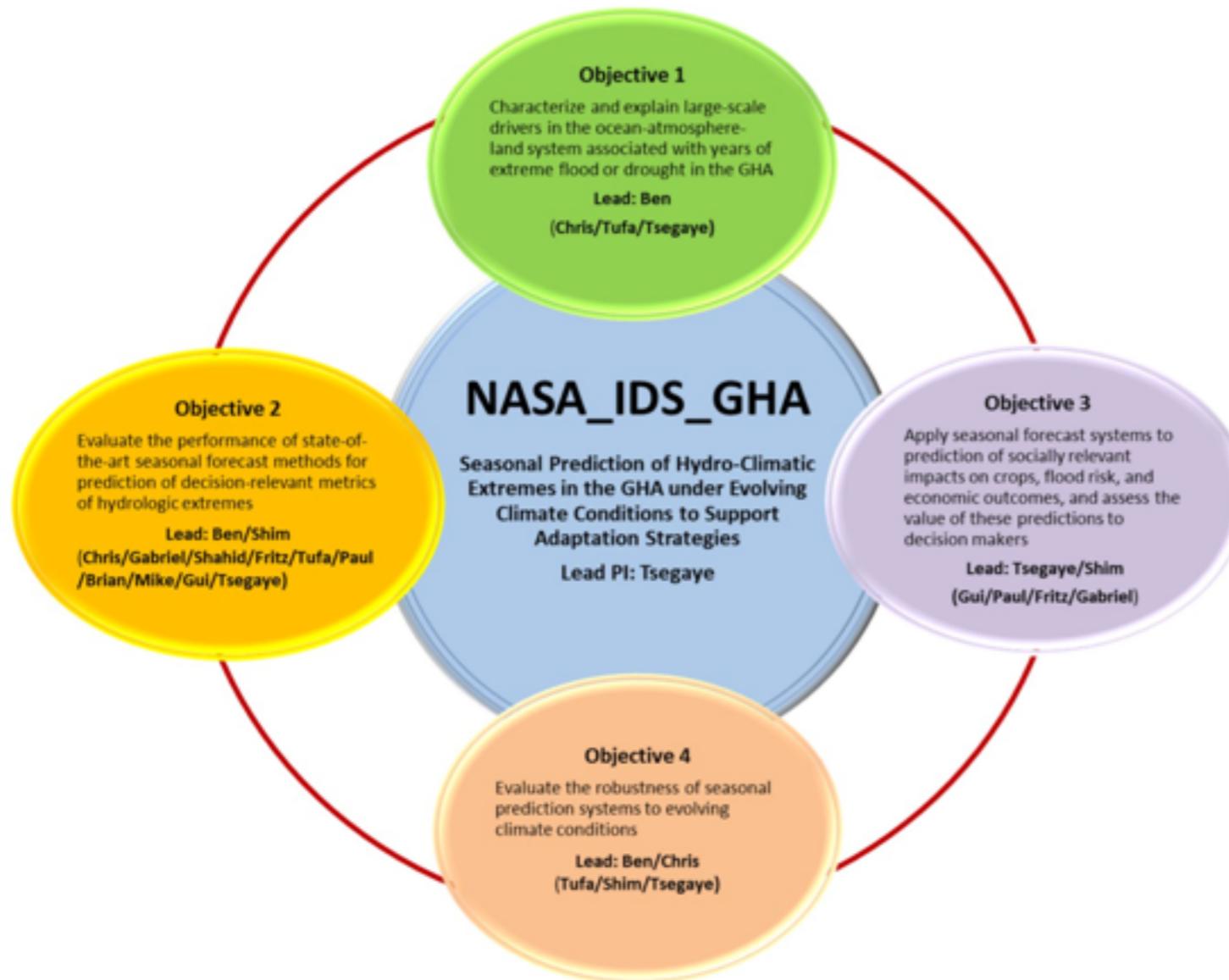


Image 1: Organizers and Participants of the 1st NASA-IDS Workshop in the GHA.

NASA IDS: Seasonal Prediction of Hydro-climatic Extremes in the Greater Horn of Africa (GHA)

The First Participatory Research Workshop and Project Meeting Report

A compiled report by Tsegaye Tadesse, Principal Investigator and coordinator of the Project, with assistance from National Meteorological Agency (Ethiopia) and the National Drought Mitigation Center.



Survey Development and Methodology

- Short Time Frame
- Survey was created for the NASA IDS workshop and approved by the UNL Institutional Review Board.
- Pre-Survey: demographics and perceptions of climate change impacts
- National Drought Management Policy Guidelines
 - Integrated Drought Management Programme (IDMP)
- Post-Survey: used to gain insight from participants to determine “next steps” for the project.

Impacts to Natural Resources and Assets	Yes	No	I don't know
Plant and animal biodiversity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of wildfires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water quantity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insect infestations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Choice of crops or varieties planted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grassland/pasture health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

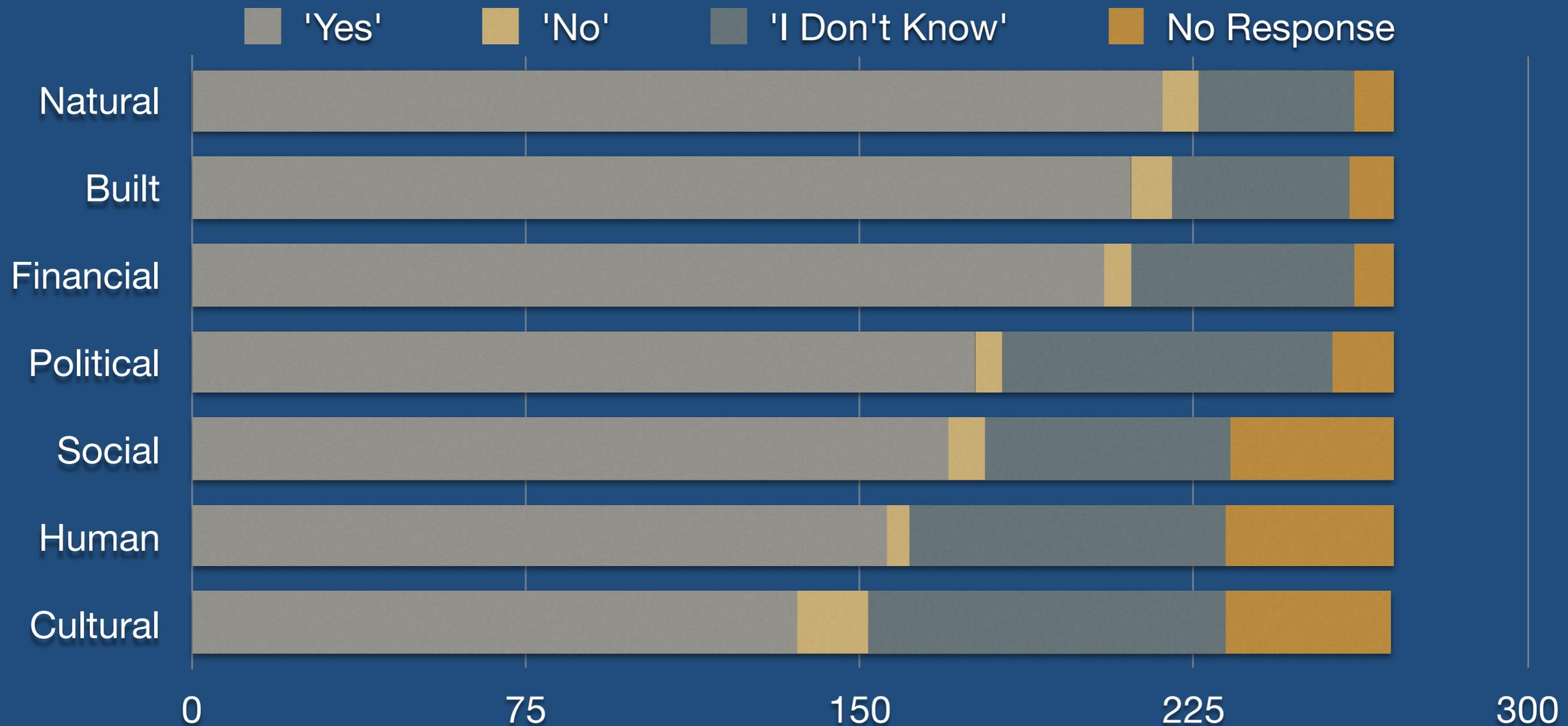
Impacts to Financial Resources and Assets	Yes	No	I don't know
Agricultural productivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Food costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Economic development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trade	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jobs in the mining industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relief programs and assistance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insurance payouts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tourism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of people in poverty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Survey Results

- 50% Response Rate from Workshop Participants
- 30 Total Responses
- Demographics
 - 87% male and 13% female
 - 80% have completed grad school
 - Many of those in attendance have had formal education in meteorology and or climatology, experience with the dissemination of scientific data, or were information brokers / extension specialists.

Survey Results

- In your country, have you seen or heard about changes (either positive or negative) in any of the following, because of climate extremes (such as flooding or drought)?



Survey Results

Impacts to Natural Resources and Assets

Plant and animal biodiversity

Water quality and quantity

Soil health

Insect infestations

Choice of crops or varieties planted

Impacts to Financial Resources and Assets

Agricultural productivity

Food costs

Relief programs and assistance

Number of people in poverty

Survey Results

Impacts to Built Resources and Assets

Dams - number and capacity

Water wells - number and capacity

Homes and buildings

Wildlife reserves

Climate or water monitoring

Impacts to Political Resources and Activities

Water-related policy

Mandates, restrictions, and rationing

Satisfaction with governmental leadership

Political or water-use conflict

Climate adaptation strategies or policies

Survey Results

Impacts to Cultural Resources and Activities

Community festivals

Family traditions

Sustainability practices

Gender and/or age-based roles

Local foods and cuisine

Impacts to Social Resources and Activities

Public awareness of climate/water issues

Public services

Population migration

Social networks and organizations

Crime

Survey Results

Impacts to Human Resources and Capital

Health/disease

Education and skills

Size of labor force

Death rates

Quality of life

Next Steps

- Continued Analysis of Survey Results
- Conduct literature review to see if perceptions are being captured in the literature.
- Develop follow up interview and survey questions to elicit more feedback
- Seek opportunities for data collection here in Lincoln
- The ultimate goal is to create a community development plan to help reduce vulnerability and increase resiliency in the region.



Questions, Comments, Recommendations?

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