

WHY DO WE WORK IN EAST AFRICA?

The semi-arid regions of East Africa, where many people rely on the rains for their crops and livestock, are among the most food insecure regions in the world. Communal conflict, and the resulting population displacement, adds additional and ongoing challenges to regional security and peace. Climate change is bringing a new dimension to East Africa's vulnerability, partly because the institutional and economic capacity to deal with climate change impacts is often inappropriately allocated and structured. It is therefore essential to understand how to enhance the ability of communities, local

organisations and governments in East Africa to adapt to climate change in a way that minimises vulnerability and promotes long-term resilience.

Already much climate change related work is being done in this region, focused on topics such as agricultural interventions, drought-resilient agriculture, and pastoralist access routes. Rather than replicate this work, ASSAR's East Africa team is harnessing its interdisciplinary strength to conduct integrated environment-development analyses at multiple scales.

Working in Awash Fentale Woreda and Amibara Woreda, Afar in Ethiopia, and Isiolo and Meru counties in Kenya, our research has three overarching themes that help to frame our research on specific issues:

The first theme is **land and water access**. We examine the connection between human wellbeing, land tenure, resource access (such as water and pasture for livestock or crops for domestic use), and resource governance (including traditional mechanisms). Examples of this work include understanding pastoralist access to land for seasonal grazing and drought reserves; choices of crop type and the location of rain-fed cultivation; the potential for sustainable irrigated agriculture; and access to household water and sanitation (especially in newly-urbanised or peri-urban settlements).



Our second theme is on **linkages at higher scales**. Here the objective is to understand issues like the dynamics of pastoral mobility across larger-scale landscapes (such as districts and countries) and the process of fiscal and political decentralisation. We consider these aspects in relation to the wider development context, including regional development projects (e.g., the LAmu Port South Sudan-ETHiopia (LAPSSSET) Transport Corridor project in Kenya), sectoral trends such as tourism, and migration/sedentarisation.

The third and final distinctive theme of our research is to understand **social differences in vulnerability, adaptive capacity and the implications of different adaptation responses** – within communities, between individuals, and according to ethnicity, gender and age. It is this analysis, building on ASSAR's core wellbeing and resilience framework, which is key to understanding trade-offs and equity dimensions of potential adaptation options.



What are the key climate patterns of the past and projected trends for the future?

- ❖ In the past 50 years, the semi-arid areas of East Africa have warmed at a rate five times greater than the rate observed during the last century.
- ❖ This warming trend is set to continue, with the number of very hot days each year projected to almost double by 2045.
- ❖ Projections for rainfall are much more uncertain, and more research needs to be undertaken to understand these trends. However, there are likely to be large increases in wet extremes in the future.



What are the expected or potential impacts of climate change on semi-arid areas?

- ❖ Greater unpredictability of seasonal rainfall and an intensification of drought and flood hazards.
- ❖ Increased pressure on available water and pasture resources.
- ❖ Ecological changes in the rangelands including increased spread of invasive species.
- ❖ Threats to income and livelihood security, and increased pressures for rural-urban migration.
- ❖ Vulnerabilities and capabilities to adapt to climate-related risks will be socially differentiated, with the likelihood of higher levels of impact on the poor and marginalised.

FOR MORE INFORMATION:

East African Lead: **Roger Few** (roger.few@cariaa.net)
 Ethiopian Lead: **Mohammed Assen** (moh_assen@cariaa.net)
 Research into Use: **Alemayehu Zewdie** (azewdie@cariaa.net)
 Website: www.assar.uct.ac.za

A CLIMATE CHANGE HOTSPOT:

CLIMATE CHANGE IMPACTS IN THE SEMI-ARID REGIONS



44%
OF ALL THE
WORLD'S
CULTIVATED SYSTEMS
ARE IN THE
SEMI-ARID
REGIONS

(UNCCD, 2015)

THEY SUPPORT



50%
OF THE
WORLD'S
LIVESTOCK

(UNCCD, 2015)

However in Africa, food emergencies often occur in the pastoralist areas of

31 COUNTRIES

(IUCN, UNEP, 2015)

Under future climate change, the crop growing season length could reduce by up to

20%

across parts of the West African Sahel, Southern Africa and Eastern Africa along with more frequent of failed cropping seasons

(Jones and Thornton, 2009; Thornton et al, 2011).

Climate change is expected to cause grassland productivity to decline by

40% → 90%

in semi-arid and arid regions

(UN Environment Management Group, 2011)



CARIAA
Collaborative Adaptation Research Initiative in Africa and Asia



IDRC | CRDI
International Development Research Centre
Centre de recherches pour le développement international

Canada