



# EAST AFRICA

## Regional Diagnostic Study

Report Summary





## About the Regional Diagnostic Studies

This work was carried out under the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA), with financial support from the UK Government's Department for International Development (DfID) and the International Development Research Centre (IDRC), Canada. The views expressed in this work are those of the creators and do not necessarily represent those of DfID and IDRC or its Board of Governors.

### Contact

Collaborative Adaptation Research Initiative in Africa and Asia  
c/o International Development Research Centre  
PO Box 8500, Ottawa, ON  
Canada K1G 3H9  
Tel: (+1) 613-236-6163; Email: [cariaa@idrc.ca](mailto:cariaa@idrc.ca)

### Funded by:



## What is ASSAR

Home to hundreds of millions of people, the semi-arid regions of Africa and Asia are particularly vulnerable to climate-related impacts and risks. Working in 11 countries in these regions, ASSAR is a research project that seeks to understand the factors that have prevented climate change adaptation from being more widespread and successful. At the same time ASSAR is investigating the processes - particularly in governance - that can facilitate a shift from ad-hoc adaptation to large-scale adaptation. ASSAR is especially interested in understanding people's vulnerability, both in relation to climatic impacts that are becoming more severe, and to general development challenges. Through participatory work from 2014-2018, ASSAR aims to meet the needs of government and practitioner stakeholders, to help shape more effective policy frameworks, and to develop more lasting adaptation responses.

ASSAR has recently completed its Regional Diagnostic Study phase which took stock of the current state of knowledge on the extant and emergent climatic and non-climatic risks in Africa and India. During this phase ASSAR explored why different people are differentially vulnerable to these risks and how people, governments and other stakeholders at various scales are responding to current and future climatic and non-climatic challenges.

## ASSAR in East Africa

The East Africa team's work concentrates on dryland zones of Ethiopia, Kenya and Uganda. The ASSAR East Africa team for the RDS phase consists of the University of East Anglia (UEA), African Wildlife Foundation (AWF), Addis Ababa University (AAU), and The INTASAVE Partnership (INTASAVE). In East Africa the RDS takes a people-centred approach. We view people as the vulnerable 'units' of interest, not sectors or system properties per se. The focus of vulnerability and response to risk is inherently local, rooted in an understanding of how that vulnerability and adaptive capacity interact with social-ecological factors and processes operating at higher scales.

## Regional to Sub-National Context

East Africa is characterized by great topographical diversity and a range of local climatic conditions. Annual rainfall cycles are complex, and rainfall variability is the main climate and weather element affecting ecosystem services, agricultural production, and socio-economic development of the region, with frequent drought and flood events. Rising population and high population growth rates in the region are important drivers of change, potentially greatly increasing demand for food, water and livestock forage. Population redistribution via sedenterisation, migration and urbanization are also key dynamics. East Africa has a largely agrarian political economy. Local communities are highly dependent on rainfed crop production and, in the dryland areas, pastoralism (livestock) and agro-pastoralism (crop-livestock mix) for livelihoods and employment. East Africa is one of the most food insecure regions due to frequent climate risks.



Long-term development plans (e.g. Kenya's Vision 2030, Uganda's Vision 2040, Ethiopia's Growth and Transformation Plan) aim to transform into industrialising middle income nations. Huge capital investments target service delivery expansion. This is constrained in semi-arid areas by: remoteness, low population density, pastoral mobility and poor infrastructure. Communal conflict and resulting population displacement and migration have challenged regional security and peace. Climate change is bringing a new dimension to East Africa's vulnerability and food security. The region is considered highly vulnerable to climate variability and change, partly due to low economic and institutional capacity to deal with impacts.



## Climate Change Trends and Projections

Broad evidence at the regional level supports increasing trends in temperature from climate baselines. Mean temperatures across the region have increased by 1 to 3°C over the past 50 years. Rainfall trends over the past 50 years are less evident than for temperature, with large variations in the direction and magnitude of changes across the region. Future projections of annual rainfall change are highly uncertain, with considerable variation across models, some indicating potential increases and others decreases. The projected increases in average annual temperatures range from no change to 4°C by 2050.

## Risks, Impacts and Vulnerability

The literature suggests a number of key determinants and drivers shaping vulnerability of the poor in East Africa. Development trends also intersect with and change vulnerability. A number of social-ecological risks are associated with environmental dynamics; climate change is only one of several interlinked drivers of change. The effects of climate change will be compounded by widespread poverty, human diseases and high population growth rates that are expected to intensify demand for food, water and livestock forage within the region. These trends are interconnected and climate change and responses to it cannot be considered in isolation. We identify 8 inter-related risks that affect people's livelihoods and wellbeing in semi-arid areas of East Africa: rainfall variability, drought, flood hazards, resource degradation, resource conflict, food insecurity, human health, and plant and animal diseases. We can refer to all of these as climate-related social-ecological risks, recognizing that each is a product of multiple factors and causes.

Different groups and societies in semi-arid areas in the region experience vulnerability to these risks in different ways. Females, disabled people, elders and children and the rural (pastoralists; smallholders) and urban poor are especially highly vulnerable to the impacts of climate change and variability, since these groups often have lower adaptive capacities and limited access to resources for adaptation practices. These categories are interconnected both in terms of their characteristics and in intersecting vulnerability experiences. Multiple dimensions of vulnerability also tend to come together in 'vulnerable locales'.

## Adaptation

Given the multi-sectoral nature of the risks described above, it is also the case that response needs are broad in scope. Even if we were to narrow the analysis to specific dynamics caused by climate change risks we would also see the need for a broad range of response measures, because the environmental and social impacts of climate change alone are so complex. Relevant sectoral strategies relate to ecosystem protection, pastoralism support, crop production, urban planning, water management, environmental health, disaster risk reduction and climate information services. Key responses that focus support for livelihoods and wellbeing cover: knowledge and awareness, extension services, livelihood diversification, social safety nets, gender focused approaches, relocation and migration and risk sharing.

Across these response fields are actions that may act to reinforce pre-existing adaptability, promote innovation, or, at a most radical level, seek to bring about transformative changes. All this underlines still further that climate change adaptation cannot readily be viewed in isolation from wider societal and environmental concerns, and hence we refer to responses within an 'adaptation-development spectrum'. This also draws attention to how actions conventionally regarded as adaptation-focussed or development-focussed may serve to reinforce or, at times, undermine one another.

## Conclusions

One of the primary objectives of ASSAR is to try to identify barriers and enablers to the reduction of vulnerability to climate-related risks, especially for poorer and marginalized populations. From the RDS work, we can begin to sketch out some of these factors, and see how they broadly relate to themes around knowledge and capacity, livelihoods and access to resources, planning and innovation, governance dimensions, and financial resources. Particularly important for the region is the way these interact with the current dynamics affecting the future of pastoralism. Despite a wealth of research and investigation reported in both academic and grey literatures for East Africa, there remain major gaps in knowledge on vulnerability, and responses to climate-related social-ecological risks remain wide and diverse. Many facets of these issues remain little explored by researchers or poorly communicated to stakeholders. Some of the key knowledge gaps cover: climate data and its effective dissemination; linkage of climate-related risks to development; dynamics in the strategies and actions of pastoralists; the ways in which risk response and adaptation activities are implemented and assessed; the appropriateness of blueprint response strategies; the role and limitations of livelihood-based adaptations; the potential of local and 'indigenous' knowledge; the governance context of risk response and adaptation; drivers behind policy developments; the role of wider environmental and political economic changes; and understanding social trade-offs that exist in responses to risk.





### **Creative Commons License**

This Working Paper is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. Articles appearing in this publication may be freely quoted and reproduced provided that i) the source is acknowledged, ii) the material is not used for commercial purposes and iii) any adaptations of the material are distributed under the same license.

### **© 2015 International Development Research Centre**

*Photos:* Outer cover and Inner cover – Evans Kimani, Embedded images – Jennifer Leavy, Poshendra Satyal and Daniel McGahey © Photographers