

GCRF-AFRICAP is a new programme of work funded by the UK government, and being led by the University of Leeds and the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), in collaboration with the Met Office, University of Aberdeen and Chatham House. The programme aims to establish academic partnerships between UK and African research and policy institutions and develop capacity across these partnerships in the field of climate smart agriculture and food systems. It is driven by an aim to build capacity for, co-develop and demonstrate, nationally owned SDG-compliant agri-food development pathways that can be productive, sustainable and climate-smart

## Climate Science

The aim is to work with project partners in each GCRF-AFRICAP theme to provide a cross-disciplinary research programme that works towards building climate food and agriculture systems and potential climate services. This in turn would help build food system resilience in the four focal countries. Assessing the potential utility of climate models for agricultural climate services represents a long-term aim that will make use of our scientific capabilities and feed back to future model development.

This work plan, in conjunction with the wider Met Office cross-thematic work aims to answer the following research questions:

1. **What is the state of the present-day climate in Eastern and Southern Africa**, and how is it likely to change out to the middle of the century?
2. What are the key climate metrics (or key types of extreme weather) for agriculture in the focus countries?
3. What are the drivers (causes/precursors) of the relevant extreme weather events across spatial and temporal scales of interest?
4. **How will the frequency and intensity of the relevant types of extreme weather change in future climate?**
5. What are the impacts of natural climate variability and change on water resources for agriculture and human usage in Eastern and Southern Africa?
6. **How predictable are the natural variations in important meteorological parameters?**
7. Does the CP4-Africa simulation produce a better representation of present-day extreme weather than CMIP5-type models?
8. Is the more detailed/higher resolution information actually useful at the field/regional scale, or more informative than statistically down-scaled GCM output?
9. How should we use CP4-Africa in combination with coarser resolution models (e.g. CMIP5/6) to maximise the utility of the climate information?

What climate services would be relevant for informing the development of climate smart agri-food systems in Eastern and Southern Africa?

If you are interested in finding out more about the research, we would be delighted to hear from you, via the contact details below.

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