

# Agriculture and rural development in Africa

Walker Institute research

## Satellite monitoring of rainfall for agriculture in Africa

Researchers in the Department of Meteorology have developed rainfall monitoring methods for agriculture in Africa using satellite imagery. Recent research shows that this method works better than other more sophisticated approaches for sub-Saharan Africa. We now have a 15 year archive of rainfall estimates covering most of Africa and are attempting to extend this to cover the full period of Meteosat imagery (about 30 years).

Current partners include the Ethiopian Met Service, Ugandan Met Service and the World Food Programme in the Sudan and Agrhymet.

[www.met.reading.ac.uk/tamsat/about/](http://www.met.reading.ac.uk/tamsat/about/)

## Food crops in a changing climate

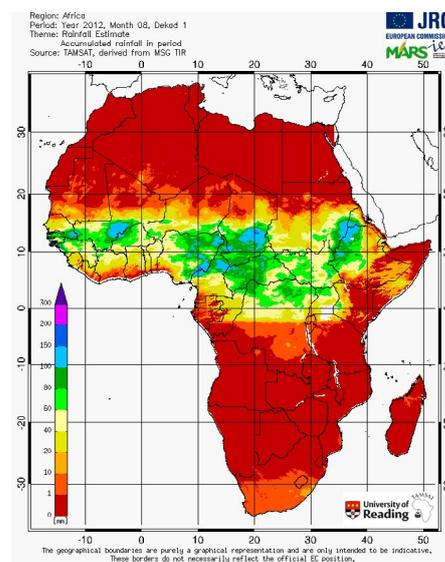
The Crops and Climate group has developed a new combined climate and crop forecasting system that captures the impacts of climate variability and change on crops.

Our research provides national and regional analyses of these climate impacts on seasonal to decadal timescales allowing a range of adaptation options to be examined.

We authored a Royal Society statement tabled at the G8 Summit in Gleneagles in 2005 which concluded that: 'world leaders, along with other government and non-governmental organisations, need to take actions to understand, monitor and adapt to the impacts of climate change on food crops.'

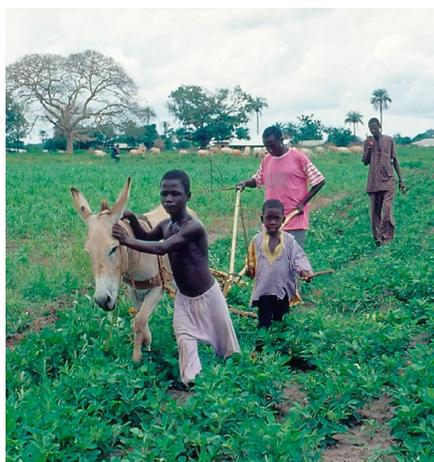
'This is particularly vital in the case of Africa where there is a need to develop innovative solutions and adaptive strategies that deliver long-term, sustainable livelihood in an era of climate change.'

[www.walker-institute.ac.uk/research/impacts/agriculture.htm](http://www.walker-institute.ac.uk/research/impacts/agriculture.htm)



Rainfall estimate derived from Meteosat thermal infra-red channels based on the recognition of convective storm clouds and calibration against ground-based rain gauge data.





## Disaster risk reduction, institutional learning, development frameworks and improving communication for farmers

Our research also addresses issues of governance, conflict and justice in the process of adaptive response to climate change. It includes assessments of resilience in socio-ecological systems and projects in Africa to explore effective livelihood adaptation and transitions.

Our scientists have developed, used and trained others in using participatory research methods to explore rural information systems and communication networks. Through systems and networks land users can access knowledge to support sustainable changes in livelihoods in the face of changes in the physical and economic environment.

We are providing support to governments, international agencies and NGOs to develop tools and guidelines to integrate disaster risk management, adaptation and sustainable poverty reduction. Recent customers include the British Red Cross/Red Crescent, DFID, UNDP and the World Bank.

[www.reading.ac.uk/shes/research/shes\\_HERG.aspx](http://www.reading.ac.uk/shes/research/shes_HERG.aspx)

[www.reading.ac.uk/apd/research/livelihoods/apd-reslrghome.aspx](http://www.reading.ac.uk/apd/research/livelihoods/apd-reslrghome.aspx)

## Using climate data effectively for agriculture

The University's Statistical Services Centre provides tools and training for people working with climatic data, particularly in developing countries. The Statistics in Applied Climatology (SIAC) courses provide people with the skills to analyse historical climate datasets and so assist end-users in making better decisions in areas such as agricultural, food security and disaster planning. Increasingly, statistical analyses are yielding benefits in other sectors such as health, construction and tourism.

The e-SIAC programme is an innovative, web-based, e-learning venture which has been developed to make the SIAC training more widely available, both to National Meteorological Service staff and climatic data users in other sectors. e-SIAC is directed primarily – but not exclusively – towards climatic data users and producers in Africa.

[www.reading.ac.uk/ssc/courses/siac/](http://www.reading.ac.uk/ssc/courses/siac/)

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