

## IMPACT CASE STUDY

# The Africa Climate Exchange

## Turning scientific advances into practical solutions

Research is enhancing our understanding of African weather and climate, yet the impact of these advances on real people's lives in Africa is often very limited. This is mainly due to communication gaps and barriers; without the mechanisms in place for effective dialogue, the latest climate science is not getting through to help inform policy. Turning scientific advances into practical solutions for African communities was therefore one of the main aims of the Africa Climate Exchange (AfClix), a knowledge transfer project to facilitate the exchange of climate science and adaptation knowledge.

### Research

Around 19 million people in sub-Saharan Africa are threatened by severe food shortages, with over four million people currently malnourished. There are a number of factors which contribute to this food insecurity, including rapid population growth, poor infrastructure, weak governance, recurrent conflict, environmental degradation, low food production and a high dependence on rain-fed agriculture. Importantly though, the weather has a big effect on all of this, and the area often suffers extremes leading to both flooding and droughts.

The Africa Climate Exchange has generated impact at individual, community, institutional and governmental scales, by building relationships, creating space for dialogue, and supporting the appropriate application of scientific learning to anticipate and promote resilience. It connects scientists together with humanitarian and development decision-makers and government policy makers, to address questions of mutual interest surrounding the issue of food insecurity related to climate. These include seasonal forecasting, evaluation of indigenous knowledge, and approaches to inform decision-making when faced with uncertainty. In this way, AfClix provides a mechanism of building relationships, understanding, and dialogue.

Since the end of 2011, the Africa Climate Exchange has been working on the ground in sub-Saharan African countries to explore how science can best inform climate-related policy for improving food security. Much of this initial phase has been focussed on mapping existing institutional, socio-cultural and economic mechanisms at local, national and international levels to evaluate opportunities and bottlenecks along the climate information chain in each country.

During the early stages of the project, AfClix identified the main communications barriers as: a lack of shared dialogue spaces between climate scientists, Non-Governmental Organisations (NGO), decision-makers and government policy-makers; a lack of understanding due to the 'language used' by the different groups involved; and a lack of understanding of the complex local issues in each area. Knowing what these communications barriers are has helped to develop the range of activities AfClix is involved in to be specific and useful to the communities they target.

Finding out what the priorities of local decision-makers are has been key in this, and has helped to connect individuals and groups in order to establish effective interdisciplinary collaborations. Working together with an integrated framework across a range of scientific disciplines, geographic regions and levels of humanitarian, development and policy decision making, ensures that science can be applied appropriately to anticipate and promote resilience to a range of potential future risks in a country-specific manner.



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#### Funding:

AfClix is part-funded through a NERC Knowledge Exchange Fellowship, and additional funding for has been provided by the National Centre for Atmospheric Science (Climate Directorate), the Grantham Institute for Climate Change, and the Walker Institute for Climate System Research. Due to the nature of its work, AfClix partners with a range of other organisations and individuals to help achieve its goals.

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The gap between scientists and policy-makers is well recognised. It is difficult for the findings from science to move outside of the academic environment without engagement with communities of users. By communicating directly with organisations and individuals who are responsible for policy and action within the communities that the science is designed to benefit, AfClix has been uncovering the country-specific issues that are used to drive the targeted activities of the organisation. Likewise, this information then feeds back to either create future integrated research projects, which AfClix helps to secure funding for (through traditional and non-traditional means), or to identify existing research which could be of direct benefit.

The science embedded within the partnerships and collaborations AfClix is involved in includes: scientific tools to increase understanding of climate change and to help coordinate an effective response to its impacts, for example land-surface modelling of climate change impacts on sugar cane yield in Sudan; development of early warning systems coupled with regional monitoring; and development of the research basis for subseasonal-seasonal-interannual weather and climate prediction, with an orientation towards the approach that will be needed at the national, regional, and multi-national levels to achieve the desired goals and sustain climate services initiatives.

In practical terms, AfClix activities are underpinned by the AfClix web portal ([www.afclix.org](http://www.afclix.org)), which helps to match needs with solutions to help tackle climate vulnerability associated with uncertainty, and to demonstrate the benefits of climate information to in-country policy makers.

The projects supported by AfClix are unique in that they combine meteorological, agricultural, hydrological and statistical modelling skills, together with socio-economic modelling, science communications and decision-making evaluations that can work at the science-policy interface and thus make a significant impact on the African ground.

## Impact

The work AfClix does is making a difference because it helps to match ground-based needs with grass-roots solutions aimed at tackling climate vulnerability associated with uncertainty, and can demonstrate the benefits of weather and climate information to in-country and UK policy makers. Multiple interdisciplinary collaborations have been spawned through AfClix connecting individuals and groups and overcoming communication barriers. For example, AfClix has been engaged with developing and submitting 11 grant proposals between January 2012 and April 2013: three of those as Principle Investigator, six as Co-Investigator, and two as Research Partner. All collaborations are contributing towards the long-term aim to promote resilience in rural communities in sub-Saharan Africa through locally relevant adaptation strategies informed by the latest climate science.

The impact of the AfClix project is realised by changing behaviour and achieving engaging interactions between organisations and individuals. This is how AfClix is making a difference.

It is hoped that the work of AfClix brings together disparate communities who are not working together, into engaged communities, which can then work through solutions to issues facing each area. Behavioural changes for each stakeholder are difficult to measure in time, though.