

Weathering drought in Africa

Article

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Weathering drought in Africa

Close to 19 million people in sub-Saharan Africa are threatened by severe food shortages, partly due to variations in the weather. Our understanding of meteorology is improving all the time, but can science really help the people at the sharp end of Africa's weather? Ros Cornforth decided it could.

More than four million people in sub-Saharan Africa are currently malnourished. Rapid population growth, poor infrastructure, weak governance, recurrent conflict, environmental degradation, low food production and high dependence on rain-fed agriculture all threaten food security.

Lurching between floods and drought, the weather is another significant factor for food security. Our understanding of weather and climate is improving all the time and, as a meteorologist, I wanted to turn these scientific advances into practical solutions for African communities, to help them survive and even thrive despite the uncertain climate. But my colleagues and I were unsure what weather information people needed, or what channels to use to exchange expertise. So in 2010 I secured a travel scholarship to go to Africa and start to find out.

I quickly discovered the communication gap wasn't confined to the UK: there were limited opportunities for climate scientists, decision-makers and farming communities to talk together too. Without mechanisms in place for effective dialogue, the latest climate science is not getting through effectively to inform policy. Sudan, for example, has no climate-related policies while climate research in Senegal is limited by weak links between the national meteorology services, universities and user communities. Many talented and motivated meteorology students have little prospect of using their skills in the long term because of severely limited funding.

The stark reality of what this really means hit me in Senegal last year when I saw the large ditches criss-crossing villages where communities lose not just crops but their children, as flash floods carve the ground into ravines of fast-flowing water. If only the villagers knew the storms were coming, children would be called back in from the fields in time.

Poor communication has two outcomes here: people are suffering because they can't access the relevant information at the right time; and countries are not investing in the capacity and expertise needed to build long-term resilience.

Importantly, the communication barriers and institutional links are different for each country, so solutions have to be tailored – but coordinated. I started the Africa Climate Exchange, AfClix, to find ways round these barriers and strengthen these links, so our science could make a difference on the ground in a number of strategically-targeted countries.

Working mainly in Senegal, Sudan and Ghana at first, my role as AfClix director is to understand the existing communication structures and listen to the needs on the ground. My own climate research helps me stay in touch with the latest science

and take ideas from Africa back to the research bench. AfClix takes me outside my comfort zone as I work with users from different sectors and disciplines, but this means we can improve communication and information exchange at every level.

For example, in the absence of better forecasts for farmers at the weekly to seasonal scales, AfClix has helped establish innovative low-cost early warning systems based on monitoring, 'nowcasting' and good communication across communities.

In one pilot project funded by the Climate & Development Knowledge Network, the Senegal Met Service, working with the Red Cross and community leaders, relays weather information to a designated village contact by mobile phone. The news is then posted on a blackboard in the village and picked up by contacts from other villages or spread through local markets – simple but effective. AfClix will support an extension to this pilot over the summer and through AfClix connections, will help extend its reach and learning to other targeted countries.

At the other end of the spectrum, AfClix is helping government policy-makers understand the importance of climate science for improving food security. By demonstrating the economic benefits of relevant weather and climate information, we hope to encourage decision-makers to engage with the issue and put money behind useful initiatives.

Activities on the ground are supported by the AfClix web portal, by helping maintain relationships between the UK and sub-Saharan Africa and signposting access to expertise, data, education resources and news – a facebook for the climate science and humanitarian-policy community.

AfClix projects are now evolving across the continent. We have plans to forewarn coffee cooperatives in Tanzania about extreme weather events which can seriously damage their crops. Farmers will be able to call into a daily radio programme to ask questions such as what seeds to use, when to plant or when the monsoon is starting. These will be answered by climate and agricultural experts from two NGOs, the local university and the national Met Service among others. The farmers will also receive information via a new SMS platform already trialled successfully by the Kenya Met Service. This lets the farmers plan ahead and take action now to deal with approaching weather; heavy rainfall can damage drying coffee beans or even wash away whole crops.

This work relies on building personal relationships and it can't be done from the UK. I travel to Africa every eight to ten weeks, juggling my own research with AfClix work. Although the work is demanding, there is nothing more motivating than sitting down with the village chiefs, NGO practitioners, fellow African scientists and government advisers and ministers, to realise how even small changes can make big differences.

Over two years in Senegal, I've seen significant improvements thanks to the energy and willingness of a committed group of people. Here, in the last year, AfClix has become a sort of 'African response unit', with people from many disciplines coming to us for help shaping their own decisions and solutions.

It's fantastic to see AfClix grow in this way. But it's even better to see how, through simple connections and taking time to listen, our science can make a difference to people's lives.

Dr Ros Cornforth is a meteorologist at the University of Reading, part-funded by NERC as a Knowledge Exchange Fellow to lead the Africa Climate Exchange, with additional funding from the National Centre for Atmospheric Science, the Grantham Institute for Climate Change and the Walker Institute for Climate System Research.

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Photo captions:

Afclix1: Through the Africa Climate Exchange, AfClix, project, African farmers will be able to access information about the weather.

Credit Ros Cornforth

Afclix2: Listening and learning with rural communities in Senegal.

Credit Ros Cornforth

Afclix4: Playing the 'Before the storm' decision-making game as part of the red Cross-HFP Senegal Demonstration Project.

Credit Ros Cornforth