

Protecting lives and livelihoods with new forecasts

The Weather and Climate Information Services for Africa (WISER) programme is helping to deliver a greater range of climate information services tailored to the needs of end users. Not only has Kenya's WISER Western initiative boosted crop yields and fishing catches as intended, it's had an impact in unexpected ways too.

Kenya's weather extremes can have a huge impact on lives and livelihoods, particularly for the millions of people who rely on fishing and agriculture to make a living. The unpredictability of the rainy season and catastrophic weather events can ruin crops and lead to famine. Yet the uptake and availability of climate information services has historically been very low.

"Until fairly recently a lot of African services published just a 10-day forecast," explains Robert Powell, Media Consultant for the Met Office, the UK's national meteorological service. "What's more these medium-term outlooks could appear on any day of the week, which meant they weren't particularly reliable." Radio stations would often take a ten-day forecast and break it down into separate daily forecasts. By the end of the ten-day period the situation could well have changed considerably, making the broadcasts inaccurate. It's not surprising that many people felt that the forecasts just weren't relevant to them, particularly as they tended to offer little localised information.

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Devolution opens doors to localisation

Yet change was in the air, as Kenya began to shift to more decentralised governance. A key development was the recent constitutional reform, which devolved a lot of power and decision making to the 47 county governments across the country. As part of this devolution, the Kenya Meteorological Department (KMD) established 47 representatives (County Directors of Meteorology (CDMs)) to liaise with the county governments. Suddenly the opportunity was there to create highly localised and regular forecasting, making the most of the CDM's deep local knowledge of their county's microclimate.

An initial project funded by the Department for International Development (DFID) – the Adaptation Consortium Project or 'ADA' – was set up in 2014 to develop climate information services for five pilot counties in eastern Kenya. "The main purpose was to create a culture of using climate information in planning for activities influenced by climate, such as agriculture, fishing and livestock farming," explains Ayub Shaka, KMD National Coordinator for the WISER Western project. The ADA project successfully created forecasts and disseminated them to end users.

WISER Western then built on ADA's experience to help Kenya's new CDMs develop their own county forecasts. "The earlier project demonstrated some of the challenges, and WISER Western helped to meet specific needs that had been raised," says Ayub.

In the early days, the emphasis was on seasonal forecasting. "Many people wanted to have information about the duration of a season," says Ayub. "In other words, the onset, dates and peaks, such as when rainfall is highest, and when the season is going to end."

Another key objective of the forecasts was to make sure they were as inclusive as possible. The ADA project had shown the benefits of creating harmonised weekly and seasonal forecasts at a county level, and WISER Western aimed to build on the lessons learned.

One key factor was how to disseminate the information. If the programme developed a weather forecast for just a couple of counties, then the radio stations would ask for a fee to broadcast it. "Giving them an accurate weather forecast that was valued for their entire target broadcast region was something they could win audience with," explains Robert Powell. Consequently, the radio stations were willing to carry the

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forecasts for free. This was a vital result, as one remit of the WISER Western project was to make the cost of information dissemination as close to zero as possible.

Through radio, SMS messaging and the internet, WISER Western was able to reach up to 400,000 households across Kenya. Climate information services were developed in nine counties, and resources are now in place to help develop services in other counties too.

Weekly rather than seasonal

One unexpected development of the WISER Western project was the demand for weekly as opposed to seasonal forecasts. Over the years, there had been considerable investment by donors into developing seasonal forecasting, for instance, assessing the length and impact of the rainy season in three or four months' time. Yet WISER Western showed that farmers were much more interested in weekly forecasts.

Weekly information helped farmers and fishermen plan ahead for the following seven days, and also matched the broadcasting schedules of the radio stations, enabling a regular item that people could listen out for.

Once farmers could see that the information they were listening to had a degree of accuracy, for instance, a prediction of 90% chance of rain on a particular afternoon, then they started using it for decision making. "Farmers were able to see that the weekly forecast was locally accurate," says Robert, "And that they could use it to plan day-by-day activities."

Increased production of up to 20%

The forecasts had a real, practical impact. For instance, by knowing the likelihood of rain at a particular time, farmers were able to plant crops just beforehand, giving the seeds the best chance to germinate. And forecasts of dry spells also helped farmers know when to harvest crops like maize, to avoid any spoilage caused by rain.

Anecdotal evidence shows that the accuracy and reliability of the weekly forecasts had a big impact on agriculture across the region. The CDM in Trans Nzoia county received reports from small-scale farmers claiming an increase in agricultural production of up to 20%. Farmers were using the forecasts to tell whether it would rain in the morning, afternoon or at night, and were able to receive forecasts not just by county, but by climate zone within each county.

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Saving lives and improving catches

The forecasts have had unexpected impacts on the fishing industry too. Kenya has 281 fishing beaches on Lake Victoria, and fishermen benefit most from daily forecasts as they have to sell their fish the very same day they catch them. The WISER Western project used a new, local language radio station to deliver daily forecasts and maritime hazard warnings for Lake Victoria, along with forecasts covering an area 50km from the shore.

Knowing wind speed and direction was crucial to the fishermen, as most of them had boats powered by sail, and wind also influences the waves on the lake. Gusty winds can stir up nutrients from the lake floor, encouraging fish to come to the surface.

So although the original intention was to save lives with the forecasts, the fishermen started using them to predict the best time to go fishing. “They would look at the wind forecast and try to sail with it, rather than against it,” says Robert. With the forecasts in place, fishermen knew when to put on lifejackets and take precautions. “A lot of them now carry telephones and radios in their boats,” adds Ayub.

Following successful pilot phases, the WISER Western programme now has the potential to go much further once sustainable funding is secured. By making these forecasts standard practice, they can boost yields, protect lives and safeguard livelihoods into the future – right across the region.

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