

RWANDA FILLS CLIMATE DATA GAP TO PROTECT AGAINST STORMS



Image credit: Andrew McConnell/Panos

Speed read

- The collection of rainfall and temperature data lapsed after the 1994 genocide
- Records were reconstructed based on station observations and satellite data
- The 30 year data set will help protect people and crops from severe weather

Rwanda's weather service is now better able to forecast floods and other natural disasters after scientists bridged climate-data gaps left by the 1994 genocide.

The collection of national rainfall and temperature records lapsed for after the genocide, and the absence of reliable records had hampered the Rwanda Meteorology Agency's ability to forecast threats such as torrential rain or flooding that damaged homes and crops, and caused fatalities.

But researchers have now combined Rwandan weather station observations from before and after the 15 year gap with satellite data on rainfall patterns over the past 30 years. It has enabled the Rwanda Meteorology Agency to fill hole in its observations, says Marcellin Habimana, a climate processing officer at the agency.

Rwanda's data gap is typical of many Sub-Saharan African countries. "Africa is very sparsely sampled," Elfatih Eltahir, a civil engineer at the Massachusetts Institute of Technology, United States, tells *SciDev.Net*.

There are just 1,152 stations in Africa within the World Weather Watch programme that reports to the World Meteorological Organisation (WMO), so each covers 27,347 square kilometres, according to German NGO the Institute Water for Africa.

In comparison, it says, the 287 WMO weather stations in Germany each cover an area about 20 times smaller than that.

And not all the African stations offer automated weather reporting, says Nick van de Giesen, codirector of the Trans-African HydroMeteorological Observatory, a project that aims to develop a network of 20,000 hydrological and meteorological monitoring stations across Sub-Saharan Africa.

"Instruments tend to fail or drift [in accuracy], errors are made while copying data and sometimes a full station goes offline," he says. "If these errors were completely random, it may not be that problematic as they would average out, but the errors typically are biased." But any human errors in reading or copying tend to have the same biases, he adds.

Failures are also likely to occur during major storms, when they are most needed, says van de Giesen, a water resource expert at Delft University of Technology, Netherlands.

Only a few African stations hold continuous records of climate data over the past 30 years, according to the UN Economic Commission for Africa.

Rwanda's newly integrated data set is one of these complete records, and it offers detailed spatial coverage based around five kilometre square cells, says Habimana of the Rwanda Meteorology Agency.

The data are used to generate publicly available interactive maps that could assist climate research and analysis, he says. The maps allow people to “apply climate information to manage short- and long-term risks with confidence”, he adds.

Source : <http://www.scidev.net/global/climate-change/news/rwanda-climate-data-gap-protect-against-storms.html>