

Southern Africa's first testbed for early warnings of severe thunderstorms launched in Lusaka

Wednesday 7 February 2024

The two-week 'testbed' project aimed at improving early warnings for severe thunderstorms in Southern Africa was officially opened in Lusaka on Wednesday 7 February 2024, with the Permanent Secretary of the Green Economy and Environment Ministry, Dr Douty Chibamba, calling on the region to fast-track efforts aimed at climate change adaptation.

In a speech read on his behalf by Zambia Meteorological Department (ZMD) Director, Mr Edson Nkonde, Dr Chibamba cautioned that the need for early warning systems was more crucial than ever, given the "human-induced" climate change, which, he said, led to more extreme weather conditions.

"Systems that warn people of impending storms, floods or droughts are not a luxury but a cost-effective tool that saves lives, reduces economic losses, and provides more than a ten-fold return on investment," he told guests gathered at the ZMD headquarters in the Zambian capital for the launch, which was followed by two webinars on aspects of the testbed.

"Early warning systems have helped decrease the number of deaths and have reduced losses and damages resulting from hazardous weather, water or climate events, although major gaps still exist, especially in developing states and least developed countries like ours."

Although its main base is the ZMD offices, the testbed has satellite operation centres at the South African Weather Service in Pretoria, and the Mozambique National Meteorology Institute in Maputo. It involves the simulation of real-time nowcasting and short-range forecasting of weather. This is complemented by community engagement sessions at hubs in Kanyama, Katlehong and Boane townships outside Lusaka, Johannesburg, and Maputo, respectively.

As part of the project, a team of international meteorologists, scientists, economists, and user engagement specialists – from the United Kingdom (UK), South Africa, Mozambique, Finland and the World Meteorological Organisation – collaborate to create warnings of severe weather, deliver these to partnering user groups, and co-evaluate the effectiveness of those warnings.

Dr Chibamba noted that the challenges posed by climate change were neither abstract nor distant for the people of Zambia, explaining that the farming community in the country, whom he considered "the backbone of our nation's food and economic security", confronted such challenges daily.

“Irregular rain patterns, prolonged dry spells, droughts, and unforeseen weather events have only emphasized the critical importance of developing weather forecasting tools that can help in strengthening the provision of early warning information and that will create resilient agricultural systems and ensuring our farming communities, agribusinesses, and local institutions are empowered with the knowledge and tools to adapt,” he said.

The government of Zambia, Dr Chibamba added, had spent a whopping US\$3million on 120 automatic weather stations as part of efforts to strengthen the provision of weather and climate services in the country. The stations had just been installed across the country.

“These stations are transmitting weather observations every 10 minutes and the testbed event currently going on is utilising the available data from the ZMD network for real-time assessment of weather conditions, and for validation of the nowcasting methodologies,” he said, adding that the move had modernised and enhanced the spatial coverage and frequency of weather observations.

Now in its second and final week of implementation, the testbed is a Weather and Climate Information Services Early Warnings for Southern Africa (WISER EWSA) project. WISER EWSA is led by the Met Office in the UK, commissioned by the UK government’s Foreign, Commonwealth and Development Office (FCDO), and supported by UK aid from the British people.

WISER seeks to generate novel weather information and ensure that this is communicated and used for disaster risk reduction decision-making while EWSA is about co-producing critical early warning alerts for and with urban populations. This requires several elements including expanding capacity for nowcasting among National Meteorological and Hydrological Services in South Africa, Mozambique, and Zambia.

EWSA also requires understanding the decision contexts of urban populations in order to set appropriate alert levels; and ensuring that the resulting co-produced early warning alerts reach the people who can use these to reduce risk.

The testbed will wrap up operations on Friday 9 February 2024. Southern Africa was preferred as the site of the project due to the region’s susceptibility to extreme weather, which has over the years seen hundreds of thousands of people and livelihoods endangered. In addition, the predicted increase in storms in the region made the area an ideal site for the testbed.

