Being able to predict floods will save lives in West Africa

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Between 2008 and 2020, West Africa experienced unprecedented flooding which devastated agriculture, livestock, freshwater supplies, infrastructure and homes. "The damage has been catastrophic'" sighs Dene Salifou from the Volta Basin Authority's Observatory for Water Resources and Related Ecosystems (Ghana). Climate change is wreaking havoc on food and water security by exacerbating the frequency and intensity of droughts and floods. Between 2001 and 2018, there were 676 floods across the continent which caused 6.3 billion US dollars worth of damage, according to Water and Climate, a report produced by UNESCO's World Water Assessment Programme on behalf of more than 30 United Nations agencies. Only Asia counted a higher number of floods during that period. A report by the United Nations Office for the Coordination of Humanitarian Affairs found that, in 2021 alone, flooding affected over 1.2 million people in 13 West and Central African countries. Some 28 million people were food-insecure, with the largest numbers found in Burkina Faso, Chad, Mali, Mauritania and Niger.

An early warning system for West AfricaÂ - UNESCO's Intergovernmental Hydrological Programme has developed an early warning system for flooding and drought which targets 11 countries with a combined population of more than half a billion, namely, Benin, Burkina Faso, Cameroon, Chad, CÃ´te d'Ivoire, Ghana, Guinea, Mali, Niger, Nigeria and Togo. The project has been financed by Japan and developed in partnership with three local bodies, as well as with the International Centre for Water Hazard and Risk Management in Japan, which operates under the auspices of UNESCO. The three local bodies are the Volta Basin Authority, Niger Basin Authority and the Centre Regional d'Agronomie, Hydrologie et Meteorologie (AGRHYMET), a specialized agency of the Permanent Interstate Committee for Drought Control in the Sahel (its acronym, CILSS, is drawn from its French name) that is based in Niamey, the capital of Niger. Once fully operational with additional funding, the project's web-based platform will collect, analyse and visualize flood-related images to identify practical solutions in real time. National water authorities in the 11 focus countries who fall under the Volta and Niger Basin Authorities will then communicate this information to local communities via face-to-face talks with communities, SMS, radio broadcasts and megaphones. They will receive real-time information on the situation in communities, to enable them to prepare people better for any potential risks. This might entail issuing warnings to move livestock to higher ground, or to pack necessities and leave potential risk areas before the arrival of floodwaters.

The prototype for the web-based platform has been developed by the International Centre for Water Hazard and Risk Management, which functions under the auspices of UNESCO. It is called the Flood Early Warning System for the Niger and Volta River Basin on Data Integration and Analysis System. However, restrictions imposed by the Covid-19 pandemic have delayed the platform's deployment over the past few years. Consequently, the project has focused on providing specialists from participating countries with online training courses in flood risk management. Organized by AGRHYMET, these pre-recorded courses are delivered in English and French. In 2020 and 2021, a total of 288 West African water experts and 44 facilitators from the 11 participating countries received this form of training. These experts are now using their newfound knowledge to train their peers and implement both national and regional flood management programmes in their respective countries. Mr Salifou has been an active supporter of the training programme. He was involved in developing some of the technical courses while undergoing expert training himself in Japan in 2019 and 2020. He says that the project has already made an impact on his work at the Volta Basin Authority, where he serves as Information Systems Manager.Â "I have seen first-hand that the tools and methodology work", he said. For him, the prospects for better flood management in future are good, as long as the project can be deployed rapidly throughout West Africa.

All of the materials developed by the project - self-study courses, remote learning software systems and the web-based flood early warning system - will continue to be operational once the project is over, so that regional institutions in West Africa can continue to access them.

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