Setting-up an hydrometeorological early warning service in Niger: lessons learnt on the co-development approach

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During the last 20 years, floods have become a major hazard in West Africa, particularly in the Sahelian belt, affecting livelihoods, infrastructure and production systems, and hence heavily impacting on sustainable development. The Sendai Framework for Disaster Risk Reduction 2015–2030 recognized Climate Services (CS) as a powerful tool for more effective disaster preparedness. The European research and innovation Roadmap for CS expands their contribution, particularly "hydrometeorological services", to the Sendai Framework. From this convergence, Hydrometeorological Early Warning Systems (EWS) become a strategic target and a building block of preparedness to hydrometeorological risks in developed and developing countries. In West Africa, EWS for floods are in place only for the main rivers and are conceived mainly top-down and hazard centered, lacking links with exposed communities and expected impacts. These gaps reduce the effectiveness of a flood EWS, while engaging local communities since de beginning through a co-production process can improve the effectiveness and ensure better response in case of alert.

Our study aims to present the lessons learnt from the set-up of a Community and Impact Based Flood EWS on the Sirba River in Niger. The service was developed with stakeholders at different levels, leveraging on existing resources and knowledge, using simple but effective approaches and integrating state-of-the-art hydro-meteorological science in a decisional scheme of Sahelian rural areas. This mechanism can be replicable in different contexts characterized by knowledge and structural deficits, by creating a better capacity to exchange data and information and by directly connecting available technical capabilities with the local level. The participatory approach allowed the beneficiaries to define the rules of the system, which, in any case, needed to be consistent with the national legislation and internationally recognized best practices.

The study suggests that it is not necessary to develop complex forecasting tools, while it can be preferable to enhance those already operating and calibrate them on the local scale through risk thresholds, field observations and potential impacts using flood scenarios. The strength of simplicity also lies in not having to spread complex messages, but simply the reference risk scenario, and finally its color-code (according to the international standards of ISO 22324:2015), which already embeds all other information including potential impacts. The simple and integrated approach illustrated in this case study, bridging the gap between top-down and bottom-up approaches, can

inspire Governments, local administrations and development partners to invest in the improvement of existing tools and knowledge and in strengthening cooperation, collaboration and coordination to reduce hazards' impacts and sustain the development of rural and urban areas.