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On the development and operationalization of an impact-based forecasting system to support early action for river floods in Zambia

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Flooding in Zambia occurs on almost an annual basis greatly affecting the livelihoods of communities. Early action is crucial to mitigate the impact of flooding but needs to be guided by an early warning that is credible and actionable, linked to situational awareness based on data. The 510 data team at the Netherlands Red Cross has been working together with the Red Cross Red Crescent Climate Centre, Zambia Red Cross Society, Water Resources Management Authority (WARMA) and Zambia Disaster Management and Mitigation Unit (DMMU) to develop a data driven early warning system to support impact based early action implementation. The system has been co-designed with the relevant local stakeholders and integrates a hydrological model with a vulnerability capacity assessment based on secondary data for the whole country at the highest level of possible granularity (district level). A threshold based trigger model has been developed together with local decision makers to activate the system with a lead time up to 7 days. The system is being integrated in the Emergency Operation Centre operated by Zambia's DMMU as a part of the country standard early action protocol. This paper describes the system design, results from the first activations and lessons learned.