

EGU22-1735, updated on 12 Aug 2022

<https://doi.org/10.5194/egusphere-egu22-1735>

EGU General Assembly 2022

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



Enhancing anticipatory actions for disaster preparedness considering physical and social factors

Paul Block¹, Jonathan Lala¹, and Juan Bazo²

¹University of Wisconsin-Madison, Madison, United States of America (paul.block@wisc.edu)

²Red Cross Red Crescent Climate Centre, Lima, Peru

Climate and weather-related disasters are increasingly expensive and deadly. Hydrologic catastrophes are especially devastating, accounting for over half of all disasters and global disaster victims. Novel approaches are desperately needed for vulnerable communities subject to hydrologic and water-related crises. Post-disaster assistance is a crucial component of disaster relief, however the potential for reducing humanitarian impacts through anticipatory, pre-disaster planning and actions cannot be overstated. Short-term early warning systems are common, yet hydrologic forecasts at monthly or seasonal scales are relatively underused to guide preparatory actions, despite their potential value. Empirical evidence suggests that pre-disaster actions can reduce loss of life and property and result in cost savings for relief and governmental organizations. Such interventions often flow through water management systems, highlighting the central role of water resources decision-making in hazard resilience.

Various humanitarian relief agencies have recently developed operational early action protocols, conditioned on forecasts and risk analysis, outlining trigger criteria and identifying early actions. Concurrently, an extensive number of subseasonal-to-seasonal climate forecast products are now available to derive hydrologic forecasts. Thus there exists significant potential to tailor subseasonal-to-seasonal hydrologic forecast products to appropriately trigger a suite of preparedness actions and decisions across multiple lead times. Various frameworks exist to understand pareto trade-offs in actions and financing, including community-based constraints and preferences. These approaches respond to the strong demand for large-scale, multi-sectoral hydrologic forecast and management tools to enable early preparedness for anticipated drought and flood extremes.