



Moving towards Forecast Based Flood Preparedness in Nepal: Linking Science of Predictions to Preparedness Actions

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Advances in flood forecasting have provided opportunities for humanitarian responders to employ a range of preparedness activities at different forecast time horizons. Yet, the science of prediction is less understood and realized across flood preparedness and response, and often preparedness plans are based upon average level of flood risk. Since, there is no such mechanism that links the science of forecasts within the existing humanitarian landscape, it remains largely unclear among the humanitarian actors about what levels of forecast uncertainties are worthy to react. Working under the remit of Forecast Based Financing (FbF), here we present ongoing initiatives in Nepal on how available flood and weather forecast products are informing specific pre-emptive actions in the local preparedness and response plans, thereby supporting government stakeholders and humanitarian agencies to take early actions before an impending flood event.

Most of the major river basins of Nepal are equipped with early warning systems and there are existing protocols and mechanisms to communicate early warnings and plan for emergencies. However, early warnings based upon real-time observation of river levels upstream provide shorter lead times for response. Nepal Department of Hydrology and Meteorology, has already operationalized three-day deterministic rainfall forecasts while the rainfall runoff models for the hydrological forecasts are currently being tested for major river basins. Similarly, the Global Flood Awareness System provides stream flow forecasts few weeks in advance for major rivers of Nepal. Capacities and technological advances on climate and weather forecasts are gradually opening the window of opportunity between forecasts and hazard events to take early actions. Developing thresholds and triggers for available forecasts of different timelines and identifying sensible early actions as Standard Operating Procedures (SOPs) provide a unique opportunity to link scientific forecasts with early humanitarian actions.

World Food Program and Practical Action have been collaborating with Nepal Department of Hydrology and Meteorology and Ministry of Home Affairs to operationalize Forecast Based Flood Preparedness (FbFP) in Nepal. Based on the available forecast products, thresholds and trigger levels have been determined for different flood scenarios. Matching these trigger levels and assigning responsibilities to relevant actors for early actions, a set of standard operating procedures (SOPs) are being developed, broadly covering general preparedness activities and science informed specific anticipatory actions for different forecast lead times followed by the immediate response activities. In the first phase, SOPs were developed for six flood prone districts of Mid and Far West Nepal which were tested in recent 2017 August flood by Ministry of Home Affairs through its district emergency operation centres. Taking the learnings and experiences from the pilot phase, the project is now aiming to out scale the concept and approach to entire flood plains of Terai. Successful implementation of this science based approach across the entire flood prone regions of Nepal would be instrumental to take forward global commitments on disaster risk reduction, climate change adaptation and sustainable development goals.