

Informing anticipatory humanitarian action: a framework for using ECMWF forecasts effectively

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Abstract

Some humanitarian crises are due to the effects of forecastable phenomena such as heatwaves or hurricanes. In principle, it is possible to take forecast-based action in advance of the event, that can reduce the impact or simply accelerate the response. Using ECMWF forecasts effectively in this context is a balance between the timescale of useful action (more can be done to reduce impact with longer lead times) and the timescale of useful predictability (the forecast is less confident at longer lead times). We set out a framework for achieving this balance based on evaluation of past ECMWF forecasts. For heatwave in Pakistan, we showed that there is an opportunity for confident humanitarian intervention before an event occurs, saving lives and money relative to the scenario of acting only after the crisis. This was tested last summer, activating a humanitarian response to an extreme heat event in Sindh province during Ramadan 2018. In other cases, it may not be possible to make a confident enough forecast at the required lead time; in this situation, humanitarian decision-makers can save time by taking forecast information off the table. Our framework illustrates how to embed ECMWF forecasts into real-time decision-making loops to support different forms of intervention (direct release of funding, insurance-based approaches, etc.), while also exploring whether or not the practitioners might benefit from changing the parameters of their decision-making process to accommodate the weakness of the forecast system. The ultimate aim is to make ECMWF forecasts more useable and increase the anticipatory disaster risk reduction applications in which they are used.