



Satellites, tweets, forecasts: the future of flood disaster management?

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Floods have devastating effects on lives and livelihoods around the world. Structural flood defence measures such as dikes and dams can help protect people. However, it is the emerging science and technologies for flood disaster management and preparedness, such as increasingly accurate flood forecasting systems, high-resolution satellite monitoring, rapid risk mapping, and the unique strength of social media information and crowdsourcing, that are most promising for reducing the impacts of flooding. Here, we describe an innovative framework which integrates in real-time two components of the Copernicus Emergency mapping services, namely the European Flood Awareness System and the satellite-based Rapid Mapping, with new procedures for rapid risk assessment and social media and news monitoring. The integrated framework enables improved flood impact forecast, thanks to the real-time integration of forecasting and monitoring components, and increases the timeliness and efficiency of satellite mapping, with the aim of capturing flood peaks and following the evolution of flooding processes. Thanks to the proposed framework, emergency responders will have access to a broad range of timely and accurate information for more effective and robust planning, decision-making, and resource allocation.