

## **Multi-dimensional perspectives of flood risk – using a participatory framework to develop new approaches to flood risk communication**

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Flooding is a major hazard across Europe which, since, 1998 has caused over €2 million in damages and displaced over half a million people. Climate change is predicted to increase the risks posed by flooding in the future. The 2007 EU Flood Directive cemented the use of flood risk maps as a central tool in understanding and communicating flood risk. Following recent flooding in England, an urgent need to integrate people living at risk from flooding into flood management approaches, encouraging flood resilience and the up-take of resilient activities has been acknowledged. The effective communication of flood risk information plays a major role in allowing those at risk to make effective decisions about flood risk and increase their resilience, however, there are emerging concerns over the effectiveness of current approaches.

The research presented explores current approaches to flood risk communication in England and the effectiveness of these methods in encouraging resilient actions before and during flooding events. The research also investigates how flood risk communications could be undertaken more effectively, using a novel participatory framework to integrate the perspectives of those living at risk.

The research uses co-production between local communities and researchers in the environmental sciences, using a participatory framework to bring together local knowledge of flood risk and flood communications. Using a local competency group, the research explores what those living at risk from flooding want from flood communications in order to develop new approaches to help those at risk understand and respond to floods. Suggestions for practice are refined by the communities to co-produce recommendations.

The research finds that current approaches to real-time flood risk communication fail to forecast the significance of predicted floods, whilst flood maps lack detailed information about how floods occur, or use scientific terminology which people at risk find confusing or lacking in realistic grounding. This means users do not have information they find useful to make informed decisions about how to prepare for and respond to floods. Working together with at-risk participants, the research has developed new approaches for communicating flood risk. These approaches focus on understanding flood mechanisms and dynamics, to help participants imagine their flood risk and link potential scenarios to reality, and provide forecasts of predicted flooding at a variety of scales, allowing participants to assess the significance of predicted flooding and make more informed judgments on what action to take in response.

The findings presented have significant implications for the way in which flood risk is communicated, changing the focus of mapping from probabilistic future scenarios to understanding flood dynamics and mechanisms. Such ways of communicating flood risk embrace how people would like to see risk communicated, and help those at risk grow their resilience. Communicating in such a way has wider implications for flood modelling and data collection. However, these represent potential opportunities to build more effective local partnerships for assessing and managing flood risks.