

# Challenging Radical Uncertainty in Science, Society and the Environment (CRUISSE)

## Project Two: Multi-stakeholder communication in flood management

Principal Investigator: Dr David Benson (University of Exeter)  
Co-Investigator: Dr Irene Lorenzoni (University of East Anglia)  
Co-Investigator: Dr Nick Kirsop-Taylor (University of Exeter)  
Lead Researcher: Dr Rebecca Pearce (University of Exeter)

### Project summary report

#### 1. Introduction

A shift towards promoting community flood risk management (FRM) in the UK has been driven by government policy, resulting in a polycentric landscape of community flood groups. According to the Environment Agency (EA, 2015: 4), empowering communities to become more flood resilience has become a key governance focus, primarily through ‘partnership working’ defined as ‘a shift from the Environment Agency acting on its own... towards multi-agency partnerships sharing resources and goals’. A greater role for community volunteering has additionally been promoted through community flood groups, community flood forums and informal community networks (ibid.). However, while some preliminary evaluation has been undertaken (Twigger-Ross et al. 2014; 2015; Benson et al. 2016), little data are available on current community based FRM governance, emergent groups and the flood risk communication strategies employed. Indeed, the extent to which FRM communication has evolved in the mitigation of flood risks within community FRM under conditions of radical uncertainty<sup>1</sup> is an important research question, particularly in respect of the Environment Agency’s current FCERM National Strategy Review. It is interesting that the Committee on Climate Change’s most recent report (CCC, 2018) on coastal management in relation to climate change underlines, for instance, the limitations of official information for conveying risks to stakeholders. Focusing on current communication around erosion risks, the report argues that information on uncertainty, how risks change over time and actions individuals may take to reduce vulnerability could be improved.

#### 2. Research design

The research conducted by the *Multi-stakeholder communication in flood management* project aimed to better understand conceptualisations of uncertainty in flood risk management in order to improve the effectiveness of communication and hence overall governance of community FRM in South West England. This research aim is encapsulated in the overarching research question which guided the project investigations: ‘*How does stakeholder understanding of uncertainty influence the communication of risks and building of resilience in flood management partnership responses?*’ In meeting the research aim, the project sought to achieve three main objectives:

- Understand if and how individual conceptualisations of uncertainty shape effective multi-stakeholder communications of risks in management of floods;
- To identify the risk communication dynamics that impact how community flood risk management operates in relation to managing flooding;
- Draw conclusions and learn lessons about how and why groups communicate in managing floods for improving communication strategies, leading to research-informed recommendations and best practice points for dissemination to stakeholders and policymakers.

#### 3. Key findings

The research objectives were addressed by: (i) a systematic web based search to identify risk communication strategies in community FRM; (ii) collaborative in depth qualitative research into multi-level communication. The survey revealed two main trends. Firstly, a substantial diversity in community FRM exists across the South West of England. Groups were categorised according to a matrix devised

---

<sup>1</sup> Defined here in terms of decision-making conducted in response to complex ‘wicked’ challenges under conditions of limited knowledge of alternatives and possible outcomes, requiring solutions derived from multiple perspectives.

using criteria for leadership (either government agency or community-led) and institutional scales of operation (multiple, local) (Benson et al. 2013), The findings showed that in addition to the four sub-types identified by Defra (2015: 6-7), namely multi-agency partnerships (MAPs), community flood forums (CFFs), informal community communication ‘hubs’ (ICCHs), and community flood groups (CFGs), the search also identified government-funded short-term EA or lead local authority flood control projects (FCPs) that have a community collaborative element. Secondly, these groups were employing a wide range of FRM communication strategies. The web search examined evidence of digital media use, plans and strategies, communication tools and public communication techniques. The principal communication methods, however, were flood risk or hazard plans, often based on EA derived flood risk hazard mapping, and EA flood warnings.

From the sample of community flood groups identified, a case study of multi-level community FRM was selected for in depth study on the effectiveness of communication, particularly in conveying uncertainty in flood risks to stakeholders. Over 30 interviews were undertaken in the case study, with the results revealing some interesting findings. Interviewees conceptualised flooding in terms of its risks to people (the individual, and the community) and to capital (property and infrastructure). They were largely pessimistic about their abilities to affect the impacts of current and future flooding, and discussed uncertainties in terms of flood risk uncertainty, economic impact uncertainty, and development risk uncertainty. These uncertainties appeared to be affecting their faith in, and engagement with institutions, thereby leading to the emergence of a culture of ‘self-help’. They discussed how their flood risk communication varied across temporal and geographical scales, but that broadly this communication was not considered effective (in terms of effecting institutional responses and changes, and widespread community engagement towards risk).

#### **4. Project value**

The project has three types of value in addressing radical uncertainty in FRM. Firstly, it explicitly prioritised co-creation of this knowledge with community stakeholders. Given the sensitivity of the subject for many individuals who consented to participate, a collaborative approach was the only effective means for conducting such investigations. Secondly, it is evident from the research that radical uncertainty is not coherently considered in community FRM communication. The project is therefore pioneering in revealing much about how, potentially, this issue could be countered in the future: a matter of urgency given recent predictions on UK climate change impacts. Thirdly, the research shows how a transdisciplinary research process could support such a dialogue. Web search data highlighted the dominance of Optimum Choice Framework (OCF) responses to local FRM in the South West. Modelling of flood risks has formed the basis of Environment Agency flood risk maps and localised flood risk plans, while EA early warning systems rely on Met Office climate predictions. Cost-benefit analysis also drives government agency flood risk investment decisions. Although critical in highlighting potential and immediate flood risks, OCF approaches are unable to fully communicate radical uncertainty in FRM, particularly around long term climate change, sea level rise and land use. Moreover, current top down communication strategies based on OCF decision-making often miss vulnerable societal groups, necessitating new ‘paradigmatic’ thinking.

In conclusion, our research demonstrates how a transdisciplinary agenda could help radically reshape our approach to FRM communication. Interviewees generally identified disconnection with conventional communication approaches, leaving vulnerable actors living effectively ‘off the radar’ from the current FRM governance system. While our study was necessarily limited in scope, a scaling up of findings would infer a sizeable proportion of the population are similarly disengaged: which is concerning given recent climate change predictions. Coping with radical uncertainty in FRM decision-making will, we argue, necessitate more qualitative, in-depth approaches to understanding this disconnection, using established empirical and theoretical tools such as narratives, role-play scenarios, experience-based anticipation, feedback learning and expert elicitation. Of particular interest to this area of study is the intuitive role of emotion and place-based attachment in FRM communication. Building the relationships of trust necessary for effective communication of risks under future radical uncertainty will require better understanding of individual stakeholder emotions (e.g. fear, happiness, distrust, anger) and also, as a result, the intrinsic values they place upon flood threatened property.