

R&D Technical Summary W5-024/TS

Improving flood warning awareness in low probability and medium – high consequence flood zones

Background

Since the review of the flood events in 1998 and 2000, the need to increase public awareness of the risk of flooding has been a priority for the Environment Agency. Generally the areas targeted to increase awareness have been those communities calculated to be at the higher end of the “at risk” spectrum. Under its terms of operation, the Environment Agency is duty bound to provide a flood warning service. Low probability flood zones, where flooding consequences may be medium to high, potentially present large risks to the public and the Agency owing to a number of factors, including a false sense of security if areas are defended to any degree.

Approach to the research

This report is the culmination of a two phase R&D project to identify a series of recommendations for the Agency in developing strategies to raise awareness of flood risk in low probability medium-high consequence flood zones. A broad review of various approaches to risk communication in terms of flooding and other hazards both in the UK and elsewhere was undertaken to identify key lessons learnt. This review was taken from both literature as well as from practice, with input obtained from an array of stakeholders engaged in flood risk management and communication both within the UK, as well as from three other countries, namely The Netherlands, Australia and the United States. All of this background work is captured in more detail within the four appendices accompanying the report.

Emerging trends in risk communication to lower probability audiences

Developing communication strategies for raising awareness in audiences in low probability flood zones is a relatively “new territory”. Factors already having a significant bearing on a flood communication strategy is that awareness raising initiatives are run during “quieter periods” and as such “...focus on attempting to motivate people to deal with infrequently occurring and destructive or disruptive hazards whose nature and intensity do not lend themselves readily to mitigation by individual action”. Other issues identified as potentially impacting on the development of communication strategies included:

- Low probability events demand different management to more frequent low consequence events and therefore attention should be given to the types of warnings issued and preparedness expected
- Risk communication strategies are often based on a typology of risk defining which stakeholders are classified as being “at risk” or not
- Ensuring public acceptance is not simply a matter of providing simplified explanations of terminology – recognising that understanding is gained through dialogue and allows effective buy in to a process by stakeholders
- An integrated approach to risk reduction involves a range of interventions, e.g. land-use planning (both on floodplains as well as within the headwater catchment area), control of run-off, flood storage, flood warning, insurance, improving flood resistance of property and the operation and maintenance of flood defences
- The technological aspects of flood risk management (modelling, planning and design) tend to focus on a system response and are able to consider a limited number of scenarios
- IT has been recognised as playing an important role in the development of disaster-prepared communities, in relation to preparedness, individual and collective mobilisation during a disaster and a capacity for post-disaster recovery and learning, thereby reducing the impact of the event by increasing a community’s resilience
- The increasing need for transparency and inclusiveness in the decision-making processes owing to the broad range of stakeholders involved.

Therefore key recommendations on flood risk communication from other research suggest that:

- Be sensitive to how the effect of a potential disaster is portrayed to an audience as if the perception is of the hazard being insurmountable and emotionally threatening, it will lessen the likelihood of appropriate steps being taken. Therefore, conveying information in a manner that causes neither hostility nor denial of the messages is more likely to lead to successful up-take of the messages
- Ensure effective risk management by engaging stakeholders in the development of a communication strategy given that risk management decisions are becoming increasingly complex as they involve elements of probability, uncertainty and variability.

Key aspects to developing risk communication strategies in low probability flood zones

Key aspects that should be considered when developing risk communication strategies for low probability flood zones are identified under the following headings as captured in section 4 of the main report:

- Identifying key issues from the research
- Profiling the target audience
- Defining communication objectives
- Defining and positioning the “product”
- Defining components of the message
- Identifying channels to the audience
- Identifying the communication mix.

Recommendations for flood risk communication strategies to low probability medium-high consequence areas

The overall aim of this project has been to identify recommendations for the Agency in terms of informing the development of communication strategies for communities living in low probability medium-high consequence flood zones. Given the structure of the Agency is tiered from national to local level, the recommendations for such strategy development, in our view, needs to address both aspects of the organisation, i.e. strategic and implementation.

(a) Development of a communication decision-support tool

The “local and personal face” is seen as an important component of a communication strategy. There are a number of risk communication approaches that can be used at a local level, but there is limited experience or research specific to the techniques used for low probability risks specifically for flood risk communication. Therefore experience and knowledge gained within the Agency’s Area Teams are valuable to the organisation, and should be captured and shared more formally.

The advantages such a tool could offer to the Agency includes:

- Enabling Area Teams to better understand approaches available to them
- Giving recognition to Area Teams that have been successful in using approaches and from whom lessons can be learnt
- Developing and retaining knowledge within the organisation as well as the individual / teams
- Enabling the sharing of knowledge across Areas
- With time, enabling a benchmarking of approaches in relation to overall risk communication strategy
- Enabling greater consistency in the presentation of risk messages within the overall communication strategy – another aspect of risk communication identified during the baseline study
- Allowing for specific feedback within the organisation, e.g. with the National Team able to identify options and Area Teams to feedback results.

Developing such a tool to be web-enabled, available on the Agency’s intranet would also enhance all of the above points even further.

(b) Inclusion of risk psychology in training of Area Team members

There is currently a standard three-day course run at intervals during the year to which Agency staff can attend. It is suggested that risk psychology is included as a component to this training. Alternatively, a short course or possibly training workshops could be run with Area Teams across regions as an internal campaign. Both could be undertaken in low cost terms, the advantage of the latter is that if done with teams, it would ensure an even and immediate platform of knowledge.

(c) Recommendations for further research and evaluation of approaches

The work and approaches being adopted by the Agency in relation to flood risk communication is already held up by practitioners in other countries as example of significant investment in hazard management and mitigation. However, in relation to risk communication in low probability flood zones, some further recommendations have been identified:

- Further research into groups to understand the value systems and perceptions, which are critical components in developing successful communication strategies
- Evaluation of the role that insurance can take in positively promoting awareness in low probability groups
- Evaluation of groups' perceptions of the benefits of flood mitigation works
- Evaluation of the presentation of flood risk information in low probability flood zones, both in terms of flood maps and other supporting information
- Review of what is considered/advised as effective action by the Agency to be taken by individuals given the broad range of audiences
- Evaluation of the possible role of surveyors in informing potential home owners of flood risk and guidelines in terms of their dispensing advice on available mitigation options
- Development of greater consistency in the quantification and qualification of the significance of risk across categories, as used by a number of stakeholders, e.g. insurance industry, local authorities, the Agency, etc.
- Consideration of how the Agency positions itself when working in partnership, as there is some evidence that adopting a partnership strategy will assist the Agency in getting the right message across to individuals and communities in low probability flood zones more effectively.

Conclusion to R&D project

It takes considerable time and effort to get a message across and build up awareness of a hazard. Key lessons from this study drawn across for individuals and communities in low probability high consequence flood zones have shown that the design and implementation of more effective programmes for hazard mitigation require multiple channels and partners, and involve highly targeted programmes focusing on how the information is presented.

This R&D Technical Summary relates to R&D Project W5-024 and the following R&D outputs:

- **R&D Technical Report - *Improving flood warning awareness in low probability and medium – high consequence flood zones, published May 2005.***
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- **R&D Technical Report Appendices - *Improving flood warning awareness in low probability and medium – high consequence flood zones, Appendices 1 to 4, published May 2005.***
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