Research and Development

Final Project Report

(Not to be used for LINK projects)

Two hard copies of this form should be returned to:
>   Research Policy and International Division, Final Reports Unit
>   DEFRA, Area 301
>   Cromwell House, Dean Stanley Street, London, SW1P 3JH.
> An electronic version should be e-mailed to resreports@defra.gsi.gov.uk

Project title	Community and Public Participation: Risk Communication and Improving Decision Making in Flood and Coastal Defence
DEFRA project code	**FD2007**
Contractor organisation and location	Scott Wilson Kirkpatrick & Co Ltd 71 Victoria Street London SW1H 0SW
Total DEFRA project costs	£ 89,850
Project start date	01/11/01
Project end date	04/01/03

Executive summary (maximum 2 sides A4)

Scientific report (maximum 20 sides A4)

EXECUTIVE SUMMARY

Scott Wilson, with assistance from Risk & Policy Analysts Ltd (RPA) and others, has undertaken a Research & Development project, on behalf of the Department of Environment Food and Rural Affairs (DEFRA) and the Environment Agency, entitled: **Community and Public Participation: Risk Communication and Improving Decision Making in Flood and Coastal Defence**.

The aim of this study was set out in the brief and is as follows:

"To review the effectiveness of consultation and communication procedures and practices used in flood and coastal defence in England and Wales and, from this, to put forward suggestions for best practice methodologies to enable the public and stakeholder groups to better appreciate flood and coastal defence issues. From this, appropriate recommendations may be put forward on how to effectively raise awareness and understanding and thus seek to reduce conflicts when implementing flood and coastal defence policies, projects and plans."

The research was split into two phases. The first has produced recommendations on improving risk communication. The second phase is to build on this work by developing guidance on public participation and conflict resolution in flood and coastal defence decision-making. This report provides details of the research undertaken during phase one only and reports its findings. The specific objectives pertaining to this phase of work are reproduced below.

- to understand better the public attitudes towards flood and erosion risk, so that policy can be developed accordingly;
- to evaluate risk communication techniques against a range of user needs and data availability and, from this, to identify best practice techniques for use in raising the level of understanding and awareness by those who live and work in high risk areas, low risk or populations potentially at risk from flooding;
- to identify effective practices to improve the understanding of flood and coastal defence terminology, and
- to develop techniques for improving awareness, knowledge and expectations on sensitive flood and coastal defence policy issues.

The conclusions and recommendations section is structured in a manner that ensures that all four of these "stage one" objectives are addressed in full by this report

This first phase of the project investigated 12 case studies, of either fluvial flooding or coastal flooding and erosion, throughout England. Four of the case studies were undertaken in detail including interviews with officials and focus groups with members of the community. The remaining eight were undertaken using a postal questionnaire survey only. This approach to the case studies allowed both an in depth analysis of the complexity of the issues, as well as some breadth to the information gathered to ensure that all variables were covered. See the table overleaf for details:

Four detailed case studies (focus group and interviews)	Uckfield Holderness	Bewdley Arun to Adur
Eight less detailed case studies (postal questionnaires)	Wigan Alconbury Rea Valley Yalding	Boston Taunton Nottingham Worcester

The results of the case study were augmented with a literature review (which formed a separate report) and two national round tables, of invited national experts and flood action group members. This combination of methods, including those used within the case studies, ensured that sufficient data was collected. The analysis was undertaken by "triangulating" the different data to identify emerging themes.

The results of this project are summarised below:

- it is risk perception not risk understanding which is the major barrier to communication;
- the public can not be treated as one target group as in reality they are made up of many different groups with different perceptions;
- the use of return periods as a means to communicate risk was not well received - a range of methods of expressing probability should be used;
- the principle behind the Indicative Flood Plain Maps (IFM) was thought to be correct. However, the lack of detail and perceived inaccuracy undermined their value;
- evidence from the case studies suggest that the public believe that the risk of flooding is increasing. The reasons that are cited are mainly man made;
- the risk message is diluted due to the presence of local rumours, mistrust of officials and scepticism of their competence;
- there were examples of where the public found that there was an inconsistency between the warnings they received from Floodline and the Automated Voice Messaging System (AVM). This reflected a wider perception that there was a lack of coordination both within and between key bodies with responsibility in flood and coastal defence;
- the way the public perceives risk is influenced by the factors that worry them. This research suggests that different members of the public are worried by a variety of factors.
- more effective public participation in schemes and plans can help build trust and understanding within the community which in turn helps communicate risk more effectively, and
- there is often significant expertise in the local community that is not fully utilised.

The recommendations of the report are reproduced below, categorised under the four objectives of the study:

To understand better the public attitudes towards flood and erosion risk, so that policy can be developed accordingly.

> **Recommendation One:-** There is a need to develop a typology of risk communication to assist the Environment Agency (and others) to effectively deliver a flood 'message'. The typology will also help in developing policy in flood and coastal management. The typology is reproduced below.

Category	Barriers to Communication	Recommendations
Experienced Regular Flooders And those that have other flood and coastal experience	No significant barrier to communication. They may have become resigned to, or aware of the limitations of Government action. These people are a very useful source of local and sectoral expertise.	Involve these people in participative processes. Provide mechanisms by which they can gather their own information and make their own decisions. e.g. Floodline
Inexperienced Irregular flooders	Generally mistrustful of officials and very angry at the lack of action. Believe that concrete action will eventually be taken. May believe that the risk of flooding is increasing due to human intervention. May also subscribe to local rumours as to the cause of the flood; especially when a perceived lack of action provides space for these rumours to grow. Have useful local knowledge.	More face to face two way contact between officials and the public. Need a clear explanation of the decision making process. Need to convince people that the risk of harm can be reduced. Need to address local rumours directly. Need to convince them that if the likelihood of flooding can't be reduced then the risks can be ameliorated through reducing harm. The reduction in harm is something the public can do reasonably effectively on their own. It is vital that the authorities provide effective and coordinated assistance during and after a flood event for this strategy to work. In addition, one needs to identify trusted local community leaders and train them in risk communication. Involve them more in planning of defences in the area.
Lack of Understanding Those that have not been flooded, have received information and do not understand the risk	This is not merely an issue of raising awareness. It probably requires face to face meetings and a variety of techniques and media. There also needs to be a clearer explanation of risk. This may be helped by a different definition but will require additional changes to the communication process.	Concentrating the message on potential for harm as well as likelihood. Identify key members of the community who are trusted. Provide basic training on risk communication and assist them in disseminating the information. Efforts should be made to draw attention to comparable risks that people face more often in daily life. Explore the use of aerial photography and digital terrain models. A selection of terms for communication the risk of flood and erosion should be used delivered via local flood action groups, the local press, and/or leaflets
Information Deficit Those that have not been flooded and have not received the information	The deficiencies of the Environment Agency's Flood Warning Public Communication Database (FWPCD) and people who are constantly moving in and out of the area.	The FWPCD risk database needs to be maintained regularly, and information needs to be updated and use made of the local media. Local community contact/flood warden needs to identify movers and help induct newcomers.
Not at Risk Those that will not be flooded	Deficiencies of the FWPCD	General awareness work in order to raise understanding nationally to enable this group of people to assist neighbours/ make informed choices when moving house. Articles in the press and the radio and television news which do not just concentrate on those that have flooded, but also pointing out that many areas that are at risk have not flooded in recent years.
Communication Deficit Those that are difficult to reach This may also include those whose physical or mental impairments require more resources to ensure that the message reaches them	These people are very difficult to reach, they do not read direct mail or use local media. This is primarily, at least initially, an awareness raising exercise.	Information needs to be personalized. Once again including issues of harm in the risk message may help raise awareness. Use of local flood action group or a nominated Warden to actively talk to people An exhibition in the immediate area where people are not aware run by local people may be useful.
Informed but Unconcerned Those	These people have come to the informed conclusion that the benefits	Continue to inform that help is available and the risk of an event occurring, particularly if this changes.

that aware of the risk but are unconcerned	of their location outweigh the risks of flooding and do not wish to be communicated with.	
Third Parties A wide range of trades and professions are involved with properties in the floodplain. Also, many agencies are involved with dealing with flood events	Lack of awareness of relevant issues. For example, there is now a need for a formal risk assessment for developments in the floodplain (PPG25). Similarly, electrical sockets should not be placed at ground level and, as many have discovered, road vehicles cannot operate in flooded streets. May be useful to distinguish between locally owned businesses and ones that are managed on behalf of a national company.	Wider circulation should be given to practical guidance documents such as the DTLR's 'Preparing for Floods' (aka the Orange Guide) There is a need for improved emergency planning for flood events. This is likely to require a multi-agency approach (as well as additional funding from Government). Start a dialogue with national chains such as Boots, Blockbuster Video, supermarkets etc so that they can disseminate information to their employees.

To evaluate risk communication techniques against a range of user needs and data availability and, from this, to identify best practice techniques for use in raising the level of understanding and awareness by those who live and work in high risk areas, low risk or populations potentially at risk from flooding.

Recommendation Two:- The above typology should be used to develop a communication strategy which meets the needs of the different groups identified by the typology. The current communication strategies employed by the Environment Agency need to be re-evaluated to reflect the typology developed above. Currently a number of media and messages are already used. However, this needs to be broadened so that those who are more difficult to reach and those that have difficulty understanding the messages are reached. This should apply equally to both awareness raising generally and warnings of impending flood/erosion events.

Recommendation Three:- When communicating risk, a balance needs to be struck between, on one hand, promoting increases in the preparedness of the public and their potential for self and mutual assistance, and on the other hand, avoiding potentially increasing anxiety and promoting feelings of disempowerment and apathy.

One means of achieving this balance is to combine risk communication initiatives with efforts to promote the potential for self and mutual assistance, through, for instance, the greater use of self help guides, particularly amongst those who have not had experience of significant flood events. This may help avoid the tendency for feelings of helplessness to promote apathy and blame seeking.

Recommendation Four:- in order to help maintain public confidence in official ability to accurately communicate risk greater coordination is needed between organisations responsible for flood and coastal management. For example, there is some indication that the public perceive that the AVM in inaccurate this may need verifying possibly through independent monitoring.

---

*Recommendation Five:-*In assessing current levels of risk it is important to draw a distinction between estimated return periods (or equivalent) of past events and the frequency of flooding (or rate of erosion) experienced in practice. Wide circulation of the local historical flooding records may help make this distinction. Other measures for communicating historical flood events are to use markings on lamp posts, bridges and churches. However, such signs need to be developed in close cooperation with the community and perhaps individualised to help build community ownership and reduce the chance of them being removed due to the prospect of blight. The resolution of insurance issues should help avoid people removing historical signs of flood.

Recommendation Six:- The following are examples of best practice in risk communication which could be used to communicate risk more effectively:

- in Birmingham and Hillfrance flood action groups have been involved in helping to publish and distribute local newsletters;
- in Bewdley local flood wardens have provided an important link between the officials and the community. They can also provide some continuity where there is high staff turnover;
- in Birmingham a local flood liaison officer has been employed by the Council to provide an important link between the Council and the flood victims;
- in Bewdley the local EA officer took people to see some reservoirs which had been the subject of a local rumour. This helped convince the community that they were not the cause of the flooding or FAGs taking on an information advisory role, and
- flood defence committees need to be made more accessible and open.

Recommendation Seven:- Rumours concerning factors which are believed to be exacerbating flood risk must be taken seriously by the relevant authorities and efforts made to (a) recognise their validity and investigate them, and (b) address them as far as is practicably or politically feasible or explain that they are not really significant. Ignoring such rumours alienates the public and provides fertile ground for their growth and spread, whilst addressing them enables false rumours to be explained and put to one side. This, in turn, provides for efforts to be focused on other 'rumours', which are worthy of investigation and/or further efforts to explain and put to one side. The propagation of false rumours can hinder efforts to develop public participation and address the 'real' issues.

To identify effective practices to improve the understanding of flood and coastal defence terminology.

Recommendation Eight:- In dealing with flood (and erosion) risk, there needs to be a greater distinction between the components of risk - likelihood (or probability) and the resultant harm. In order to achieve this a standardised set of terminologies employing year on year % chance, odds, return period, or probability of flooding as compared with similar more well known risks, all of which are well known to the Environment Agency, should be developed. Furthermore, these terminologies should be accompanied with a short and concise explanation that the harm from an individual flood event can vary due to the depth and duration of the flood and the self help measures undertaken.

This full range of terminologies should always be reproduced together on any official publication regarding the risks associated with flood and coastal defence. This will help reduce the reliance on return periods, which was not well received during the study, as the favoured form of risk communication at present.

Although, there may be merit in using qualitative terms (such as high, medium and low), there needs to be further debate as to how such terms should be derived from numerical terms. In relation to the 'harm' component of risk, there needs to be a clearer emphasis that this is most likely to be influenced by self-help measures.

Recommendation Nine:- In relation to 'difficult' issues, which the experts feel are not easily communicated, one means by which the communication could be facilitated is through the use of 'easy to understand' leaflets or briefing notes which explain to the lay-person such concepts as the national flood and coastal defence policy, the importance of sediment transport and the use of economics in decision making. This will help manage expectations and aid more public participation in planning. These leaflets need to emphasise the human impacts of flooding and need to be circulated to a targeted section of the public using the typology above. Furthermore, if the local community is involved in their development and distribution it may increase the chance of readership.

Recommendation Ten:- The IFMs could be improved and suggestions form the research include: more local detail; depths of floodwater; possible flow direction and local variations in topography. They could take account of current flood management schemes and should be easily updateable. The practicality of layering maps so that more detailed scales can become available should be investigated. Maps could also become part of the property related searches undertaken by solicitors but not estate agents. The maps should also include a clear explanation of the risk as described in recommendation Five.

To develop techniques for improving awareness, knowledge and expectations on sensitive flood and coastal defence policy issues.

> **Recommendation Eleven:-** Greater use of comparisons to other risks people face in daily life to communicate risk. No comparison is perfect so it cannot be relied upon in isolation. It needs to be complimented by the other techniques as described in recommendation five. A possible example is the use of data on the likelihood of house fires.

> **Recommendation Twelve:-** There is great potential to capitalise on the potential of community expertise, networks and champions to (a) gather information concerning the behaviour of water, flood risks and appropriate responses, (b) assist in the development and utilisation of appropriate risk communication strategies, and (c) assist in the development and operationalisation of appropriate flood response strategies and actions (including post-flood measures). The Environment Agency and Local Authorities could play a facilitating role in providing information and some resources to help communities take some responsibility for their own risk communication and flood preparation. Recommendation six shows some good practice examples of officials and the community working together

> **Recommendation Thirteen:-** Information put forward by local people should be assessed and, where appropriate, employed in decision-making processes. There are few things more guaranteed to alienate locals than discounting and ignoring the information they offer, even if it does contradict 'expert' opinion. Furthermore, such information may prove to be of value in modelling and assessment exercises.

> **Recommendation Fourteen:-** Feedback should be seen as an essential part of the consultation process. It is just as important to explain why an option has not been pursued as to why the preferred one has been chosen. Moreover, there is a need to demonstrate to the public that officials do appreciate the wider issues.

> **Recommendation Fifteen:-** The role and workings of some existing flood and coastal defence institutions could be given much more publicity - and, indeed, may provide a suitable forum for stakeholder concerns to be expressed and considered.

> *Recommendation Sixteen:-* Token public participation can be more damaging than no participation; it is important to (a) provide the public with accessible and comprehensible information on the case issues, particularly concerning wider-geographical scale, longer-term and strategic budget issues; (b) demonstrate that all options and their consequences are openly detailed to the public; (c) elicit their views and priorities in a thorough and appropriate manner; (d) demonstrate that the publics views and priorities are fully considered in decision-making processes; and (e) subsequently explain the basis on which decisions have been made. The appropriateness of different approaches to achieving these aims in different contexts and at different levels will be explored in phase 2 of this study.

Finally, a work plan for phase two of the research has been proposed. The revised work plan takes into account the findings of phase one and acknowledges a closer relationship between the two phases than originally envisaged by the brief. This second phase of work, if approved, will draw upon some of the research into public participation undertaken during phase one and revisit some of the original case studies, to enable detailed guidance on risk communication, public participation and dispute resolution to be developed.