

Collaboration with civil contingency partners and communities for improved FCERM outcomes

Improving Institutional and Social Responses to Flooding

Science Report: SC060019 Work Package 3



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It's our job to make sure that air, land and water are looked after by everyone in today's society, so that tomorrow's generations inherit a cleaner, healthier world.

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Author(s):
Lindsey Colbourne

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Research Contractor:
Lindsey Colbourne Associates

Environment Agency's Project Manager:
Jacqui Cotton, Rivers House, Leeds

Collaborator(s):
Elham Kashefi
Will Medd
Nigel Watson

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Steve Killeen

Head of Science

Executive summary

Recent efforts to cope with and recover from major floods in the UK have mainly been successful where professional partners and communities have worked together. Collaboration will become more important with the need to prepare for future flooding in the UK.

This report summarises work carried out under Work Package 3 of the project Improving Institutional and Social Responses to Flooding. The overall aim of this work package was

'to understand what is needed to achieve a successful partnership with the Environment Agency's professional partners (as defined under the Civil Contingencies Act) in effectively responding to a flood incident. And in the light of this information, to provide whatever practical tools and guidance might be useful for developing the institutional capacity required, so that staff can work more effectively in partnership in flood incidents across England and Wales.'

The focus on 'partnership with professional partners' was later broadened to encompass 'collaboration with professional partners and communities'.

The approach to this work involved:

- 1) Establishing current practices to ensure this report builds upon and feeds into rather than duplicates what is already happening.
- 2) Developing practical tools/frameworks to help boost collaborative working with professional partners and communities on flood management.
- 3) Encouraging the use of the tools/frameworks.
- 4) Reviewing findings and making recommendations for taking the work forward.

This research finds that there is significant room for improving the way that the Environment Agency collaborates with professional partners and communities on flood and coastal erosion risk management (FCERM). The work also suggests that examples of good collaboration result from individual initiative rather than from corporate incentives and processes. It is of some urgency now that the approach to collaboration is improved across the organisation.

Three possible levels of change are put forward:

- **Level 1:** Improving collaboration through the provision of better expert analysis and data
- **Level 2:** Improving collaboration through the development of more accessible, actionable information and relationships
- **Level 3:** Improving collaboration by enabling integrated planning and action

The Environment Agency may naturally focus on the first level. This however, will not enable the Environment Agency, professional partners, communities and individuals to manage the complexity and urgency of flood and coastal erosion. It is proposed instead, that the focus of effort should be on developing actionable information and relationships through:

- Equipping staff with the permission and skills to collaborate with professional partners and communities as a core part of their work.
- Greater emphasis on recovery and planning for collaboration in the future, rather than relying on collaboration in a crisis.

- Greater recognition of the value of what others do, and developing processes which enable the Environment Agency to support their work.
- Improving the way that day-to-day meetings and 'partnerships' with professional partners and others are planned for and run, building in a greater element of two-way collaboration to overcome the current emphasis on one-way information giving.
- Improving the way that data and information is shared with professional partners and others.
- Bringing clarity to the way the Environment Agency works with and supports efforts by communities, including the use of drop-ins, flood ambassadors, flood wardens and community flood plans.

A toolkit which includes examples of current practice is provided with the aim of supporting the immediate application of some of these findings.

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This report builds on the work of many others, through reports, workshops and indirect means. In particular, thanks to the following for their ideas and suggestions:

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1 Introduction

This report outlines practical tools and recommendations from Work Package 3 of the project *Improving Institutional and Social Responses to Flooding* (IISRF).

1.1 Objectives of Work Package 3

The objectives of this work package were “to understand what is needed to achieve a successful partnership with the Environment Agency’s professional partners (as defined under the Civil Contingencies Act) in effectively responding to a flood incident. And in the light of this information, to provide whatever practical tools and guidance might be useful for developing the institutional capacity required, so that staff can work more effectively in partnership in flood incidents across England and Wales.”

The focus on ‘partnership with professional partners’ was broadened by the IISRF Project Board in April 2007 to encompass ‘collaboration with professional partners and communities’ as a result of the findings of Work Package 3’s interim report published in March 2007¹.

1.2 Approach to Work Package 3

The approach adopted for this study consisted of the following:

- Establish the current practice of flood management to ensure this Work Package adds value to and builds upon rather than duplicates what is already happening.
- Develop practical tools to improve collaboration with professional partners and communities on Flood and Coastal Erosion Risk Management (FCERM), and encourage the use of such tools.
- Review findings and make recommendations for taking the work forward.

The study made use of the following:

- Interviews with staff and civil contingency partners.
- Literature review and web searches.
- Workshops, training and planning sessions with flood incident management (FIM) staff involved in the summer 2007 floods in the North East and Midlands regions.
- Evaluation of Environment Agency-run meetings with professional partners and communities in Midlands region, and with *Building Trust with Others* mentors.
- Attendance at the Extreme Flood Conference in 2006.
- Involvement of the project board and Virtual Sounding Board throughout the project.

¹ *Improving collaboration with professional partners and communities: A review of practice and evidence.* Work Package 3 Interim Report (March 2007). Included as Appendix 1 to this report.

1.3 Accompanying reports and evidence

This report outlines practical tools developed under this project. The analysis and evidence underpinning the report are set out in an accompanying report: Improving collaboration with professional partners and communities: A review of practice and evidence (Appendix 1).

2 Practical proposals for improving collaboration with civil contingency partners and communities on FCERM

2.1 Introduction

This section sets out key findings from the literature and current practice reviews, and makes proposals for immediate use (Section 2.3) and longer term systematic change (Section 2.4).

2.2 Key findings from the research review and current practice

The accompanying report, *Improving collaboration with professional partners and communities: a review of practice and evidence* (Appendix 1) shows that collaboration does not just add value to FCERM, it is essential to its success. With shifts in Government and EU policy and policies such as Making Space for Water and the Water Framework Directive, high profile flood incidents and lessons learned, it is no longer possible to deliver FCERM without working collaboratively with others such as civil contingency partners (CCPs), communities, individuals and organisations with the knowledge/capacity/ presence/resources to deliver. With the lessons learned reports from the summer 2007 floods suggesting the Environment Agency taking on a strategic overview role inland and on the coast², it is essential that the Environment Agency and its professional partners find effective ways of collaborating within what Nigel Watson and colleagues at Lancaster University have termed 'an increasingly complex and chaotic operating environment'.³

One finding of the review is that there is currently too much emphasis on what is termed 'partnership', without a clear understanding of what is meant by the term or what it means in practice. Partnership is a very specific form of collaboration that is appropriate only in some very specific situations. The work suggests the use of the term 'collaboration', is more appropriate, together with the use of frameworks such as the typology of collaboration adopted by the Building Trust programme⁴. This would help bring greater clarity to the kind of collaboration required and to value all forms of collaboration⁵. For example, interviews and experience showed that during the summer 2007 floods, successful collaboration with professional partners very much depended on successful informal networking and relationships.

² Environment Agency (2007) *Review of 2007 Summer Floods*. Recommendation 12. Pitt (2007). *The Pitt Review: Learning lessons from the 2007 floods*. IC19.

³ Appendix 2

⁴ *Building Trust* is the Environment Agency's engagement programme, run by its corporate affairs directorate.

⁵ *Building Trust with Others* (2007). LCA supplementary guidance. Unpublished.

Table 2.1: Typology of collaboration, adapted from Building Trust with Others/LCA

Type of collaboration	Why you might want to use this type of involvement or collaboration	Examples of techniques that you might use
Involving others in decision-making		
Information gathering - targeted	a) Finding out specific information from specific people/organisations to inform a decision b) Collecting and analysing day to day, non solicited feedback from your stakeholders to inform any decisions.	<ul style="list-style-type: none"> ➤ Meetings ➤ Interviews/surveys ➤ Customer feedback ➤ Front line staff feedback ➤ Drop ins
Information gathering - broad	Informing decisions by gathering views as widely as possible from professional partners, the community and others. Often one off involvement.	<ul style="list-style-type: none"> ➤ Market research surveys ➤ Focus groups ➤ Exhibition/ questionnaires ➤ Meetings ➤ Drop ins
Involving	Enabling others to shape decisions on an ongoing basis. This results in longer term and more influential relationships in which final decisions are made by the Environment Agency, but based on the working relationship with those involved.	<ul style="list-style-type: none"> ➤ Advisory bodies ➤ Liaison groups ➤ Planning groups ➤ One-to-one relationships
Deciding together	Sharing the decision-making equally with stakeholders.	<ul style="list-style-type: none"> ➤ Partnerships ➤ Dialogues
Involving others in practical delivery		
Information giving	Letting others know of decisions, opportunities, ideas. This may or may not be with the intention of altering their perceptions or behaviour. Informing may also involve sharing views/listening to different points of view, and allowing people to understand differences, rather than explicitly trying to inform the community and others about decisions.	<ul style="list-style-type: none"> ➤ Updates at meetings ➤ Exhibitions, drop-ins, guided tours ➤ Education programmes ➤ Talks, presentations ➤ Public relations work through the press
Co-delivery and capacity building	Working with and enabling others to do/deliver something, such as closing flood gates, collecting data, raising funds.	<ul style="list-style-type: none"> ➤ Silver/Gold command activities ➤ Training others to put up temporary flood defences ➤ Giving grants ➤ Operating volunteer schemes
Coordination/networking	Maintaining relationships, sharing information, ensuring coordination	<ul style="list-style-type: none"> ➤ Virtual networks/list serves ➤ Conferences ➤ Informal meetings, lunches ➤ Doing the day job – on the phone, in the community

The Civil Contingencies Act (CCA) provides a basic framework for this collaboration, establishing in broad terms the need to collaborate, with whom and when. As our review shows⁶, there are some excellent examples of collaboration. CCPs are taking the initiative alongside the Environment Agency – local authorities and the Fire and Rescue Service in particular, but also parish councils, the National Flood Forum and local businesses.

Building on these successful examples, the review suggests that collaboration can – and should – take place in a cost effective way throughout the flood risk cycle, from planning and prevention through risk assessment and warning to response during flooding and aftercare, recovery and adaptation. It needs to involve collaboration on sharing/discussing information and data on flooding, on designing and planning how to improve flood resilience and on delivering.

Table 2.2: A framework for collaborative activity across the flood cycle

Type of activity	Stage of flood cycle			
	Planning and prevention	Risk assessment, warning (preparedness)	Response during flooding (readiness onwards)	Aftercare, recovery and adaptation
Data: share/discuss information	What data or information sharing can help with planning and prevention?	What data or information sharing can help with risk assessment, warning and preparedness?	What data or information sharing is needed during a flood?	What data or information sharing is needed after a flood?
Design: designing and planning	What designing and planning can be done to prevent flooding risks?	What designing and planning can be done to help effective risk assessment, warning and preparedness?	What designing and planning is needed during a flood?	What designing and planning is needed as part of aftercare, recovery and adaptation?
Deliver: practical activities	What can be done on the ground to prevent flood risk?	What can be done on the ground to deliver effective flood risk, warning and preparedness?	What can be done on the ground during a flood?	What can be done on the ground to assist with aftercare, recovery and adaptation?

The review identifies three types of possible collaboration within this framework, requiring engagement at different levels of seniority and in a range of situations: from setting the conceptual strategic direction through day-to-day and preparatory coordination to crisis response (see Table 2.3). Again, the review found good examples of all these types of collaboration, but the most successful examples result from the skills/abilities/risk-taking/rule-bending of individual members of staff⁷. At one level, this finding is not surprising: it is well established that trust is built in individuals rather than in institutions⁸, and that collaboration can only be achieved by staff with skills and commitment to do the job. However, the findings also point to the fact that there is not the organisational culture, processes or support to ‘mainstream’ collaboration by the Environment Agency within its FCERM work. Indeed we have found that often the organisation as a whole rewards one way information giving and resists collaboration.

⁶ Appendix 1

⁷ Appendix 1

⁸ Brooks (2007). *Building Trust with Others*. Presentation of evidence by Cath Brooks, 2007. Based on Petts et al. (2002). *Understanding public perception of risk*.

Table 3: Types of collaboration: the three Cs

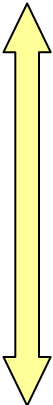
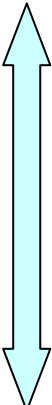
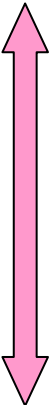
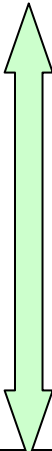
Type of collaboration	Characteristics			
	Strategic prevention	Senior level	Formal	Scheduled
<p>Conceptual/strategic Brought together to strategically tackle underlying causes of flood risk</p> <p>Example: Local Resilience Forums (LRFs)</p>				
<p>Convening/coordinating Brought together to share information and data, and improve relationships</p> <p>Example: Agreement on data sharing such as radar data on rainfall shared between Environment Agency, Yorkshire Water and Bradford MDC</p>				
<p>Crisis/co-delivery Brought together in response to crisis</p> <p>Example: Sub-regional emergency plan.</p>	Operational delivery	Front line	Informal	As and when

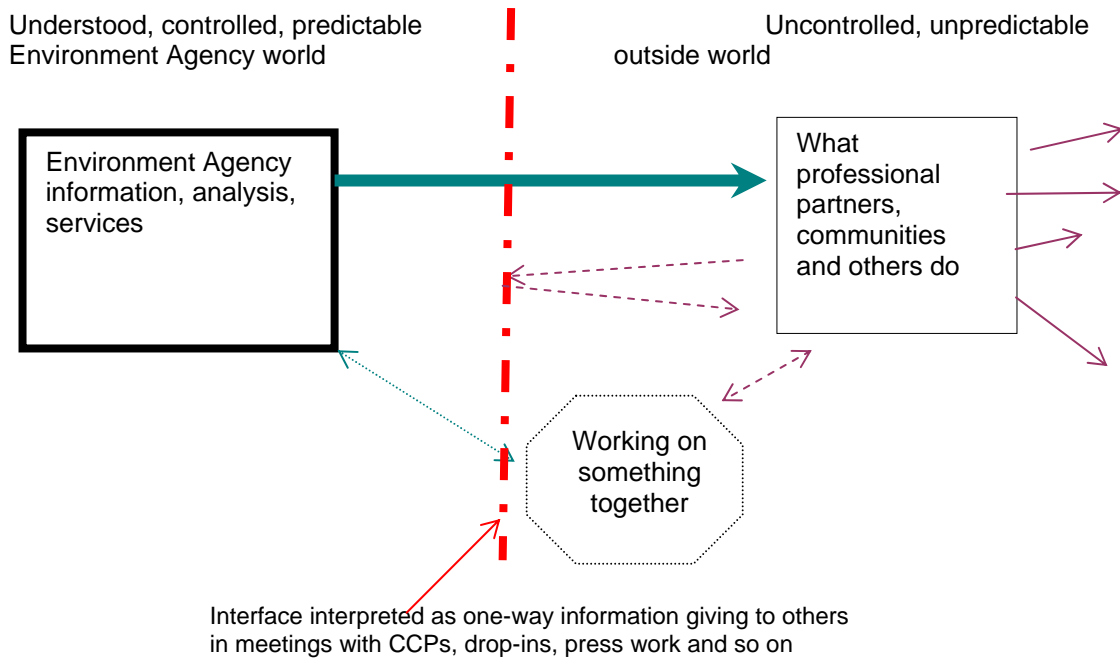
Figure 2.1 below sets out a way of conceptualising the current resistance to collaboration, whereby the temptation to stay within the ‘understood, controlled, predictable Environment Agency world’, and resist all interaction with the messy outside world results in interfaces, such as meetings with CCPs, post-flood drop-ins and even the way that press relationships are approached, being mostly about one-way information giving by the Environment Agency.

As part of this project, Lindsey Colbourne Associates (LCA) attended Environment Agency run meetings with communities and LRF partners as observers in order to explore one of those interfaces – meetings within the LRF structure. The meetings showed a strong tendency to approach the meeting from the position that “the Environment Agency is here to provide a technical/specialist service”. This translated into the presumptions that:

- We [the Environment Agency] know we’re doing the right thing (or as much of the right thing as we can given our resources).
- No one else can, or should need to, really help us (of if they can it takes too much of our time to get that to happen).
- Our job is to pass the information over – yours [other organisations] is to use it [and deal with the messy bits]
- We can’t take/don’t deserve any criticism and will defend against suggestions or different points of view.

This results in loss of the potential added value of meeting face-to-face with collaborating bodies (see analysis in Section 2.7). This finding chimes very much with that of other work packages of the IISRF project, for example the emphasis on *giving* flood warnings, and it misses the added value that two-way collaboration to ensure the warning is *responded to* can bring.

Figure 2.1: Resistance to collaboration



The resistance to collaboration, and emphasis on turning all interfaces with others into one-way information giving as illustrated in Figure 2.1, can influence – and stifle – the motivation and delivery of almost all types of engagement. Table 2.4 sets out how the Environment Agency-centric view might affect different types of collaboration. For example, where the Environment Agency wants to inform others, such as through flood warnings or through an exhibition about flood risk, the motivation can be either to bring others round to ‘our’ way of thinking (which leads to an emphasis on one way provision of information), or it can be about sharing understanding and increasing capacity (which leads to emphasis on two way collaboration and shared delivery). Clearly there is enormous added value of the latter in enabling more effective responses to flooding and more flood resistant communities.

Table 2.4: Influence of different motivations on engagement with others

Collaborative motivation	Type or level of engagement	Organisation centric motivation (one-way information)
Convening/supporting others to understand and do what they need to do. <i>Motivation: More resilient communities</i>	Devolve decision-making and action to others E.g. Community emergency plans	Telling others it is not (or it is no longer) within organisational responsibility/budget ... so they have to do it themselves. <i>Motivation: reduced responsibility</i>
Process of negotiation, boundaries determined by what is appropriate. <i>Motivation: Greater capacity to deliver</i>	Decide together E.g. Local Resilience Forums (LRFs)	Formal agreements bounded by organisational considerations. <i>Motivation: Clear responsibility/accountability</i>
Flexible continuous negotiation. Evolving. <i>Motivation: Shared learning and better decisions</i>	Involve E.g. Meetings with CCPs	Formal structures. Tightly controlled. <i>Motivation: Bring others along with us</i>
Continuous process feeding into decision-making. <i>Motivation: More informed decisions</i>	Gather information (consult) E.g. Drop-ins, surveys	Discrete activity at arm's length from the core decision-making process. <i>Motivation: Due process</i>
Explicitly meshing our views/needs with those of the target audience. <i>Motivation: Shared understanding and increased capacity</i>	Inform E.g. Issuing flood warnings	Telling/educating. <i>Motivation: Bring others round to our view; shed responsibility</i>

As a result of this resistance and focus on a one-way interface with the world (the right hand column of Table 2.4), the Environment Agency is not generally viewed as a naturally collaborative organisation, and it is not yet comfortable with dealing with the 'increasing complexity'⁹. In an analysis Lindsey Colbourne Associates conducted for the Making Space for Water project SD6 (2007)¹⁰, the forces which hold back further collaboration are shown to be strong (see Figures 2.2 and 2.3). As a result, there are many examples of poor relationships and poor responses to flooding.

This finding is of concern not just in the existing day to day operations of the Environment Agency. The Environment Agency is taking on the strategic overview role on the coast and inland: This role will require a collaborative mindset which engages the 'whole system' (rather than the Environment Agency's own specialisms alone) in understanding the issues, in identifying possible solutions and implementing those solutions.

⁹ This is discussed in more detail in the IISRF Work Package 4 Report. See Colbourne (2008a)

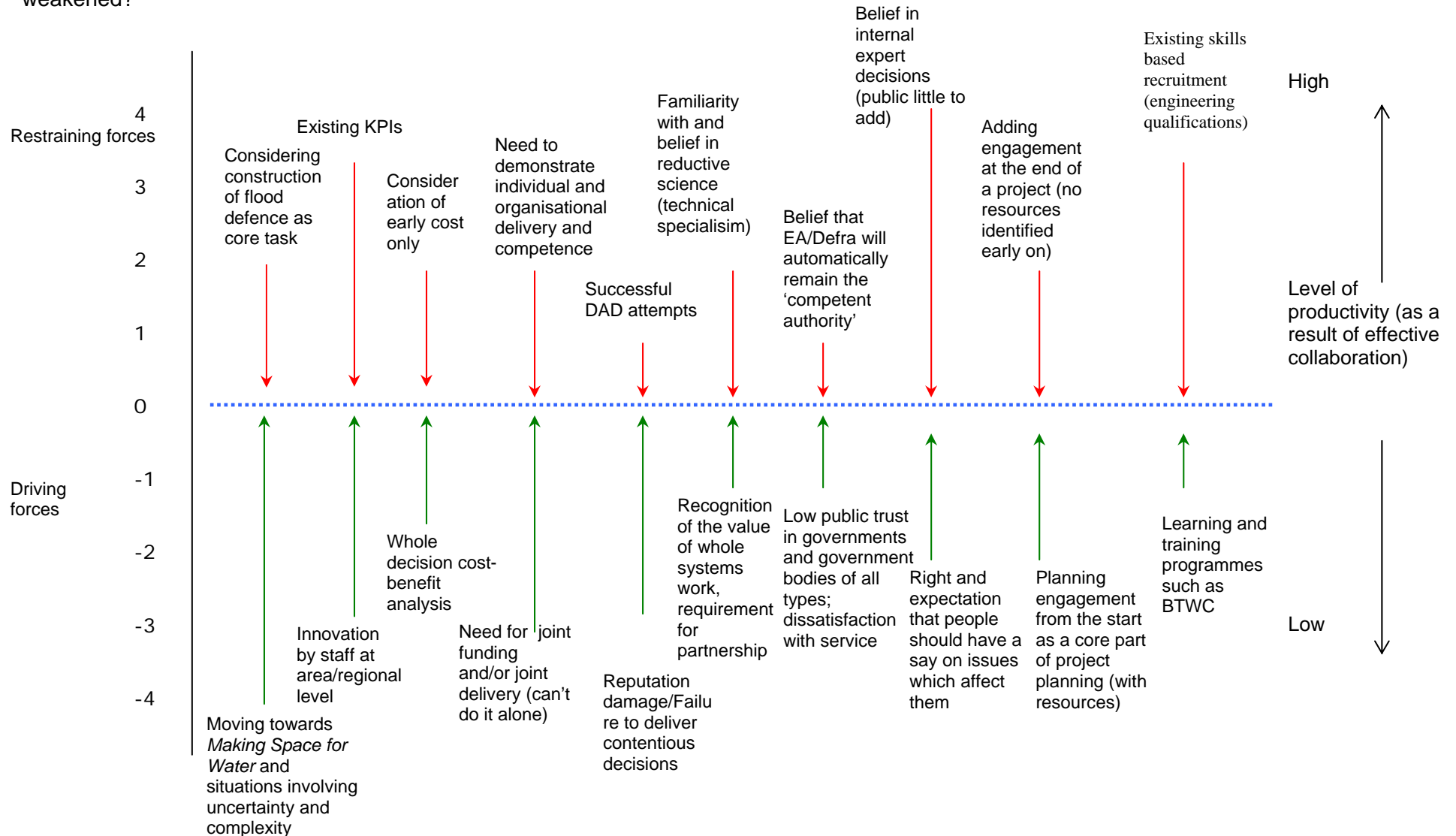
¹⁰ Included in Thomas *et al.* (2007) *Building stakeholder and community engagement* (SD6)

Figure 2.2: Forces influencing a more collaborative approach

	Driving force which supports or drives collaboration	➡	⬅	Restraining force which inhibits collaboration
#		strength		
1	Moving towards Making Space for Water and situations involving uncertainty and complexity	-4	+2	Considering construction of flood defence as core task
2	Innovation by staff at area/regional level	-3	+3	Existing key performance indicators
3	Whole decision cost-benefit analysis	-2	+2	Consideration of early cost only
4	Need for joint funding and/or joint delivery (can't do it alone) e.g. Civil Contingencies Act	-3	+2	Need to demonstrate/justify individual and organisational delivery and competence
5	Reputation damage/failure to deliver contentious decisions	-3	+1	Successful DAD attempts
6	Recognition of the value of whole systems work, requirement for partnership	-1	+2	Familiarity with and belief in reductive science (technical specialisms) and need to defend one view
7	Low public trust in governments and government bodies of all types; dissatisfaction with service	-1	+1	Belief that Environment Agency/Defra will automatically remain the competent authority
8	Right and expectation that people should have a say on issues which affect them	-2	+4	Belief in internal expert decisions (public or others have little to add)
9	Planning engagement from the start as a core part of project planning (with resources)	-2	+2	Adding engagement onto the work at the end (not having resources identified)
10	Learning and training programmes such as BTWC	-1	+3	Existing skills-based recruitment (requirement for engineering qualifications)
	Total	-22	+22	

Figure 2.3: Force Field Model: Driving and restraining forces for collaboration

Forces seek equilibrium: To encourage change, create asymmetry between forces. Which of the restraining forces can be removed or weakened?



2.3 Practical, cost-effective ways to improve collaboration with professional partners and communities

The previous section points to many opportunities for change within the Environment Agency in order to support collaborative working for successfully on flood management. Proposals for addressing this in a systematic way are set out in Section 2.4.

This section outlines some practical starting points that could be implemented now, within current practices and procedures.

The proposals here have been based on – and tested by – interviews, planning, training sessions and workshops with staff and civil contingency partners, observations at meetings between the Environment Agency, partner organisations and communities and by the Building Trust with Others programme. A practical toolkit has been produced to support the recommendations.

In summary, the observations and proposals are:

- Staff need permission and skills to do collaboration as a core part of the work.
- Collaboration is often instigated in a crisis. Greater emphasis is needed on recovery and planning for effective collaboration in the future.
- Greater recognition is needed of the value of what others do – developing processes which enable the Environment Agency to support the work of others.
- Improve the way that day-to-day meetings and ‘partnerships’ with professional partners and others are planned for and run, building in a greater element of two way collaboration to overcome the current emphasis on one-way information giving.
- Improve the way that data and information is shared with professional partners and others, in particular overcoming some of the ‘myths’ around sharing information and data and how to increase the two way exchange rather than one way provision of information
- Bring consistency and clarity to the way that the Environment Agency works with/supports efforts by and with communities, specifically around the use of drop-ins, flood ambassadors, flood wardens and community flood plans.

2.4 Staff need permission and skills to do collaboration as a core part of their work

2.4.1 Evidence

A recurring theme in the research, interviews, literature and workshops is just how much good practice is down to individual initiative. It is an obvious point, but an important one. Even within the constraints of current culture, KPIs and AMS, individuals (within the

Environment Agency, local authority, the community and other partner organisations) are almost always identified as the real reason for breakthroughs. They are also usually the focus of trust in the organisation (**'organisations aren't trusted, but the individuals within it'**¹¹).

However, the staff involved in collaborative activity with partners and communities feel strongly that the organisation does not support them. As one Flood Incident Manager put it:

"Locally it doesn't seem as though there is national support or understanding for what we are trying to do here [on community-based incident plans] – we need more guidance from the Environment Agency in terms of what we want to do with communities.

*There are no KPIs or working structures to support the community-based incident plans. This means it is all a bit hand to mouth, and dependent on getting the resources (people/time) to do it. [The Regional Flood Manager] is supporting staff to do this, and in many rural areas there is recognition that it is the only way to do it. On paper it doesn't make sense in terms of the number of properties at risk, but in rural areas it is the only way we can do it."*¹²

This lack of corporate support/incentive and the high staff turnover in organisations such as the Environment Agency contributes to loss of direction/learning/trust when these 'leading lights' move on.¹³ Some also raised the problem of (the Environment Agency) relying on consultants, so relationships and understanding are not built within the organization.

One way of addressing this is to broaden the conception of skills required to 'do the job':

"In addition to technical support, the Environment Agency needs to respond to the psycho-social needs of the flood victims and to feel and demonstrate greater empathy. It was felt that the Environment Agency would benefit from being less authoritarian by empowering innovative individuals within the organisation.

Not all staff members should be expected to be brilliant at working with local communities. Part of the Environment Agency's skill will be to select staff who want to be trained for working with communities."¹⁴

Our observations at many Environment Agency-run meetings clearly highlights the difference that skills can make – staff skilled in collaboration use the time to build relationships, new projects and positive outcomes. Those who are not tend to plan the meetings as one-way information giving, and can be defensive and resist discussion /suggestions from others. Clearly this is a huge waste of time and effort: it takes no longer to run a meeting effectively and the outcomes are significantly greater.

So what skills are needed?¹⁵

- ✓ One-to-one skills – building personal relationships, listening, understanding.
- ✓ In room skills – running effective participatory meetings, making clear decisions, working with consensus and common ground.
- ✓ Within-organisation skills – influencing, pushing boundaries, making the organisation work for the situation (rather than the other way around).

¹¹ Brooks, 2007. Ibid

¹² Interview with Flood Incident Manager. February 2007

¹³ See Wilkinson (2004) *Joining Up: Stockbridge Pathfinder*. This evidence was corroborated by interviews/observations in 2007 in the Environment Agency's South West and Midlands regions.

¹⁴ Environment Agency (2005). *Involving communities and citizens in flood*.

¹⁵ Adapted from the *Review of partnerships and inter-organisational working* included as Appendix 2.

- ✓ Cross-organisation skills – understanding other organisational cultures, establishing appropriate relationships, identifying common agendas.
- ✓ Public/community -facing skills – empathising, dealing with anger, being ‘can do’. In his submission for this work package, Rose (2007)¹⁶ says it is critical to be specific about the skills and intelligences required for this work, and to recruit, assign or enable people with collaborative skills and preferences (as in Myers Briggs types ENFP and ESFP¹⁷) to oversee consultation and outward-facing work. One such skill is interpersonal intelligence, as shown in Figure 2.4.

Figure 2.4: A description of Gardener’s interpersonal intelligence

INTERPERSONAL INTELLIGENCE		
- Used for communicating with others (Gardener)		
<p>The ability to work effectively with others, to relate to other people and display empathy and understanding, to notice their motivations and goals. To think about and understand another person. To have empathy and recognise distinctions among people and to appreciate their perspectives with a sensitivity to their motives, moods and intentions. It involves interacting effectively with one or more people among family, friends or working relationships.</p>		
Characteristics:	Likes:	Learning techniques:
<ul style="list-style-type: none"> ✓ Relates to and mixes well with others ✓ Puts people at ease ✓ Has numerous friends ✓ Sympathetic to others' feelings ✓ Mediates between people in dispute ✓ Good communicator ✓ Good at negotiating ✓ Cooperative 	<ul style="list-style-type: none"> ✓ Being with people ✓ Parties and social events ✓ Community activities ✓ Clubs ✓ Committee work ✓ Group activities/team tasks ✓ Managing/supervising ✓ Teaching/training ✓ Parenting 	<ul style="list-style-type: none"> ✓ Learn from others ✓ Work in teams and learn together ✓ Talk to others to get and share answers ✓ Compare notes after a study session ✓ Make use of networking and mentoring ✓ Teach others ✓ Socialise during breaks ✓ Throw a party to celebrate/reward your success

¹⁶ Rose (2007). For detail see the section on the psychology of change in IISRF Work Package 4 report (2008).

¹⁷ The Myers Briggs type indicator and its application to organisations is discussed in Bridges,(2000), *The character of organisations*.

2.4.2 Recommendations

Clearly one way of improving collaboration is to have staff with the skills to do it. They need to be recognised, recruited and supported to 'do their stuff' and to help others to do the same: Especially when they move on.

There is also a need to support continuity of approach, and to notice and challenge individual behaviour that is not conducive to effective relationships.

The following are considered key to building collaborative capacity within the Environment Agency and with partners, as recommended by *Better Engagement and Risk Communication – Building Stakeholder and Community Engagement (2007)*¹⁸;

- Revise Capabilities Dictionary, Job Profiles and Resource capacity to ensure we can meet resource demands and ensure staff have appropriate new skills.
- Work with willing staff to build up relevant skills of rapport and engagement planning (making it a less seemingly chaotic process) with those in relevant and key FCERM roles, including provision of tools, systems and processes
- Recruit and assign or enable people with the right inter- and intra-personal skills to oversee consultation and outward-facing activities
- Work strategically and tactically with other organisations 'culturally' better equipped to carry out some engagement tasks through new Governance arrangements and seek mentoring opportunities.
- Limit formal classroom-style training and consider in-house programmes as demonstrated by BTwC. These are cost-effective and can be tailored to FCERM needs through sharing of good practice with external support.
- Development of a 'safe' network for sharing practice, including a recognised and supported internal and external mentoring network, the use of the intranet for sharing experiences (good and bad), guidance and support.
- Develop our FCERM consultants' abilities to understand, support and encourage engagement, including use of specialist engagement agencies.

2.5 Planning now for future collaboration (not waiting for a crisis)

2.5.1 Evidence

"They're all pointing the finger at each other, saying you're responsible – one party's blaming another." Business, Sheffield¹⁹

As set out in Section 2.2, this review identifies three types of collaboration at different levels of seniority and in a range of situations: from setting the conceptual strategic direction through day-to-day and preparatory coordination to crisis response.

¹⁸ Thomas *et al.* (2007) Ibid.

¹⁹ Quoted in the Pitt Review (2007)

However, practice shows that collaboration (as opposed to simple information giving or exchange) is

a) most often instigated in a crisis, and

b) not followed through after the crisis in order to either support the recovery process or to improve performance next time round.

For example, we found in the Midlands, North East and Thames Regions that multi-organisational post flood drop-ins were by far the most useful and best received: collaboration working in a crisis. As yet there has been no follow-up through the Local Resilience Forum (LRF) sub group (or equivalent) to plan collaborative drop-ins in the future, despite suggestions that it should happen.²⁰

The good news however is that there does appear to be an appetite for such coordination/strategic (as opposed to crisis) collaboration. For example district and county council, police, waterways and fire/rescue service representatives attending Local Resilience Forum Gloucestershire County Flooding Sub group²¹ suggested many practical ways of collaborating proactively in the future to improve resilience next time round, including:

- Get planners together to talk about implications for future, including covering information such as return periods and what that means for building in the flood plains, planning permission and so on.
- Work together to decide how to refer to the floods in work with press, presentations and so on, so that a clear and consistent message is given as to the likelihood of the floods returning (Are they a one-off? An extreme event? A sign of things to come?). This will affect what people do to prepare (or not) in the future.
- Awareness-raising campaign jointly not just on how to floodproof/prepare for flooding, but also on how to not add to the problem (for example not concreting over drives). This could involve contacting estate agents, solicitors to educate them about responsibilities as house owners (as done by the District Council in Stroud)
- Joint approaches to leaflets going out in flood season, work with radio stations and the media.
- Using data from other organisations (such as police) to calibrate gauge information and warnings.
- Deciding the names of the new Flood Watch Areas together, so that they mean something to all who are meant to respond to them.

Of these suggestions, just one was taken up by the Environment Agency (to look into the name of a particular Flood Watch Area), but none was considered from the point of view of future collaboration or fully discussed. Part of this is about the style of meetings and need to approach them in a more collaborative way (see Section 2.7). But as set out in Section 2. 2 it is also about a natural resistance to collaboration that needs to be overcome.

A separate project is developing internal policy on the Environment Agency's role in flood recovery. Draft policy from this work was discussed with Environment Agency staff at our 'post-flood drop-in' workshop²² with FRM and External Relations staff from the North East and Midlands regions. The overwhelming feeling was that the Environment Agency must

²⁰ Post Flood Drop-in Best Practice Guide Workshop. January 2008; telephone interview with FIM, Thames, West Area.

²¹ LRF Gloucestershire County Flooding Subgroup, Tewkesbury. October 2007

²² Workshop involving 12 staff, 23 January 2008. Birmingham.

have more of a role post-flooding, including taking part in drop-ins/other community liaison, but that currently it is not clear what is 'allowed' or useful. This chimes with the aftercare think tank²³ convened by Emma Hayes:

“Although the Environment Agency does not have a lead role in after-care and recovery, we do undertake activities during this phase which are important for recovery (e.g. post flood-event surveys, provision of information about why the flood happened). In undertaking these activities we can either help build trust with communities or harm our reputation. We also have responsibilities to promote sustainable development.

There may be a conflict between the boundaries of our role as set out by the law, and the reality faced by area staff on the ground following a flood. Members of the public have certain expectations of the Environment Agency’s role.

What are the impacts?

The Environment Agency’s reputation can be damaged by failure to participate in meetings following a flood. Conversely, community relations can be improved by participation in drop-in centres and by working with the community.

Poor community relations will impact upon our ability to collect post flood-event data, and may impact upon the degree to which people trust the Environment Agency and trust and take action on our information and messages (e.g. flood warnings).

Poor aftercare can have an impact on the ability of the economy, environment and the community to recover.”.

2.5.2 Recommendations

The role of the Environment Agency post-flooding, including the role in recovery should not be constrained to the current legal position, but should take into account the role of others and the gaps that the Environment Agency could usefully fill.

Although the Environment Agency does not have a leading role in recovery, it may need to undertake specific activities to assist recovery from flooding, including working with Local Authorities and others during the recovery phase. The role of the Agency can be thought of as falling into two broad areas:

- those actions which are specific to recovery, reconstruction and clean-up after a flood (such as pollution control, repairing of flood defences);
- activities which are part of the Environment Agency’s general role in flood risk management, but which may be especially important, or which may need to be modified to take account of circumstances, needs and information that comes to light as communities recover from a flood (such as engagement around proposed schemes, using information to update Environment Agency systems and understanding)

²³ Aftercare Think Tank. Emma Hayes, March 2007

LRFs – and their sub groups - should plan for all three types of collaboration listed in Section 2.2 (Table 2.3):

Conceptual/strategic Working strategically to tackle underlying causes of flood risk
Convening/coordinating Working together to share information and data, developing new initiatives
Crisis/co-delivery Working together in response to crisis

In doing so, meetings should place greater emphasis on enabling collaboration and action together rather than on information giving or information exchange. See Section 2.7 for details. Collaboration should cover each stage of the flood risk cycle, and should encompass how collaboration on public engagement activities such as:

- Drop-ins, public meetings and working with communities (Section 2.9.2).
- Working with press/media (Section 2.6.2).
- Presenting a consistent/accessible public face including data and information (see Section 2.8.2).

2.6 Recognising the work of others

2.6.1 Evidence

Research, policy and practice shows that flood risk management solutions *can no longer be imposed or delivered by the Environment Agency/Defra alone.*²⁴

*“The time of going out to stakeholders and telling them what’s good for them has gone! So the Environment Agency needs the skill of engaging effectively.” (Peter Bye, Environment Agency Board)*²⁵

*“The very title of Making Space for Water suggests that, rather than trying to hold back floods and defend people from them, a more cooperative approach should be taken whereby people learn to live with floods and communities become flood resilient.” (Twigger-Ross, 2005)*²⁶.

*“Only by working together and by being prepared for flooding can we [the Environment Agency] reduce the risk to people, property and the environment... We will adopt a strategic approach to FRM ... This will require greater collaboration with stakeholders.” (Environment Agency Strategy for FRM)*²⁷

*“Research has shown that FRM solutions only work if they are accepted by the local population. The need to involve at-risk communities in the decision-making process using deliberative techniques is irrefutable.” (Dr Gerda Speller)*²⁸

*“Responsibility does not lie with Government or other authorities and organisations alone. The response to a major emergency is stronger if all parties work together, including communities and individuals. In major emergencies where responders are severely stretched, community resilience has an important part to play, before, during and after the event. In preparing for an emergency, communities have an important shared local knowledge – for example, the location of doctors, vulnerable people and temporary shelter and where useful equipment is stored.”*²⁹

“It was the community that came into its own as everyone was looking after everybody else.” (Business, East Lindsey)

*“People in our community went round every home and collected medications and prescriptions and kept people up to date. But that’s from people in our community, no doctor came.” (Householders, Toll Bar, Doncaster)*³⁰

Our review also demonstrates the need to develop relationships with a wider set of groups than professional civil contingency partners. As Sarah Cornell put it:

“The Environment Agency has tackled the structures of partnership for flood defence planning and construction. In that context, it has clear relationships and a common

²⁴ Colbourne (2005) Op cit. Appendix 1

²⁵ Peter Bye, 17 November 2004

²⁶ Twigger-Ross (2005). *Improving the contribution of social science to the Flood Risk Management Science Programme*. Defra, London p13.

²⁷ Environment Agency *Strategy for Flood Risk Management*

²⁸ Speller (2006) *Improving community and citizen engagement in decision-making, delivery and flood response*.

²⁹ Pitt Review (2007) op cit.

³⁰ Pitt Review (2007) op cit

language with its statutory consultees, environmental engineers and development planners. It now needs to explore more formalised and accountable partnership in the delivery of the full portfolio of flood risk management measures, which, in addition to conventional flood protection, includes land-use planning and spatial regeneration, insurance, post-flood recovery programmes, and flood-proofed and flood-resilient homes and communities driven by raised flood risk awareness in individuals.

Most of these activities lie beyond the conventional roles of local authorities and the Environment Agency in flood response. A partial stakeholder network is already in place (with developers, insurers, educators, health care professionals, and so on) allowing for information flow, but consolidating that network into one that can allow for full dialogue leading to shared decisions and delivery is still some way off.”³¹

“Key insights for us [are] The need for the widest range of partners to plan as far in advance as possible for flood contingencies [and] That a huge number of bodies and agencies need to cooperate for improvements in FM to happen.”³²

We have also witnessed at a very practical level that there is still resistance to accepting and supporting the initiative or needs of others to act. For example, see the section in this report on running better meetings. However, we have also witnessed the realisation that the Environment Agency cannot do this alone:

- **Torbay Integrated Urban Drainage Pilot:** realisation that the Environment Agency cannot offer advice to individual property owners, whereas others (e.g. the National Flood Forum) can and does.
- Building Trust with Others Design Training Course and Observation at **Bewdley Flood Group** liaison meeting: Insight that the Environment Agency can work with others to identify funding/resourcing for flood defences, even if own monies are insufficient.
- At the review of 2007 post-flood drop-ins, staff said the presence of other organisations (from local authorities to the Association of British Insurers) was a determining factor in the success of the drop-ins.
- In rapid-response catchments such as Boscastle, Cornwall, community action has been the only way of acting fast enough to save lives and property.³³

These insights have been supported by reports on the summer 2007 floods which recommend that the Environment Agency take a strategic overview of risk and flood:

The review considers that the Environment Agency is best placed to deliver the national, strategic role in relation to surface water flooding, which will involve developing maps, warning systems, options for modelling and the standard analytical framework around which the risks are understood. This will be consistent with the Environment Agency’s national role in relation to coastal and river flooding.³⁴

These reports recognise that others need to lead on some strategies and actions, and that the Environment Agency needs to improve its support of others, as stated below.³⁵

Many properties were flooded, firstly by surface water, and then by river water. Areas in Sheffield were examples of this, where pictures of the flooded city centre show rivers still

³¹ Cornell (2006). *Improving stakeholder engagement in flood risk management decision-making and delivery*. Technical Report SC040033/SR2

³² Delegates at the Extreme Flood Conference November 2006

³³ Presentation at the Extreme Flood Conference November 2006

³⁴ Pitt Review (2007) op cit.

³⁵ Environment Agency (2007) op cit.

within their banks hours before river flooding commenced. Residents and businesses that received an accurate and timely flood warning from us for river flooding when surface water flooding had already happened were confused and angry. Some people were confused when they received severe flood warnings, having already had a flood warning.

Our professional partners have highlighted the need to be much clearer about the relationship between 'triggers' (for example, warnings and forecasts) and the related response (evacuation, distribution of resources). Issues include the amount of warning time professional partners need to take action and their willingness to accept that longer lead-in times will lead to a higher level of false alarms and increased costs for their service. In a few cases, the language we use affected people's response to our forecasts and warnings. Our communication of peak flood levels on the River Thames at Oxford and downstream confused people even though they were accurate. A glossary of flood-related terms that everyone can understand might help.

People and communities at risk need to be better prepared for flooding. It is reasonable to assume that the impacts of future flooding of the magnitude seen in 2007 could be reduced if properties were more resilient, and people were better prepared to protect their belongings and increase chances of rapid recovery.

The Government, Environment Agency, ABI and local government could all play a leading part in this work. Relevant parts of the building regulations could include measures for flood resistance (preventing water entering) and resilience (reducing damage if water does get in). Insurance companies could use conditions or vary premiums to encourage flood resistance and resilience as is done for home security.

People need to be more aware of the risks of flooding and better prepared to protect themselves and their properties. We should promote more people signing up to our flood warning service, protecting their properties more by using door guards and air brick covers and other measures to protect them from the effects of flooding, and increasing the number of homes being built or restored to withstand flooding.

Pitt Review (2007)

IC 20–The interim conclusion of the Review is that local Surface Water Management Plans, as set out under PPS25, should provide the basis for managing surface water flood risk. These plans should be coordinated by the local authority and be risk-based, considering all sources of flooding.

The Environment Agency would ... need to provide a toolkit to local authorities to enable them to work to a consistent standard and deliver an effective approach to managing and understanding local flood risk.

Each SWMP should be accompanied by an action plan setting out the actions to be taken by all those engaged in flood risk management and with responsibilities in this area, which may often include the Environment Agency in its local capacity. These action plans should be developed in partnership with the relevant organisations and led by the local authority.

One particular area for improving collaboration is with the media. We found evidence of multiple benefits of 'special arrangements' with local radio (such as BBC Radio Gloucestershire) to cover flooding. This again was reinforced by the Pitt Review Interim Conclusions (2007):

The review believes that in any realistic analysis of local media involvement during emergencies, the benefits far outweigh the costs if the involvement is properly organised and structured. Local media should be supported in developing their public information role at all stages of an emergency. Reluctance to involve the media is outdated, betraying a lack of understanding of both modern news coverage and the ability of news

organisations to operate effective 'Chinese walls' between production staff and journalists. This relationship-building needs to happen at the local level, although the review is aware of general work under way by Regional Media Emergency Forums to develop links between broadcasters and the responder community, and this work should also draw upon experiences of the floods. Effective engagement with the media in many areas needs to be replicated in all, as do the opportunities such engagement offers for stronger public leadership.

In Gloucestershire, for example, the local BBC radio station received a large number of calls from the public giving live accounts of flooding on their streets and transmitting messages to concerned listeners' friends and relatives whom they were otherwise unable to contact. Staff from Severn Trent Water came to the station to give specific information on water supplies.

"People can actually ring in and give information and they relay that back to the town, and that was working very well." (Householder, Cheltenham)

"The radio's been absolutely invaluable – if they can get it all together why can't others?" (Householder, East Riding)

However, the whole culture of the Environment Agency is that it is 'in charge' and 'sorting things out'. For example, just see the back of this report, which says:

*We are The Environment Agency. It's our job to look after your environment and make it a **better place** – for you, and for future generations.*

Your environment is the air you breathe, the water you drink and the ground you walk on. Working with business, Government and society as a whole, we are making your environment cleaner and healthier.

The Environment Agency. Out there, making your environment a better place.

This attitude does NOT give the message that the Environment Agency needs others to do their bit (although it does mention in passing that it works with others in order to do the Environment Agency job better).

Recommendations

As part of developing the strategic overview role inland and on the coast, the Environment Agency should set out explicitly what the Environment Agency is best placed to do and what others can/should do, and how the interfaces and collaboration can be managed. This process itself would need to be undertaken **collaboratively**, for example, discussing with the National Flood Forum what they'd like their role to be/what they'd need to do it, how to support local authorities and so on. See also Pitt Interim Conclusions 22 and 23 and Lessons Learned from 2007 summer floods recommendation 9:

IC 22–The interim conclusion of the review is that Defra should issue guidance on how all organisations can be brought together to work with local authorities on surface water flood risk management, sharing information, modelling and expertise on a consistent basis.

IC 23–The interim conclusion of the review is that the Government, as part of its Water Strategy, should resolve the issue of which organisations should be responsible for the ownership and maintenance of sustainable drainage systems.

Recommendation 9. We will review our professional partners' specific needs, so that we and the Met Office provide forecasts and warnings which mean they can easily take action.

Explore new tools and processes that may make collaboration possible within this complexity, such as Open Strategy <http://openstrategies.com/>. This is an example of a new paradigm for multi-stakeholder planning.

Ensure Local Resilience Forums consider the unique roles of the full range of actors involved, and so that engagement is fully planned for before, during and after a flood. This should include the media

REC 13–The review recommends that Local Resilience Forums urgently make arrangements to involve local media representatives in local preparedness and response to support their public information role. (Lessons Learned from Summer 2007 Floods Recommendation)

2.7 Improving two-way collaboration with professional partners

2.7.1 Evidence

It is clear that there is a significant mismatch between some of the 'grand ideas' about the possibilities of collaboration (as recommended by the Pitt and Environment Agency summer floods lessons learned reports for example) and the reality that even the most basic 'nuts and bolts' of good meetings and good collaborative practice are often not in place. For example:

- In Devon, the Operational and Emergency Flood Response Groups meet once a year, primarily as discussion forums, bringing together LAs, police, ambulance, coast guards, water companies, Met Office. They involve up to 30 people and are mostly run as 'listen and learn', and an opportunity to catch up with what's going on (new flood warning systems and so on). Although people like to get together, they seem to lack a bit of a sense of urgency/action and are not run in a way in which such action could be jointly planned or executed.
- In Gloucestershire, the Local Resilience Forum Gloucestershire County Flooding Sub group meets annually primarily in an information exchange mode, again missing most opportunities for collaboration and action (see section 2.5.1). *"We don't want to allow too much discussion because we haven't got any resources to do anything"*. Staff view all discussions from a 'people are telling us what to do' angle, rather than 'people can discuss things and decide to do something about it amongst themselves' angle. For example an offer by Tewkesbury Borough Council to look into an awareness campaign on longer term flood prevention (e.g. not tarmac over gardens etc), which was supported by a number of councils was effectively curtailed by the Environment Agency chair. Words implying collaboration were often in place but actions don't follow, for example, in discussion of a rapid response catchment project, a PowerPoint said "awareness will take place at a local level and partners will be involved". But reality: councils making suggestions but none taken up/all resisted.
- In Worcestershire, both the police and Environment Agency officers said that the LRF *doesn't really work because it has no money and so often it isn't clear how anything will happen, whose responsibility it is to do something. When actions are agreed often they don't happen.*

Our analysis of meetings such as these is that they may provide only a fraction of their potential value in enabling collaboration for more effective FRM because:

- Participants are unclear what each agenda item is for.
- There is an assumption by the Environment Agency that the meeting is for information provision, framed from an Environment Agency point of view
- Much of the information could be passed on outside the meeting.
- There is an assumption that any discussion would necessarily result in action by the Environment Agency and that as staff are already overloaded, discussion should be minimised. This results in lost opportunities of

leadership/action by others and lost added value of potential partnership outcomes.

- It is not clear when actions/ideas are being decided upon, by whom.

We have also seen well run meetings, both by professional facilitators and by Environment Agency staff with the skills to make the meetings work, resulting in practical working relationships and actions. For example, the public meetings and Liaison Group meetings (and their sub groups) developing the Flood Risk programme in Shaldon, Devon, or the Bewdley Flood Group liaison meetings.

Mostly worryingly, when questioned about the cost/benefit of running meetings, staff often point to costs being related to agenda sending and minute taking, rather than the lost benefits of time spent in a room doing very little.

2.7.2 Recommendations

- Identify running meetings collaboratively as a specific skill. Use staff specifically trained to run meetings collaboratively (for example, staff with knowledge of BTwC). Where meetings are particularly critical, or difficult, consider using professional facilitators.
- Use a standard agenda form which requires people to consider/plan for collaboration rather than focusing meetings on one way information giving.
- Use a Decision/Action/Who/When recording sheet during a meeting so all are clear what has been decided, what actions will be taken and by whom.
- Health check meetings and partnerships: Involve participants at meetings in evaluating their effectiveness
- Evaluate the cost/benefits of running meetings, including the improvements of using tools offered here. This could include following through work in the Midlands who are taking on this toolkit and other examples of regular meetings. Research on this could break down the time spent doing different activities and the 'benefits' achieved in terms of concrete actions/follow through and improved outcomes on the ground.

2.7.3 Tools provided/recommended

- Meeting agenda proforma
- Commandments for good meetings
- Health check for meetings/partnerships
- Meeting minutes proforma (decision/action/who/when)
- Recommended: Rocket Science's Partnership Manual, 2006³⁶

³⁶ Rocket Science, 2006. The Improvement Service, Partnership Working.
<http://www.rocketsciencelab.co.uk>

2.8 Improving data and information sharing with professional partners and others

2.8.1 Evidence

Even within the Environment Agency's 'homeground' of data/information, there is significant scope for improving collaboration, responsiveness and empowerment, not just with professional partners, but with communities and individuals. For example, the Environment Agency concluded in its review of summer 2007 floods:

The public has highlighted that there is confusion over who can best provide advice and information on floods. We have successfully carried out pilot studies with 29 local authorities to assess the practical issues for local government and utilities to use our Floodline system as a shared flood event call handling and advice service. We are now doing work to assess how the pilot study results could be extended on a phased basis across England and Wales. Funding will be an issue.

We and our professional partners should review the ways we coordinate the provision of advice and information on all aspects of flooding to the public.

Phil Foxley, Flood Incident Manager for West Midlands, asked that we consider how to share data on flooded properties, as one of the most stressful and time-consuming activities during flooding is providing information to ministers and senior figures in the Environment Agency on the extent of the flood. This was reinforced by the Interim Pitt Review (2007) which says:

Although local responders generally appreciated central government's need for local information, the review has learned that they were frustrated by the volume of information requested and the time it took to collate. On the other hand, central government was concerned by the lack of agreement on the extent of the flooding and the scale of the damage. This was exemplified by the range of information supplied on the number of properties affected by the June floods. Initial Environment Agency reports were of 3,000 to 4,000 properties affected, while several days later the government offices and local authorities were reporting 30,000 houses flooded from all sources, including surface water. It was subsequently established that the discrepancy arose because the Environment Agency was counting only properties affected by river flooding, excluding those in urban areas affected by surface water flooding – the most significant impact in June.

The potential for greater collaboration in this field is clear. A possible reason for lack of collaboration was suggested in the 2007 Pitt Review, quoting evidence that civil contingency partners are currently using data protection to avoid sharing data.³⁷

It is evident that some responders were reluctant to share personal information with each other for fear of contravening duties of confidence or the Data Protection or Human Rights Acts. In general, emergency responders should balance the potential damage to the individual (and where appropriate the public interest in keeping the information confidential) against the public interest in sharing the information. In emergencies, the public interest consideration will generally be more significant than during day-to-day

³⁷ Pitt Review (2007) op cit.

business. But it is clear that this message has not yet been received by all emergency responders. It is also clear that a number of myths around data protection still remain.

The Cabinet Office has issued guidance to the emergency responder community to dispel some of the myths surrounding data protection as an aid to emergency planning, response and recovery (www.ukresilience.info/response/recovery-guidance.aspx). One of the key principles in that guidance is that data protection legislation is not a barrier to appropriate information-sharing. The guidance provides a framework within which personal information can be used with confidence that individuals' rights to privacy are respected.

We found some evidence of resistance to or at least nervousness about data-sharing when talking to staff. For example:

*"[There isn't really a precedent for working jointly with other organisations when collecting data] it depends on who we are working with and for what ..I suspect there may be a big issue with blight and data protection infringement if we start holding and sharing info on specific properties that have flooded. It may actually be to our benefit in some circumstances NOT to hold this information!!... [in pooling data collected by partner organisations] the contracts are usually difficult."*³⁸

The Environment Agency's internal review³⁹ quotes evidence that partners cannot follow our advice to link more to action:

Our professional partners have highlighted the need to be much clearer about the relationship between 'triggers' (for example, warnings and forecasts) and the related response (evacuation, distribution of resources). Issues include the amount of warning time professional partners need to take action and their willingness to accept that longer lead in times will lead to a higher level of false alarms and increased costs for their service. In a few cases, the language we use affected people's response to our forecasts and warnings. Our communication of peak flood levels on the River Thames at Oxford and downstream confused people even though they were accurate. A glossary of flood-related terms that everyone can understand might help.

We will review our professional partners' specific needs, so that we and the Met Office provide forecasts and warnings which mean they can easily take action.

We witnessed this first hand while observing a flooding subgroup of a LRF – as recorded in the minutes of the meeting⁴⁰, it was clear that civil contingency partners were having trouble interpreting data provided by the Environment Agency, and that the Environment Agency needs to be open to changing the systems that they provide in order for them to be effective. For example, the exchanges below:

Flood situation summary sheets

- Flood situation summary sheets will...be distributed by email to civil contingency partners and ... give information on the type of warning in force as well as the gauge location, the river level, the forecast river level and the peak river level.
- [Borough Council] asked whether 'normal' river levels are available so that they can be compared to the levels given on the summary sheets [otherwise the levels provided on the sheets would not help them interpret them].

³⁸ Email correspondence with staff, November 2007

³⁹ Environment Agency (2007) op cit.

⁴⁰ Points taken from minutes of Local Resilience Forum Gloucestershire County Flooding Subgroup. Riversmeet House, Tewkesbury, 30 October 2007.

- [The Environment Agency] stated that these ‘normal’ levels were on the Environment Agency’s gauge board sheets and that these can be provided.

Flood warning areas

[County Constabulary] raised concern with the [new] name of the Flood Watch area ‘Rivers in the Cotswolds’ because Stroud, which falls within the Flood Watch area, is not part of the Cotswolds. The group agreed that ‘Rivers in the Cotswolds’ could be misconstrued and suggested that a name such as ‘Stroud District’ might be more appropriate. [Fire and Rescue Service] pointed out that Flood Watch areas with names based on the district that they fall within would be more effective in triggering the right thought processes so that the best course of action can be taken in a flood.

[Environment Agency] explained that Flood Watch areas, by their nature, need to be based predominantly on river catchments. [Environment Agency] also made the point that this was a Flood Watch area, rather than a Flood Warning area and thus is not related to property. Flood Watch’s are more applicable to professional partners and farmers with land at risk from flooding.

However, given the concerns [Environment Agency] agreed that the Flood Watch area name would be reviewed.

Many have commented⁴¹ that basic sharing of data is the essential foundation of effective responses to floods, yet it remains one of the basic problem areas.

“The authorities are quite agreed about the policies but a little difficulty in collaboration and sharing data remains.”⁴²

“The most important thing we could do to improve flood response [in Worcestershire] is to share real-time data. We’ve all agreed this needs to happen but nothing gets done about it.” (Police officer)⁴³

Another result of the inability to share data is the multiple questionnaires and surveys conducted post-flooding. As Sue Tapsell says:

“There are often two or three lots of data collected [post-flooding]: the post-event questionnaire from the Environment Agency which is usually undertaken quite a while after flooding, then there are often other more detailed data collected by Environment Agency area staff immediately after a flood on which properties flooded etc. - with no collaboration with Environment Agency communications staff who do the post-event survey. Then there is the local authority data which is often collected. For example, in Gloucestershire they did a door-to-door survey collecting data on damages and losses. They also usually have data on people with special needs. As a start it would be useful for each organisation to at least share the results of their data collection with others (current IP/legislation allowing). The next step is probably to look at developing a better system of data collection that all can share, but I think that that is probably a long way off yet.”⁴⁴

Despite this rather gloomy picture of the inability of organisations to share data at an individual property level, there are many examples of innovative data-sharing and access, especially on environmental data. Precedent has been set for pooling data collected separately by partner organisations; for example, rain gauge data is shared with the Met Office and radar data on rainfall is shared between the Environment Agency, Yorkshire Water and Bradford MDC. One of the changes post-Boscastle was the introduction of joint logs between CCPs. In Gloucestershire, new forms have been designed to help

⁴¹ Presentations and feedback from Extreme Flood Conference, November 2006.

⁴² Insight recorded on delegate feedback forms from Extreme Flood Conference, November 2006.

⁴³ From discussion after community liaison meeting with the Bewdley Flood Forum, November 2007.

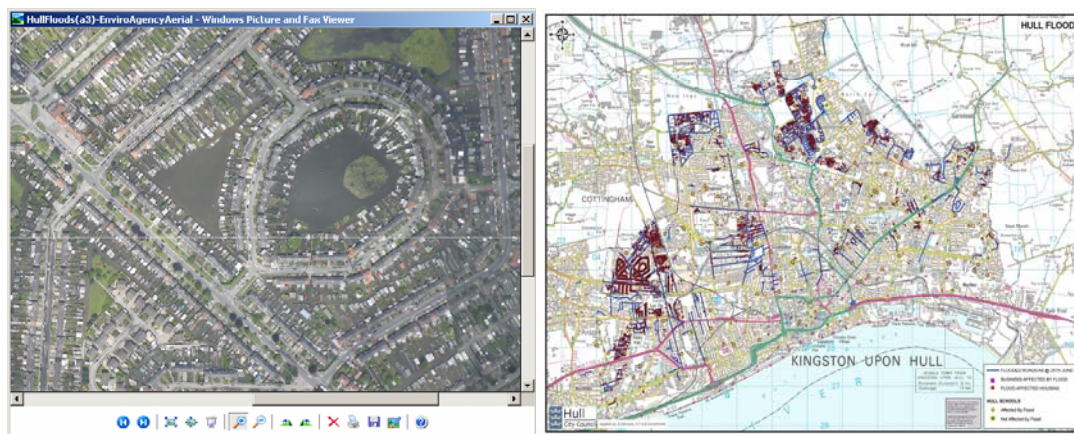
⁴⁴ Sue Tapsell, email, November 2007

professional partners interpret river levels and flood warnings.⁴⁵ In Salford an agreement has been struck with the Fire and Rescue Service: households they make contact with, for example as part of a fire survey, are asked whether they'd be happy to be contacted by the Environment Agency about flood warnings.

Far-reaching innovations are afoot. Hull City Council has been using webmapping linked to call centre Oracle CRM (customer relationship management) database.⁴⁶ All requests/observations from individuals and communities, and from professional partners – such as reporting blocked drains, flooding and so on – are linked to an activity code with geographic coordinates. Data is then extracted on a quarter-hourly basis and used to create a table relating to each code. During floods in Kingston upon Hull, silver command could search the map to inform decisions and priorities. This Oracle-based data sharing system has received an award for innovative use of technology and has the following benefits:⁴⁷

- saving money – less duplication, easier access;
- improving customer service;
- evidence-based resource targeting;
- modernisation;
- seamless data-sharing;
- data quality;
- potential for advanced functionality;
- responsiveness.

Figure 2.5: Use of web-based data-sharing, summer 2007 floods, Hull



Similarly, the Department for Environment, Food and Rural Affairs (Defra) is currently considering a proposal to provide a map-based real-time warning service and also give the public an opportunity to upload their own images and information. Their proposal is based on the 'mashup' and social networking concepts: these provide environments in which links between people, topics, locations and information can more easily be

⁴⁵ Local Resilience Forum Gloucestershire County Flooding Subgroup. Riversmeet House, Tewkesbury, 30 October 2007

⁴⁶ Interview with Glenn Dobson, ICT Manager at Hull City Council, December 2007

⁴⁷ The benefits of consolidating spatial data using Oracle Technology: Hull City Council's experience. Presentation to the *UK Oracle's User Group Conference*, 3 December 2007

identified and manipulated. Mashup technologies make information and application capabilities available to be easily combined in new ways with maps, timelines, filters and dynamic links to produce rapidly and cheaply assembled 'situational applications' – i.e. applications that meet the need of rapidly emerging, sometimes short-lived, situations.

Mashup technologies can be combined with social networking software to enable people to access, evaluate and share them based on their common interests, skills and experiences. Finally, the concepts of 'tagging', 'rating', and 'reputations' can be applied to mashups, the information sources that they are built from, and the people who use and create them. This creates a seamless network of people, information and applications that can be dynamically categorised and linked according to issues that emerge day by day, rather than through an imposed hierarchy of navigation.

This technology has already been applied to flooding: the BBC hosted a mashup application using GoogleMaps to organise reports of flooding incidents submitted by the general public (see Figure 2.6). IBM has worked with the United States Environmental Protection Agency (USEPA) to create mashup applications linked in a shared 'wiki' workspace to collect information relevant to workers responding to outbreaks of avian influenza.

Use of these types of tools is strongly endorsed in the Pitt Review (2007):

The review recognises that developing visualisation tools that can cope with the required volume and complexity of data may take some time and it will be important that such tools are cost-effective and easy to use. However, we believe that the Environment Agency and its partners should work to develop and bring such tools into use, and where necessary using simpler versions of these tools until more complex ones become available.

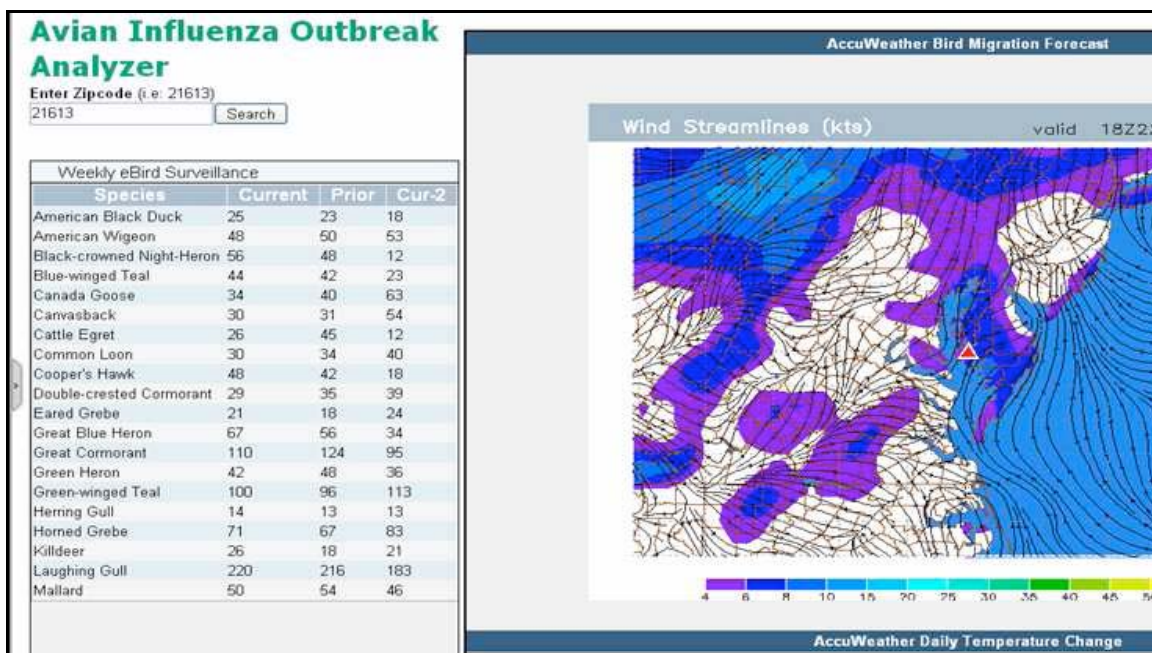
None of the advances in modelling and mapping ... will be of value if they are not designed to the needs of those who will use them. The review believes that research into these tools should focus on how flood risk managers, emergency planners and responders could use them.

It would be of great value if a single website provided links to all the websites needed for a comprehensive set of advice on flood-related matters. This could be the area's LRF website, with all Category 1 responders also linking back to this 'hub' website. Other useful information could also be linked, for example the guidance from the Electrical Safety Council on actions to take once floodwater has subsided.

The interim conclusion of the review is that advice disseminated via the internet should be coherent by ensuring integration and consistency between local websites, including that of the Local Resilience Forum and those of all Category 1 responders.

The interim conclusion of the review is that essential service providers should maintain continuous provision of public information during an emergency, through a website linked to other responders and local authority contact centres.

Figure 2.6: Existing applications of mashup and social networking technologies



In the interim findings of the Pitt Review, the Atlantis programme⁴⁸ is given as an example of good practice for data/information-sharing. The aim of Atlantis is to provide integrated base geographic and environmental datasets to better support water management in flooding and water quality for the twenty-first century. The project is currently aiming to establish components of an information infrastructure where the primary datasets are a fully harmonised detailed river network and digital terrain model. These will be supported by any other relevant (complementary) datasets. All these datasets will be interoperable.

⁴⁸ See <http://www.dnf.org/Applications/Atlantis/whatisatlantis.htm>

Recommendations

Address the resistance to data and information-sharing, as set out in the interim conclusions and recommendations of the Pitt Review⁴⁹ including:

- IC 6–The interim conclusion of the review is that the Environment Agency progressively develops and brings into use flood visualisation tools, designed to meet the needs of flood risk managers, emergency planners and responders.
- 5.66 The confusion experienced in June suggests that for surface water flooding events, central government should seek information via Government Offices from local authorities in the first instance.
- Data from the Environment Agency and the Association of British Insurers (ABI) should be used as supplementary evidence to gauge the extent of potential damage.
- 5.67 It will also be helpful to be clearer about what data is needed, who is responsible for providing it and when. This could be captured in pre-agreed templates for specific scenarios, reducing the amount of work needed at the local level during an event. This model could be incorporated into central government’s usual template for situation reports – referred to as a Common Recognised Information Picture (CRIP).
- 5.68 One further issue is the handling of information once it reaches central government’s crisis machinery. Information presented to ministers through CRIPs during the summer was on occasions inaccurate. This could be improved by simplifying information content, or by establishing a Defra/Environment Agency situation room.
- IC 67–The interim conclusion of the review is that advice disseminated via the internet should be coherent by ensuring integration and consistency between local websites, including that of the Local Resilience Forum and those of all Category 1 responders.
- IC 68–The interim conclusion of the review is that essential service providers should maintain continuous provision of public information during an emergency, through a website linked to other responders and local authority contact centres.
- 5.56 The review encourages responders to familiarise themselves with this guidance, and the Cabinet Office to continue promoting it, in order to ensure that appropriate relationships are established between bodies, such as social care departments, faith groups and voluntary organisations, which hold relevant data on vulnerable people. (www.ukresilience.info/response/recovery-guidance.aspx)

⁴⁹ Pitt Review (2007) op cit

2.9 Use of drop-ins, flood ambassadors, flood wardens and community flood plans

2.9.1 Evidence

Our review shows considerable variety in the way that the Environment Agency works with communities across the UK, including the approach to and implementation of:

- flood or community wardens
- community flood groups/liaison groups
- community emergency or incident plans
- flood ambassadors
- drop-ins and surgeries.

At area, regional and national level there is sometimes confusion on the desirability of a particular activity, and how much time/effort should be spent on it. It is commendable that national policy leaves flexibility to the local level, but *only* if the resulting diversity of approach is compared and lessons learned across areas and regions. Otherwise practice will appear inconsistent and confusing. For example, the Environment Agency Management System for Flood Wardens is flexible in terms of the use of flood wardens. As a result, some areas encourage the use of community flood wardens, but in many areas, they are actively discouraged (for example, quoting health and safety and liability issues), or only encouraged if used in conjunction with the local authority as community (rather than just flood) wardens. The results are fascinating. In the North West Region, one officer is supporting 15 community groups; in the North East Region, staff are supporting 20 groups and 65 flood wardens (although they are concerned that this is unsustainable); in South Wessex, hundreds of wardens are being supported with an active policy of recruiting more, while in Gloucestershire staff are concerned about their ability to support just two groups.⁵⁰

Attitudes and experiences also vary in relation to the role and suitability of others as potential collaborators, including parish councils and the National Flood Forum. In some areas, parish councils have been found to be the easiest and most cost-effective 'way in' whereas in other areas, individual parish councils have proven too removed from the community. In some areas (such as Thames, West Area and Midlands), the National Flood Forum is actively involved in organising flood fairs and advice whereas in other areas, it (and the community groups it encourages) is considered antagonistic rather than a potential collaborator. It would be useful to understand the factors contributing to these differences.

The Environment Agency's summer floods 2007 report⁵¹ highlighted two ways of working with communities, through flood ambassadors and post-event surgeries:

People welcomed and supported our flood ambassadors and post-event surgeries. Over 110 staff took on the role of flood ambassadors and went round to homes offering advice and listening to concerns. This is extremely useful as we learn first hand what is concerning people. Flood surgeries were especially successful when we linked in with our partners and held events quickly after the floods. The events allow people affected by

⁵⁰ For more details, see accompanying report: *Supporting communities to improve flood risk management – Examples of the Environment Agency's work*. Colbourne (2007).

⁵¹ Environment Agency (2007) op cit.

flooding to share their experiences, ask questions, and allow us and our professional partners to listen, learn and explain. Attending these events after the floods, as well as responding to the very high level of ministerial, parliamentary, local government, business and customer queries, has been a considerable pressure.

We need to revise our good practice guidance and share this with our partners, so that we effectively plan to include the work of flood ambassadors and flood surgeries in the response and recovery phase.

However, our work in planning and supporting flood work in the North East and Midlands areas found that the experience of using ambassadors and surgeries (or drop-ins as they are more commonly known) was mixed at best.

On the positive side, the diversity of approaches means are many different initiatives to compare, and if learning systems were in place, there would be much learning and improvement going on between areas and regions. However staff have commented to us that meeting with their peers to share practice and ideas is discouraged. These comments have been received from Building *Trust with Communities* mentors and from flood incident managers, so it appears to be happening at different levels of seniority. As part of this project, we therefore brought together the FIM and external relations teams responsible for planning and implementing the post-summer 2007 flood drop-ins and ambassador schemes from the North East and Midlands regions to share experience and develop a good practice guide. The 12 staff involved found this initiative helpful, and emphasised how much there was to learn from each other. They also commented that their 'within region' learning session took place as a result of the pressure to take part in our workshop – they would have wanted to hold it anyway, but pressures of the post-flood 2007 work would have made it difficult to get everyone together.

2.9.2 Recommendations

- Approaches to working with communities work best when a clear and coherent planned approach is taken, as developed by the 'Building Trust with Others' programme. This programme, which could consider and use any number of the approaches explored here, could be tailored to supporting staff to design and implement their work with communities to improve flood resilience – wherever possible working with other organisations such as through the LRF.
- The Environment Agency should promote and support the development of community emergency/incident plans (and their practicing/updating), by the parish council (or equivalent). The various templates for community emergency/incident plans should be combined into a 'good practice' template which includes options for tailoring to particular circumstances such as the type of flooding, the type of organisations/their activity/presence in an area and so on. These templates should be made widely available
- The Environment Agency should NOT attempt to actively develop new community groups or flood wardens to work on flooding issues alone, but should support and work through other initiatives and with other organisations (local authorities) to build on existing or emerging groupings, including community wardens.
- There should be a presumption (set in job descriptions/KPIs) that initiatives from the community/from particularly engaged local authority/parish councils should be encouraged and supported, no matter how 'aggressive' they appear

initially to be. Evidence shows⁵² that establishing genuine, ongoing, practical relationships and communications can replace aggression with constructive working relationships which increase community resilience. Staff need support and training in order to deal with initial levels of conflict. Work could usefully be done with the National Flood Forum to find a way of enabling local flood groups and the Environment Agency to work as constructively as possible together, perhaps setting out a memorandum of understanding listing each other's roles, what can be expected of each and so on.

- Flood Ambassadors are a useful way of having a presence in a flooded community, and building communication channels and insights which can inform the best way of responding to flooding and how to work with the community for recovery. However, they ONLY work if the right people are used, with a clear remit and briefing. A person spec, brief and pack need to be developed to support use of flood ambassadors post flooding⁵³
- Drop ins/surgeries can be a very useful way of helping a community to recover from flooding. They can also inform the Environment Agency's data and information so that warnings can be improved in the future. They can also build constructive relationships which will increase the opportunities for collaborative action in the future. However, they can also be hugely resource intensive, and where directed from Head Office level (rather than the local level) they can be a waste of time and effort. Build on and implement the drop in best practice guide set out in our toolkit.

2.9.3 Tools

This work has led to the development of two tools, which are published separately:

- Supporting *communities for flood risk management*. Some examples of current practice
- Running effective drop ins/surgeries: A guide based on experience

⁵² *Building Trust with Communities* case studies, such as Bryn Posteg landfill, Shaldon flood risk project.

⁵³ For example, see job/person specification proposed by one member of staff who acted as a flood ambassador post-summer 2007 floods in the accompanying report, *Supporting communities to improve flood risk management – Examples of the Environment Agency's work*.

3 Towards systematic change

3.1 Introduction

As the review showed (and as the Pitt Review 2007 reinforced), organisational consistency in the way that the Environment Agency considers working with others is both a long way off, and critical to success in taking on the ‘strategic overview’ role (both inland and on the coast) over the next few years. One way to approach this consistency is to choose between three levels of change for the way that the Environment Agency will work with others to implement the strategic overview role:

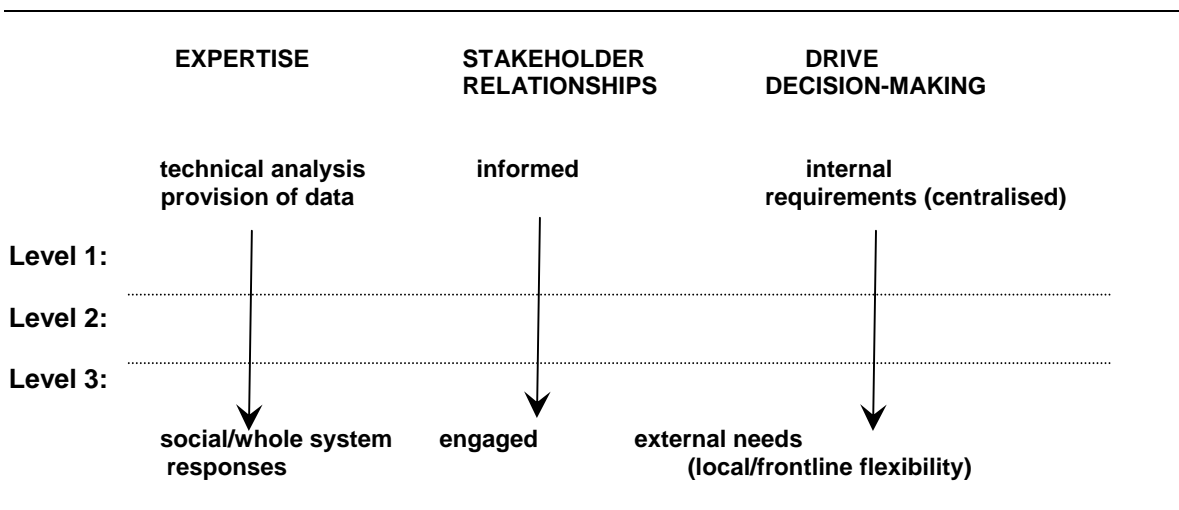
Change level 1: Provision of better expert analysis/data

Change level 2: Development of more accessible, actionable information and relationships

Change level 3: Enabling integrated planning/action

Each ‘change level’ has different implications for the expertise that staff will require, the relationship the Environment Agency will have with communities, individuals and partners and for the motivations and decision-making requirements (see Figure 3.1). Level Three clearly requires greater change than Level One. The desired outcome may be different for different parts of the Environment Agency. But as a rule of thumb, Level One would be the minimum level of change and Level Two will often be the most desirable and achievable level of change.

Figure 3.1: Characteristics of the three proposed change levels



For each of these change levels, the IISRF project suggests that change to the way that engagement is used within FCERM could happen at three levels: system framework, organisation and on the ground.

System framework refers largely to the way FRM is framed and discussed in policy, strategy and guidance documents. *Making Space for Water* has signalled a shift towards ‘living with flooding’, with more discussion on the concept of resilience.

Organisation refers to the way the Environment Agency chooses to shape FRM teams, fund flood warning, together with the way the organisation works in terms of communicating internally. The way an organisation is structured gives clues as to what is valued. It is also about what is counted, i.e. what are the key performance indicators. From our current practice review and contact with Area staff there is frustration that the Area teams feel when dealing with national targets together with perceived lack of support and understanding for what is being done at the area level by those in Head Office.

On the ground refers to what happens in practice for example where a different message is used in a flood warning, or where local flood action groups are being encouraged to develop flood plans.

Changes in any one of these areas is likely to influence the others and lead to change in other areas. System framework sets the frame for organisation and on the ground change. We suggest that on the ground changes often remain local where no system framework exists. For example, time and again researchers find creative, innovative, and above all practical solutions are happening on the ground (see Twigger-Ross and Scrase, 2006 for examples relating to vulnerability and flooding). However, these solutions remain localised because there is not the organisational structure and ethos, or the system framework to enable general principles to be derived and shared through the organisation. Because of the lack of those supporting structures and policies sometimes a creative idea, often an engagement method, is picked up in isolation and unquestioningly spread across all areas. An example would be the use of drop-ins following flooding. Because of their success in some areas (such as Carlisle post-2005 floods), Environment Agency staff at regional and local levels were told to run drop-ins post-summer 2007 floods, without any clear logic about why, when and where they needed to take place.

3.2 Systematically improving collaboration for FCERM outcomes: Identifying levels of change

3.2.1 Standard/level 1: Provision of better expert analysis/data

This level could be characterised by the following:

What would be different?

- **On the ground:** More coordinated data and information sharing, more use of standard templates so that data/information is shared more consistently and more easily, recognition of the value of community level emergency planning.
- **Organisation:** No immediate change but staff will be more involved in LRF and in supporting community initiatives, new system for providing information on the extent of flooding
- **System framework:** No immediate change but these frontline changes are supported by the system and are nudging it towards a more people centred service. The structure under the CCA does provide for collaboration, how effective that is will need evaluating e.g. how did this work in the recent summer 2007 floods.

Planning and prevention:

- **Data:** data sharing between CCPs on flooding and its effects is considered and improved (and myths surrounding non-sharing of data due to Data Protection Act dispelled).⁵⁴ Minimum level: relevant officers having CCP emergency numbers in mobile. Forecasting and modelling for all types of flooding improved (Atlantis Programme bringing together datasets from different organisations) and revision of flood maps to identify areas at risk of significant depth/velocity of water.⁵⁵
- **Public interface:** Environment Agency proactively provides community emergency plan templates and written guidance to parish councils, and reactively to other groups on request. Working with other organisations such as the local authority, National Flood Forum, fire and rescue services and the police. Community emergency plans should include lists of [types of] vulnerable people, guidance to households on what to do, and the use of community wardens. Emphasis on catchments (identified with help of CCPs) with less than two hours warning (including surface water risk) to have these plans in place. Flood awareness campaigns and Flood Warnings Direct (FWD) start to focus on how to prepare rather than receiving warnings⁵⁶
- **CCP collaboration:** Active participation in LRF/other forms of CCP liaison, including provision of information from flood risk modelling and mapping to improve the accuracy and consistency of flood risk information in Community Risk Registers.⁵⁷ Writing of strategies and regular exercising to test systems, development of communications plans (covering during and after communications and engagement with the public, including how to use the media/having agreements with local radio stations) and convening of civil contingency partner meetings to receive/provide updates, provision of information/decisions to inform local authority planning decisions and PPS25 local Surface Water Management Plans.⁵⁸

Understanding risk, warnings

- **Data:** Warning system remains largely the same with FWD at the centre, but information/warning systems improved to cover all forms of flooding and to increase uptake by responders, including opt-out FWD system adopted across England and Wales. More frequent and systematic monitoring of groundwater levels at times of high risk by Environment Agency to predict and mitigate against groundwater flooding.⁵⁹
- **Public interface:** Move towards smaller Community Flood Warning Areas, based on communities rather than rivers/catchments. This avoids duplication of warnings and provides more meaningful warnings to those receiving the warnings⁶⁰. Uptake of warnings is increased through use of more customer focused methods (e.g. Values Modes⁶¹) so people receive more tailored messages, in ways that mean they are more likely to take up the warning and to do something about them. Information provided to rapid response

⁵⁴ As noted in paragraphs 5.54 and 5.55 in the Pitt Review (2007) op cit.

⁵⁵ As recommended in IC3 and IC4 in the Pitt Review (2007) op cit.

⁵⁶ To help achieve Recommendation 33 of Environment Agency *Review of 2007 Summer Floods*.

⁵⁷ As recommended in IC5 in the Pitt Review (2007), op cit.

⁵⁸ Ibid IC20

⁵⁹ Ibid. Urgent Recommendation 1

⁶⁰ Currently, if someone lives close to two rivers they will receive a separate warning for each river.

⁶¹ Described in Fernandez *et al.* (2008). *More targeted flood warnings: A review. Improving Institutional and Social Responses to Flooding. Work Package 1.* Chapters 4 & 5.

catchments/those that can't be covered by the systems (possibly via third party).

- **CCP collaboration:** Flood warning CCP planning meetings convened every six months as well as after major flood events. Focus on information sharing to improve coordination, such as the use of agreed templates for flood situation updates (e.g. Midlands 'Flood Situation Summary Sheets').

During flooding

- **Data:** Data collection by Environment Agency/other CCP staff feeds easily into system; clear process/responsibility for provision of data on number of households flooded including, for example, pre-agreed templates on what data is needed/who is responsible for providing it for specific scenarios (itself incorporated into central government's Common Recognised Information Picture).⁶²
- **Public interface:** Continuous provision of public information through Environment Agency website linked to other responders and local authority contact centres,⁶³ and consistent advice disseminated from LRF and all Category 1 responders.⁶⁴ Improvements to Floodline (and local authority equivalent) so for example, 95 per cent of calls handled even at peak of crisis (compared to 78 per cent at peak on 23 July 2007).⁶⁵ Support for staff in choosing the best method(s) of public interface from a range of approaches including flood ambassadors and drop-ins with the aim of: providing information on what happened, helping people understand what can be done, gathering information to improve models (where possible with other CCPs), storing contact details to continue communications. Planned use of media to assist with communications.
- **CCP coordination:** Gold Command activated at early stage on precautionary basis.⁶⁶ Environment Agency staff attend all multi-agency strategic and tactical groups (as current practice in FRM incident response standard) including Gold Command.

After flooding

- **Data:** Environment Agency systems updated quickly with intelligence and new flood maps produced and sent to key contacts.
- **Public interface:** Continue to attend/run drop-in centres/surgeries (as above). Ongoing use of media (as set out in communications plan).
- **CCP coordination:** LRFs follow Cabinet Office guidance on transition to recovery: recovery subgroups established from outset of major emergency – handover from Gold Command to the local recovery coordinating group(s) chaired by local authority.⁶⁷ Post-flooding report sent to local authorities for planning purposes, feeding of information to contacts (e.g. flood group coordinators) in local areas for dissemination.

Strengths/weaknesses of this approach

⁶² Pitt Review (2007) op cit, Paragraph 5.67

⁶³ Ibid. Interim Conclusion 68

⁶⁴ Ibid. Interim Conclusion 67

⁶⁵ Environment Agency (2007) op cit.

⁶⁶ Pitt Review (2007) op cit. Paragraphs 5.20 and 5.21.

⁶⁷ Ibid. Interim Conclusion 51

- **Strengths:** Change is within existing system building on what is there, focussing on targets. Some moves towards a more integrated, people-focussed service which enables other actors to do more.
- **Weaknesses/risks:** Danger that this approach may reward organised communities at the expense of those already excluded or not working well with the Environment Agency. Emphasis on information/data-sharing (and due process) may stifle creative responses. Underlying psychological or systemic issues/causes of poor responses to flooding – and the capacity to address them – not tackled. Needs enough committed people in strategic positions, especially in management positions at area and regional level, as there will be limited support from above to change KPIs, budgets and training/support systems.

3.2.2 Level 2: Accessible, actionable information and relationships

The characteristics of this level take those set out for level one as included, but greater emphasis on ensuring **analysis/data enables others to take action**.

What would be different?

- **On the ground:** Real sense of collective and collaborative action supported by technology and staff. Ability within local areas to tailor what is required.
- **Organisation:** Changes to recruitment and structure mean that staff with collaborative skills are recognised and deployed effectively. Some merging of functions with other organisations (e.g. to provide one stop shops). Staff supported to carry out community engagement around flood plans and flood warning. Staff developed to work effectively in collaboration with professional partners within the framework of the LRF. Better links developed between Head Office and Areas and the facilitated exchange of best practice.
- **System framework:** Clear lead from policy for a system that combines technology (FWD, Floodline, visualisation) with social engagement (working in collaboration), and how the Environment Agency plays a role *with others* to deliver this.

Planning and prevention

- **Data:** Automated and integrated data sharing systems established with all CCPs to enable real time information on extent/behaviour of flooding and what is being done to address it. Likely to include geographical flood visualisation methods to meet the needs of flood risk managers, emergency planners and responders,⁶⁸ building on input from staff and informants (such as the Oracle system at Hull City Council, and the Atlantis programme).⁶⁹
- **Public interface:** More than one attempt at encouraging the producing of community emergency plans (guided by Building Trust type approaches), including cross CCP hosted events to encourage communities to establish plans/groups (as in N Area, NW). Regular follow up and support provided by named officers as part of their job, including attending liaison group meetings and exploring creative ways of funding local initiatives (as in Midlands – e.g. Worcester flood liaison group). Plans endorsed by all CCPs and include

⁶⁸ Pitt Review (2007) Interim Conclusion 6.

⁶⁹ Ibid. Paragraph 3.2.1

consideration of vulnerable groups and response and recovery. Work with interested stakeholders to inform collaborative approaches to flood resilience, for example farming and boating communities to improve advice and warning⁷⁰, with landowners in relation to withdrawal or reduction in rural watercourse maintenance⁷¹, and with community groups to find innovative sources of funding. Some national level activity to explore the implications of and how to deal with Making Space for Water.

- **CCP collaboration:** Convening of civil contingency partner meetings not only to receive/provide updates from each other, but also to change what they do and work together on improving flood resilience (or example, improving how data provided by Environment Agency can be changed to be most useful^{72,73,74}, projects such as campaigns to increase understanding of responsibilities amongst property owners, identifying rapid response catchments, supplying/verifying data on flooding, influencing planning by characterising nature/return periods of flooding⁷⁵). At each level within the Environment Agency/CCPs, relevant officers know each other (for example, 'take someone to lunch' programme⁷⁶, convening of flood warning groups). Explicit understanding of and support for other actors taking the lead/initiative (local authorities, Flood Forum, media), including use of grants (as in North West Region Sandside Coastal Group's grant for temporary defences operation in return for signing up to FWD). Making Space for Water approach built into work by all, including drawing up SWMPs in collaboration with CCPs.

Understanding risk, warning

- **Data:** Opt-out FWD system adopted everywhere and/or arrangements in place with CCPs to cross-check FWD registration (for example, in Salford homes receiving fire checks by FRS are asked if they mind being contacted by the Environment Agency to go on FWD).
- **Public interface:** FWD tailored to people's needs: People can sign up for FWD messages in languages other than Welsh and English and earlier warnings for vulnerable people. Warning messages encourage action: they include information on what actions to take (currently available on Floodline), ideally tailored to different flood situations; Floodline actions on same webpage as warning information, with different types of warning clearly distinguished. Provision of advice and information on all aspects of flooding is coordinated with other CCPs.⁷⁷ Community information and view about risk and behaviour of floods is seriously considered and incorporated where possible.⁷⁸
- **Collaboration with CCPs:** Flood warning system includes collaboration with CCPs and community on dissemination, such as door knocking for vulnerable groups (police, neighbours, flood wardens/local coordinators,

⁷⁰ Environment Agency (2007) op cit. Recommendation 8.

⁷¹ Pitt Review (2007) op cit. Interim Conclusion 29.

⁷² As discussed at Local Resilience Forum Gloucestershire County Flooding Subgroup. Riversmeet House, Tewkesbury, 30 October 2007, Flood Situation Summary Sheets; names of flood warning areas.

⁷³ Pitt Review (2007) op cit. Paragraph 3.2.3.

⁷⁴ Environment Agency (2007) op cit. Recommendation 9.

⁷⁵ As suggested by Chris Pike, Tewkesbury Borough Council, Local Resilience Forum Gloucestershire County Flooding Subgroup. Riversmeet House, Tewkesbury, 30 October 2007.

⁷⁶ New Orleans/Herefordshire and Worcestershire presentation to Extreme Flooding Conference 2006.

⁷⁷ Environment Agency (2007) op cit. Recommendation 10.

⁷⁸ Similar to Pitt Review re: clearance of weed, dredging and drainage channels

parish/community councils). Information provided by Environment Agency to CCPs clarifies relationship between triggers (warnings/forecasts) and response required (evacuation, distribution of resources).⁷⁹

During flooding

- **Data:** Integrated data systems mean a cross-CCP view of number of households flooded can be easily given (including beginnings of mechanisms for community intelligence about extent of flooding to be fed into the system), and continually inform emergency response.
- **Public interface:** One-stop contact point (phone and website) for flooding queries/info, which is able to provide answers to nearly all queries within a specified time (similar to what the Fire and Rescue Service provides). Strong community presence including fully briefed flood ambassadors. Drop-in centres/surgeries held, but ALL are with CCPs (none with solely the Environment Agency). Attendance at public meetings possible/constructive due to closer earlier relationships and agreements on how they will be run. Arrangements with media mean media plays central and collaborative role in getting messages out to and in from the public.⁸⁰
- **Collaboration with CCPs:** Focused to provide consistent public interface.

After flooding

- **Data:** Systems updated quickly with intelligence gathered from all sources. New flood maps/warning areas publicised and put on publicly accessible internet (with input from CCPs to ensure they are usable).
- **Public interface:** As for Level 1, but active efforts made to feedback to all who have attended sessions, and strengthen relationships.
- **CCP coordination:** Cross-CCP lessons learned report, linked to cross-CCP planning on how to improve resilience in the future.

Strengths/weaknesses of this approach

- **Strengths:** Change emphasises people as well as technology, consistent with key messages from Pitt Review (2007).
- **Weaknesses/risks:** Danger of changes focused on delivery of services, not being up to the complexity and speed of change to flooding experienced on the ground.

3.2.3 Level 3: Integrated planning and effective response by resilient communities

This level places greatest emphasis (performance and incentives) on resilience to flooding (outcomes) rather than provision of services.

What would be different?

⁷⁹ Environment Agency (2007) op cit. Recommendation 9.

⁸⁰ Pitt Review (2007) op cit. Recommendation 13

- **On the ground:** Network and outcome-focused approach means a more flexible and responsive set of activities to improve flood resilience.
- **Organisation:** New teams such as cross-organisational flood incident management teams. Staff core skills include working in collaboration and with volunteers. Agreements between organisations at national level.
- **System framework:** Organisational and cultural change that reflects a people centred outcomes approach.

Planning and prevention

- **Data:** As level 2, but all integrated systems are also fully accessible to the public, and public able to upload their own intelligence/information.
- **Public interface:** Fully guided by Building Trust type approaches. Established community structures: every community has emergency plan. Community wardens are paid, linked to networks of voluntary groups/volunteers who play a key role in delivering warnings and providing flood detection information alongside other emergency responses. Wide range of local groups actively engaged and involved (from business associations to care homes). [Most] homes at risk from any form of flooding have some incentive for flood proofing/have planned what to do in a flood. People are aware of the relationship between the actions they need to take and actions required at the wider planning level to make space for water at a community or catchment level.
- **Collaboration with CCPs:** A core group of staff from relevant CCPs – linked to the LRF and emergency planning more generally - work together through the FRM cycle, each taking lead for a different aspect of the cycle. In addition collaboration for all levels of planning with different organisations leading on each (such as the local council on surface water management plans).

Understanding risk, warning

- **Data:** Warning system now focused on enabling effective response. Focus on flood incident management service – including use of data and information from a range of sources - rather than flood warning from Environment Agency in isolation.
- **Public Interface:** FWD is one of a number of methods for warning people and no longer classified as the only way of achieving ‘maximum’ level of service (Work Instruction, Flood Warning Levels of Service, 2006).
- **Collaboration with CCPs:** Cross-CCP determination of and powers to deliver what works, drawing on national guidelines as for Level 2.

During flooding

- **Data:** As level 2, but systems enabling community/other organisation input of information about floods and flood response in order to enable fully integrated understanding of what is going on by all.

- **Public interface:** Arrangements with media for getting information out to the public and back from public to CCPs and to above information systems fully in place.
- **Collaboration with CCPs:** Teams co-located.

After flooding

- **Data:** shared data systems with community interface allowing monitoring of response and recovery, such as houses where insurance claims have/have not been action, works being carried out, renovation/redecoration completed; social networking systems supporting the development of groups or initiatives by people affected by flooding; CCPs using programmes like Atlantis to share and update information on flood impacts, and response and to collaborate on recovery.
- **Public interface:** As for Level 2
- **Collaboration with CCPs:** As for Level 2

Strengths/weaknesses of this approach

- **Strengths:** Combines the best in technology and organisations in the service of people and outcomes, without the ‘silos’ interfering. Reaches all communities, not just the most organised.
- **Weaknesses/risks:** Significant change to the core business and skills of the Environment Agency and others. More difficult to evaluate performance of staff and organisations. Significant resources would be required at least initially to enable changes to happen.

3.3 Recommendations

We recommend that these change levels are considered throughout the Environment Agency, and where possible, with professional partners (perhaps through the Local Resilience Forums). Different levels of change may be required in different parts of the Environment Agency and this will mean that both short-term and more aspirational targets are likely to vary. The Environment Agency should accept that this is inevitable in a large organisation working across a number of regions, and work with this diversity rather than seek to impose an artificial uniformity.

A rule of thumb, settling for Level One change will not be sufficient to deliver the kinds of change required to deal with flooding in the future, even if it works in the short term. We therefore recommend that planning is done now to reach Level Two.

In the interim, the practical actions recommended in Section 2 will help move the Environment Agency into a position from which Level Two change is possible.

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List of abbreviations

ABI	Association of British Insurers
AMS	Agency Management System
CCA	Civil Contingency Act
CCP	Civil Contingency Partner
CRIP	Common Recognised Information Picture
FIM	Flood Incident Management
FRM	Flood Risk Management
FRS	Fire and Rescue Service
FWD	Flood Warnings Direct
IP	Incident Plan
KPI	Key Performance Indicator
LA	Local Authority
LCA	Lindsey Colbourne Associates
LRF	Local Resilience Forum
MIP	Major Incident Plan

Appendix 1: Improving collaboration with professional partners and communities: A review of practice and evidence

Improving Institutional and Social Responses to Flooding Work Package 3 Interim Report

April 2007

1 Aims and approach

1.1 Aims

This report provides a basis to develop practical tools to help the Department for Environment, Food and Rural Affairs (Defra), the Environment Agency staff and partners to work together effectively during flood incidents. As a first step the report brings together existing literature and practice with new ideas.

The report works best when read in conjunction with its sister report ⁸¹, covering broader cultural and systemic issues.

The report is 'interim', and has not involved as many people as we would have wished (due to the time constraints).

1.2 The context for this work

The objectives of Work Package 3 are:

To understand what is needed to achieve a successful partnership with the Environment Agency's professional partners (as defined under the Civil Contingencies Act) in effectively responding to a flood incident. And in the light of this information, to provide whatever practical tools and guidance might be useful for developing the institutional capacity required, so that staff can work more effectively in partnership in flood incidents across England and Wales.

Work package outcomes

Primary Outcome: A **practical set of outputs** (e.g. simple tools and guidance) for Environment Agency/Defra staff and partners which will assist them to work effectively in partnership during flood incidents.

Secondary outcomes:

- ✓ Evidence and learning collated from work with key Environment Agency staff and professional partners to understand the **benefits** of partnership working and what – if anything- they need to improve partnership working.
- ✓ An understanding of what is **needed** to create and maintain effective partnerships for responding effectively to flooding, including for example, how to form and maintain partnerships, and any links to/requirements of partnership working before and after a flood (such as in the other stages of the flood risk cycle), to wider partnership working (such as with the community) and any evidence to back this up.
- ✓ Simple **guidance** on how the Environment Agency can develop the necessary skills to work in partnership effectively. Although this will be focused on during flood incident

⁸¹ Colbourne, L. (2008) *Mainstreaming collaboration with communities and stakeholders for FCERM. Improving Institutional and Social Responses to Flooding Work Package 4*. SC060019. Environment Agency, Bristol. Appendix 1.

partnership working, it is anticipated that the guidance may be applicable, or at least have implications to all four stages of the flood risk cycle.

Package success criteria (outcomes)

FRM staff across the UK interested in/ using the outcomes of the work package to inform their partnership work.

1.3 Tasks to undertake

Task 1

Guided by research by Environment Agency staff, establish the current context and practice (to ensure this work package adds value to, builds upon and feeds into rather than duplicates what is already happening), including for example:

- *Building Trust with Communities* (BTWC) work.
- The project on understanding duty officer support and training needs.
- Examples of how partnerships were established and how they worked in a range of small to large-scale flood incidents such as Oxford, Llanrwst, Ottery St Mary, Carlisle, Boscastle, Elmsleigh, Stockbridge, and potential at-risk flood areas.
- Triton (national scenario response testing) – lessons learned.
- Regional/local scenario-based exercises – lessons learned.
- Guidance used at national, regional and local level.
- An understanding of how current practice varies across the UK, including local authority flood response plans where they are in place.
- Key messages and findings from Making Space for Water (RF8 improving responses to flood incidents).
- How and when partnerships are formed and at what level within the organisations involved (for example, chief executive/area manager; emergency planners; flood warning teams/local authority contacts; frontline staff).
- Implementation of vulnerability and flooding policy.

In addition, placing the above within the context of the policy shift from flood defence to living with flooding, and understanding key reviews and changes such as Defra's review of the strategic overview role on the coast (in England) and the equivalent (WAG) in Wales, the programme looking at rapid flood response, the adaptation toolkit (and issues around devolution of responsibility to partners and communities) and any implications for this work.

Identify (Environment Agency staff) and collate examples of good and poor practice in local partnership working. Consider evidence from recent studies, for example the Stockbridge pathfinder⁸² and PURE in the North East Region⁸³, as well as insights gained from interviews, experiences such as the flood at Shaldon and other reviews, and possibly other relevant civil emergencies such as rail accidents.

⁸² Wilkinson (2005). *Joining Up: Stockbridge Pathfinder*, Environment Agency Science Report

⁸³ Doyle (2006) *Developing Effective Partnerships 1: Literature Review; 2: Case Studies; 3: Summary Report*. Environment Agency Science Reports SC020092/SR1/2/3

Task 2

From this review identify:

1. A typology or framework for understanding the different types of partnerships (how they are established, maintained and how they perform) relevant to response during flood incidents. This task will be informed by and where possible relate to the typology of flood types developed in Work Package 1.
2. What is required for effective partnerships in flood incident response (identifying examples of good practice as well as areas for improved practice). This includes: the identification of partners; using existing relationships with other organisations (such as health professionals) in areas where there is infrequent flooding; the agreement of roles; the management/maintenance of partnerships; what happens before and after a flood; one-stop shops; role of partnership in achieving wider sustainable development objectives and in devolving responsibilities to partners and communities.

1.4 Next steps for the project

Task 3

Set out **practical tools/processes** for increasing the capacity for the development, maintenance and operation of effective partnership working in flood incident response (Note: although focused on response, there may be implications for all levels and for all stages of the flood risk cycle). For example, how to use the BTwC toolkit; identifying individuals who will run incident response partnership meetings.

Task 4

Encourage, monitor and support the use of tools and processes in a range of partnership situations. Minimal 'helpdesk' support from consultants.

Output

Publication of report(s) to include the tools and lessons learned, suggested amendments from updates or use, and recommendations for mainstreaming the results.

2 Context

2.1 What is the problem?

A changing context

In their review of ‘what are the lessons from social science research on partnership working for the Environment Agency to develop more effective partnership relationships in relation to improving the social and institutional responses to flooding’, Watson *et al.* (2007)⁸⁴ identify a number of key contextual changes that are particularly significant for the design of future institutional arrangements and approaches for flood management, including:

- ✓ Recent shifts in government flood hazards management policy.
- ✓ Lessons from high-profile flood incidents.
- ✓ Practical experiences and insights gained from national flood exercises.
- ✓ The development of new emergency planning arrangements.
- ✓ Developments in EU environmental policy and legislation.

See Appendix 2 for the full assessment.

The authors conclude:

“[Our] account of changing contextual conditions suggests that future flood hazard management strategies and institutional responses must be designed to work in an increasingly complex and chaotic operating environment. While many of our present institutions and organisational arrangements were designed for a stable and highly predictable environment, a world characterised by change, complexity, uncertainty and potential conflict regarding alternative knowledge claims and management options is fast becoming the reality. Trist (1980, p.117) called this new type of environment ‘the turbulent field’ and described it in the following terms:

“...large competing organisations all act independently, move in many diverse directions, and generate unanticipated and dissonant consequences. These dissonances increase as the common field becomes more crowded with participants. The result is ‘contextual commotion’ – as if ‘the ground’ were moving as well as the organisations.”

In a turbulent environment, flooding requires a very different type of institutional and social response since no single organisation, no matter how large or powerful, has the necessary knowledge, skills and resources to cope with the situation effectively....

While the need for organisational and cultural change has already been

⁸⁴ See Appendix 2,

acknowledged in the Delivery Plan for Making Space for Water (Defra, 2005a), the specific institutional arrangements and approaches required for effective and sustainable flood management across England and Wales have so far received surprisingly little attention from policy makers or researchers.’⁸⁵

2.2 What is already in place? The Civil Contingencies Act and Capabilities Programme

The most relevant guidance on working with others on flooding is set out in the Civil Contingencies Act 2004 (CCA). The purpose of the CCA is to set up a single framework for civil protection in the UK. It provides a clear duty on local responders to plan and prepare for emergencies. Under the Act, the Environment Agency is obliged to cooperate and share information with other Category 1 responders to prepare for major flooding and pollution incidents. An emergency under the act is ‘*an event or situation which threatens serious damage to human welfare in a place in the UK, the environment of a place in the UK, or war or terrorism which threatens serious damage to the security of the UK*’.

This places duties on Category 1 responders to assess risks and develop contingency plans and maintain their own business continuity. It does not specify duties of individual responders but does require them to act in concert. In particular, it requires them to plan in concert via Local Resilience Forums (LRFs).

Meanwhile, the Capabilities Programme aims to build resilience to emergencies across UK, by ensuring a robust response infrastructure is in place to deal rapidly, effectively and flexibly with the consequences of a range of disruptive challenges. The FECP (Flood Emergency Capability Programme) aims to improve the resilience to flooding from any source. The governing board has members from local authority organisations, devolved administrations as well as UK Government. They are taking forward recommendations from experience (such as Carlisle), identifying and plugging gaps in capability/resilience. Defra FM chairs the inter-departmental FECP board, whose aim is to improve resilience to all types of flooding and all aspects of the response. The Environment Agency is Defra’s main delivery agent for flood risk management and project manages the FECP

“All professional partners must take steps to understand the flood risk in their areas and what its impacts might be (for example, where evacuation is needed; who are the vulnerable people; logistics). Need to work closely with the Environment Agency to do that.” Sarah Nason, Defra

Who needs to be involved

Schedule 1 of the CCA lists the responders subject to its provisions. The Act splits local responders into two categories, depending on the extent of their involvement in civil protection work, and places a proportionate set of duties on each:

Category 1 responders (core responders) as set out in the CCA

Emergency services

- ✓ Police forces

⁸⁵ Appendix 2 (LCA highlight)

- ✓ British Transport Police
- ✓ Fire authorities
- ✓ Ambulance services
- ✓ Maritime and Coastguard Agency

Local authorities

- ✓ All principal local authorities (districts, shire counties and unitaries)
- ✓ Port Health Authorities

Health bodies

- ✓ Primary Care Trusts
- ✓ Acute Trusts
- ✓ Foundation Trusts
- ✓ Local Health Boards (in Wales)
- ✓ Any Welsh NHS Trust which provides public health services
- ✓ Health Protection Agency

Government agencies

- ✓ Environment Agency
- ✓ Scottish Environmental Protection Agency

Category 2 responders (cooperating responders) as set out in the CCA

Utilities

- ✓ Electricity distributors and transmitters
- ✓ Gas distributors
- ✓ Water and sewerage undertakers
- ✓ Telephone service providers (fixed and mobile)

Transport

- ✓ Network Rail
- ✓ Train Operating Companies (passenger and freight)
- ✓ London Underground
- ✓ Transport for London
- ✓ Airport Operators
- ✓ Harbour Authorities
- ✓ Highways Agency

Health bodies

- ✓ Strategic Health Authorities

Government agencies

- ✓ Health and Safety Executive

Other relevant bodies identified in interviews, workshops and literature review

- ✓ National Flood Forum
- ✓ Citizens Advice Bureaux
- ✓ Local MPs
- ✓ GPs
- ✓ Association of British Insurers
- ✓ Private Landlords
- ✓ Voluntary groups
- ✓ Community groups
- ✓ Individuals with named role (such as flood wardens)
- ✓ Individuals who act 'in the moment' (such as in Boscastle)

Responsibilities set out in the Civil Contingencies Act

Responsibilities of Category 1 responders

The Civil Contingencies Act requires Category 1 responders to:

- ✓ Assess the risk of emergencies and use this to inform contingency planning.
- ✓ Put in place emergency plans.
- ✓ Put in place business continuity arrangements.
- ✓ Set up arrangements to make information available to the public about civil protection matters and maintain arrangements to warn, inform and advise the public in the event of an emergency.
- ✓ Share information with other local responders to enhance coordination.
- ✓ Cooperate with other local responders to enhance coordination and efficiency.
- ✓ Provide advice and assistance to businesses and voluntary organisations about business and continuity management (local authorities only).

Responsibilities of Category 2 responders

Category 2 responders are 'cooperating bodies' who while less likely to be involved at the heart of the planning work, will be heavily involved in incidents that affect their sector. Their duties are cooperating and sharing relevant information with other Category 1 and 2 responders.

National Capability Survey: Key gaps identified⁸⁶

"Almost one-third of all flood plans in existence have not been published/communicated to people in their area." 2006 National Capability Survey

⁸⁶ Information in this section is taken from a presentation by Colin Berghouse: National Capability Survey at the Extreme Flood Conference, November 2006

What plans are in place, and what do they cover?

- ✓ Nearly 90 per cent of Category 1 responders said they have plans in place to respond to flooding. But the status and validity of these plans is unclear and many have not been reviewed in the past 12 months. Almost one-third of flood plans in existence have not been seen or validated by the Environment Agency.
- ✓ A third of local authorities (county and unitary) indicated their evacuation plans do not cover the risk of flooding, even though they understand their area to be at risk.
- ✓ Of the police forces that indicate they have flood plans, a majority do not have flood evacuation routes identified and one in five do not include traffic management measures in their evacuation plans.
- ✓ Two-thirds of Category 1 responders have not determined the location of groups of vulnerable people (such as care homes) within their flood plans.
- ✓ Over half of Category 1 responders do not have business continuity plans in place (the ability of emergency responders to continue performing critical functions during a flood emergency is fundamental to disaster management and recovery).

What are the main gaps in current capability?

Policies and procedures

- ✓ Lack of procedures in some Category 1 responder organisations on how to deploy a response.
- ✓ Lack of focus on recovery (managing the consequences after the initial crisis is over).

Communication

- ✓ Lack of emergency response plans published and promoted to local people.
- ✓ Lack of properly trained personnel that are identified in local authority emergency response plans.

What lessons have we learnt from recent experiences?

- ✓ Plans without operating procedures are inadequate.
- ✓ Plans and exercises are a means to an end - not an end in themselves.
- ✓ Vulnerable people are the most likely victims.
- ✓ Emergency response staff and their families get caught up in a crisis themselves.
- ✓ Evacuation and sheltering are intrinsically linked.
- ✓ De-conflicting situation reports is critical to decision-making.
- ✓ Rapid procurement and distribution of goods and services needs to be pre-determined and underpinned with logistical support.
- ✓ When the crisis is over, who clears up?
- ✓ In a large-scale disaster, national and local responses must be complementary.

Extreme Flood Conference, 8 November 2006

Summary of delegate feedback from the conference⁸⁷ shows clearly that partnership working was top of the agenda for improving responses to extreme flood events.

The main set of points raised are very closely related, the need to work together, collaborative working in partnerships, the need for effective communications, and information sharing and the need to exercise plans to achieve effective working accounted for almost half the responses.

The point most raised by delegates (45 points) concerned the importance of collaboration between partners. This point involved:

- awareness of the wide range of organisations affected by extreme floods;
- the need to work together and to improve the ability to work together;
- the benefit of knowing people from other agencies when the need arises.

Key to this working together is the need for effective **communication between organisations** and for this to improve was highlighted. The need for effective information sharing was raised by delegates and during the event.

Coding categories	Number of mentions
Partnership and collaborative working - the importance of this issue	45
Communication/information sharing between organisations	28
Exercises - the value of doing them and knowing who to work with	18
Better pre-planning	19
Gaps identified and actions needed	18
Public awareness and the importance of communication with them	20
Recovery	17
Miscellaneous specific points; funding/resources, skills, leadership	17
General Awareness/learning points from the meeting	17
International experience best practice from overseas or other types of flooding	11

TOTAL **210**

The importance of exercises, at a variety of scales was highlighted as a way to test plans but also get to know partners in terms of how they work and most importantly who is likely to be involved; the relationships between individuals during emergency response work is very important.

The need for effective plans was highlighted (18 points); there is clearly an awareness of the need for plans and recognition that these are an important step but not an end in themselves, they need to be tested (exercises) and worked through and developed in partnership with others.

Gaps and actions No specific question was asked on ‘What needs to be done?’ or on the gaps in the current system and mostly these points are covered in the different sections of the responses and some points are expressed strongly. There is clearly

⁸⁷ Information in this section was taken from an analysis of responses by R. Earll (CMS) and Harriet Greene (CIWEM) November 2006

important work to be done and Colin Berghouse's presentation covering a 'gap analysis' was particularly important in this regard. The actions and gaps grouping also highlights issues where further work is needed. Several points raised the issue of the adequacy of awareness among *professionals* about the issues surrounding extreme events.

One of the main presentations by Simon Hughes focussed on **public awareness** of flood risks and a range of issues that arise from this; this was a theme touched upon by other speakers also. Recent changes away from hard engineering/flood protection to flood risk management, reinforced by the direction set by *Making Space for Water* clearly highlight the need for a different approach towards public awareness and engagement and the investment that needs to be made in this area. The reality of extreme events touched upon by a number of speakers was that the public need to be aware enough to take appropriate action **before** an incident including leaving properties at risk.

The **recovery stage** of flooding incidents was highlighted by all three case studies and clearly there are enormous costs and amounts of work involved. In the Carlisle incident recovery is estimated to have cost £400 million. There is an indication in the points made that much more needs to be done to plan for and lead the recovery phase of the work.

A number of points were made about leadership and the need for this, the adequacy of funding, and the need to develop the skills base.

3 Who should be doing what? Civil Contingencies Act

3.1 Role of the Environment Agency

Critical role

“Key role is warnings – critical to implementing MIPs, especially in areas where plenty of lead time such as tidal (Exeter, Tiverton, Totness, Newton Abbott). The Environment Agency provide information on flood risk, and provide warnings to communities and partners.”⁸⁸

There is consensus on the practical roles of Environment Agency during a flood incident:

- ✓ Timely issue of flood warnings (to the community and civil contingency partners).
- ✓ Provision of data/information to CCPs and attendance at strategic meetings.
- ✓ Data collection, recording and reporting.
- ✓ Monitoring, inspection and operation of flood assets.
- ✓ Erection of permanent demountable defences.
- ✓ Work to supplement existing Environment Agency flood defences at risk of failure.
- ✓ Evaluation of effectiveness of response.

Adding value? How far to go

However, there is some contention about how ‘far’ the Environment Agency should go on the ‘softer’ aspects of the job i.e. those that involve people rather than engineering or science. Opinions vary on what the Environment Agency is required to do, what it is actually doing, what (ideally) it should be doing, and what others want from it. Below are a few examples:

Working with communities (as distinct from civil contingency partners)

“Locally it doesn’t seem as though there is national support or understanding for what we are trying to do here [on community-based Incident Plans] – we need more guidance from Environment Agency in terms of what we want to do with communities.

There are no KPIs or working structures to support the community-based Incident Plans. This means it is all a bit hand to mouth, and dependent on getting the resources (people/time) to do it.

[The Regional Flood Manager] is supporting staff to do this, and in many rural areas there is recognition that it is the only way to do it (e.g. Wales).

⁸⁸ Interview, Bradford City Council, 2007.

*On paper it doesn't make sense in terms of the number of properties at risk, but in rural areas it is the only way we can do it.*⁸⁹

Role in more human aspects of flooding?

In addition to technical support, the Environment Agency needs to respond to the psycho-social needs of the flood victims and to feel and demonstrate greater empathy. It was felt that the Environment Agency would benefit from being less authoritarian by empowering innovative individuals within the organisation.

*Not all staff members should be expected to be brilliant at working with local communities. Part of the Environment Agency's skill will be to select staff who want to be trained [to work with communities].*⁹⁰

Which parts of the Environment Agency have a role, when?

Something that seems to be missing is clarity about which bit of the Environment Agency needs to be engaged at which bit of the flood cycle. For example:

- *flood management focus on prediction/warning, maintenance and repair, data collection (during/after);*
- *environmental management have a role during clear up (e.g. waste);*
- *development control have a role in rebuilding;*
- *corporate affairs have a role in agency reputation;*
- *and who has a role in thinking about the human side?*⁹¹

Taking on more of a convening role?

*"I was involved in Selby where defences at risk of failing brought together CEX of CC, DC, senior Environment Agency, utilities, police super inspector, fire, ambulance. We needed to establish a clear aim, clear performance measures, clear values required as 1,000 people mobilized to help. Governance even for a management team to do this would take days. But for this we had a few hours, and team was operating 24 hours a day. I expect a partnership to operate as high performing team, and to achieve this, I took over the chairing of the initial meeting. We need to have people ready to run these emergency partnerships."*⁹²

Most of these activities lie beyond the conventional roles of local authorities and the Environment Agency in flood response. A partial stakeholder network is already in place (with developers, insurers, educators, health care professionals, and so on) allowing for information flow, but consolidating that network into one that can allow for full dialogue

⁸⁹ Interview with Environment Agency Flood Incident Manager, February 2007.

⁹⁰ Involving communities and citizens in flood. 2005

⁹¹ Interview with Flood Incident Manager, Ibid

⁹² Environment Agency FRM Senior Manager, in conversation, September 2006

*leading to shared decisions and delivery is still some way off.*⁹³

A recent literature review⁹⁴ identified three roles for the Environment Agency:

- ✓ as protector (with full power to protect people or the environment);
- ✓ as convenor (bringing together interested parties to make a decision together);
- ✓ as advisor or advocate (providing information or advice to others to make a decision).

⁹³ Cornell (2006) *Improving stakeholder engagement in flood risk management decision-making and delivery*. R&D Technical Report SC040033/SR2. Environment Agency, Bristol.

⁹⁴ Lindsey Colbourne Associates 2005

AMS: Incidence response standards for FRM

ACTIVITY : FM3 Working in cooperation with professional partners on flood defence	
DEFINITION : Working in cooperation with professional partners to ensure a seamless and integrated response to flood incidents.	EXAMPLES OF TYPES OF WORK: Providing information and advice to professional partners and multi-agency strategic (gold), tactical (silver) and operational (bronze) groups, including attendance where necessary.
COMMENTS : Excludes data collection, recording and reporting after a flood incident, monitoring and inspection of flood defence assets, the operation of assets, Erection of permanent demountable Defences, works to supplement existing Agency flood defence assets in danger of failure, timely issue of flood warnings. Incidents assessed on the basis of the initial information received or warnings given.	

PURPOSE AND BENEFITS: Use powers invested in the Agency to prevent, minimise, remedy or mitigate the effects of flooding on the environment arising from rivers or the sea. Enables Agency to act to prevent harm to human safety, health and property.

Shaded Standard chosen for 2005/06	Definition of incident response standard	Consequences of adopting response standard	Resource Required (incremental) FTE	Shaded Standard chosen for 2005/06
1.	Provide information and advice from Incident Rooms to professional partners as requested during category 1 flood incidents. No attendance at multi-agency strategic or tactical groups. Attend multi-agency Operational groups only where necessary for the safe and effective deployment of Agency resources in undertaking their role and responsibilities.	High risk of communication failure leading to a less effective response. High risk of negative publicity in media. Little or no feedback from partners on the impact and needs of the communities affected by flooding and therefore difficult to prioritise the Agency's own activities. Loss of respect with professional partners and the public.		
2.	Provide information and advice from Incident Rooms to professional partners as requested during category 1 flood incidents. Attend all multi-agency strategic groups but no tactical groups. Attend multi-agency Operational groups only where necessary for the avoidance of loss of life and/or for the safe and effective deployment of Agency resources in undertaking their role and responsibilities.	Moderate risk of communication failure leading to a less effective response. Moderate risk of negative publicity in media. Limited feedback from partners on the impact and needs of the communities affected by flooding and therefore difficult to prioritise the Agency's own activities. Loss of respect with professional partners and the public.		
3.	Provide information and advice from Incident Rooms to professional partners as requested during category 1 flood incidents.	Low risk of communication failure leading to a less effective response. Low risk of negative publicity in media. Some gaps in feedback from partners on the impact and needs of the		

Shaded Standard chosen for 2005/06	Definition of incident response standard	Consequences of adopting response standard	Resource Required (incremental) FTE	Shaded Standard chosen for 2005/06
	<p>Attend all multi-agency Strategic groups.</p> <p>Attend multi-agency tactical and operational groups only where necessary for the avoidance of loss of life and/or for the safe and effective deployment of Agency resources in undertaking their role and responsibilities.</p>	<p>communities affected by flooding to aid prioritisation of the Agency's own activities.</p> <p>Fair relations with professional partners and the public.</p>		
4.	<p>Provide information and advice from Incident Rooms to professional partners as requested during category 1 flood incidents.</p> <p>Attend all multi-agency strategic and tactical groups.</p> <p>Attend multi-agency Operational groups only where necessary for the avoidance of loss of life and/or for the safe and effective deployment of Agency resources in undertaking their role and responsibilities.</p>	<p>Low risk of communication failure leading to a less effective response.</p> <p>Low risk of negative publicity in media.</p> <p>Some gaps in feedback from partners on the impact and needs of the communities affected by flooding to aid prioritisation of the Agency's own activities.</p> <p>Good relations with professional partners and the public.</p>		

3.2 Role of local authorities

Critical role

Under the Civil Contingency Act, local authorities will:

- ✓ Cooperate with other responders.
- ✓ Share information with other responders.
- ✓ Undertake risk assessments.
- ✓ Undertake emergency planning based on the risks.
- ✓ Communicate with the public before, during and after an emergency, based on the ownership of the risk.
- ✓ Undertake internal business continuity management.
- ✓ Promote business continuity to local businesses and voluntary agencies.

Adding value? How far to go

In a similar way to the Environment Agency, there is clearly plenty of added value roles for local authorities around the human or community-focused aspects of flooding and ways of dealing with it. For example:

Taking the lead

“Devon CC have been working for 10 years to help develop multi-agency Major Incident Plans to deal with flood evacuation in 13 locations. Best practice programme. Exercising elements of the plan annually. Devon Flood Warning and Emergency Response Plan. There are MIPs across the SW, but better in Devon due to County Council leadership.”⁹⁵

Community-based response

“In 1996 the Environment Agency wrote a letter to Devon County Council telling them of the largest risks – a list of communities requiring evacuation plans (1,000s). This critical letter started real leadership by CC, annually encouraging parish councils to consider the need for IPs (how warning or flood will turn into action) which lasted until about 18 months ago (although personnel changes have since led to it dropping down the agenda).”⁹⁶

Self help, housing, recovery

“It [flood planning] is not top of local authority agenda unless they’ve experienced it recently, but we have a role in:

- *Preplanning – warnings, evacuation routes, public education for self help, emergency rest centres; list of location of vulnerable residents; pre-determined advice/info booklets; alternative accommodation lists; multi-agency arrangements; recovery plans; outreach support processes; pre-determined multi-agency recovery team.*
- *Stabilisation – temporary re-housing; vulnerable support; advice, information and*

⁹⁵ Interview with Flood Incident Manager, Ibid

⁹⁶ Interview with Flood Incident Manager, Ibid

guidance; flood defence repair.

- *Recovery – regeneration of community; outreach teams for the vulnerable; improved flood defences.*⁹⁷

3.3 Role of Fire and Rescue Service (FRS)

*“Stop doing more projects into what needs doing! We know what we need to do. Just get on with doing it.”*⁹⁸

Example: Chief Fire Officers Association (CFOA) Project: Management of major flood emergencies

FRS contribution to the emergency phase

- Commenced June 2005, reported November 2006. Starting point was that floods are multi-agency, multi-disciplinary and multi-jurisdictional events. Considers actions during emergency only. A systems approach to disaster management and response.
- Key planning and operational objectives: single overarching flood response framework to support multi-agency working. Identify best practice and share information widely. TV makes it real for the public.

Project outcomes

Strategic Review Document

- Findings of research
- Key risks and control measures
- Environment Agency roles, responsibilities and capabilities
- Case studies, best practice examples

Flood Response Guidance Document

- Practical guidance for the management of major flood emergencies
 - Regional/national mutual aid deployment arrangements
 - Model multi-agency protocols
- Model risk assessment and communications protocols

Recommendations in key areas

- ✓ Roles and responsibilities (such as what fire officers should do to contact Environment Agency and local authority locally)
- ✓ Planning and preparation for flood events
- ✓ Interaction with multi-agency partners
- ✓ Use of weather and flood data (*“We had to go to the USA to find out what had sat on the Environment Agency’s desk next door”*)

⁹⁷ Flintshire County Council.

⁹⁸ Fire and Rescue Services representative, informal comment.

- ✓ Service systems and protocols to support the response phase
- ✓ Command and control of major incidents.

3.4 Role of resilience forums and operational and emergency flood response groups

Resilience Forums

Local Resilience Forums (LRF) are organised on police areas – broadly counties – and include local authorities, police, FRS, NHS Trusts and the Environment Agency.

Regional Resilience Forums (RRF) bring together LRFs at Government Office of the Region level to provide cross-regional coordination and support the work of the LRFs.

Local resilience forums still finding their feet⁹⁹

Many are not embedded yet – they are looking at all risks. Flooding in Devon has been well managed in the past (Devon County Council lead) but other risks have been overlooked, and LRF is uncovering these. Therefore flood may be going down the agenda, as resources (such as police) may be increasingly stretched.

The LRF is more bureaucratic than old informal arrangements, and some Environment Agency staff feel less connected than through informal links with local authority and police. Where this is compounded by staff changes, there is less council support for flood plans.

Ideal way forward would be for LRF to set the strategic direction, and then designate jobs to do task and finish groups/individuals (as in the old informal grouping).

Operational and Emergency Flood Response Groups (OEFRG)¹⁰⁰

In Devon, these meet once a year, primarily as discussion forums, bringing together local authorities, police, ambulance, coast guards, water companies, Met Office. Up to 30 people. Mostly run as 'listen and learn', and an opportunity to catch up with what's going on (e.g. new flood warning system, IPs etc), they seem to lack a bit of a sense of urgency/action. Although people like to get together.

May be need to establish task and finish groups which would ensure more action results from these meetings.

⁹⁹ Interview with Environment Agency staff, Devon Area, February 2007.

¹⁰⁰ Op cit

4 Beyond civil contingency partners: Collaboration with communities and others

4.1 Working more with communities and individuals

The first Board Meeting for the IISRF project recommended that the focus of this work should change from “reducing the negative consequences of flooding” to “enabling communities to be more flood resilient.” This change reflects the results of our work to date, and the vital role that communities themselves play in becoming more flood resilient. For example:

“Civilians are the true first responders and first line of defence.” Bill Durodie, Kings College London

“It was one hour and 15 minutes before the first helicopter came. Meanwhile local people cleared the hotel which spanned the valley and thirty minutes later, water came in at first floor level and collapsed the floor. Local people and their knowledge/involvement saved lives.” Account of the flooding at Boscastle, 2004.

“Almost one third of all flood plans in existence have not been published / communicated to people in their area”. 2006 National Capability Survey

It is clear that civil contingency partners may not be able to do all community related work.

4.2 Working with other organisations

Literature reviews, practice and interviews show there is a strong interest in developing relationships with more than just civil contingency partners and communities:

“The Environment Agency has tackled the structures of partnership for flood defence planning and construction. In that context, it has clear relationships and a common language with its statutory consultees, environmental engineers and development planners. It now needs to explore more formalised and accountable partnership in the delivery of the full portfolio of flood risk management measures, which, in addition to conventional flood protection, includes land use planning and spatial regeneration, insurance, post-flood recovery programmes, and flood-proofed and flood-resilient homes and communities driven by raised flood risk awareness in individuals.

Most of these activities lie beyond the conventional roles of local authorities and the Environment Agency in flood response. A partial stakeholder network is already in place (with developers, insurers, educators, health care professionals, and so on) allowing for information flow, but consolidating that network into one that can allow for full dialogue leading to shared decisions and delivery is still

some way off.¹⁰¹

Key insights for us:

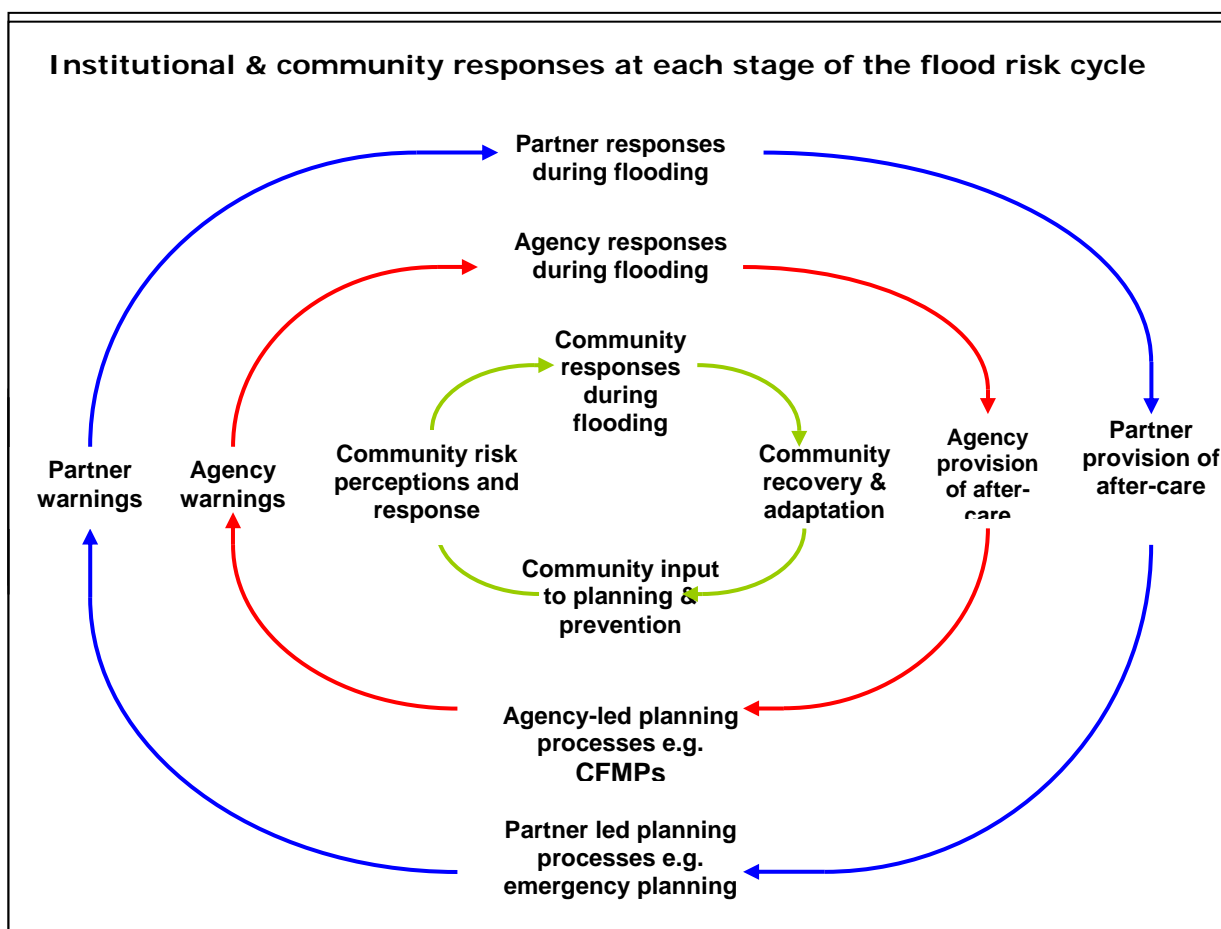
- *The need for the widest range of partners to plan as far in advance as possible for flood contingencies.*
- *That a huge number of bodies and agencies need to cooperate for improvements in FM to happen.*¹⁰²

¹⁰¹ Cornell (2006) op cit.

¹⁰² Delegate feedback from the Extreme Flood Conference, November 2006

5 What needs to be done, by whom, across the flood cycle?

5.1 The flood cycle



This conception of the flood cycle shows the links between the before, during and after stages of a flood as well as the triple line of community, Environment Agency and partner activities. What it clearly shows is that it isn't possible to 'just' focus on one stage of the flood cycle, or one component of those involved in dealing with floods.

Initial work shows that aftercare, recovery and adaptation is the most neglected aspect of the flood cycle, but that even basic activities such as information-sharing can be missed.

"Flood recovery phase is a key gap that needs roles and responsibilities defined at a government level."

"The authorities are quite agreed about the policies, but a little difficulty in collaboration and sharing data remains."¹⁰³

¹⁰³ Delegate feedback from Extreme Flood Conference, November 2006

5.2 What needs to be done, when, by whom?

This section provides a framework for considering what ideally should be done by whom at each stage of the flood cycle (planning and prevention, risk assessment and warning, during flood and aftercare recovery and adaptation), in terms of:

- ✓ DATA: sharing information/data
- ✓ DESIGN: designing/planning
- ✓ DELIVER: undertaking practical activities.

This structure may be useful for others when planning their collaborations:

Type of activity	Stage of flood cycle			
	Planning and prevention	Risk assessment, warning (preparedness)	Response during flooding (readiness onwards)	Aftercare, recovery and adaptation
Data: share/discuss information Section 5.2.1	What data or information sharing can help with planning and prevention?	What data or information sharing can help with risk assessment, warning and preparedness?	What data or information sharing is needed during a flood?	What data or information sharing is needed after a flood?
Design: designing/planning Section 5.2.2	What designing and planning can be done to prevent flooding risks?	What designing and planning can be done to help effective risk assessment, warning and preparedness?	What designing and planning is needed during a flood?	What designing and planning is needed as part of aftercare, recovery and adaptation?
Deliver: practical activities Section 5.2.3	What can be done on the ground to prevent flood risk?	What can be done on the ground to deliver effective warnings and preparedness?	What can be done on the ground during a flood?	What can be done on the ground to assist with aftercare, recovery and adaptation?

The information in this section is a very initial set of suggestions listed by ‘type of activity’, and needs to be added to in later stages of the project by working with the relevant organisations and individuals. In doing so, we need to consider the roles of the widest range of potential players including voluntary and community groups. We also need to consider what types of collaboration need to underpin these activities.

DATA: Sharing/discussing information

Many have commented¹⁰⁴ that basic sharing of data is the essential foundation of effective responses to floods, yet it remains one of the basic problem areas.

“The authorities are quite agreed about the policies but a little difficulty in collaboration and sharing data remains¹⁰⁵”

Planning and prevention:

What data or information sharing can help with planning and prevention?

Activity	By whom
Develop agreements on sharing of data. E.g. Agreement on data sharing such as radar data on rainfall shared between Environment Agency, York Water and Bradford MDC.	Environment Agency, local authority, water company
Find practical ways of automating and integrating systems and data-sharing, such as joint logs (post-Boscastle).	Environment Agency, local authority, FRS, Police
Develop list of vulnerable people/locations. How to share information on vulnerable groups between organisations?	Social services, police, voluntary and community groups
Establish list of alternative accommodation.	Local authority
Use data as a way of establishing interest and relationships. E.g. Devon – letter from Environment Agency to County Council setting out all communities at risk. County Council started process of establishing MIPs in 13 urban areas and IPs in 50 rural areas.	Environment Agency
Keep Category 1 responders informed (local authorities, police, ambulance, coast guards, water companies, Met Office). Could be used to set up task and finish groups as subset of LRF.	Operational and emergency flood response groups
Understanding ABI position on insurance.	Local authority, ABI
Provision of detailed information and maps of areas at risk. Local authority emergency planning duty manager should be familiar with this information.	Environment Agency, local authority, emergency planning duty manager
Know your civil contingency partners – on first name terms where possible - E.g. Have all numbers in your mobile phone (New Orleans FRS) - E.g. 'Take a copper to lunch' programme (New Orleans FRS)	All CCPs
Land use planning – one clear web portal for local authorities to go to (e.g. suggested by Darren Johnson in relation to London/Thames Gateway)	LGA, Environment Agency, local authority
Understand other organisations' cultures and how they work - presentations, visits - exercises	All CCPs
Check communications in catchments /have contingency plan (e.g. Boscastle had no reception)	All CCPs
Increase understanding of any changes in FRM, such as managed realignment, but beware just handing over responsibility/blame (marketing-led approaches). Has to be two-way gathering of information and views	Environment Agency? Via community liaison officers?

¹⁰⁴ Presentations and feedback from Extreme Flood conference, November 2006

¹⁰⁵ Insight recorded on delegate feedback forms from Extreme Flood Conference, November 2006

Risk assessment, warning (preparedness)

What data or information sharing can help with risk assessment, warning and preparedness?

Activity	By whom
Increase understanding of any changes in FRM, such as managed realignment, but beware just handing over responsibility/blame (marketing-led approaches). Has to be two-way gathering of information and views.	Environment Agency? Via community liaison officers?
Detect, forecast, warn, especially for areas where plenty of lead-in time (tidal).	Environment Agency
System for using information on flooding coming from community (e.g. in Council as for Bradford), both during the day and out of hours, and how to respond to any trends emerging.	Environment Agency, local authority
How Environment Agency and Met Office can work together to reduce the number of false warnings (e.g. six or seven false warnings a year seems common result).	Environment Agency, Met Office
How local authority and Met Office can work together on non-main river-related flooding e.g. Bradford local authority receives weather warnings on 24-hour basis (method of dissemination and action set out in Council's Severe Weather Plan).	Local authority, Met Office
Environment Agency and FRS sharing data? E.g. Have pager to notify level of water (North Carolina FRS)	Environment Agency, FRS
Keep all informed of newest warning arrangements. Task and finish groups could do specific work on warnings.	Operational and emergency flood response groups
Public history and knowledge of flooding. Local knowledge can help build on shared stories and pictures.	Environment Agency, local authority
Provision of home and insurance flood protection information: householders should know 'everything about their insurance and insurance company contained in their policy' ¹⁰⁶	Environment Agency, ABI
Flood fairs (consider renaming as evidence from Bradford suggested people think it is a celebration of flooding!)	National Flood Forum
Floodpacts – support, not just hand over e.g. Bradford Council.	Environment Agency, local authority
Clarity how various organisations will be 'activated' e.g. Bradford Council – contact Emergency Room and request they activate the Emergency Planning Duty Manager Pager System.	CCPs
Community IPs (Hampshire, Devon) – should include list of emergency numbers.	Environment Agency, local authority, parish councils

¹⁰⁶ Scrutiny report on the Civil Contingencies Act 2004 and the inter-relationship with flooding issues in the Bradford Metropolitan District Council, March 2007

Response during flooding (readiness onwards)

What data or information sharing is needed during a flood?

Activity	By whom
Gather information (if safe)..	Environment Agency
Use modern technology to support joined-up information (such as joint logs).	CCPs
Everyone needs to be kept informed e.g. Council emergency planning team need to tell drainage people to stay ready to come out.	Local authority
Don't just rely on telemetry – send more people out to look, or use local people.	Local authority, Environment Agency
Have clear information/advice to public on what to do (e.g. switch off gas/electricity; raise items; where to get information from).	Local authority, Police, Fire
Have clear guidelines on how to relate to any community initiatives (e.g. in Bradford, FLAPs).	Environment Agency, local authority
Have one central point for information/communication, whether for public looking for information or architects or builders looking for guidance.	Local authority?
Alternative accommodation lists.	Local authority
One source of information for insurance (Boscastle).	
One contact point for media/VIP visits (Boscastle).	
Twice daily meetings with community (Boscastle).	

Aftercare, recovery and adaptation

What data or information sharing is needed after a flood?

Activity	By whom
Gather data, update models.	Environment Agency FRM
Who will collect data and evaluate it? How will learning happen? E.g. KPI for Environment Agency staff: appropriate action based on post-event surveys of response.	
Community IPs – have list of contractors.	Parish Council
Local authority: Advice on dealing with insurance companies. Malton Local Authority produced a guidance leaflet for affected residents following the 2000 flooding.	Local authority/ABI
Attending drop-ins and meetings to share information.	All CCPs?
Support voluntary/community initiative: Communities Reunited was a driving force for helping affected residents to recover in Carlisle.	Local authority

DESIGN: Designing and planning to increase community resilience to flooding

Planning and prevention

What designing and planning can be done to prevent flooding risks?

Activity	By whom
Development of flood risk management strategies and plans. E.g. Bradford, River Wharfe FRMS developed by consultants with negligible input from a very willing local authority.	Environment Agency plus ALL relevant stakeholders (not just consultants)
What roles around PPG/PPS 25 and design/planning to prevent flooding?	Local authority, Environment Agency
Set strategic direction. Establish task and finish groups and teams to deliver.	LRF
Broaden stakeholders to include builders and developers, media, educators.	All CCPs
Local authority sandbagging policy (e.g. Bradford).	Local authority
Exercises – smaller local exercises to help people get to know each other and increase corporate understanding.	CCPs
Individual emergency plans (community level).	CCPs and parish councils
Develop Major Incident Plans (MIPs).	CCPs

Risk assessment, warning (awareness and understanding)

What designing and planning can be done to help effective risk assessment, warning and preparedness?

Activity	By whom
Have a flood plan, and person/system by which it is activated.	local authority (and all CCPs)
Who is responsible for getting warnings out?	local authority? Environment Agency?
What of areas where warnings will never be sufficient lead in times to get CCPs 'out' (Boscastle) Need for community-based incident plans, led by parish councils.	Parish Councils, CCPs
Ensure clear system by which, on receipt of flood warning or notification of flooding, the appropriate people are notified (e.g. local authority's drainage officer, traffic and highways officer, council liaison officer).	CCPs

This area is covered in Twigger-Ross *et al.* (2008) Improving flood warnings: Final report. Improving Institutional and Social Responses to Flooding Science Report (SC060019) - Work Package 1. EA/Defra Science Report.

Response during flooding (readiness onwards)

What designing and planning is needed during a flood?

Activity	By whom
Consider how to deal with major incidents where all emergency services tied up with urban areas. Need for IPs.	LRF
Experienced person to chair initial emergency planning meeting.	Local authority, Environment Agency, Police?
How should responses vary according to the size of the flood? E.g. Larger scale flooding, emergency control centre activated, emergency management group convened, appointment of operational tactical coordinator.	CCPs

Aftercare, recovery and adaptation

What designing and planning is needed as part of aftercare, recovery and adaptation?

Activity	By whom
How all clear and stand down instructions will be given.	
FRM in the North East are producing a specification on how to consider aftercare in flood plans at four levels: region, borough, community, professional organisation. ¹⁰⁷	Environment Agency/local authority
Exercising for <u>recovery</u> as well as <u>response</u> stage.	
Political versus engineering solutions.	

¹⁰⁷ Aftercare Think Tank, 2007. *ibid*

DELIVERY: Undertaking practical activities

Planning and prevention

What can be done on the ground to prevent flood risk?

Activity	By whom
Enforcement? E.g. role in enforcement of planning, in ensuring water companies do their stuff?	Environment Agency
Ensuring drains and debris kept cleared, and so on. E.g. Bradford Metropolitan District Council	Local authority, Environment Agency, Joint Operational Groups

Risk Assessment, warning (awareness and understanding)

What can be done on the ground to deliver effective warning and preparedness?

Activity	By whom
Idea of one-stop shop flood web-portal E.g. Fire service have just instigated one	Environment Agency, FRS?
E.g. Practical tips on delivery of warnings.	

Response during flooding (readiness onwards)

What can be done on the ground during a flood?

Activity	By whom
Overcoming problems with seniority differences between police and Environment Agency in deciding what to do in an emergency. e.g. Carlisle, police initially overrode Environment Agency	Environment Agency, Police
Have numbers in mobile.	CCPs
Operate defences, maintenance and repair.	Environment Agency FRM
Reputation management.	Environment Agency Corporate Affairs
Evacuation of people trapped in homes, or vehicles from watercourses. Essential damage control, such as pumping flood water and salvage works (may charge).	Fire service
Traffic control (road closures, traffic diversions), provision of information, evacuation of public where required. Can assist Environment Agency with notification of flooding if requested. Use of vehicles with PA systems.	Police
Unblock/deal with overwhelmed sewers and remove consequential flood waters.	Water company
Temporary rehousing.	Local authority
Support for the vulnerable.	Local authority
Drop-in centre.	Local authority, FRS, Environment Agency

Aftercare, recovery and adaptation

What can be done on the ground to assist with aftercare, recovery and adaptation?

Activity	By whom
Lead once supporting systems reopened. Legal position.	Local authority (police handover)
Inspecting flood defences, safe operations and repair. Controlled breaches (Carlisle).	Environment Agency FRM
Building relationships which can boost community resilience and better relationship with Environment Agency in future. E.g. Stockbridge: Social Services running daily meetings to build relationships. E.g. Carlisle meetings with public, parish councils, business groups. E.g. Carlisle encouraging and supporting the set up of community groups, linking to National Flood Forum.	Environment Agency FRM/Corporate Affairs National Flood Forum (NB Problem with corporate affairs/external relations taking over this role?)
Assisting during clear up (e.g. waste).	Environment Agency Environmental Management
Rebuilding.	Environment Agency Development control
Assist with pumping of flood water (Carlisle).	
Long-term work: consider what 'return to business normality' means for residents. May reopen road to traffic relatively quickly but may be a year for house rebuilding and five years until people's children stop being scared of water. This humanity side is important, even for Environment Agency who focus on repairing defences and other physical issues. Individual staff make all the difference (e.g. Stockbridge).	Environment Agency, local authority
Clean up once flood waters have subsided and access possible. Time may need to pass before dealing with contaminated debris and household items, as home insurers may need to evaluate damage.	Local authority
Drop-in centres, which have proved very effective in terms of helping the community to recover (such as Carlisle, Boscastle).	Local authority, Environment Agency
Continued presence while security risk (people not back in their homes).	Police/fire
Resources: flood relief fund, retaining fire fighters (Boscastle)	

6 Working together more effectively: Terminology and a typology of collaboration

Partnership or collaboration? A matter of definition

The most common 'insight' recorded from the Extreme Flood Events Conference held in November 2006 was that partnership working is key to delivering effective responses. This section argues that the word partnership is mis-used in this context, and suggests that a clear understanding of the range of approaches to collaboration, to deliver activities set out in the previous section is the way forward.

Our conclusion is supported by the findings of Watson et al.(2007)¹⁰⁸ who , although they continue to us the word 'partnership', use it to cover all forms of inter-organisational collaboration. They identify the following variations and influences on collaborative arrangements:

- ✓ **Organisation and institutional contexts** (*Formation of statutory partnership, involvement of bodies with different modes of working, wider context of networking within which partnership is situated*)
- ✓ **Working assumptions about the nature of the collaboration** (*Whether it is led by a particular agency, based on informal or legal agreements, tightly defined membership*)
- ✓ **Nature of the partnership** (*From information sharing, service delivery, strategic decision making, public engagement*)
- ✓ **Significance of interpersonal relationships** (*Key personal making the partnership work or more formal representation from key bodies*)
- ✓ **Resourcing of the partnership** (*Does it have mainstream funding, is it pump-primed, is it a one-off grant, is it resourced by the partnership organisations, does it have its own budget*)
- ✓ **Relationship to policy agendas** (*Is delivery core service, meeting national objectives, joining-up different policy areas*)
- ✓ **Organising principle of the partnership** (*Is it responding to a particular problem, to a funding opportunity, or a legal or political demand to coordinate policy*)
- ✓ **Mode of collaboration** (*Is it network-based, more hierarchical, or even market-based through competitive tendering processes*)

The authors conclude: "It would be inappropriate to attempt to identify a single partnership model for use in flood hazards management. Rather, the key to success will be to use different types of partnership working selectively to fit particular local circumstances and needs".

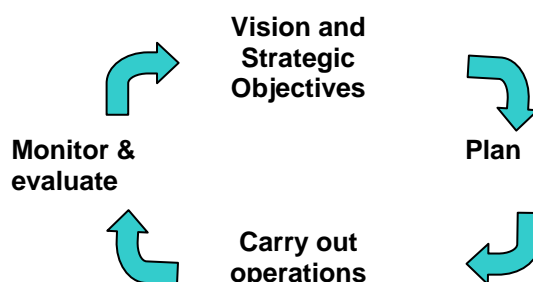
¹⁰⁸ Appendix 2

What is partnership?

LCA consider that partnership, in the formal sense, is a very specific form of collaboration. It involves:

- ✓ power to make its own decisions in pursuit of a specified goal
- ✓ control over resources (pooled)
- ✓ mutual benefits and risks: share work, profit, loss, decisions by consensus

Usually, genuinely working in partnership involves the planning cycle:



Although partnership will be one form of collaboration, it is a much overused word and masks a variety of very useful forms of collaboration. Use of the word also casts little light in terms of the 'degree of collaboration that is sought':

Degree of collaboration
<p>Meetings, no action Good for getting to know each other; impressing funders</p>
<p>Joint bid, no joint working Danger that collaboration turns to competition once cheque received.</p>
<p>Cooperative working No change to how partners work but improved coordination. Sometimes joint 'badging' of initiatives.</p>
<p>Collaborative working Includes shared management or a new team doing something new. No longer an 'add-on' to people's real jobs.</p>
<p>Joint budgets, targets and objectives New structures and new priorities and spending of partners.</p>

The full range of collaboration¹⁰⁹

Rather than continue to use the word 'partnership' as a general term, many have recognised that it is good practice to explicitly know of, refer to and use a more descriptive 'typology' of collaboration. We will use the collaboration definition provided by Watson *et al.* (2008):

'Collaboration' is defined here as a process in which two or more organisations or groups pool their appreciations and/or tangible resources (e.g. information, money, labour) to solve a set of problems which neither can solve individually. (Gray, 1985).

¹⁰⁹ Used in the Environment Agency's *Building Trust with Communities Toolkit*, 2007 update.

Below we set out one of the current typologies of collaboration, which describes the range of possible purposes of collaborations relevant to flood risk management.

Type of collaboration	Why you might want to use this type of involvement or collaboration	Examples of techniques that you might use
Involving others in decision-making		
<i>Information gathering - targeted</i>	a) You need to find out specific information from specific people to inform a decision - e.g. asking disabled users about access b) You are committed to regularly collecting and analysing day-to-day, non-solicited feedback from your stakeholders to inform any decisions.	<ul style="list-style-type: none"> ➤ Interviews ➤ Websites ➤ Customer feedback ➤ Frontline staff feedback ➤ Day-to-day analysis of customer experiences
<i>Information gathering - broad</i>	You will make the decision, but you want to inform that decision by gathering views as widely as possible from the community and others first. Often one-off involvement.	<ul style="list-style-type: none"> ➤ Market research surveys ➤ Focus groups ➤ Exhibition/questionnaires ➤ Public meetings ➤ One-to-one meetings
<i>Involving</i>	You will make the decision(s), but you want stakeholders to be able to shape decisions on an ongoing basis. This results in longer term and more influential relationships in which final decisions are made by the Environment Agency, but based on the working relationship with those involved	<ul style="list-style-type: none"> ➤ Advisory bodies ➤ Liaison groups ➤ One-to-one relationships
<i>Deciding together</i>	You share the decision making equally with your stakeholders.	<ul style="list-style-type: none"> ➤ Partnerships ➤ Dialogues
Involving others in practical delivery		
<i>Information giving</i>	Letting others know of decisions, opportunities, ideas. This may or may not be with the intention of altering their perceptions (PR) or behaviour (education). Informing may also involve sharing views/ just listening to different points of view, and allowing people to understand differences, rather than explicitly trying to inform the community and others about decisions.	<ul style="list-style-type: none"> ➤ Taking part in others' initiatives such as community strategies ➤ Giving information through leaflets, guided tours, presentations, data ➤ Running education programmes ➤ Giving talks, educating ➤ Public relations work through the press
<i>Co-delivery and capacity building</i>	You want to work with and enable others to do/deliver something, such as closing flood gates, collecting data.	<ul style="list-style-type: none"> ➤ Relationships with individual property owners ➤ Giving grants ➤ Providing training and education ➤ Operating volunteer schemes
<i>Coordination & networking</i>	Maintaining relationships, sharing information, ensuring coordination	<ul style="list-style-type: none"> ➤ Networks, conferences, informal meetings, doing the day job

Three broad types of collaboration for improved flood incident response: the three Cs

“We have made the argument that a key underlying lesson from the research is that there should not be ‘a one-size fits all approach’ to partnership working for flood hazard management. Any approach that is developed not only needs to be ‘fit for purpose’, but must also fit the local context”¹¹⁰.

So the question becomes, how to begin to identify a form of collaboration that is fit for purpose and context? Is there a way of conceiving collaborative working that would help staff at the Environment Agency and civil contingency partner organisations to consider what they need to do?

There are many ways to approach this, and Watson *et al.* (2007) have identified the need for some ‘way in’:

“Partnerships come in different shapes and forms and involve different modes of working together....it is important to recognise the value of each mode and to match them appropriately with the different sorts of situations which occur within the field of flood hazards management.”

For example, Pratt *et al.* (1998), using a whole systems thinking framework and metaphors of ‘fitness landscapes’, develop a typology of partnership working based on a combination of the extent to which the goals being sought are more individual or more collective, and the extent to which the objectives and solutions are predictable.

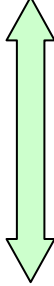
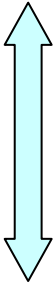
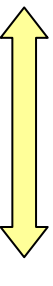
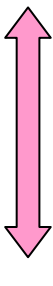




Watson *et al.*’s review also demonstrates the importance of **contextual** conditions as influences upon the success or failure of a collaborative initiative. Simply stated, there may be little or no point in attempting to create a new partnership arrangement if organisations do not believe they are confronted by a common problem and that ‘they are all in it together’. Equally, flood events and other crises can serve as defining moments with the potential to galvanise public support and commitments to multi-party action. Overall, what this suggests is that the timing of the initiation of a partnership is absolutely crucial to its long-term survival and success.

Based on workshops, interviews and a literature review, it is possible to identify three broad types of collaboration, the three Cs:

- Conceptual
- Convening
- Crisis

Starting work through any one of these can lead to the establishment of others; for example, a flood might stimulate a crisis collaboration. This may then lead to convening and conceptual collaboration. The most effective responses will be possible when all three are in place, engaging people at an appropriate level in the organisation:

¹¹⁰ Watson *et al.* (2007). Ibid

Type of collaboration	Characteristics			
	Strategic prevention	Senior level	Formal	Scheduled
Conceptual/strategic Brought together to work strategically to tackle underlying causes of flood risk <i>Example: Local Resilience Forums</i>				
Convening/coordinating Brought together to share information and data, bring in all actors, improve relationships <i>Example: Agreement on data sharing such as radar data on rainfall shared between Environment Agency, York Water and Bradford MDC; exercises</i>				
Crisis/co-delivery Brought together in response to crisis <i>Example: Subregional emergency plan.</i>	Operational delivery	Front line	Informal	As and when

7 Working together more effectively: Improving collaboration

The myth of essential conditions

So far we have focused on what needs to be collaborated on, the form of collaboration and respective roles of potential collaborators. However, Watson *et al.* (2007) suggest that:

“In practice, collaboration is a complex and fragile process. Potential obstacles and barriers exist during each phase of interaction and there is always the danger that the collaborative arrangement becomes a problem in its own right rather than a solution. Clearly, inter-organisational collaboration should not be treated as a panacea or ‘silver bullet’ for flood hazard management although it does offer significant advantages, particularly when compared with more traditional single-agency or bureaucratic types of institutional responses.”

So how to avoid the dangers, and reap the benefits? Watson *et al.* having set out a number of influences on collaboration (see section 6.1), go on to conclude that it is simply not possible to list out a step by step or prescriptive approach to effective collaboration:

“[Collaborative] successes and failures in terms of developing and implementing policies, programmes and projects cannot be accounted for by referring to a list of essential conditions or ‘ingredients’ (Medd 2001).”

“The point of our review is not to suggest a new set of lists of ‘must do’s’ that is universally applicable across the entire flood hazard management arena. Rather, our intention is to illustrate the types of debates and questions that need to be asked in thinking about partnership working for flood management.” Watson *et al.* (2007)

In the sections below we set out some of questions that need to be considered to improve collaborative working around flooding.

An evolving (learning), tailored yet flexible approach

From individual relationships to systems of governance

Watson *et al.* (2007) identify three broad areas of attention in the literature.

- ✓ **Interpersonal relationships:** identifying key attributes of individuals that facilitate or hinder effective collaboration and cooperation (see Hornby 1993).
- ✓ **organisational relationships:** the nature of partnership organisation in itself, as well as questions about how the organisations involved work (see Alexander 1995).

- ✓ **broader systems of governance:** how these shape, enable and hinder partnerships, for example ‘the enabling state’ or ‘network governance’ (see Lowndes and Skelcher 1998).

It is easy to be overwhelmed by the changes required, as illustrated by our findings in Work Package 4. But equally, at each of these levels, it is possible to improve collaboration.

For example, at the interpersonal level, a report on managed realignment by CIWEM recommends the appointment of ‘liaison officers’ assigned by operating authorities to build better relationships with coastal communities where managed realignment is a possibility:

*Liaison officers could help the operating authority to explain why managed realignment has been proposed and discuss rights and choices residents have, as well as helping those whose opinions, aspirations and concerns often remain unheard to make their views known.*¹¹¹

Iterative nature of collaboration

Noting that they are not offering a ‘grand theory’ or the ‘iron law of collaborative endeavour’ Hudson *et al.* (1999)¹¹² propose ten stages which increase the probability of collaboration. These “are iterative and cumulative rather than merely sequential, with a large element of learning by doing”:

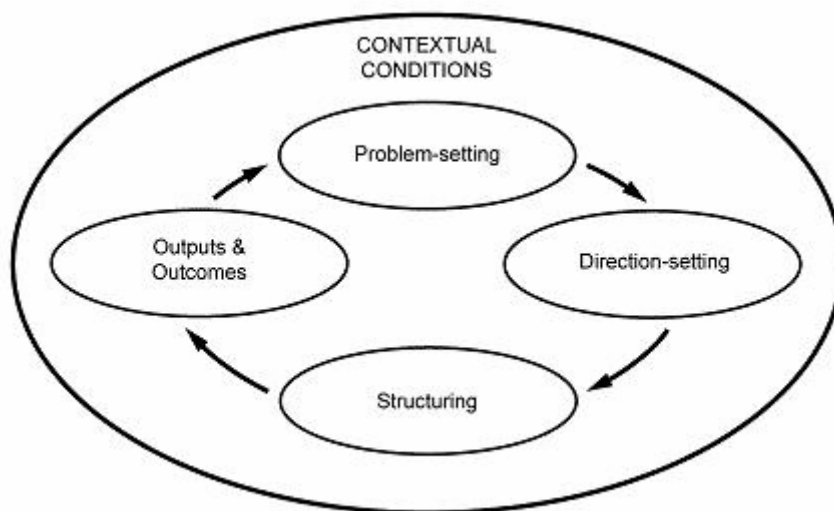
- ✓ **Contextual factors: expectations and constraints.** A context in which there is the need to collaborate to avoid duplication, omission, divergence, counter-production (Huxham and MacDonald 1992) may provide the necessary ‘trigger’ for interaction.
- ✓ **Recognition of the need to collaborate:** a clear sense of the benefits of collaboration (Kanter 1994), recognition by stakeholders of both independence and interdependence.
- ✓ **Identification of a legitimate basis for collaboration:** the motivation for organisational involvement (including more negative aspects) and identification of stakeholders.
- ✓ **Assessment of collaborative capacity:** “the level of activity or degree of change a collaborative relationship is able to sustain without any partner losing a sense of security in the relationship” (Hudson *et al.* 1999), including resources and organisational culture.
- ✓ **Articulation of a clear sense of collaborative purpose** (though with some recognition of the value of ambiguity (Nocon 1989).
- ✓ **Building up trust from principled conduct:** including “fair dealing in the distribution and appropriation of benefits and fairness in procedure” (Hudson *et al.* 1999, citing Cropper 1995) and in personal relationships.
- ✓ **Ensuring organisational ownership:** including investment in individuals with skills in working in policy networks, identifying resources and other key people, and frontline staff.

¹¹¹ RSPB 2005. (Nottage, A. and Robertson, P.) *The Saltmarsh Creation Handbook: a project manager's guide to the creation of saltmarsh and intertidal mudflat*. The RSPB, Sandy and CIWEM, London. Information Press.

¹¹² From Watson *et al.* (2007). *Ibid*

- ✓ **Nurturing fragile relationships:** including addressing clarity of purpose, commitment, shared ownership, management arrangements and organisational learning.
- ✓ **Selection of an appropriate collaborative relationship:** as loosely coupled networks, as coalition or acting as one.
- ✓ **Selection of a pathway:** the extent to which the partnership is formed through market, hierarchy or network exchange (Thompson *et al.* 1991).

Similarly, Watson *et al.* (2007) highlight Gray's (1985) theoretical and empirical work which demonstrates how collaborative initiatives develop over time as a function of external pressures and the dynamics of inter- and intra-organisational relationships. Although collaboration is viewed as a highly unpredictable ('messy') process, Gray's work highlights the importance of contextual conditions and four distinct phases of interaction (see below).



- ✓ **Contextual conditions:** collaboration does not operate in isolation and prevailing economic, political, social, legal, institutional and environmental conditions may encourage or discourage the establishment of partnership arrangements. In the extreme, adverse conditions may mean there may be little or no point in even attempting to establish a collaborative relationship. Indeed, much of the empirical work on collaboration points towards the significance of a 'crisis' of some sort as the necessary lever which prompts organisations to interact with each other. In the current context, such a lever may occur in the form of a significant flood event, a change in legislation or institutional policy or even expenditure cuts which result in organisations seeking to establish new co-funding arrangements. Difficulties can arise when the partner organisations are exposed to different sets of contextual conditions. For example, one organisation may be motivated by a genuine commitment to improving the way in which flood events are dealt with through joint decision-making and action. In contrast, other organisations may see working in partnership simply as an opportunity to gain additional resources for their own purposes or collaboration may be legally mandated or imposed by more senior officials upon organisations that otherwise would choose not to engage with one another because of fears about the loss of power, authority, resources or territory.
- ✓ **Problem-setting:** this initial phase is concerned with establishing an identity for the problem that is of concern to the partners and establishing which organisations and

interests have a legitimate stake in the problem domain. In the context of flood management, the partners would typically address key questions such as 'what is the current state of the flood hazard problem and flood management', 'who is affected and in what ways', and 'why is the current situation less than desirable'? Through joint research, conferences, workshops and meetings, a common understanding of the shared problem starts to emerge and the stakeholders begin to appreciate their interdependencies. Arriving at such a common understanding is not always easy since information is likely to be incomplete, evidence open to interpretation and the claims of stakeholders/interest groups are likely to be contested. Nevertheless, this initial phase has a fundamental bearing on the whole process of collaboration. Inadequate exploration and appreciation of the problem may undermine subsequent attempts to find joint solutions. Several attempts to establish a common identify for the problem may therefore be required. Conversely, careful and in-depth problem-setting can help to strengthen links among disparate groups and engage organisations that previously resisted collaboration.

- ✓ **Direction-setting:** assuming that a common understanding of the problem has been established, attention should then shift towards identifying desirable future conditions and a direction for action. A key issue for negotiation during this phase is 'ends legitimacy'. In other words, feasible super-ordinate goals should be identified which reflect the desires and aspirations of the collaborating organisations. Such ambitions are often articulated through a 'vision statement' or 'future state vision' establishing some underlying principles to guide collaboration as well as describing the conditions or 'end points' to be achieved. Whilst direction-setting is an important aspect of collaboration, in practice the establishment of agreed long-term goals and joint actions is unlikely to be straightforward because different understandings, values, attitudes and aspirations among the collaborating organisations will have to be reconciled through dialogue and negotiation.
- ✓ **Structuring:** assuming that attempts to assess current conditions and to define a more favourable alternative for the future have at least been partially successful, inter-organisational structures and procedures should be created to guide subsequent decision making and action. Such structures and procedures may be of a formal or more informal nature, depending on the institutional and social context. In effect, the previously loosely negotiated understandings among the partners should be turned into a set of arrangements designed to allocate roles and responsibilities and to regulate interactions among the collaborators. According to McCann (1993), this structuring phase is often poorly handled. Explicit mechanisms for equitably negotiating roles and responsibilities are often missing and there is a tendency to rely on bureaucratic management principles. Consequently, roles may be poorly matched to capabilities and insufficient consideration may be given to alternative operating structures such as networks and coalitions as well as partnership arrangements. Failure to develop adequate structural arrangements for the inter-organisational environment can have major implications, since the collaborators will not have an appropriate platform for moving in the desired direction.
- ✓ **Outputs and outcomes:** although much of the literature on collaboration identifies structuring as the last phase in the process, it is important to recognise that collaboration is only a means to an end and not an end in itself. By working through the first three phases of collaboration, the participating organisations should be able to develop joint policies, programmes and projects (outputs) which will ultimately improve conditions on the ground (positive outcomes) in ways that are consistent with established long-term goals, ambitions and visions (Selin and Chavez, 1995). However, failure to generate significant outputs or to achieve positive outcomes is

very likely to undermine the commitment to collaboration among the participating organisations and groups.

While there is a logical sequence to the four phases of collaboration, in reality the process may take a number of different directions. For example, several repetitions of the cycle may be required before outcomes are achieved, and the length of time devoted to each phase will vary from case to case. Furthermore, obstacles and disagreements or shifts in knowledge and understanding among the partners may necessitate a return to one or more of the previous phases in order to re-define the shared problem and/or re-organise joint activities and arrangements. The model outlined above shows that, in practice, collaboration is a complex and fragile process.

8 Personal skills

What a difference a person makes

A recurring theme in the research, interviews, literature and workshops is just how much difference an **individual** can make. It is an obvious point, but an important one. Even within the constraints of current culture, KPI and AMS, individuals (within the Environment Agency, Local Authority, the community and other partner organisations) are named as the real reason for breakthroughs happening. They are usually the focus of trust in the organisation (**'organisations aren't trusted, it's the individuals within it'**).

However, there is high **staff turnover** in organisations such as the Environment Agency and many have commented on the loss of direction/learning/trust when these 'leading lights' move on. Some also raised the problem of (the Environment Agency) relying on consultants, so relationships and understanding are not built within the organisation.

In addition to technical support, the Environment Agency needs to respond to the psycho-social needs of the flood victims and to feel and demonstrate greater empathy. It was felt that the Environment Agency would benefit from being less authoritarian by empowering innovative individuals within the organisation.

Not all staff members should be expected to be brilliant at working with local communities. Part of the Environment Agency's skill will be to select staff who want to be trained as communities.¹¹³

Clearly one way of improving collaboration is to have staff with the skills to do it. They need to be recognised, recruited and supported to carry out their work and help others do the same, especially when they move on. There is also a need to support continuity of approach, and to challenge individual behaviour that is not conducive to effective relationships.

¹¹³ Environment Agency (2005) Improving community and citizen engagement in flood risk management decision making, delivery and flood response. Environment Agency R&D technical report (SC040033/SR3)

What skills are needed?

Skills for a range of situations

Skills for collaboration are required as follows:

- ✓ One-to-one skills – building personal relationships, listening, understanding.
- ✓ Facilitator skills – running participatory meetings, making clear decisions, working with consensus and common ground.
- ✓ Within-organisation skills – influencing, pushing boundaries, making the organisation work for the situation (rather than the other way around).
- ✓ Cross-organisation skills – understanding other organisational cultures, establishing appropriate relationships, identifying common agendas.
- ✓ Public-facing skills – empathising, dealing with anger, being ‘can do’.

Interpersonal intelligence (Gardener’s intelligences)

In his submission for this report, Chris Rose suggests it is going to be critical to be specific about the skills and intelligences required for this work, and to recruit and assign or enable people with **ENFP and ESFP** tendencies to **oversee consultation and outward-facing activities** (this has obvious drawbacks but in playing into the natural silo tendency it may make change more acceptable). For detail see the section on the psychology of change in Work Package 4 report, but in summary: recruitment could be based on the seven Gardener’s intelligences, one of which is interpersonal intelligence:

INTERPERSONAL INTELLIGENCE

- Used for communicating with others (Gardener)

The ability to work effectively with others, to relate to other people and display empathy and understanding, to notice their motivations and goals. To think about and understand another person. To have empathy and distinguish between people and to appreciate their perspectives with a sensitivity to their motives, moods and intentions. To interact effectively with one or more people among family, friends or working relationships.

Characteristics:

- ✓ Relates to and mixes well with others
- ✓ Puts people at ease
- ✓ Has numerous friends
- ✓ Sympathetic to others' feelings
- ✓ Mediates between people in dispute
- ✓ Good communicator
- ✓ Good at negotiating
- ✓ Cooperative

Likes:

- ✓ Being with people
- ✓ Parties and social events
- ✓ Community activities
- ✓ Clubs
- ✓ Committee work
- ✓ Group activities/team tasks
- ✓ Managing/supervising
- ✓ Teaching/training
- ✓ Parenting

Learning techniques:

- ✓ Learn from others
- ✓ Work in teams and learn together
- ✓ Talk to others to get and share answers
- ✓ Compare notes after a study session
- ✓ Make use of networking and mentoring
- ✓ Teach others
- ✓ Socialise during breaks

- ✓ Throw a party to celebrate/reward your success

9 Good, interesting and poor practice: Lessons learned?

Illustrations of the range of types of collaborations

The information in this section has been produced by Watson *et al* (2007).

Given that the social, institutional and physical contexts of floods vary, and that the social science of collaborative work shows unequivocally that local context matters, the aim of this section is to illustrate the diversity of collaborations addressing flood management. The intention is not to offer detailed and critical evaluations of these, but rather to use the examples to demonstrate the diversity of ways in which the Environment Agency already engages in collaborative working for flood management in different contexts.

Environment Agency as liaison for residents' partnership

Worcester Action Against Flooding (WAAF) held its first meeting in 2001, after Worcester experienced severe flooding in 2000. Residents' experience was that the response from agencies was badly coordinated and inconsistent. The group had full support of their Environment Agency Regional Flood Defence Manager and developed a very effective working relationship with him where he would regularly meet with community groups. Since his departure, the nature of the relationship between the Environment Agency and local communities has changed considerably and there is almost no co-working.

Source: WAAF website www.waaf.org.uk; phone interview with key personnel in WAAF

Environment Agency in partnership with non-governmental organisation

Thames Landscape Strategy (TLS) Hampton to Kew established since 1994. The TLS is a not-for-profit organisation dedicated to conserving, promoting and enhancing the Thames landscape between Kew and Hampton. The Environment Agency is one of the funding partners and an active member, along with local authorities and other organisations such as English Heritage. The TLS has developed a '100-year blueprint', a strategy and management plan, which covers history, culture, geology, flooding, habitats, historic parks, conservation areas and recreation. It has a very active presence in the community, working closely with over 100 local groups and organisations to ensure that local voices are heard by planning authorities and the Environment Agency.

Sources: TLS website www.thames-landscape-strategy.org.uk; Piper (2005)

Environment Agency as the secretariat for a strategic alliance

River Thames Alliance formed in 2003 as a new strategic partnership for the non-tidal River Thames. The Environment Agency holds the secretariat but the alliance also has membership of local authorities, the Countryside Agency, ACTVaR (Association of Councils in the Thames Valley Region), the River Thames Society and other interest groups. Its principal aim is to

implement the Thames Waterway Plan “to map out the reinvigoration of leisure and tourism along the river corridor in ways that are both socially inclusive and sustainable” (Environment Agency 2004, quoted in Piper 2005). However, there is little involvement of local groups or residents. The Thames Waterway Plan did not encompass proposals made by local interest groups to designate the river as a linear park benefiting local communities, and for the control of riverside development. The Environment Agency is said to dominate the agenda of the alliance, focusing on navigation and recreational use of the river.

Sources: RTA website www.riverthamesalliance.com, Piper (2005)

Environment Agency raising flood awareness by funding local project

The Severn Community Flood Forum (SCFF) was set up as part of a research project by University of Gloucestershire looking into the history of flooding, using an oral history methodology. The forum was part-funded by the Environment Agency as an aide to raising awareness about local flooding issues. Bewdley Residents Flood Committee participated in this and follow-on activities.

Source: <http://www.glos.ac.uk/shareddata/dms/C0B6DA36BCD42A0394E1293C7FC81B1A.pdf>

Environment Agency as lead in development of local flood groups

Following the floods of 2005, Environment Agency staff based at Penrith invited the National Flood Forum to help develop local flood groups, particularly in at-risk communities. Keswick Flood Action Group is one such group. The group has been working closely with the Environment Agency Flood Incident Management Team to improve the local warning system; members have visited the flood control room in our Penrith offices to increase awareness of procedures for flood predictions and warnings; residents are being trained to use wireless pagers in case mobile networks fail; and warning systems are being improved through systems of direct communication between local residents and Environment Agency regional staff. The FAG has produced a database of vulnerable households, in addition to a ‘phone tree’ to ensure warnings are passed on in a reliable way. At present, Keswick FAG is campaigning for a grants system to make individual homes more flood resilient.

Sources: Keswick FAG website www.keswickflood.org and National Flood Forum website www.floodforum.org.uk; telephone interview coordinator National Flood Forum representative

Environment Agency as supportive partner

Formed in 1999, the Rea Valley Residents’ Environment and Flood Action Group (FLAG) in Northfield works very closely with the local authority and with the Environment Agency. They have produced a Flood Defence Plan to help the community deal with flooding emergencies. Members of the group know who to contact and how, and to call on further volunteers who would help during a flooding emergency.

Sources: Birmingham City Council website http://www.birmingham.gov.uk/GenerateContent?CONTENT_ITEM_ID=27008&CONTENT_ITEM_TYPE=0&MENU_ID=14165&EXPAND=12083m

Flood Incident Management Team Leader, Sam Probert from the Upper Trent 1 Area received

a prestigious Golden Sandbag Award in the Environment Agency category at the National Flood Forum conference. Sam was nominated for the award by the Rea Valley Residents, Environment and Flood Action Group (FLAG) in Birmingham. Chairman Norma Boyd said: *“Since the formation of our group in 1999 we have had very good and consistent help and advice from our area Environment Agency Team, led in recent years by Sam Probert. We are especially grateful for the invaluable help given by Sam and the team, day and night, on rainfall prediction, water-levels in the river, flood warnings and advice on installing residents own flood protection measures.”*

Source: National Flood Forum (2006) Report of Annual Conference in Bradford NFF website www.floodforum.org

Environment Agency as member of strategic partnership in community

East Peckham Flood Relief Partnership is a multi-agency strategic group set up by the council following floods in 2002 to coordinate work around flooding. It has representation from the Environment Agency, local authorities, water authorities, and East Peckham Flood Group. The partnership was successful in obtaining funding for a dam which was opened in 2006. Residents were integral to the design of the scheme.

East Peckham Flood Group was established in 2003. It has held monthly meetings with speakers from various organisations to update residents on flood prevention and defences and circulates monthly newsletters to over 300 residents. Sue Chalkley, a founding member of the EPFG is now one of the Directors of the National Flood Forum. The Environment Agency is reported to be a very effective and supportive partner in East Peckham.

Sources:

Tonbridge and Malling Borough Council website

<http://www.tmbc.gov.uk/cgi-bin/buildpage.pl?mysql=996>

Sue Chalkley (2006) presentation at National Flood Forum annual conference in Bradford

<http://www.floodforum.org.uk/conference2006/suechalkley-eastpeckhamfloodgroup.pdf>.

A resident's account

<http://www.zurich.co.uk/NR/rdonlyres/BA6DCEB2-4423-4FD9-88C3-C91DD400A3B4/0/ZurichHowtoGuideDealingwithFloodsJan07.doc>

Environment Agency working in local strategic partnership

Bradford District Water Management Advisory Steering Group was set up in 2005 in response to findings of a council-commissioned independent inquiry into flooding issues in the district; the Steering Group was set up as a sub-group of the Bradford Local Strategic Partnership Environment Partnership. The group brings together various council departments (Emergency Planning Unit, Environmental Services, Regeneration Partnership Development Unit, Policy Development Service) with the Environment Agency, water authorities, and Bingley Voluntary Action. The group's aims are to ensure communication between different organisations, facilitate a common understanding of the roles, responsibilities and limitations of each organisation, and to develop an integrated approach to strategic and operational development (including work around Making Space and the Water Framework Directive).

Sources:

Bradford Council website

http://www.bradford.gov.uk/environment/environmental_protection/water_management/Adviso

[ry_steering_group.htm](#)

Ashley *et al.* (2005) *Review to consider the future of water management and the associated problems of flooding in the Bradford District*. Bradford Metropolitan District Council
http://www.bradford.gov.uk/NR/rdonlyres/AB1C2216-0062-49FD-BF3B-3A525B9E606E/0/Final_Review_WM.pdf

Environment Agency working through Neighbourhood Renewal Fund

In addition, the Bradford Flood Local Action Plans (FLAPs) project was set up in 2004 in response to residents' concerns about flood risk and prevention. The project was led by Bingley Voluntary Action (BVA) and financed by the Neighbourhood Renewal Fund. BVA helped local groups share their concerns, understand the issues and decide upon their own course of action and if needed, negotiate with appropriate agencies. In total, 11 FLAPS were produced in 2005-2006. The partners in the project were Bradford Council, Environment Agency, Yorkshire Water, the National Flood Forum and the West Yorkshire Service Fire Service. The project has been cited as best practice by the National Flood Forum and the Environment Agency. The Neighbourhood Support Service continues to provide public information on flooding matters through the Neighbourhood Forums. It also facilitates meetings in communities affected by flooding.

Source: Report of the Director of Policy and Performance to the meeting of the Bradford Council Environment and Waste Management Improvement Committee, 22 November 2006
<http://councilminutes.bradford.gov.uk/Minutes/docs/2006IMPENV/ENV22NOVREPK.PDF>)

Environment Agency as the problem focus for local partnerships

Lewes Flood Action Group formed in 2001 after serious floods in 2000 affected 600 homes and 200 businesses. The group is fighting for better flood defences for the town and is campaigning for a national movement of communities at risk of flooding. Residents are angry at their treatment by the Environment Agency, Defra and national government. They do not feel supported by us. Members of the group have been known to protest Environment Agency flood information exhibitions with placards saying "Action not Information".

"People were really angry, almost more angry than I have seen for a long time. It's the final blow that there is no money coming to Lewes at all in the foreseeable future. The Environment Agency had two large caravans, one was explaining the flood warning system, which is exactly what they have been doing for years, ... Another was a demonstration of new flood doors and some Mickey Mouse stuff about how you can have a power socket higher up the wall... we were worried and concerned and disappointed ... that their caravans were nothing more than window dressing." (Duncan Macpherson, Vice-Chairman Lewes FAC 2005)

Sources: Lewes Flood Action Group website, <http://www.lewes-flood-action.org.uk/index.html>
The Argus, 22 October 2005, <http://archive.theargus.co.uk/2005/10/22/204336.html>)

Environment Agency establishing statutory flood partnerships

Regional Flood Defence Committees are committees of the Environment Agency which help to deliver the Environment Agency's flood risk management functions. There are 11 committees across England. They meet quarterly and are made up of local authority representatives and members appointed by the Defra and the Environment Agency. For example, the North West

Regional Flood Defence Committee “*plays an integral part in the flood defence schemes that are developed in the North West and provides sound advice on how flood defence work should be managed*”. The committee includes representatives from Regional Environment Protection Advisory Committee, Regional Fisheries Ecology Recreation Advisory Committee, Councillors from Cheshire and Cumbria County Councils, Councillors from Association of Greater Manchester Authorities, Councillor from Lancashire County Council, Councillors from Association of Merseyside Metropolitan Boroughs, and Defra.

Source: National Flood Forum website

<http://www.floodforum.org.uk/infoanddownloads/rfcd/more>

<http://www.environment->

[agency.gov.uk/regions/northwest/871681/871816/?version=1&lang=_e](http://www.environment-agency.gov.uk/regions/northwest/871681/871816/?version=1&lang=_e)

Environment Agency as participant in multiple-risk management forums

Following the Civil Contingencies Act (2004), a number of resilience forums have been set up across the country. For example, the Greater Manchester Resilience Forum includes representatives for the following agencies responsible for the emergency planning process across the conurbation: the 10 local authorities (Bolton; Bury; Manchester; Oldham; Rochdale; Salford; Stockport; Tameside; Trafford; and Wigan); Greater Manchester Police, Fire & Rescue Service, and Ambulance Service; British Transport Police; Health Protection Agency; Strategic Health Authority; Environment Agency; Military; Government Office North West. The forum is a strategic multi-agency body for civil protection arrangements in Greater Manchester. The overall purpose of the forum is to ensure preparedness to deliver a multi-agency response to emergencies of different types and scales. The forum is supported in its work by a range of sub-groups dealing with specific aspects of civil protection arrangements.

Source: <http://www.gmep.org.uk/ccm/navigation/greater-manchester-resilience-website/emergency-plans/>

The twelve examples of collaboration outlined above illustrate some of the diversity of partnership arrangements which have been created around flood hazard management. Each represents a particular need and set of circumstances and, as a result, will have its own particular requirements for success. What also emerges is the diversity of roles played by the Environment Agency in the various partnership arrangements, ranging from initiator/instigator, leader, supporter, trusted aide, team member, and pillar to ‘target’ (Table A1).

The point is not to try to identify the most appropriate universal role for the Environment Agency in flood hazard management partnerships, but to recognise that requirements will vary enormously according to local circumstances, prevailing attitudes within the community and the formal/informal institutional structures and processes already in place.

Table A1: Diversity of Environment Agency involvement in flood management

NAME	WHO'S INVOLVED	KEY OBJECTIVE	ISSUES	PRIMARY ROLE FOR Environment Agency
Worcester Action against Flooding	Residents, with support of other agencies and MP	To improve flood management in Worcester. To provide practical support and information to community, with a focus on vulnerable members.	Building relations of trust crucial for effective partnerships.	Liaison
Thames Landscape Strategy	NGO working in partnership with many other agencies and many communities	To conserve, promote and enhance the Landscape along river (Kew to Hampton).	TLS acting as vehicle for dialogue between communities and agencies/planning authorities, ensuring their voices are heard.	Funding partner and active member
River Thames Alliance	Environment Agency provides the secretariat. Local authorities, Countryside Agency and others	To reinvigorate leisure and tourism.	Acting as a strategic partnership with no or little involvement from community. Agenda dominated by Environment Agency.	Secretariat
Bewdley Residents Flood Committee	Residents, with support from Environment Agency and other agencies	To improve flood defences for Bewdley. To provide practical support and Information.	Effective partnerships can be forged through good communication and willingness by Environment Agency to engage with communities	Funder
Lewes Flood Action Group	Residents	To improve flood defences in Lewes.	Residents in conflict with Environment Agency because of what they perceive to be lack of action to improve flood defences.	Environment Agency as the problem focus
Bradford District Water Management Advisory Steering Group	Bradford MDC various departments, Environment Agency, water authorities, and Bingley Voluntary Action	To provide a coordinated approach to water management.	Steering Group is a sub-group of the Local Strategic Partnership (LSP) Environment Partnership	Contribution as part of Local Strategic Partnership
Keswick Flood Action Group	Residents with close support from Environment Agency and Council, MP and NFF	To improve flood defences and provide community support during flooding incidents.	Penrith Environment Agency keen for local flood action groups to develop effective partnership.	Proactive lead

Rea Valley Residents' Environment and Flood Action Group	Residents working closely with Birmingham BC and Environment Agency	To provide information and support to Community. Have developed a Flood Defence Plan	Environment Agency working closely with local people.	Supportive partner
East Peckham Flood Relief Partnership	Instigated by Council,. Partnership of Environment Agency, local authorities, water authorities, and East Peckham Flood Group	To provide a coordinating strategic group.	Effective in procuring flood defence, with community participation in planning process.	Working member
East Peckham Flood Group	Residents, with support from other agencies including Environment Agency	To improve flood defences and provide information and support to community	Residents working in partnership with Environment Agency and local authority.	Working partner
North West Regional Flood Defence Committee	Environment Agency committees along with Defra and councillors.	To help deliver Environment Agency's flood risk management functions	Key discussions held elsewhere. Meetings act as formal ratification of decisions.	Establishing statutory partnership
Greater Manchester Resilience Forum	Ten local authorities, Police, Fire Service, Army, Environment Agency, Government Office NW, Strategic Health Authority, Health Protection Agency, British Transport Police, Ambulance Service	To comply with Civil Contingencies Act 2004 by developing civil protection plans.		Participant

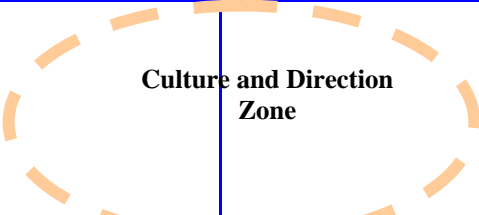
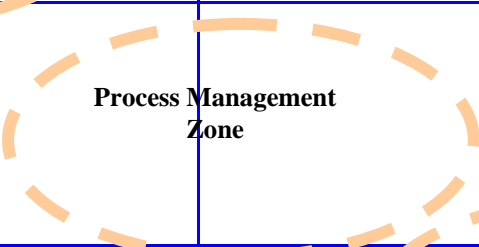
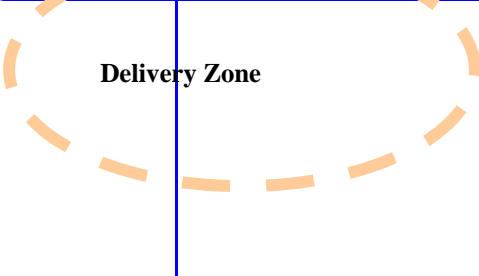
10 Pathfinders, tools and next steps

Our work programme suggests that the next task is to develop practical tools and processes (approximately 10 days of work) and test them through pilots/pathfinders (with minimal 'help desk' support from us of up to 14 days).

Given findings and work done so far, we recommend the following next steps for discussion at the Board meeting on 17 April 2007:

- (i) Work with CCPs and others to fill in the gaps/develop guidance and tools set out in this report (work which would also support the use of them in pilots/pathfinders). Work would involve interviews and workshops, and making link to the work of others such as Colin Burgehouse, Emma Hayes, the Fire and Rescue Service, LGA etc. It could also include capacity assessment (see table overleaf).
- (ii) Identify possible pilots/pathfinders, including the following ideas that have emerged so far:
 - linking with BTwC flood enquiries;
 - trialling a framework agreement in Bradford across all Environment Agency/local authority responsibilities (waste, flood, pollution);
 - study Devon's community plan pilots including Shaldon;
 - support LRFs/Operational and emergency groups to generate a sense of urgency/real tasks to do (in Devon);
 - working with Herefordshire FRS to follow through their pioneering work.

Assessing organisational capacity/barriers within each CCP in terms of working collaboratively

Levels of Decision Making Challenges	Board	Senior Managers	Middle Managers	Operational Staff
Culture and Direction Culture Commitment	 Culture and Direction Zone			
Process Management Know your stakeholders Joined-up programming Take risks and learn	 Process Management Zone			
Delivery Skills and confidence Route map to the right place	 Delivery Zone			

This framework could provide a basis for sharing views on strengths/weaknesses within CCPs, and areas for improvement. 97

Science Report Collaboration with civil contingency partners and communities for improved FCERM outcomes

Appendix 2: Improving Institutional Responses to Flooding: Review of partnerships and inter-organisational working

Nigel Watson, Will Medd and Elham Kashefi
Department of Geography
Lancaster University

1. Introduction

The development of more effective institutional and social responses to flooding represents a considerable challenge for government and the numerous public organisations with responsibilities for flood management at the national, regional and local level. Part of the challenge stems from the complexity of the flood problem itself. Flood hazards management represents what Ackoff (1974) termed 'a mess', Trist (1983) called a 'meta-problem' and Dorsey (1986) labelled a 'wicked problem'. This type of problem is not isolated but spans several different policy domains and organisational jurisdictions. Flooding has multiple dimensions (bio-physical, economic, social, technical, legal, and political), is spatially and temporally dynamic, is not amenable to accurate prediction and is likely to generate controversy because of differences in knowledge, values and expectations among interest groups and management authorities. The challenge of flood management is further compounded by changing demographic and spatial patterns of social vulnerability to flooding (Fernandez *et al.* 2007, Walker *et al.* 2008), and the consequent need to tailor policies and practices for flood prevention, warning, incident management and recovery to reflect the increasingly varied and dynamic cultural and socio-economic environment.

It is becoming increasingly clear that a 'blueprint' or 'one-size fits all' approach to flood management is a poor match for prevailing conditions across the UK. This point was confirmed by Thrush *et al.* (2005) in their study of flood impacts and responses to warnings during the flooding experienced in parts of England and Wales in 2000:

"What emerges as a key finding strongly, is the need to consider local issues and to retain (or reinstate) local action rather than adhere solely to a national initiative. Much valuable information is held by local residents, by officers at regional Environment Agency offices and by staff within local authority, voluntary and local emergency services. This is information with a vital bearing on circumstances relevant to local flood events."

In addition to these concerns, there are significant institutional and organisational challenges which must also be addressed if the management of flood hazards is to become more effective in the future. For clarity, the term 'institutions' is used in this report to refer to those "*structures, processes and policy approaches for making public decisions and for influencing the behaviour of individuals, groups and firms*" (Watson *et al.* 1996). In the context of flood hazard management, institutional policy analysis is concerned with evaluating the arrangements used to make public decisions, and assessing the outputs and outcomes of those decisions in terms of actions taken by public and private groups to deal with the threat of flooding. While the need for organisational and cultural change has already been acknowledged in the Delivery Plan for *Making Space for Water* (Defra, 2005a), the specific institutional arrangements and approaches required for effective and sustainable flood management across England and Wales have so far received surprisingly little attention from policy makers or researchers.

A key question, therefore, concerns the types of institutional arrangements that are required in order to respond effectively to the turbulent contextual conditions and 'wicked problem' characteristics which define flood hazard management in the UK at the present time. Many policy makers, resource managers and researchers are inclined to believe that the answer lies with improved inter-organisational relationships and working practices, based on collaboration rather than competition or even cooperation or coordination as a basic value. 'Collaboration' is defined here as a process in which two or more organisations or groups pool their appreciations and/or tangible resources (e.g. information, money, labour) to solve a set of problems which neither can solve individually

(Gray, 1985). Belief in the power of inter-organisational collaboration is reflected in the current popularity of the 'partnership ethos' which is evident in many different policy sectors, including water resources and flood hazard management. However, practical experience and academic research has shown that partnership working itself can be problematic and difficult to manage. As such, it is important for those working in the area of flood hazard management to appreciate the different approaches available for building and maintaining inter-organisational collaboration and collaborative partnerships. These issues provide the focus for this report in addressing the question: What are the lessons from social science research to develop more effective partnerships to improve the social and institutional responses to flooding?

The report is set out as follows. First, we briefly review some of the contextual factors that have led to increased calls for partnerships and inter-organisational working (from now on this will be referred to as 'partnerships'). Second, we look at the ways in which partnership working has emerged across a range of policy domains and identify some of the key issues highlighted by the literature on partnership working. Third, we review the notion that there are models of partnership working, giving three examples of how key aspects of partnership working are often framed. Fourth, we look at different examples of partnership working in relation to flooding to illustrate the diversity of forms it can take. In the final section, we conclude by identifying key lessons which emerge from partnership research and practice, and draw attention to areas where further research is needed.

2. The changing context of flood management

Some of the key contextual changes that are particularly significant for the design of future institutional arrangements and approaches for flood management include:

Recent shifts in government flood hazards management policy

The government response to *Making Space for Water* (Defra, 2005b) sets the agenda for the implementation of a more holistic approach over the next twenty years and beyond. Some of the key features of this new strategy pertinent to partnership working are: stronger links between flood management and sustainable development policies, including the transparent application of social, environmental and economic criteria in the appraisal of management options; a 'whole-of-government' approach in which flood risk is addressed across a range of policy arenas and jurisdictions (including climate change, land-use planning and development, agriculture, transport and nature conservation); a 'multiple-means' approach aimed at tackling the underlying causes of flood risk, improving measures for flood preparedness, incident management and community recovery, and shifting the emphasis from 'hard' engineering towards 'soft' solutions that work with natural processes; use of co-funding arrangements to spread the burden of flood management among public and private interests; local participation in decision-making; integration of flood management with other catchment-based initiatives; and accountability and transparency in monitoring progress and measuring performance.

Lessons from high-profile flood incidents

The post-incident evaluations and reports for the flooding experienced in Bradford during October 2000, Boscastle in August 2004 and Carlisle in January 2005 provide some important insights and lessons on the adequacy of institutional arrangements for flood hazard management. The inquiry into water management and flooding in Bradford District resulted in a series of recommendations, including the development of a clear vision and strong local leadership, more integrated and coordinated management, better coordinated and inter-linked emergency plans and more community engagement to improve understanding of the problems and awareness of responsibilities for dealing with risk and flood mitigation (City of Bradford Metropolitan District Council (CBMDC) (2005). However, in its response to the inquiry report, the Environment and Waste Management Improvement Committee of CBMDC drew attention to a number of barriers which continue to impede implementation, including the fact that many of the desired actions fall outside the Council's own statutory duties, its inadequate statutory powers to ensure appropriate actions were being taken by other organisations, insufficient financial resources linked to budgetary cuts within central government and variable access to European Union funds depending on the status of the local area, changes to the policies of insurance companies for properties at risk or previously flooded, and complacency within the community and the organisations with management responsibility because of the often lengthy time periods between flood events (CBMDC, 2006).

In the case of Boscastle, the response to the flood incident has been described as an example of good coordination between the emergency services and public sector organisations (Environment Agency, 2005). Following the event, efforts have focused on the identification of a viable engineering solution to the problem in consultation with the Boscastle Regeneration Steering Group. In addition, research has been undertaken to better understand the vulnerability of the River Valency catchment to flooding with a view to improving flood warning, raising public awareness and influencing planning decisions and emergency response plans.

Effective inter-agency working was also identified as an important aspect of the emergency response to the flooding of Carlisle in January 2005 (Government Office for the North West, 2005). The same report noted that there were significant differences in organisational cultures, norms and practices, with some agencies following the emergency response plan to 'to the letter' and others adapting their actions to new information and changing circumstances on the ground. A more systematic review of flooding in northern England and North Wales in January 2005 resulted in a number of recommendations for flood protection, forecasting, warnings and incident management (Environment Agency, 2005b). Among the key recommendations were: a need to encompass all aspects of urban drainage including road drainage and sewerage within flood protection measures; improved forecasting and warnings for extreme as opposed to severe weather; improved community support for vulnerable people and the establishment of self-help groups; better internal communications within the Environment Agency; improved resilience of public infrastructure (electricity, roads, water and sewerage); and the provision of adequate resources and contact arrangements to support multi-agency emergency response plans.

Practical experiences and insights gained from national flood exercises Exercise Triton was conducted in 2004 with the aim of simulating a one in 1,000 year flood affecting nearly half of England and Wales, and testing organisational arrangements and institutional responses. The post-exercise evaluation resulted in a large number of detailed recommendations pertaining to improved multi-agency working, communications and resources during the warning, incident and recovery phases of floods (Defra *et al.* 2004).

The development of new emergency planning arrangements

The Civil Contingencies Act (2004) aims to increase *resilience* through improved responses for both national and localised emergencies which pose threats to human welfare, the environment and security. Part 1 of the Act requires the establishment of Local Resilience Forums to improve coordination and cooperation among the core emergency organisations (the Category 1 responders), which include local authorities and the Environment Agency, and other organisations with responsibilities for utilities, transport, and health and safety (Cabinet Office, undated). The jurisdiction of each forum is based on police force areas. In addition to cooperating during the preparation and implementation of emergency plans, Category 1 responders are required to devise business continuity plans, provide public information and maintain arrangements to warn, inform and advise members of the public in the event of an emergency. Local authorities are also expected to provide advice and assistance to businesses and voluntary organisations about continuity management. Part 2 of the Act provides government with special emergency powers which may be invoked nationally or on a regional basis to deal with extreme natural, technological or terrorist threats.

Developments in EU environmental policy and legislation

The Water Framework Directive (WFD) and the European Commission (EC) proposal for a directive on the assessment and management of floods (COM (2006) 0015 Final) is set to introduce a number of important changes in policy. Both the WFD and the proposed directive on floods identify the River Basin District (RBD) as the principal spatial unit for planning and management. The need for public engagement and inter-agency cooperation in the preparation and implementation of flood risk and river basin management plans, and the need to address more closely the impacts of land-based activities upon water quality and quantity are also emphasised. Furthermore, flood risk management plans are to cover prevention, protection *and* preparedness.

The above account of changing contextual conditions suggests that future flood hazard management strategies and institutional responses must be designed to work in an increasingly complex and chaotic operating environment. While many of our present

institutions and organisational arrangements were designed for a stable and highly predictable environment, a world characterised by change, complexity, uncertainty and potential conflict regarding alternative knowledge claims and management options is fast becoming the reality. Trist (1980) called this new type of environment ‘the turbulent field’ and described it in the following terms:

“...large competing organisations all act independently, move in many diverse directions, and generate unanticipated and dissonant consequences. These dissonances increase as the common field becomes more crowded with participants. The result is ‘contextual commotion’ – as if ‘the ground’ were moving as well as the organisations.”

In a turbulent environment, flooding requires a very different type of institutional and social response since no single organisation, no matter how large or powerful, has the necessary knowledge, skills and resources to cope with the situation effectively.

3. Partnership research and practice

While the partnership agenda is now gaining momentum within flood hazard management, it has been established for some time across other areas of government policy. Partnership working, collaboration, joined-up thinking, inter-agency working, inter-sector working, in rhetoric at least, are foundational to ‘third way’ approaches to governance. Consequently, there is a diverse range of literature analysing and evaluating different forms of partnership working. This takes many forms, ranging from prescriptive accounts of how effective partnership working should work, to evaluations of specific cases, to critical accounts that situate partnership working within new modes of governance and explore some of the implications for the distribution of decision-making power and the assumption that partnerships are always ‘a good thing’. Within such writing, a diverse body of knowledge is brought to bear on the partnership problematic, including management studies, organisational theory, inter-professional working, sociology, governance, economics, policy analysis, political economy, and psychology. Different approaches have different key issues that need to be understood, and consequently there are marked differences in the sorts of prescriptions that are offered.

Examples of key policy areas grappling with partnership working include:

- **Health and social care:** key issues for health and social care have been around developing partnerships that involve inter-professional relations as well as organisational dynamics (see Hornby 1993; Leathard 1994)
- **Urban regeneration:** partnership working between local government, business and voluntary organisations has become the main vehicle for urban generation in Britain, “with at least 700 such urban partnerships, with as many as 75 operating in a single city at sub-regional, city-wide and neighbourhood levels” (Carley 2000; Hastings 1996).
- **Sustainable development:** exploring, for example, the capacity of local authorities to develop participatory ways of working to address Local Agenda 21 (see Freeman 1996; Lyons 2001)
- **Health inequalities:** partnership working has been a key mechanism for strategies to tackle health inequalities with a literature trying to build up the ‘evidence base’ for partnership working (see Evans and Killoran 2000)
- **River basin management:** here, the concern has been with developing effective partnerships for planning and management that include public participation (see Kidd 2000; Watson 2004; Piper 2005)

Across these examples, there are clearly specific issues concerning particular policy initiatives and also the nature of the problem being addressed varies considerably. These fundamental differences impact on the type of partnership arrangements which are needed and the research lessons that can be drawn from evaluations. Key factors shaping particular partnership arrangements include the following (overlapping) issues:

- **Organisation and institutional contexts** (*formation of statutory partnership, involvement of bodies with different modes of working, wider context of networking within which partnership is situated*)
- **Working assumptions about the nature of the collaboration** (*whether it is lead by a particular agency, based on informal or legal agreements, tightly defined membership*)
- **Nature of the partnership** (*from information sharing, service delivery, strategic decision-making, public engagement*)
- **Significance of interpersonal relationships** (*key personal making the partnership work or more formal representation from key bodies*)
- **Resourcing of the partnership** (*does it have mainstream funding, is it pump-primed, is it a one-off grant, is it resourced by the partnership organisations, does it have its own budget*).
- **Relationship to policy agendas** (*is delivery core service, meeting national objectives, joining-up different policy areas*)
- **Organising principle of partnership** (*is it responding to a particular problem, a funding opportunity, or a legal or political demand to coordinate policy*)
- **Mode of collaboration** (*is it network-based, more hierarchical, or even market-based through competitive tendering processes*).

This list is not exhaustive but shows the need to understand the contexts of partnership working in order to use research findings. Clearly, partnerships come in many shapes and forms, and take on different roles. As such, it would be inappropriate to attempt to identify a single partnership model for use in flood hazards management. Rather, the key to success will be to use different types of partnership working selectively to fit particular local circumstances and needs.

Defining a literature on partnership is not straightforward, not simply because of the many domains of partnership working, but because different sets of issues emerge. On one level, research on partnership working may focus on interpersonal relationships, identify key attributes of individuals that facilitate or hinder collaboration and cooperation (see Hornby 1993). On another level, organisational relationships may be analysed, opening up a myriad of questions about the nature of partnership organisation as an entity in itself, as well as questions about how the organisations involved work (see Alexander 1995). This may involve questions about different partnership arrangements (formally, informally; through networks and hierarchy and so on) as well as questions about the importance of the structure and culture of the organisations involved. At another level, how changes in broader systems of governance shape, enable and hinder partnership working may be the focus, such as ‘the enabling state’ or ‘network governance’ (see Lowndes and Skelcher 1998).

What is clear from social science research is the need to acknowledge, and indeed work with, the complexity of partnership working, to understand the broader context and local conditions that enable and/or hinder partnership working, and to recognise that their successes and failures in terms of developing and implementing policies, programmes and projects cannot be accounted for by referring to a list of essential conditions or ‘ingredients’ (Medd 2001). The research literature also draws attention to the fact that

partnerships engender relations of power which involve processes of both exclusion and inclusion.

4. Models of partnership and inter-organisational working

Given the plethora of areas in which partnership working has emerged, it is not surprising to find a vast body of literature that seeks to identify the key criteria for successful partnership working. There is not the scope to review all those lessons here and in some sense this would be a pointless task. Our argument here is that core elements of a successful partnership in one context may well not be the core elements necessary in another. So here we aim to give a flavour of that research with a view to developing some key points of consideration in the following sections. In this section then, rather than attempt a comprehensive review of key literatures, we draw on three key reviews to illustrate the types of debate and propositions. First, we highlight the core findings of a key review undertaken in the field of health and social care, second, we comment on the recent report for the Environment Agency on developing effective partnerships and third, we overview the work of Barbara Gray, one of the leading international authorities on inter-organizational collaboration.

The area of health and social care has a long history of partnership working, one that became consolidated most explicitly in the late 1990s under new Labour. Consequently this is a huge literature extolling the virtues of partnership working, how best it can be achieved and, of course, where policy has let the possibility of partnership down. In 1999, Bob Hudson and colleagues provided a significant review of that literature, drawing together the lessons from a wide body of research and situating this within a social science framework. Their paper was written in the context of a lack of 'evidence-based' policy making around partnership in which governments have been wedded to '*optimistic*' (Challis *et al.* 1988) and '*naïve*' (Booth 1988) models of partnership which presume the 'rationality' and/or 'altruism' of public sector organisations. Academic debates have challenged the accuracy of these assumptions, and Hudson *et al.* (1999) review research in a range of disciplines in order to articulate a more '*realistic*' model of inter-agency partnership – one which reflects the complexity and fluidity of collaborative initiatives. Partnership is taken to be 'a good thing' and they pursue the question 'what increases the probability of collaboration?' Noting that they are not offering a 'grand theory' or the 'iron law of collaborative endeavour', they propose a framework that includes ten stages of partnership working (see below) which 'are iterative and cumulative rather than merely sequential, with a large element of learning by doing':

Contextual factors: expectations and constraints. A context in which there is the need to collaborate to avoid duplication, omission, divergence, counter-production (Huxham and MacDonald 1992) may provide the necessary 'trigger' for interaction.

Recognition of the need to collaborate: a clear sense of the benefits of collaborative advantage (Kanter 1994), recognition amongst stakeholders of both independence and interdependence.

1. **Identification of a legitimate basis for collaboration:** the motivation for organisational involvement (including more negative aspects) and identification of stakeholders.
2. **Assessment of collaborative capacity:** "*the level of activity or degree of change a collaborative relationship is able to sustain without any partner losing a sense of*

security in the relationship" (Hudson *et al.* 1999), including resources as well as organisational culture.

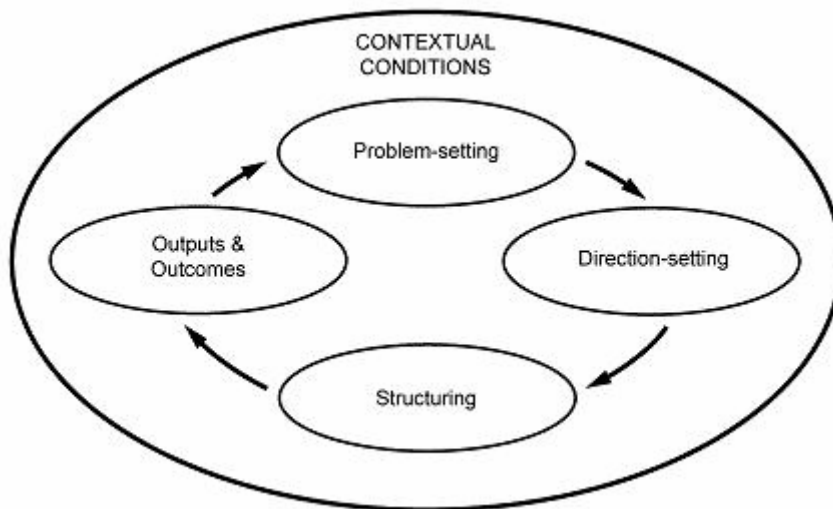
3. **Articulation of a clear sense of collaborative purpose** (though with some recognition of the value of ambiguity (Nocon 1989).
4. **Building up trust from principled conduct:** including "*fair dealing in the distribution and appropriation of benefits and fairness in procedure*" (Hudson *et al.* 1999, citing Cropper 1995) and in personal relationships.
5. **Ensuring organisational ownership:** including investment in individuals with skills in working in policy networks, identifying resources and other key people, and frontline staff.
6. **Nurturing fragile relationships:** including clarity of purpose, commitment, shared ownership, management arrangements and organisational learning.
7. **Selection of an appropriate collaborative relationship:** as loosely coupled networks, as coalition or acting as one.
8. **Selection of a pathway:** the extent to which the partnership is formed through market, hierarchy or network exchange (Thompson *et al.* 1991).

Doyle (2006a, 2006b) offers an overview of lessons learned on partnership working for the Environment Agency. Like Hudson and his colleagues, Doyle's review builds on research experience of case studies and lessons from a wider literature. Doyle notes the power of policy in shaping the opportunities for partnership working, both in terms of the broader politics of environmental policy and specific policy initiatives. In *Making it happen*, the Environment Agency states it 'cannot deliver its agenda for change alone and can only do so through effective joining up with partner organisations (Environment Agency 2001b cited by Doyle 2006b). Doyle's review explores four different types of partnerships, each with a different focus: one that is development-led, one community-led, an Environment Agency-led partnership and a partnership addressing the concerns of residents in a village. The lessons and recommendations identified by Doyle (2006b) are as follows:

1. Partnerships need to be understood and clearly defined.
2. Careful thought needs to be given to the selection of partners.
3. The need to learn from our own and others' mistakes.
4. Partners need to understand how other partner organisations function, and be able to explain how their own organisation functions.
5. In entering into partnership with businesses or with local communities, public sector organisations need to know what the pay-off is for each of these.
6. Partnership needs to be articulated around an agreement (often legal) which can help define common aims and values.
7. There needs to be clarity about who speaks for the partnership, and who can make executive decisions.
8. Someone or some organisation needs to take the lead.
9. There is a need to clarify differences and how they can become a potential locus of conflict.
10. Investment in time, money, support and commitment needs to be clear.
11. The partnership needs to be an appropriate size - we need to know whom we can and cannot make partnerships with.
12. Partnership relies upon trust.
13. We need to be aware of the potential risk to the credibility of our organisation.
14. Local identities can be an important asset.

15. There is a need for mechanisms for learning about what the various organisations are about and how we can use their expertise to build projects.
16. It is important to know how partnerships can be brought to an end.

The American conflict and negotiation expert, Barbara Gray, has written extensively on the subject of multi-party collaboration (for example, Gray 1985; 1989; 2003; 2004). Her work is distinctive because of the way in which collaboration is characterised as an emergent and iterative process rather than a highly structured and linear arrangement. Gray's theoretical and empirical work demonstrates how collaborative initiatives develop over time as a function of external pressures and the dynamics of inter- and intra-organisational relationships. Although collaboration is viewed as a highly unpredictable ('messy') process, Gray's work highlights the importance of contextual conditions and four distinct phases of interaction:



Contextual conditions: collaboration does not operate in isolation and prevailing economic, political, social, legal, institutional and environmental conditions may encourage or discourage the establishment of partnership arrangements. In the extreme, adverse conditions may mean there may be little or no point in attempting to establish a collaborative relationship. Indeed, much of the empirical work on collaboration points to the significance of a 'crisis' of some sort as the necessary lever which prompts organisations to interact with each other. In the current context, such a lever may occur in the form of a significant flood event, a change in legislation or institutional policy or even expenditure cuts which result in organisations seeking to establish new co-funding arrangements. Difficulties can arise when the partner organisations are exposed to different sets of contextual conditions. For example, one organisation may be motivated by a genuine commitment to improving the way in which flood events are dealt with through joint decision-making and action. In contrast, other organisations may see working in partnership simply as an opportunity to gain additional resources for their own purposes, or collaboration may be legally mandated or imposed by more senior officials upon organisations that otherwise would choose not to engage with one another because of fears about the loss of power, authority, resources or territory.

Problem-setting: this initial phase is concerned with establishing an identity for the problem that is of concern to the partners and establishing which organisations and interests have a legitimate stake in the problem domain. In the context of flood management, the partners would typically address key questions such as 'what is the current state of the flood hazard problem and flood management', 'who is affected and in what ways', and 'why is the current situation less than desirable'? Through joint research, conferences, workshops and meetings, a common understanding of the shared problem

starts to emerge and the stakeholders begin to appreciate their interdependencies. Arriving at such a common understanding is not always easy since information is likely to be incomplete, evidence open to interpretation and the claims of stakeholders/interest groups are likely to be contested. Nevertheless, this initial phase has a fundamental bearing on the whole process of collaboration. Inadequate exploration and appreciation of the problem may undermine subsequent attempts to find joint solutions. Several attempts to establish a common identify for the problem may therefore be required. Conversely, careful and in-depth problem-setting can help to strengthen links among disparate groups and engage organisations that previously resisted collaboration.

Direction-setting: assuming that a common understanding of the problem has been established, attention should then shift towards identifying desirable future conditions and a direction for action. A key issue for negotiation during this phase is 'ends legitimacy'. In other words, feasible super-ordinate goals should be identified which reflect the desires and aspirations of the collaborating organisations. Such ambitions are often articulated through a 'vision statement' or 'future state vision' establishing some underlying principles to guide collaboration as well as describing the conditions or 'end points' to be achieved. Whilst direction-setting is an important aspect of collaboration, in practice the establishment of agreed long-term goals and joint actions is unlikely to be straightforward because different understandings, values, attitudes and aspirations among the collaborating organisations will have to be reconciled through dialogue and negotiation.

Structuring: assuming that attempts to assess current conditions and to define a more favourable alternative for the future have at least been partially successful, inter-organisational structures and procedures should be created to guide subsequent decision-making and action. Such structures and procedures may be of a formal or more informal nature, depending on the institutional and social context. In effect, the previously loosely negotiated understandings among the partners should be turned into a set of arrangements designed to allocate roles and responsibilities and to regulate interactions among the collaborators. According to McCann (1993), this structuring phase is often poorly handled. Explicit mechanisms for equitably negotiating roles and responsibilities are often missing and there is a tendency to rely on bureaucratic management principles. Consequently, roles may be poorly matched to capabilities and insufficient consideration may be given to alternative operating structures such as networks and coalitions as well as partnership arrangements. Failure to develop adequate structural arrangements for the inter-organisational environment can have major implications, since the collaborators will not have an appropriate platform for moving in the desired direction.

Outputs and outcomes: although much of the literature on collaboration identifies structuring as the last phase in the process, it is important to recognise that collaboration is only a means to an end and not an end in itself. By working through the first three phases of collaboration, the participating organisations should be able to develop joint policies, programmes and projects (outputs) which will ultimately improve conditions on the ground (positive outcomes) in ways that are consistent with established long-term goals, ambitions and visions (Selin and Chavez, 1995). However, failure to generate significant outputs or to achieve positive outcomes is very likely to undermine the commitment to collaboration among the participating organisations and groups.

While there is a logical sequence to the four phases of collaboration, in reality the process may take a number of different directions. For example, several repetitions of the cycle may be required before outcomes are achieved, and the length of time devoted to each phase will vary from case to case. Furthermore, obstacles and disagreements or shifts in knowledge and understanding among the partners may necessitate a return to one or more of the previous phases in order to re-define the shared problem and/or re-organise joint activities and arrangements. The model outlined above shows that, in practice,

collaboration is a complex and fragile process. Potential obstacles and barriers exist during each phase of interaction and there is always the danger that the collaborative arrangement becomes a problem in its own right rather than a solution. Clearly, inter-organisational collaboration should not be treated as a panacea or 'silver bullet' for flood hazard management although it does offer significant advantages, particularly when compared with more traditional single-agency or bureaucratic types of institutional responses.

The point of our review is not to suggest a new set of lists of 'must do's' that is universally applicable across the entire flood hazard management arena. Rather, our intention is to illustrate the types of debates and questions that need to be asked in thinking about partnership working for flood management. To this end, before turning to the next section, it is worth reflecting on some of the more fundamental yet challenging questions emerging from the literature on partnership working.

First, working in partnership carries risks. In any collaborative arrangement, there is the need to accept a 'loss of glory' (Huxham and MacDonald 1992) since successful outcomes will typically be attributed to the partnership rather than any particular organisation. Indeed, in some cases the very purpose of a partnership is to empower local communities (see Piper, 2005). In essence, there is often a sense of surrender in partnership work which entails a loss of freedom to act independently (Hudson 1987; see also Charlesworth *et al.* 1996). Within this context, organisations need to decide if it is appropriate to invest scarce resources into such arrangements rather than pursue their own aims and objectives (Hudson 1987). Finally, for any participating organisation, there are issues of accountability and where this ultimately lies if the partnership fails to deliver, or where responsibility for past decisions ultimately rests (Doyle 2006a).

The question of accountability raises issues that stretch beyond the partnership or organisations within it. Accountability within a partnership can be more difficult to establish compared with more traditional bureaucratic models of decision-making. A partnership may potentially become a scapegoat or used as a vehicle to divert criticism or blame. A related issue is that of representation. While partnerships are sometimes heralded as an opportunity for openness and holistic policy, the reality is that they must necessarily involve some degree of exclusion. This raises issues about the relationship between the partnership and those marginalised or excluded from its decision-making, including the risk that the partnership itself may become yet another self-interested actor within the policy field.

Another issue concerns the value of working with models of the *ideal* partnership (Medd 2001). First, there is a need to consider how partnership strategy and practice may need to focus effort on how to work in partnership when the perfect conditions *are not* in place. Second, the ideal models represented in evaluations always suffer in having to simplify in order to represent the work. And yet it may be more hidden, informal work of the partnership that influences action and determines ultimate success or failure. In this sense, the representations captured in evaluative studies may not reflect the dynamics that enabled the partnership to work. Third, many evaluations often start with the *a priori* assumption that partnership is necessarily positive, confusing description with prescription. Fourth, evaluations tend to work from within the partnership, looking at the structure of the partnership or associated organisations. And yet, since partnerships are situated within a wider plethora of networks and inter-organisational relations, it can sometimes be decisions outside the partnership which enable the decisions within it and ultimately determine its success or failure in achieving its aims and objectives.

5. Examples of collaborative flood management

In this section, we turn away from the research on partnership working in general to consider partnership working in the specific context of flood management. To date, there has been very little academic evaluation of partnership working in flood management explicitly. Evaluations of flood management that mentioned partnership working tend to do so as a source of deficit, that is, that particular situations were badly handled because of a lack of partnership, joined-up working, improved collaboration and so on. Indeed, a key finding of this review paper is that there is no, for want of a better term, reliable 'evidence base' for partnership working in flood hazard management, certainly not of the sort found in other areas. Given that the social, institutional and physical contexts of floods vary, and that the social science of partnership work shows unequivocally that local context matters, the aim of this section is to illustrate the diversity of partnerships addressing flood management. Our intention is not to offer detailed and critical evaluations of these partnerships but rather to use the examples to demonstrate the diversity of ways in which the Environment Agency already engages in partnership working for flood management in different contexts.

Environment Agency as liaison for residents' partnership

Worcester Action Against Flooding (WAAF) held its first meeting in 2001, after Worcester experienced severe flooding in 2000. Residents' experience was that the response from agencies was badly coordinated and inconsistent. The group had full support of their Environment Agency Regional Flood Defence Manager and developed a very effective working relationship with him where he would regularly meet with community groups. Since his departure the nature of the relationship between the Environment Agency and local communities has changed considerably and there is almost no co-working.

Source: WAAF website www.waaf.org.uk; phone interview with key personnel in WAAF

Environment Agency in partnership with non-governmental organisation

Thames Landscape Strategy (TLS) Hampton to Kew is established since 1994. The TLS is a not-for-profit organisation dedicated to conserving, promoting and enhancing the Thames landscape between Kew and Hampton. The Environment Agency is one of the funding partners and an active member, along with local authorities and other organisations such as English Heritage. The TLS has developed a '100-year blueprint', a strategy and management plan, which covers history, culture, geology, flooding, habitats, historic parks, conservation areas and recreation. It has a very active presence in the community, working closely with over 100 local groups or organisations to ensure that local voices are heard by planning authorities and the Environment Agency.

Sources: TLS website www.thames-landscape-strategy.org.uk; Piper (2005)

Environment Agency as the secretariat for a strategic alliance

River Thames Alliance formed in 2003 as a strategic partnership for the non-tidal River Thames. The Environment Agency holds the secretariat but the alliance also has membership of local authorities, the Countryside Agency, ACTVaR (Association of Councils in the Thames Valley Region), the River Thames Society and other interest groups. Its principal aim is to implement the Thames Waterway Plan “*to map out the reinvigoration of leisure and tourism along the river corridor in ways that are both socially inclusive and sustainable*” (Environment Agency 2004, quoted in Piper 2005). However, there is little involvement of local groups or residents. The Thames Waterway Plan did not encompass proposals made by local interest groups to designate the river as a linear park benefiting local communities, and for the control of riverside development. The Environment Agency is said to dominate the agenda of the alliance, focusing on navigation and recreational use of the river.

Sources: RTA website www.riverthamesalliance.com, Piper (2005)

Environment Agency raising flood awareness by funding local history project

The Severn Community Flood Forum (SCFF) was set up as part of a research project by University of Gloucestershire looking into the history of flooding, using an oral history methodology. The forum was part-funded by the Environment Agency as an aide to raising awareness about local flooding issues. Bewdley Residents Flood Committee participated in this and follow-on activities.

At:<http://www.glos.ac.uk/shareddata/dms/C0B6DA36BCD42A0394E1293C7FC81B1A.pdf>

Environment Agency as proactive lead in development of local flood groups

Following the floods of 2005, Environment Agency staff based at Penrith invited the National Flood Forum to help develop local flood groups, particularly in at-risk communities. Keswick Flood Action Group is one such group. The group have been working closely with the Environment Agency Flood Incident Management Team to improve the local warning system; members have visited the flood control room in our Penrith offices to increase awareness of procedures for flood predictions and warnings; residents are being trained to use wireless pagers in case mobile networks fail; and warning systems are being improved through systems of direct communication between local residents and Environment Agency regional staff. The FAG has produced a database of vulnerable households, in addition to a ‘phone tree’ to ensure warnings are passed on in a reliable way. At present, Keswick FAG is campaigning for a grants system to make individual homes more flood resilient.

Sources: Keswick FAG website www.keswickflood.org and National Flood Forum website www.floodforum.org.uk; telephone interview coordinator National Flood Forum representative

Environment Agency as supportive partner

Formed in 1999, the Rea Valley Residents' Environment and Flood Action Group (FLAG) in Northfield works closely with the local authority and with the Environment Agency. They have produced a Flood Defence Plan to help the community deal with flooding emergencies. Members of the group know who to contact and how, and to call on further volunteers who would help during a flooding emergency.

Sources: Birmingham City Council website

http://www.birmingham.gov.uk/GenerateContent?CONTENT_ITEM_ID=27008&CONTENT_ITEM_TYPE=0&MENU_ID=14165&EXPAND=12083m

Flood Incident Management Team Leader, Sam Probert from the Upper Trent 1 Area received a prestigious Golden Sandbag Award in the Environment Agency category at the National Flood Forum conference. Sam was nominated for the award by the Rea Valley Residents, Environment and Flood Action Group (FLAG) in Birmingham. Chairman Norma Boyd said: *"Since the formation of our group in 1999 we have had very good and consistent help and advice from our area Environment Agency Team, led in recent years by Sam Probert. We are especially grateful for the invaluable help given by Sam and the team, day and night, on rainfall prediction, water-levels in the river, flood warnings and advice on installing residents own flood protection measures."*

Source: National Flood Forum (2006) Report of Annual Conference in Bradford NFF website
www.floodforum.org

Environment Agency as member of strategic partnership in community

East Peckham Flood Relief Partnership is a multi-agency group set up by the Council following floods in 2002 to coordinate work around flooding. It has representation from the Environment Agency, local authorities, water authorities, and East Peckham Flood Group. The partnership was successful in obtaining funding for a dam which was opened in 2006. Residents were integral to the design of the scheme.

East Peckham Flood Group was established in 2003. It has held monthly meetings with speakers from various organisations to update residents on flood prevention and defences and circulates monthly newsletters to over 300 residents. Sue Chalkley, a founding member of the EPFG is now one of the Directors of the National Flood Forum. The Environment Agency is reported to be a very effective and supportive partner in East Peckham.

Sources:

Tonbridge and Malling Borough Council website

<http://www.tmbc.gov.uk/cgi-bin/buildpage.pl?mysql=996>

Sue Chalkley (2006) presentation at National Flood Forum annual conference in Bradford

<http://www.floodforum.org.uk/conference2006/suechalkley-eastpeckhamfloodgroup.pdf>.

A resident's account

<http://www.zurich.co.uk/NR/rdonlyres/BA6DCEB2-4423-4FD9-88C3-C91DD400A3B4/0/ZurichHowtoGuideDealingwithFloodsJan07.doc>

Environment Agency working in local strategic partnership

Bradford District Water Management Advisory Steering Group was set up in 2005 in response to findings of a council-commissioned independent inquiry into flooding issues in the district; the Steering Group was set up as a sub-group of the Bradford Local Strategic Partnership Environment Partnership. The group brings together various council departments (Emergency Planning Unit, Environmental Services, Regeneration Partnership Development Unit, Policy Development Service) with the Environment Agency, water authorities, and Bingley Voluntary Action. The group's aims are to ensure communication between different organisations, facilitate a common understanding of the roles, responsibilities and limitations of each partner, and to develop an integrated approach to strategic and operational development.

Sources:

Bradford Council website

http://www.bradford.gov.uk/environment/environmental_protection/water_management/Advisory_steering_group.htm

Ashley *et al.* (2005) *Review to consider the future of water management and the associated problems of flooding in the Bradford District* Bradford Metropolitan District Council

http://www.bradford.gov.uk/NR/rdonlyres/AB1C2216-0062-49FD-BF3B-3A525B9E606E/0/Final_Review_WM.pdf

Environment Agency working through Neighbourhood Renewal Fund

In addition, the Bradford Flood Local Action Plans (FLAPs) project was set up in 2004 in response to residents' concerns about flooding risk and prevention. The project was led by Bingley Voluntary Action (BVA) and financed by the Neighbourhood Renewal Fund. BVA helped local groups share their flooding issues, decide upon their own course of action and if needed, negotiate with appropriate agencies. In total, 11 FLAPS were produced in 2005-2006. The partners in the project were Bradford Council, Environment Agency, Yorkshire Water, the National Flood Forum and the West Yorkshire Service Fire Service. The project has been cited as best practice by the National Flood Forum and the Environment Agency. The Neighbourhood Support Service continues to provide public information on flooding matters through the Neighbourhood Forums. It also facilitates meetings in communities affected by flooding.

Source:

Report of the Director of Policy and Performance to the meeting of the Bradford Council Environment and Waste Management Improvement Committee, 22 November 2006

<http://councilminutes.bradford.gov.uk/Minutes/docs/2006IMPENV/ENV22NOVREPK.PDF>

Environment Agency as the problem focus for local partnerships

Lewes Flood Action Group formed in 2001 after serious floods in 2000 affected 600 homes and 200 businesses. The group is fighting for better flood defences for the town and is campaigning for a national movement of communities at risk of flooding. Residents are angry at their treatment by the Environment Agency, Defra and national government. They do not feel supported by us. Members of the group have been known to protest at

Environment Agency flood information exhibitions with placards saying “Action not Information”.

"People were really angry, almost more angry than I have seen for a long time. It's the final blow that there is no money coming to Lewes at all in the foreseeable future. The Environment Agency had two large caravans, one was explaining the flood warning system, which is exactly what they have been doing for years ...Another was a demonstration of new flood doors and some Mickey Mouse stuff about how you can have a power socket higher up the wall... we were worried and concerned and disappointed ... that their caravans were nothing more than window dressing." (Duncan Macpherson, Vice-Chairman Lewes FAC 2005)

Sources:

Lewes Flood Action Group website, <http://www.lewes-flood-action.org.uk/index.html>
The Argus 22 October 2005, <http://archive.theargus.co.uk/2005/10/22/204336.html>

Environment Agency establishing statutory flood partnerships

Regional Flood Defence Committees are committees of the Environment Agency which help to deliver the Environment Agency's flood risk management functions. There are 11 committees across England. They meet quarterly and are made up of local authority representatives and members appointed by Defra and the Environment Agency. For example, the North West Regional Flood Defence Committee *"plays an integral part in the flood defence schemes that are developed in the North West and provides sound advice on how flood defence work should be managed"*. The committee includes representatives from Regional Environment Protection Advisory Committee, Regional Fisheries Ecology Recreation Advisory Committee, Councillors from Cheshire and Cumbria County Councils, Councillors from Association of Greater Manchester Authorities, Councillor from Lancashire County Council, Councillors from Association of Merseyside Metropolitan Boroughs, and Defra.

Source: National Flood Forum website

<http://www.floodforum.org.uk/infoanddownloads/rfcd/more>
<http://www.environment-agency.gov.uk/regions/northwest/871681/871816/?version=1&lang=e>

Environment Agency as participant in multiple-risk management forums

Following the Civil Contingencies Act (2004), a number of resilience forums have been established across the country. For example, the Greater Manchester Resilience Forum includes representatives for the following agencies responsible for the emergency planning process across the conurbation: the 10 local authorities (Bolton; Bury; Manchester; Oldham; Rochdale; Salford; Stockport; Tameside; Trafford; and Wigan); Greater Manchester Police, Fire & Rescue Service and Ambulance Service; British Transport Police; Health Protection Agency; Strategic Health Authority; Environment Agency; Military; Government Office North West.

The forum is a strategic multi-agency body for civil protection arrangements in Greater Manchester. The overall purpose of the forum is to ensure there is an appropriate level of preparedness to deliver an effective multi-agency response to emergencies of different

types and scales. The forum is supported in its work by a range of sub-groups dealing with specific aspects of civil protection arrangements.

Source: <http://www.gmep.org.uk/ccm/navigation/greater-manchester-resilience-website/emergency-plans/>

The twelve examples of collaboration outlined above illustrate some of the diversity of partnership arrangements which have been created around flood hazard management. Each represents a particular need and set of circumstances and, as a result, will have its own particular requirements for success. What also emerges is the diversity of roles played by the Environment Agency in the various partnership arrangements, ranging from initiator/instigator, leader, supporter, trusted aide, team member, and pillar to 'target' (Table A2). The point is not to try to identify the most appropriate universal role for the Environment Agency in flood hazard management partnerships, but to recognise that requirements will vary enormously according to local circumstances, prevailing attitudes within the community and the formal/informal institutional structures and processes already in place..

Table A2: Diversity of Environment Agency involvement in flood management

NAME	WHO'S INVOLVED	KEY OBJECTIVE	ISSUES	PRIMARY ROLE FOR Environment Agency
Worcester Action Against Flooding	Residents, with support of other agencies and MP	To improve flood management in Worcester. To provide practical support and information to community, with a focus on vulnerable members.	Building relations of trust crucial for effective partnerships.	Liaison
Thames Landscape Strategy	NGO working in partnership with many other agencies and many communities	To conserve, promote and enhance the landscape along river (Kew to Hampton).	TLS acting as effective vehicle for dialogue between communities and agencies/planning authorities, ensuring their voices are heard.	Funding partner and active member
River Thames Alliance	Environment Agency provides the secretariat. Local authorities, Countryside Agency and others	To reinvigorate leisure and tourism.	Acting as a strategic partnership with no or little involvement from community. Agenda dominated by Environment Agency.	Secretariat
Bewdley Residents Flood Committee	Residents, with support from Environment Agency and other agencies	To improve flood defences for Bewdley. To provide practical support and Information.	Effective partnerships can be forged through good communication and willingness by Environment Agency to engage with communities.	Funder
Lewes Flood Action Group	Residents	To improve flood defences in Lewes.	Residents in conflict with Environment Agency because of what they perceive to be lack of action to improve flood defences.	Environment Agency as the problem focus
Bradford District Water Management Advisory Steering Group	Bradford MDC various departments, Environment Agency, water authorities, and Bingley Voluntary Action	To provide a coordinated approach to water management.	Steering Group is a sub-group of the Local Strategic Partnership (LSP) Environment Partnership	Contribution as part of Local Strategic Partnership
Keswick Flood Action Group	Residents with support from Environment Agency, Council, MP and NFF	To improve flood defences and provide community support during flooding incidents.	Penrith Environment Agency keen for local flood action groups to develop effective partnership.	Proactive lead

Rea Valley Residents' Environment and Flood Action Group	Residents working closely with Birmingham BC and Environment Agency	To provide information and support to community. Have developed a Flood Defence Plan.	Environment Agency working closely with local people.	Supportive partner
East Peckham Flood Relief Partnership	Instigated by Council. Partnership of Environment Agency, local authorities, water authorities, and East Peckham Flood Group	To provide a coordinating strategic group.	Effective in procuring flood defence, with community participation in planning process.	Working member
East Peckham Flood Group	Residents, with support from other agencies including Environment Agency	To improve flood defences and provide information and support to community.	Residents working in partnership with Environment Agency and local authority.	Working partner
North West Regional Flood Defence Committee	Environment Agency committees along with Defra and councillors.	To help deliver Environment Agency's flood risk management functions.	Key discussions held elsewhere. Meetings act as formal ratification of decisions.	Establishing statutory partnership
Greater Manchester Resilience Forum	Ten local authorities, Police, Fire Service, Army, Environment Agency, Government Office NW, Strategic Health Authority, Health Protection Agency, British Transport Police, Ambulance Service	To comply with Civil Contingencies Act 2004 by developing civil protection plans.		Participant

6. Conclusions and lessons for improving the management of flooding

The question this review has addressed is ‘what are the lessons from social science research on partnership working for the Environment Agency to develop more effective partnership relationships in relation to improving the social and institutional responses to flooding’? The multiple challenges of flood management, from coordinating planning to effective risk communication to resilient flood mitigation and response are characteristically ‘wicked issues’. They require action to be taken by numerous different organisations as well as publics. Partnerships may be an appropriate response, where partnership is understood to mean an arrangement which enables joint decision making and implementation of agreed actions. We have made the argument that a key underlying lesson from the research is that there should not be ‘a one-size fits all approach’ to partnership working for flood hazard management. Any approach that is developed not only needs to be ‘fit for purpose’, but must also fit the local context. In this conclusion, we reflect on some of the key messages and lessons which emerge from this review.

One key point to emerge from the review of theoretical work and also the practical examples is that partnerships come in different shapes and forms and involve different modes of working together. As such, it is important to recognise the value of each mode and to match them appropriately with the different sorts of situations which occur within the field of flood hazards management. For example, Pratt *et al.* (1998), using a whole systems thinking framework and metaphors of ‘fitness landscapes’, develop a typology of partnership working based on the extent to which the goals being sought are more individual or collective, and the extent to which the objectives and solutions are predictable. Where there is strong predictability and individual goals, market modes of exchange may be most appropriate (such as awarding contracts). Where predictability is poor but individual goals strong, cooperation between actors becomes important with the possibility of ‘win/win’ situations. Where predictability is strong and the goals are collective, a form of coordination may be more appropriate, perhaps setting up a joint structure or formalised partnership arrangement. At other times, when there is a collective goal but unpredictability in how to achieve it, the purpose of the partnership is to develop new ways of working and to find new ways of resolving intractable issues. Arguably, it is this last scenario which characterises many flood hazard management situations in the UK at present.

Second, the review demonstrates the importance of contextual conditions in the success or failure of a collaborative initiative. There may be little or no point in attempting to create a new partnership arrangement if organisations do not perceive that they are confronted by a common problem and that ‘they are all in it together’. Equally, flood events and other crises can serve as defining moments with the potential to galvanise public support and commitments to multi-party action. This suggests that the timing of initiation of a partnership is crucial to its long-term survival and success.

A third point is that despite its many different shapes and forms, inter-organisational collaboration is essentially an evolving and iterative process in which information exchange, social learning, deliberation and negotiation are integral parts of joint decision-making. Thus, partnerships may best be thought of as ‘adaptive institutions’ which evolve in response to changing external pressures and internal dynamics as the participants go about problem-setting, direction-setting, structuring and delivering outputs and outcomes.

Fourth, the idea that partnerships may need to take different forms in different context raises some difficult challenges for the Environment Agency. It suggests that the Environment Agency may need to develop different approaches in different locations to address a similar problem. Consequently, the idea of a 'nationally consistent approach to all aspects of flood hazard management' may no longer be appropriate in an environment characterised by diversity, turbulence and 'wicked' or 'messy' problems. In some cases, for example, it may be that the Environment Agency needs to take a lead in establishing a partnership to address flooding issues. This may be to enable collective engagement in changing ways of working or it may be to ensure that delivery of risk communication is achieved. In other cases it may be that already existing partnerships, whether established by the local community or through the local authority (such as local strategic partnerships), are better placed to raise the profile of flood management or facilitate the development of flood risk communication, and that the role of the Environment Agency is more one of liaison and provision of particular expertise or advice. In other cases, it may be that the Environment Agency needs to acts an intermediary organisation, working in-between the interests of other organisations and translating across different agendas without formally establishing a partnership approach (Medd and Moss 2005).

This raises questions about of determining the criteria for establishing the appropriateness of a particular approach. This is a research problem in itself and one that would need further analysis in the area of flooding. Key dimensions, however, include:

- the nature of the problem (from flood planning, risk communication, emergency response to information sharing, coordinated effort, collective delivery);
- potential partners (other agencies, NGOs, business, different publics);
- the capacity of involved stakeholders (resources, organisational culture, appropriate personnel, representation);
- existing arrangements (local community networks, forums and partnerships);
- the scale of activity (regional, local, community).

A further consideration is the extent to which flooding is actually the focus of the partnership. The 'boundary object' that different actors have in common (Bowker and Star 2000) also becomes important here. Concerns with flooding may vary from the health and safety of the population, to economic impact, to environmental impact. These are not necessarily incompatible, but different work may need to be done for each. Flood management initiatives may need to feed into existing partnerships concerned with health and safety, or local environment conservation, or local business networks. This suggests the need for an intermediary organisation to enable the Environment Agency to work in these allied areas of public policy, rather than the formation of new partnerships with an exclusive focus on flood hazard management.

Fifth, the literature consistently highlights the importance of personnel in partnership working. Research in health and social care has established that people and personalities do matter, that you need the "right people in the right place at the right time", and to avoid "the wrong people in the wrong place at the wrong time" (Hudson *et al.* 1999). For example, Bewdley Residents Flood Committee formed in 2001 after three floods in 2000, and the area had a history of Environment Agency officers providing invaluable practical support to the community during floods in 1998 and 2000. However, partnership working has been deeply affected by the Environment Agency's organisational restructuring with a loss of contact and new people with a lack of intimate local knowledge.

Sixth, there are significant political dimensions to partnership working. It would be a mistake to assume that partnership working will achieve unproblematic consensus decision making. Further, while partnerships imply a degree of power sharing in decision making, they may also exacerbate problems of social exclusion if the membership is not fully representative of the various groups with interests in the problem domain. The formation of a formal partnership can also become a burden – the Environment Agency may find itself not only in a position of having to liaise with other key organisations outside of the partnership, it may now have to develop strategies for liaising with the partnership, with a new added layer of complexity. Further still, there are potential problems regarding accountability for the collective decisions taken by partnerships because ‘when everyone is in charge, no one is in charge’.

Finally, the review has found that at present there is a surprising lack of detailed empirical research regarding the development of partnership arrangements in the area of flood hazard management within the UK. Although we have identified a range of examples which illustrate different approaches and the various roles adopted by the Environment Agency, very little published research is available which examines the specific circumstances which led to the adoption of a partnership approach, the ways in which the arrangements are organised and operated, or their impacts on the management of floods in terms of improved warnings, incident management or post-event recovery. This represents a significant gap in knowledge and understanding which needs urgent attention.

In summary, traditional command-control and bureaucratic institutional arrangements are a poor match for the increasingly turbulent conditions and messy problems which characterise flood hazard management in the UK at the present time. New types of institutional responses are required to enable integration across organisational boundaries and a wider range of resources, skills and other capabilities brought to bear on the flood problem. Inter-organisational partnerships which emphasise collaboration rather than other forms of interaction, such as competition, cooperation and coordination are potentially very useful, and there is already evidence of this sort of response being developed in a variety of local contexts. While the idea of producing a guide or manual to effective partnership working for flood hazard management may appear attractive, there are very real dangers in producing ‘lists’ of ‘key elements for success’ and ‘good practices’ because what works well in one local context may be inappropriate for another. Therefore, collaboration in the context of an inter-organisational partnership should be treated as an evolving, iterative process rather than a tightly defined and structured institutional arrangement. Partnerships come in many forms and it may be possible to use existing local arrangements to address flood issues rather than establish new ones solely for the purpose of improving the management of flooding. At the same time, partnership working itself can be problematic and the pathway from problem definition, to setting the direction, to structuring and finally to delivering outputs and outcomes is unlikely to be smooth. This reinforces the importance of facilitation and negotiation skills within partnership arrangements. Finally, there are significant human factors associated with partnership working and attention must be paid to the building of trust and respect among the participants, particularly at the outset when substantial differences in interests, knowledge, values and expectations are likely to exist.

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