Environment Agency

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Joining Up: Stockbridge Pathfinder

Science Report: SC010044/SR4

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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.

Our work includes tackling flooding and pollution incidents, reducing industry's impacts on the environment, cleaning up rivers, coastal waters and contaminated land, and improving wildlife habitats.

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Steve Killeen

Head of Science

Executive Summary

Introduction

A key role for the Environment Agency is to champion the environment 'in the context of sustainable development'. During 2001 – 2004, the Environment Agency undertook a major research study, 'Joining Up', to clarify the nature and extent of the social dimension of its work and develop a social policy firmly rooted in this evidence base. The Stockbridge case study was one of four pathfinders developed as part of this research.

The aim of this pathfinder was to explore how the Environment Agency might work locally with communities and other stakeholders to improve both its responses to the aftermath of flooding and its longer-term work in flood prevention. The study sought to address a number of questions in the context of flood risk management, some of which were also likely to have wider import for the social dimensions of the Environment Agency's work. These included:

- For the Environment Agency, what are the most appropriate forms of engagement with communities and other stakeholders?
- How should the Environment Agency build relationships with communities and other stakeholders so that technical information can be understood better?
- How might the Environment Agency engage more effectively with disadvantaged communities and groups?
- What opportunities are provided by Local Strategic Partnerships to enable the Environment Agency to work better with other partners, especially with local government?
- How might the Environment Agency develop less 'functional' and more integrated approaches to promoting its work within a community?
- How should the Environment Agency help its staff develop the necessary skills and confidence to manage the tension between local flexibility and responsiveness to local contexts and the organisation's requirements for consistency?

The flood-affected community in Stockbridge, Keighley (West Yorkshire) was chosen for this pathfinder study, partly because the researcher David Wilkinson had extensive experience of the local flooding in October 2000 and its aftermath and lived in the same local authority ward. In addition, Stockbridge is a relatively poor community and was therefore likely to raise issues of social inequalities. Stockbridge lies on the Rivers Aire and Worth, approximately 20 miles downstream from the source of the River Aire at Malham Tarn and 70 miles upstream from the point where the River Aire enters the Humber Estuary.

Together with the other pathfinders, this study has played a valuable role in helping to shape the Environment Agency's social policy (Environment Agency, 2003), the Environment Agency's position statement on tackling environmental inequalities (Environment Agency, 2004a), and an internal report on the Environment Agency's role in communities (Warburton, 2004).

This report will be of particular interest to those working on:

- The development of environmental citizenship;
- Flood pre-, during- and after-care;
- The development of Catchment Flood Management Plans;
- A stakeholder engagement strategy for flood risk management;
- The public participation strategy for the Water Framework Directive, including River Basin Planning and Programme of Measures;
- The Environment Agency's contribution to regeneration and the development of sustainable communities.

Method and approach

This report starts with the immediate aftermath of the floods in Stockbridge in October 2000 and describes a process of action research conducted between January 2002 and March 2004.

From the outset, it was clear that key agencies had had considerable success in building strong relationships with the community immediately after the October 2000 floods. These relationships played a significant part in the physical, emotional and community recovery following the traumatic experience. This seemed a valuable context in which to explore some of the Environment Agency's key research questions relating to flood warning, prevention and management. In particular, it could help the Agency address these issues through the perspectives of the different stakeholders involved, especially those of local people who had experienced the flooding.

In this study, the action research began with the questions, concerns and actions of members of the Stockbridge Neighbourhood Development Group (Stockbridge NDG) and linked these back to the Agency's research questions through two major cycles of inquiry. In the first cycle of inquiry, the Stockbridge NDG and the Environment Agency agreed to bring together flood-affected communities across the area covered by the Yorkshire Flood Defence Committee. The aim was to focus on lessons learned through the flooding experience and the recovery period, on the part of both the communities and the agencies involved.

Seven different communities from along the Rivers Aire and Calder met in June 2002. They agreed to hold a further event to bring together flood-affected people with a range of senior stakeholder agency staff and politicians with influence over relevant land-use decisions. There was, though, a very poor response from stakeholder agencies, and the event was postponed. The first cycle of inquiry closed in October 2002 with a number of hypotheses about why the researchers had failed to bring agency stakeholders together. These hypotheses then formed the basis for a second cycle of inquiry, which was conducted from July 2003 to March 2004.

This second cycle of inquiry was funded by Oxford Brookes University as an independent piece of research, and involved the researcher engaging with a widening circle of actors with a stake or interest in the causes of flooding and its possible prevention (Wilkinson and Colvin, 2005). The main findings of this companion study are incorporated into this report.

Main findings

There are six key findings from the overall research that are directly relevant to the social dimension of the Environment Agency's role in post-flood support and in longer-term flood prevention and management:

1. *Quality of aftercare.* The enlightened response of the emergency planning team at Bradford MDC appears to have been critical. It contributed firstly to the effective psychological and social recovery of the flood-affected community in Stockbridge; secondly, to the development of positive and ongoing relationships between the Stockbridge NDG and key agencies including the Environment Agency.

2. *Development of 'catchment consciousness'.* Many stakeholders pointed to the need to understand the causes of flooding across the whole catchment rather than focusing on their own locality. This includes the need to understand the ways in which water finds its way into rivers and the increasing risks of flooding outside as well as within functional flood plains. This suggests a growing 'catchment consciousness' – both within flood-affected communities and also on the part of local authorities and other agencies and the many networks that connect them. Flooding is a growing priority for a number of local authorities along the Aire catchment, as well as for the Yorkshire and Humberside regional assembly.

3. *The need for systemic solutions.* The growing awareness of the systemic *causes* of flooding needs to be matched by systemic *solutions*. Thinking in terms of a 'flood risk hierarchy' of solutions highlights the need to design solutions that start 'upstream' and address the key role of farming and land use within this. Systemic thinking also highlights the many links between factors affecting flooding and those affecting water quality. The Water Framework Directive provides an important opportunity to promote catchment consciousness and tackle these issues in a joined-up way.

4. *The need to build 'bridging social capital'.* The flood-affected communities and agencies that took part in this research are keen to contribute to catchment-wide solutions addressing both flooding and water-quality issues. At the moment, though, many of the networks between these communities, agencies and others are restricted to local authority boundaries. There is a growing recognition that systemic, catchment-wide solutions at the natural and technical (engineering) levels need to be matched by catchment-wide institutional approaches. This will require the further development and interconnection of the existing networks within local authority boundaries, with much more attention given to the development of 'bridging social capital' between these new networks and relationships.

5. *The role of the Environment Agency.* Within all of this, the role of the Environment Agency is key. The Agency is in the unique position of being able to take a whole-catchment perspective across the full range of water functions and uses. Major drivers are already pushing it in this direction. They include climate change

modelling, the development of more strategic catchment flood management plans, and the Water Framework Directive, with its emphasis on integrated planning at River Basin District level. The role of the Agency should be one of leadership, working closely with stakeholders to develop catchment-wide solutions based on catchment-wide analysis. But to do this, the Agency will need to take the lead in developing the necessary 'bridging social capital', thereby linking existing and embryonic local stakeholder networks.

6. *Flooding and regeneration – finding the right focus* The Environment Agency needs to find the right focus around which to link stakeholder networks. Regeneration and the amenity value of water and rivers could probably act as an incentive for stakeholders to come together. This would serve to frame the negatives of flooding and flood risk management in a much more positive way, and it mirrors the argument for making the connections between water quantity and quality wherever possible.

Recommendations

1. The Environment Agency should do more to learn from the very successful story of post-flooding co-operation between agencies and local people described in this study. At the moment, this 'knowledge' is confined largely to those who were directly involved. The lack of institutional learning is probably as great, and more significant, on the local authority side. The Environment Agency's role in the aftermath was greatly facilitated by the work of the local authority in this case. Nationally, the Environment Agency should work with the Local Government Association to describe and learn from this and other positive examples. This could then lead to guidance on the process and the socio-psychological dynamics involved in effective relief and recovery following flooding events.

2. The Environment Agency published its draft stakeholder engagement framework for River Basin Planning for consultation in January 2005. There are plans to complement this with a similar strategic framework for stakeholder engagement in shoreline and catchment flood management planning. To support the development of both these frameworks, the Environment Agency should invest further in this pathfinder. This would provide a valuable opportunity to learn more about how it might develop 'bridging social capital' between the existing stakeholder networks within and beyond local authority boundaries. The study has already established an embryonic network of partners who would be willing to support the Environment Agency in this initiative. As a next step, the Environment Agency could take the lead in bringing these partners together through a catchment-wide 'whole systems' event.

3. In investing further in this pathfinder, the Environment Agency should also consider opportunities to learn more about how its water-based leadership can make a contribution to sustainable regeneration and to the development of sustainable communities within the region. In this, it should consider working in partnership with Yorkshire Forward, which already has ambitious plans for regional regeneration (the so-called 'urban renaissance towns' initiative). Yorkshire Forward has sponsored development approaches which include innovative processes of public involvement.

4. As in the Water Framework Directive Ribble Basin pilot study, some of the learning from such an initiative is likely to be specific to the unique institutional, social, economic and environmental conditions of the Aire catchment. But the Environment Agency should also explore how the learning emerging from such an initiative could be used more broadly, on one hand to help shape national policies and frameworks, and on the other, to spread to the unique conditions of other catchments and river basins through learning networks.

Contents

1. Introduction

1.1 The Stockbridge pathfinder and its relationship to the Joining Up R&D project

The 'Joining Up' science project was established by the Environment Agency in 2001. Its aim was to raise awareness, internally and externally, of the social dimensions of the Environment Agency's work, within the context of sustainable development. Its particular aim was to help Environment Agency staff to use social knowledge and social science, and consider social priorities, more effectively in their work.

Phase 1 of the Joining Up Project (HOCO 400) sought to evaluate the social context of the Environment Agency's work. This was achieved in part by conducting a literature review[1] and providing a summary of the Environment Agency's existing work[2]. A series of five interactive regional workshops was also held to consider how social issues impacted on the Agency's work. A draft Social Policy Framework was produced (in November 2001), followed by an interim science report (in January 2002).

Through the workshop process, Environment Agency staff raised a series of issues, concerns and hopes, resulting from their own experiences of the social dimensions of their work. Perhaps the most interesting and significant of these was the widespread recognition that there is no such thing as a purely environmental problem and that all environmental problems exist in a wider social context. Other recurrent themes from the workshops reported in the draft Social Policy Framework ((Warburton and Colvin, 2001) were:

- The need for social issues to be integrated with the 'day job';
- How to engage with stakeholders and communities;
- Building relationships so that technical information can be understood better;
- The need to be more aware of existing skills within the Agency and being better able to network these;
- The need to develop more skills in these areas;
- The need for the Environment Agency to engage more with disadvantaged communities and groups;
- The need to use Local Strategic Partnerships as an opportunity to work better with other partners and especially local government;
- The need for more integrated approaches to promoting the Environment Agency's work within a community – the need for fewer 'functional' approaches to communities and more joined-up approaches;
- Potential conflicts between the professional lives and personal values of Environment Agency staff – the need for staff to be 'passionate professionals';

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1 Warburton, D. (2005) *Understanding the social context of the Environment Agency's work - policy and literature review*. Environment Agency Science Report E2-057/SR1

2 Warburton, D. (2005) *Some current approaches to the social dimensions of the Environment Agency's work*. Environment Agency Science Report E2-057/SR2

- The tension between local flexibility and responsiveness to local contexts and the organisation's requirements for consistency.

Phase 2 of the Joining Up project (E2-057) was designed to build on the findings of Phase 1 through four pathfinder projects, and further work involving Environment Agency staff. The purpose of Phase 2 was to:

> '…strengthen the Environment Agency's contribution to sustainable development by delivering an Agency social policy, embedding this within operational activities and increasing knowledge and learning within the Agency through targeted support to *Making it Happen'* (the Environment Agency's Corporate Strategy for 2002-2007).

The social policy was formally agreed in July 2003 (see Annex).

One of the four pathfinders in Joining Up Phase 2 is described in this report, focused on the aftermath of the 2000 floods in Stockbridge, Keighley (West Yorkshire). The Stockbridge pathfinder was designed initially as a local, community-based case-study to help the Agency test and illuminate, in the context of flood risk management, the three key themes of its social policy:

- Understanding the social impacts of its work;
- Tackling environmental inequalities;
- Ensuring transparency, information and access to participation.

The overall aim of the pathfinder was ***'to explore how the Agency can work locally with other stakeholders and communities to improve its responses to dealing with both the aftermath of flooding and longer-term flood prevention'.***

1.2 Selecting Stockbridge as a pathfinder study

At the end of the first phase of Joining Up, the decision was taken to select four pathfinder studies that could respond to the issues raised in the regional workshops/ summarised in the Social Policy Framework. A further aim of these pathfinders was to begin to develop the staff confidence, skills and capacity within the Environment Agency to work with these issues.

It was decided that two of the pathfinders would focus on cross-cutting themes (working with Local Strategic Partnerships (Porter et al, 2005a) and staff development (Porter et al, 2005b) and two on functional areas of Agency work - flooding (this study) and strategic waste management (Wilkinson, 2005).

David Wilkinson had extensive second-hand experience of the flooding of Stockbridge, Keighley, West Yorkshire in October 2000, and its aftermath, and lived in the same local authority ward. Key agencies and the community appeared to have had considerable success in building strong relationships after the flood event. These relationships had played a significant part in the physical, emotional and community recovery following a traumatic experience. This seemed a valuable

context in which to explore some of the key emerging themes expressed in the draft Social Policy Framework:

- It sought to understand events through the perspectives of the different stakeholders involved, and especially those of local people who had experienced the flooding;
- Stockbridge is a relatively poor community and likely to raise issues of social inequality;
- It related to the social dimensions of flood warning, prevention and management. At this stage, we were relatively unaware of other work on community-based issues of flooding as part of the flood-warning programme and the development of the National Flood Forum and its programme of activities.

Although there had not been a social policy workshop in the North East region in Joining Up Phase 1, through the strong support of Jean Varley (Corporate Affairs Manager, NE Region) and David Wilkes (Ridings Area Flood Defence Manager), it was possible to develop this project as the fourth Joining Up pathfinder. Jean Varley was the immediate contact point as a member of the original Phase 1 Joining Up project design team.

David Wilkes was keen to support further work that brought local people together with professionals. In his view, this was likely to enable those who had been flooded, or were at risk of being flooded, to become more knowledgeable about both the causes of flooding and their potential prevention, including both ‘hard’ and ‘soft’ defences. It also brought local knowledge and conditions into the discussion. Through this, it became far more possible to have informed discussions with communities and, potentially, with other stakeholders. The understanding of ‘technical/professional’ knowledge becomes far more possible in the context of relationships built on trust and learning. This was a specific example of addressing the question raised by many staff in the social policy workshops about how to convey technical information to local communities and other stakeholders. We were thus interested to see how the development of this pathfinder could develop useful knowledge about this specific aspect, not only in the context of flood risk management, but also in the many other social contexts in which the Agency works.

2. The method and approach

2.1 The scope of the study

This report describes 'case study' work carried out between January 2002 and March 2004 with a flood-affected community in Stockbridge, Keighley (West Yorkshire). During the study period, this work also involved communities, organisations and agencies upstream and downstream from Stockbridge, throughout the Aire catchment.

An action research approach was taken (see 2.2 below) in line with the Joining Up project brief. Action research methodologies are explored more fully in the overall Joining Up report (Warburton, Porter and Wilkinson, 2005). In this case study, the action research started with the questions, concerns and actions of members of the Stockbridge Neighbourhood Development Group (Stockbridge NDG). This group was formed following the floods in October 2000. Its main purpose was to rebuild the community following the floods, as well as to gain greater understanding of the causes of the floods and their longer-term prevention. This led the community to ask questions about river catchment management, land-use practices and land-use planning decisions upstream. Contact with other flood-affected people along the Aire, together with improvement to the hard river defences at Stockbridge, led local people to think also about downstream impacts. For instance, would the improvements to their defences simply increase the risk of floods downstream in storm conditions?

The project story below follows the development of these questions and issues as 'we' sought to engage with other stakeholders over the period to date, together with the impact of ensuing events. 'We' here refers to David Wilkinson – the primary research contractor on this study – together with members of the Stockbridge NDG.

This has not been a smooth or simple journey. Our early aim of bringing key stakeholders together in dialogue (see section 3.2) remains a goal and still to be achieved. The reasons why this has proved so difficult are instructive. We reflect on these in section 6.

With some modifications, the two parts of the project story are reported her as they were written up at different times. This has been done to highlight the questions, hypotheses, actions, reasonings and reflections as they emerged at the time. It also reflects the discontinuities and difficulties in the process.

There were not sufficient resources in the Joining Up budget to carry on beyond part 1 of the story below. However, we were fortunate to have attracted additional funding from another sponsor: the Sustaining Life project based at Oxford Brookes University, to continue with part 2. While the findings from part 2 are reported fully in a companion study (Wilkinson and Colvin, 2005), they are summarised in section 4 of this report and referred to in the analysis and discussion that follow.

2.2 A note on action research

In this pathfinder, along with others contributing to the Joining Up project, we have taken an action research approach to the inquiry. Research can be defined as a process of careful search or study. Social researchers employ a range of methods where the researcher takes different positions in relation to the researched. These range from that of dispassionate observer and data-collector to participant observer, through to fully-fledged participatory action research. Each of this array of methodologies is informed by:

- Differences of underpinning theoretical perspective;
- The nature and purpose of the subject being researched.

Kurt Lewin is usually cited as the originator of action research. He was concerned with research that led to the resolution of social problems and conflicts and to desirable social change. In a social experiment to encourage US housewives to substitute tripe for beef in their family diets (in order to reserve beef supplies for the US troops), Lewin taught them how to cook tripe, encouraged them to try it at home and then studied the outcomes. He is credited with two famous action research straplines: “There is nothing so practical as a good theory,” and, “The best way to understand something is to try to change it” (Lewin, 1951). In action research, theory is useful only in so far as it guides action, and theory is proven only when it leads to useful change. Its roots are pragmatic and its repertoire of approaches, eclectic. Davydd Greenwood and Morten Levin provide a useful definition:

> ‘Action research is social research carried out by a team encompassing a professional action researcher and members of an organisation or community seeking to improve their situation’ (Greenwood and Levin, 1998).

It does not preclude other research methodologies. For example, the orderly and detached collection of data and contextual material may be highly relevant. Further, because the researcher is working with and alongside ‘communities of practice’ in an enabling role of some kind, she/he is likely to work with a variety of facilitating methodologies. These can include whole systems methodologies and action learning approaches (Warburton, Levett and Pilling, 2005).

3. The project story (part 1)

This chapter is derived from two main sources. The story of the immediate aftermath of the flood came largely from extensive conversations with many of those involved. This was later supported by funding through the Joining Up project. The chapter is adapted from the account given in 'Leading Change: A guide to whole systems working' (Attwood et al, 2003).

3.1 Flooding at Stockbridge and its aftermath

At 05.00am in the morning of 30 October 2000, the Stockbridge neighbourhood of Keighley started to flood when the River Aire overtopped its banking. Stockbridge is a relatively poor, ethnically mixed community. The housing stock consists of mostly Victorian terraced houses and budget-priced 1930s semis, privately owned or rented. There is also a small amount of relatively new housing built on the flood plain, both privately and housing association owned. For the most part, the community is relatively low-paid.

Some people had about an hour's warning, others none at all. By 10.00am, people were arriving at the Keighley Leisure Centre (about half a mile away), where the local authority (Bradford Metropolitan District Council) had set up an emergency response centre. Some arrived without shoes and socks, and many were upset and disoriented by the experience. There was also a growing realisation by many that they had no household insurance.

A total of 292 households were affected. It was between six and 12 months before people were back in their homes. Not only was this a traumatic event for individuals, it was also a traumatic event for a fragile community. What happened next is a positive story of what can be achieved when frontline agencies collaborate and involve local people fully.

In accordance with Bradford Metropolitan Council's disaster emergency plan, Graham Thompson (Bradford Area Social Services Manager for older people in the Keighley area) was given the lead role in responding to the crisis from that first morning. This involved working closely with the Council's emergency planning team, other council departments and external agencies, senior council officers and the local MP and ward councillors. Reflecting on the experiences of the first few days, Graham, with his development manager Maria Wilkinson, developed some guiding principles for the relief efforts (in systems thinking terms these were in effect a 'minimum critical specification' for responding to the crisis). These formed the foundation for the rest of the response, which lasted for the best part of a year. Effectively, they decided:

- To set up a small full-time core team of people who would liaise and bring in all the other agencies who were already, or needed to be, involved;

- That the core team would have a continuous daily presence at the Victoria Hall leisure centre including weekends, to respond to residents' needs, questions and anxieties;

- To pay particular attention to residents' experiences and needs, and to use this as the basis for action (local people were brought into, or near to, the core team) rather than imposing predetermined professional solutions;

- To go to great lengths to communicate and involve residents and appropriate agency staff and to seek to build trust, especially through the core team, with the assistance of a central telephone enquiry service and social services communications staff;

- To seek answers to residents' questions as soon as possible;

- To work with other council services and other agencies to ensure residents' needs were dealt with as constructively as possible.

The key actions and events that followed were:

- Every affected person without alternative accommodation was found somewhere by the first evening, with transport arranged. Nobody had to be housed at Victoria Hall;

- For the first night, everybody in need was given essential personal toiletries and medical advice if required;

- Meals were provided at the leisure centre for the first three weeks following the flood from that first day;

- Advice or information that would assist the recovery process was made available;

- Meetings, coordinated by Graham Thompson, were held every day for the first four weeks and thereafter on a less frequent basis. Attendance in the first few days was as high as around 400 people of all ages;

- Eight editions of the *Flood Information Bulletin* were produced and distributed between 3 November and 11 December 2000.

- Many agencies and organisations were brought in, involving around 500 staff and volunteers. They included 12 departments of Bradford Council, Yorkshire Electricity, Transco, British Telecom, Yorkshire Water, the Environment Agency, police, health (acute and primary care trusts), fire services, Royal Mail, benefit agencies, and a range of local businesses, voluntary groups, ward and other councillors, the MP and many others.

The first few public meetings held at the leisure centre in the immediate aftermath of the crisis were particularly significant. People were confused and angry, and there

was considerable expression of this, mainly focused on Graham Thompson, the coordinator. Andrew Abbott, who was later to become chair of the Stockbridge Neighbourhood Development group, said, with much agreement from other members of the group:

> "It is embarrassing to remember how some of us behaved then. And Graham just took it all and remained completely unruffled. He was incredible. We were upset and confused and out to blame someone. I have apologised since! We quickly learned that the best way forward came through collaboration and that people were there to help us. When we had questions that couldn't be answered immediately, they always came back with answers as soon as possible. We see so many of these staff as friends now."

Within a few days, the mood changed and new beginnings were created. High levels of trust started to be built between the residents themselves, between agencies solving problems together and between agencies and residents. Graham Thompson created a framework, a way of meeting, in which emotions and anger could be expressed and in which residents and the staff involved could collectively begin the work of rebuilding lives, property, the local environment and the community itself.

It also enabled a productive relationship between the Environment Agency, especially the Area Flood Defence Manager, David Wilkes, and residents to start planning for improved flood defences. In the beginning, the Agency was a major target for complaints about the inadequacies of both flood defences and the flood warnings. Residents are now much better informed about the complex world within which the Environment Agency operates in order to secure scarce resources for making improvements. They are much better placed to have an influence on this and on flood warning systems.

A big problem that came to light on that first day was that many people had no insurance cover. Nearly half the households affected had no contents cover, and about a quarter had no buildings cover. An independent trust fund was set up, supported by Bradford Metropolitan District Council and a number of banks, building societies and other organisations. Most of the money was distributed to meet the needs of those without insurance cover. (This was quite a contentious issue among some of those who did have insurance.) Again, similar core principles of working were applied. The same core team provided most of the servicing to Trust members. By now, they had extensive knowledge of what happened and its impact locally. There were high levels of trust with local people, through the processes of working that had been set up and through numerous home visits. It was also decided to approve one building contractor, supervised by the Council's Environmental Protection Service, and one local provider for white goods and one for carpets. The latter two were within walking distance, in recognition of the fact that many residents did not have cars. This was done to build partnership and trust in the supply of services and goods.

Residents, with support and encouragement from the local ward councillors, the MP and Bradford Council's Keighley Area Panel staff, set up their own Neighbourhood Development Group. They are currently actively rebuilding their community and infrastructures in continuing partnership with key agencies. In fact, some residents

have expressed the view that a lot of good came out of the flooding because the processes that followed to 'rebuild' Stockbridge have been so helpful in enabling people to meet and connect with each other and revive a community spirit that had previously scarcely existed.

Through the experiences and close links with the Environment Agency in particular, residents have become much more aware of the causes and the increasing risks of flooding. What they once saw as a stretch of river down one side of their neighbourhood they now appreciate is part of a living system in which a whole host of decisions being taken upstream can impact on their lives. Changing moorland and forestry management methods, agricultural practices and urban developments have all been increasing the speed with which water runs off the land into streams and rivers, contributing to sharper peaks and troughs in-flows. Residents have also become concerned about how these decisions are taken, especially through the planning processes of local authorities upstream, and also about how floodwaters can increasingly be held on floodwash plains.

3.2. Shaping the Stockbridge pathfinder

During the autumn of 2001 and in early 2002, David Wilkinson (the consultant researcher) was involved in a series of meetings with staff from the Environment Agency (David Wilkes, Jean Varley and Stacey Powell), Bradford Metropolitan District Council (policy officer Bob Adsett, Keighley deputy area co-ordinator Jeff Bennett, and Pam Hardisty from Bradford Neighbourhood Renewal). David Wilkinson subsequently met members of the Stockbridge Neighbourhood Group. We discussed three approaches to exploring the relationship of the community to its wider institutional and environmental setting following the flooding, with the Environment Agency being a key stakeholder in each case. These were:

(i) Renewal and regeneration post-flooding linking bottom-up/top-down initiatives such as Bradford's Neighbourhood Renewal scheme with the recently formed Stockbridge Neighbourhood Development Group. The focus here is on the community's involvement and its own capacity-building in improving the physical environment through neighbourhood renewal and interagency mainstream spending linked to an emerging community agenda. This would also seek to influence short and long-term land-use planning decisions in Keighley and wider that impact on the potential of the two rivers (Aire and Worth) as environmental assets rather than sources of catastrophic disruption and fear.

(ii) Connecting the people of Stockbridge to all those who have a stake in the catchment management of the two rivers and who can contribute both to increasing or alleviating the risk of flooding. This relates particularly to commercial/residential developments and changing agricultural/forestry practices etc that impact on levels of water run-off.

It was evident through the Stockbridge Neighbourhood meeting that many people in Stockbridge were aware that decisions upstream, over which they had no influence, may impact on them. Such activities included the land

planning decisions of Craven District Council and North Yorkshire County Council as well as those of many farmers and landowners. There are strong links here into the future involvement processes associated with the European Water Framework Directive.

(iii) Bringing together flood-affected communities across the area covered by the Yorkshire Flood Defence Committee to focus on lessons learned by communities and agencies through the flooding experience and the recovery period.[3]

In February 2002, the Stockbridge NDG and the Environment Agency agreed that the third option would offer the most attractive and interesting way forward. They thought that it could be more appropriate to pursue the first two options after the defences had been built. We also agreed a draft proposal to bring together flood-affected groups from across Yorkshire, key local agencies/stakeholders (as seen as relevant by local groups) and key flood-defence decision-makers (including the Environment Agency) to review:

- Lessons learned from the flood experience, especially in terms of the relationships between residents and agencies;
- The factors that helped and hindered recovery;
- Expectations that residents and agencies do/should have of themselves and each other;
- Lessons for flood-defence decision-makers;
- How to increase awareness of these issues among people who live on flood plains in at-risk areas (and the relevant delivery agencies) and who have not yet been flooded.

After further discussion, the Stockbridge NDG and the Environment Agency decided to limit the scope to those people living along the Aire and Calder. Two meetings were then held to engage with members of flood-affected communities along the rivers. People from seven different communities along the Aire and the Calder in Leeds attended the first of these, held at Keighley Fire Station on the evening of 24 June 2002. Six groups were from communities along the Aire. The seventh was from Todmorden, which had experienced flooding from the Calder in the summer of 2000. The meeting decided to hold a further whole-systems type event on Saturday 28th September 2002, with the aim of bringing together flood-affected people and a range of senior stakeholder agency staff and politicians who have an influence over relevant land-use decisions. The purpose of that day was to look at both aftermath and prevention issues. Unfortunately, we received a very poor response from stakeholder agencies and the proposed event had to be postponed.

[3] From notes circulated, David Wilkinson 21.3.02. See also notes produced on 12.12.01 and 3.11.01

We[4] then decided to explore the reasons for this poor response, as well as aiming to build stronger inter-agency connections or pathways, as the basis for moving towards sustainable flood-prevention and integrated river-basin management. We hypothesised that the poor response could be due to flooding becoming low priority, especially in local government, as time passed since the flooding event in October 2000. Alternatively, it could be that there were not sufficient connections between those doing the inviting – the Environment Agency and representatives of those flooded during 2000 along the Aire and the Calder – and those being invited. We had concentrated on building the links between those affected by the floods rather assuming that it would be easier to involve other stakeholders, especially those from other institutions. But if they were not connected to each other in 'constituencies of interest' linked to catchments, this could lead to a further lack of connectedness to the bigger picture in terms of improving catchment management. By 'constituencies of interest' we were referring to potential stakeholder groupings such as strategic land-use planners, land-drainage engineers, 'interested' politicians, landowners and so on. Subsequently (see next part of this project story, section 4) it became clear that, for example, land-use planners and land-drainage engineers both meet on an area/regional basis, but apparently not on a catchment one. So this lack of connectedness was evident within different stakeholder constituencies of interest, especially along river catchments, as well as across each of the constituencies.

It could also be that a focus other than a specific emphasis on flooding might have helped attract stakeholders into the room. At this stage, the amenity value of water and its role in regeneration were low on our agenda, though we had talked about this.

In summary, there were a number of possible explanations about why we had failed to bring stakeholders together. These were:

- Flooding was not a high priority for them;
- There was a lack of connectedness within stakeholder constituencies of interest along river catchments;
- There was a parallel lack of connectedness across stakeholder groups;
- Flooding and flood risk-management was not enough of a focus to bring stakeholders together.

Our hypothesis was that one, or a combination, of these factors was the cause of the poor response.

[4] Reference to 'we' and 'our' here refers primarily to conversations between key participants from the Environment Agency (Jean Varley and David Wilkes) and members of the Stockbridge NDG, chaired by Andrew Abbott and David Wilkinson.

4. The project story (part 2)

David Wilkinson was commissioned independently by Oxford Brookes University to undertake a second phase of action research between July 2003 and March 2004. This further work illustrates and illuminates the tentative views – or hypotheses – formed at the end of part 1. While this has been written up in a companion report (Wilkinson and Colvin, 2005), it is important to give some account of this in support of the recommendations set out in Section 6.

4.1 Continuing the inquiry: from July to November 2003

The poor response to our initial attempt to get other stakeholders and agencies together with flood-affected people was clearly disappointing. We invested most of our time and energy bringing those affected by the flood together, because David Wilkinson expected this to be the most difficult task. But it proved somewhat easier than anticipated. We should perhaps have invested a similar amount of time in building relationships with strategic land-use planners and other decision-makers and stakeholders. Another possibility was that flooding had again become a very low priority for local authorities, given the amount of time that had elapsed since the October 2000 floods (and summer 2000 in the case of Todmorden on the river Calder). But these were just speculations; we did not know.

In the second phase of action research, David Wilkinson went back to the origins of this case-study. He met with Andrew Abbott (28 July 2003), the chair of the Stockbridge Neighbourhood Development Forum (Stockbridge NDF), which had formed after the flood. He re-emphasised the need to focus on prevention and land-use planning and management. He and members of the NDF were concerned about the consequences of changing land use and potentially increasing run-off rates upstream. This concern focused on the planning decisions of Craven District Council (which also has the source of the River Aire at Malham Tarn within its boundaries) and the North Yorkshire National Park.

David Wilkinson also met with Councillor Andrew Mallinson, the ward councillor on Bradford Metropolitan District Council for the Keighley North Ward, which contains the Stockbridge District. He had taken an involved interest in the Stockbridge flood and became the representative for Bradford and Calderdale local authorities on the Yorkshire and Humber flood defence committee. His interests and concerns reflected those of Andrew Abbott. For him, far too much emphasis was being placed on the short-term concerns of flood defence, especially at the flood-defence committee. He also wanted to see a far greater emphasis on flood-prevention and water management. These would include for instance, measures to slow run-off rates, increasing use of washland areas, water meadows and so on. These issues are developed more fully in the section on the flood risk hierarchy in section 5.

Both he and the Stockbridge NDF were pleased to see the completion of the new flood defences in Stockbridge. But they were only too well aware that:

- No defences give 100 per cent proofing against further risk of flooding, though they can reduce the risk considerably. They have to be maintained to avoid ‘catastrophic collapse’ and may, in exceptional circumstances where flood levels exceed the design level of the defence, be overtopped;

- Hard defences serve to push flood-waters downstream and may increase the risks to other already vulnerable locations and other areas that have had no previous histories of flooding. (Flood risk on the River Aire was considered relatively low before October 2000; this is no longer the case);

- Many buildings and people have no chance of getting their own flood defences because too few are affected in any single location. It is government policy that the benefits of a scheme must outweigh the costs. This is determined through Defra guidance on Economic Appraisal. It is difficult to get a benefit/cost ratio greater than unity for small communities (Defra, 2000a).

On Monday 11 August 2003, Keighley and South Craven experienced the worst of three flash storms in a period of just over two weeks. Each of these had been very localised and had led to flash flooding with the worst of this, again on 11 August. Some properties had been flooded twice.

Following this event, Bradford Council organised a flood forum meeting. It was led and facilitated by Jeff Bennett, the Keighley area co-ordinator who had also played an important role in community development and the formation of the Stockbridge NDF in the aftermath of the October 2000 flood there. The forum meeting was attended by more than 100 people, including those who had been affected by the floods (around 30 houses and businesses) or nearly flooded, town and district councillors, a range of council officers and representatives from Yorkshire Water. Various factors had caused the flooding, ranging from blocked culverts, drains and gullies to overloaded ‘combined’ sewers. Many of these situations were not on the flood plain.

The forum was organised in a very open and inclusive way. Those who had been flooded were invited to talk about their experiences. This approach allowed them to express both the shock and dismay about the damage and disruption caused by the unexpected nature of the event. In these circumstances, it is perhaps a natural human tendency to seek to place blame without necessarily understanding the full picture. This, of course, does not mean that, in the longer run and with more information and clarity, the causes could have been prevented.

There was also some controversy, especially following an article in the local *Keighley News*, that some street drains had been blocked by surplus concrete and fat that had been poured down them. There were also complaints about whether council-owned drains, gullies and culverts were regularly being inspected, cleared and maintained. And, of course, there were questions about culvert ownership and the riparian responsibility and duties of all culvert owners, both public and private. The forum also raised many questions about the adequacy of sewers, especially given large-scale house building programmes – particularly those in higher level districts and villages surrounding the main Keighley town centre. Most of the town centre is on the valley bottom, just upstream from the confluence of the rivers Aire

and Worth at Stockbridge. Those attending the forum expressed concern about the consequences of building development and its drainage and sewerage, both on and off the flood plain. They also raised questions about all types of changing land use and the consequent effects on drainage and run-off rates.

Councillors present suggested the possibility of Bradford Council running either a scrutiny committee or an independent public inquiry into flooding and its causes and potential remediation across the district. There was a positive response to this idea. The outcome was that there were both. A scrutiny committee was set up to inquire into the adequacy of the internal council services that have a particular stake in this issue; for example, land drainage, land planning, highways, cleansing and so on. There was also be an independent inquiry into 'water management', led and chaired by Professor Richard Ashley, professor in urban drainage at Bradford University (Bradford MDC, 2005). David Wilkinson was asked to be on an advisory committee to support this, and to give evidence. The inquiry ran from January to May 2004.

David Wilkinson also met with the relevant Assistant Chief Executive, policy officer (Dave Melling), and the heads of strategic land planning and land drainage in Bradford Metropolitan District Council (Bradford MDC). These discussions have demonstrated that, within the local authority, there has been an increasing awareness and concern on the flooding issues. Up to this point, neither the Stockbridge Neighbourhood Development Forum nor David Wilkinson had been aware of this. Dave Melling, the policy officer working on the development of a holistic approach to flood prevention and servicing the scrutiny and public inquiries stresses that:

- In recent times, flooding was a virtually unknown problem within Bradford MDC boundaries, except for a limited number of buildings close to the Wharfe in the Ilkley area. In October 2000, the Aire flooded buildings in Bingley, Nab Wood, Shipley and Baildon, as well as Stockbridge. These other areas will not get land defences. Since then, there have been a number of flood alerts along the Aire;

- Evidence from the Meteorological Office and the Environment Agency shows an increasing likelihood of heavy rain events and very localised flash storms like the ones that affected Keighley in August 2003 in an otherwise very dry summer. The expectation now, therefore, is that floods are increasingly likely to happen and predicting the location of their impact will be increasingly difficult. Flooding is caused by overloaded drainage systems, sewers, 'ordinary watercourses' and main rivers as well as blocked culverts, gullies and drains;

- Recent initiatives within Bradford MDC focused on understanding these growing problems and concerns, together with developing the crosscutting links to understand these better with the various relevant departments. The Council is now developing these initiatives further, with the Environment Agency and Yorkshire Water;

- There has been an increasing fragmentation of the institutional framework over the years. Different bodies, typically local authorities, privatised water companies, the Environment Agency and, where they exist, internal drainage boards, have very different governance systems, purposes and objectives.

For these reasons, the public inquiry addressed water management rather than just flooding and its prevention.

Through these various meetings, and with the Environment Agency's area flood defence manager, David Wilkinson also became aware of:

- An increasing interest in the merits of Sustainable (Urban) Drainage Systems (SUDS) and also the highly problematic issue of their adoption after construction; that is, the issue of who pays for their long-term maintenance;

- Two major studies on drainage and flood risk commissioned by the Bradford MDC on drainage and flooding:

    - The Keighley Drainage Study on the impact of further building development and the sewerage capacity of the District and possible increased flooding risk caused by this (Babtie Group, 2000);

    - The Bradford Strategic Flood Risk Assessment, addressing flood risk across the whole of the District and undertaken according to the Policy Planning Guidance (PPG 25) (Jeremy Benn Associates, 2000).

- The dilemmas of some elected council members, especially those directly involved with planning decisions, and planning officers about the extent to which they can push for measures to remediate increased run-off and drainage and even resist developments where they may have serious doubts about sewage-carrying capacity. There have clearly been tensions between the water company and the Council in some instances about this capacity; hence the drainage study above. This is an issue that is far more extensive than the better-publicised matter of building directly on flood plains.

  Planning officers and elected members fear that, if they turn down planning applications on these grounds, there is a high risk that their decisions will be overturned by the planning inspectorate or in any subsequent judicial process, incurring heavy costs for the Council.

4.2 Additional research during this second phase

Additional action research reported in Wilkinson and Colvin (2005) and covering the period November 2003 – March 2004 included the following:

- An Environment Partnership Summit on 21 November 2003 run by Bradford Metropolitan District Council, together with the Environment Agency;

- Attendance and presentations at meetings of the Craven District Flooding Panel on Wednesday 26 November and on 18 February 2004.

- Preliminary contact made with ‘EYE on the Aire’ (EYE), an organisation that has worked since 1987 to improve the 21-mile stretch of river that flows through the city of Leeds.

- Meetings with Terry Hesselton, head of strategic planning for Selby District Council (30 January 2004); David Sellars, head of land drainage, Leeds City Council (30 January 2004); Alan Kendall, head of strategic planning for Wakefield Metropolitan District Council (4 February 2004).

- Conversations with Alan Parks, head of regeneration for Castleford. The regeneration plans for Castleford, along with Featherstone, Knottingley, Normanton and Pontefract, stem from ambitious proposals by Yorkshire Forward, the regional regeneration agency. These towns are part of Wakefield Metropolitan District Council. Innovative processes of public involvement contributed to the development of these proposals (Simpson and Lewis, 2002).

Significantly, the Aire passes through the centre of Castleford and is the proposed focal point for the town centre regeneration. This marks a significant shift in the public attitudes towards the river. Towns such as Keighley, Leeds and Castleford are in the heartland of the industrial revolution in West Yorkshire. The river – like so many others – was exploited for power, cleaning, industrial use and waste disposal. Symbolically, these expanding towns, based largely on wool, textiles and engineering, turned their backs on the river and its deteriorating quality. The Aire’s source at Malham Tarn and its upper reaches were increasingly seen as an area of natural beauty and a focus for leisure; downstream, though, it was a rather different story. In the regeneration proposals, previous history is being recognised, while the relationship between the public, communities, the built environment and the river are in the process of significant reconnection.

Castleford is described as follows in the regeneration proposals:

> “The important Roman station of Castleford formed a key early north-south trade route crossing, at the junction of the Aire and Calder rivers. Castleford’s largely farming economy later evolved and accelerated in the 18th Century alongside Knottingley and Ferrybridge, around a wider base of trade and exchange enabled by the Aire and Calder navigation. Mineral extraction, glass-making, engineering and boat-building, pottery, corn mills, malt kilns, brickworks, confectionery works, chemicals and other businesses thrived. Castleford Tigers is a popular nationally recognised rugby league club located close to the centre of town. The world-renowned sculptor, Henry Moore, was also born in Castleford in 1898.” (Yorkshire Forward Urban Renaissance Programme, 2003, page 17)

The proposals highlight the development of the river-front through the town:

> ‘Developing the waterfront and re-establishing the link between the river and the town centre are key opportunities to develop Castleford. The scheme can produce a quality environment that would act as a major visitor attraction, providing safe connectivity between retail areas along Carlton Street and a revitalised waterfront and river corridor’.

5. Analysis and discussion

5.1. Themes and issues emerging

5.1.1. The impact of PPG 25

The combination of an increasing awareness of local risk, together with the impact of 'Planning Policy Guidance 25: Development and flood risk' (ODPM, 2001) and the Environment Agency's monitoring of planning applications and its standing advice to local authorities has put, and kept, flood risk high on the land-use strategic planning agenda. Bradford MDC has commissioned a flood-risk assessment for the whole district; other authorities have done studies for the areas known to be most at risk. Planners are increasingly likely to work with land-drainage engineers. But despite this, there is evidence that local arrangements within local authorities are piecemeal. Also, the connections between the various departments and sections, such as planning, building control, land drainage and highways maintenance may be variable, especially at the local level. District councils have no land-drainage departments and responsibilities. Many areas are also covered by 'internal drainage boards' (IDBs). The Selby area is covered by at least six IDBs. A number of major rivers flow through this district. As well as the Aire, which now contains the Calder, it also has the Ouse and the Derwent, which join with the Trent (not in Selby) as they flow into the Humber estuary. The Ouse presents the greatest flood risks.

5.1.2 The extent of fragmentation of knowledge and resources

Broadly speaking, the fragmentation (see 5.1.1) operates at a number of levels.

- **Intra-agency,** as mentioned above. But within local authorities it is evident that joining-up is gathering pace. This was particularly evident in Craven and Bradford, where the Flood Panel and Inquiry respectively were acting as a focal point for this joining-up.

- **Inter-agency:** There are many agencies with a stake in urban and land drainage. These include the various departments of local authorities, water authorities and OFWAT (the water regulator), IDBs, national parks, landowners, and the Environment Agency. Some of the implications of this complexity are analysed in section 5.2.3. One respondent suggested to me that Yorkshire Water had withdrawn the responsibility from the local authority for the design, management and maintenance of the sewerage system. Before then, drainage, highways and sewage were all in one organisation, with joint training, close joint working and shared local knowledge. A number of people also pointed out that, whatever the water company might want to do to invest in more collaborative, preventative and joint working, it was constrained by the need to maximise shareholder value within a tight regulatory framework designed to minimise water rate bills. The current system does little to support the adoption of sustainable urban drainage (SUDS) and other measures to hold water for as long as possible close to the point of rainfall (see section 5.2.2).

- **The loss of local knowledge:** Most of the people contacted for this research talked about this. In part, the loss of local knowledge was a result of the fragmentation of work referred to above. But this effect is aggravated by an increasingly ageing workforce – certainly in local authorities – and early retirement. This results in the loss of workers with detailed local knowledge about the workings of drainage, culvert and sewerage systems, especially in urban areas. The result is that there are fewer people who have the local overall picture of how these systems function, especially in severe conditions. Where funding is tight, this loss of local knowledge probably compounds problems of maintenance and improvement, and land drainage issues compete with more high-profile services such as education and social services, which consume as much as 80 per cent of unitary authorities' budgets.

5.1.3 Regeneration and water

This is a growing interest in regeneration along inland waterways. In this case study, it is perhaps most clearly exemplified in the example of Castleford. But it is also significant in Leeds and along the Aire. The Leeds Liverpool Canal, which runs along the Aire Valley above Leeds, is also an important focus for development and improvement. The regeneration focus on water and rivers could be another way of drawing land-use planners and others from local authorities together on a catchment basis.

5.2 An analysis of the findings using systemic perspectives

5.2.1 From the pluvial to the fluvial

This study was rooted in the experiences, concerns and understandings of those who have been directly affected by flooding. David Wilkinson engaged with a widening range of others who have a stake and/or special interest in the causes of flooding and its possible prevention. From their different geographical, organisational or interest 'locations', there appears to be an increasing need for people to understand the 'upstream' systemic causes of flooding and how to alleviate these causes.

It is tempting to think of flooding as an issue that affects coastlines and rivers and their flood plains. These floods are more spectacular and newsworthy than drainage floods, rather in the way that media coverage of train crashes is far greater than of road accidents. But even in the autumn 2000 floods, where there was so much river flooding, 32 per cent of property floodings were caused by 'flooding from streams and ditches' and 'inadequate drainage etc' (see DTLR, 2002, Table 1 - see below).

Table 1: Autumn 2000 floods: causes of property flooding	
Overtopping of river defences	28%
No flood protection on river	40%
Flooding from streams and ditches	18%
Inadequate drainage etc	14%

Under current arrangements, the Environment Agency is responsible for main rivers. But over the next three years, it will become responsible for other water-courses at greatest risk of flooding – critical ordinary water-courses or COWs. The Agency will take over these responsibilities from local authorities. In the Environment Agency's Ridings area, this will lead to a 40 per cent increase in river network covered.

But a growing range of stakeholders, especially in Bradford and Craven, are becoming involved in flood-risk issues. In this study:

- Stakeholders increasingly appreciate that a key cause in the fluctuation of river flows, particularly in relation to increased peak flows, is the speed of run-off, along with the ways in which water is used and finds its way into rivers;

- They understand too that there may be limitations to the benefits of the provision of hard river-defences that are likely to raise the risks of flooding further downstream;

- They increasingly understand that these risks may be greater with faster run-offs and therefore potentially greater river peak volume flows for a given period and quantity of rainfall over a catchment. And if there is a tendency towards heavier prolonged rainfall as well as flash storms, this will add further pressure to drainage systems of all kinds – streams, watercourses and rivers;

- There seems to be a growing realisation that flooding is likely to be more of a risk above functional flood plains[5] as well as areas of flood plain now at increasing risk. Also, that any changes in land use can have impacts on rivers and flood plains. These include physical developments of all kinds, as well as changing agricultural practices and upland land management. The longer that rainfall can be held as close to the point at which it falls, and the longer it takes to reach sewers, drains, streams and rivers, the better. The more sponge-like, porous and absorbent our landscapes and built environments, whether naturally or designed that way, the more the flooding risks both on and off the flood plains will decrease;

- This awareness is, significantly, not the result of an externally imposed or recommended external theory. It is rooted in the local and professional

[5] PPG 25 defines functional flood plains as 'the unobstructed or active areas where water regularly flows in time of flood'….' In these functional flood plains, the Government considers that built development should be wholly exceptional and limited to essential transport and utilities infrastructure that has to be there' (ODPM, 2001, paragraph 23).

knowledge of those on the ground who increasingly have to face these issues. As people work across functional disciplines and/or their own locations of flooding, they switch their attention to a whole catchment system and, within that, the many subsystems of urban and rural drainage. As a result, people seek to understand and intervene in the way natural and human-made systems work, starting from the rainfall and where it lands (the pluvial) through to the ways rivers and estuaries function (the fluvial).

It seems that these increasingly inclusive groupings of stakeholders are currently contained in pockets along the Aire, with little or no contact between them. This is certainly the case with the developing work in Craven and Bradford. It also appears to be the case with EYE on the Aire. Local authority boundaries appear to prevent this network of awareness from extending to the whole of the Aire catchment.

The Environment Agency by contrast has, through its history and purpose, a much more whole-river perspective. Its links into local government, especially on planning control consultations, are strong, but resource and operational constraints prevent it from doing much more than this. With the shift to central government funding for flood defences, the Environment Agency is adopting a more strategic approach to prioritising the building of flood defences according to assessment of risk and potential scale of damage (Environment Agency, 2004b), as laid out through Defra criteria (Defra, 2001).

The Environment Agency already plays a major role in flood-risk warning and in building and maintaining flood defences. But the Environment Agency's ability to exercise a stronger leadership and advocacy role in the domain of prevention, especially of flood plain development and land-use management is, in practice, far more limited. While the provision of more hard defences does increase 'prevention' at current points of high risk, it may be doing rather less to address the broader issues of prevention raised here.

The inevitable tendency is also to focus on those areas of potential river flooding that fall into the Defra criteria (Defra, 2002a) (- the 'train crash' floods). But there are many other properties at risk of river flooding that won't get funding for hard defences, as well as all those properties already at risk (and more that will become so) from 'flooding from streams and ditches' and 'inadequate drainage'. The Environment Agency's efforts to defend properties could be limited to fewer than 50 per cent of those currently known to be at high risk and to the defence of properties at risk but not adjacent to 'main rivers' or 'critical ordinary watercourses' (Environment Agency, 2005). Definitions of main rivers and critical ordinary watercourses) may fall more under the jurisdiction of local authorities, but it is clear that they have few resources for this. Further, this research has found that what local authorities can or will do may be very limited, either because of a lack of resources or for other reasons, some of which are explored here.

Understanding the drainage and groundwater hydrology from the pluvial to the fluvial can be linked to an understanding of the factors that affect water quality. These will include a wide range of single point and diffuse sources of pollution such as agriculture (fertilisers and chemicals), industry, urban run-off (including roads, car parks etc), domestic waste and sewage disposal and so on. The adoption of the

European Water Framework Directive (EC Directive 2000/60/EC) will further stimulate improvements to water quality. The Directive will do this by taking a holistic perspective through the development of river basin management plans (RBMPs) and subsequent programme(s) of measures (PoMs). There will be 10 designated river basin districts across England and Wales (Defra, 2002b). In most instances, there are many catchments in one river basin district. Individual catchments can be characterised as subsystems within the whole system of the river basin district. And each catchment (sub) system is, of course, comprised of numerous subsystems and sub-subsystems.

As the sole competent authority, the Environment Agency will have a significant lead role in the development of RBMPs and PoMs and their implementation (Defra, 2003). The draft statutory instrument, *Water Resources, England and Wales*, came into force on 22 December 2003 (Defra, 2003, pages 66-78). The details on the monitoring programmes (section 9, page 69) say that:

> "(1) The Agency must establish programmes for monitoring water status in order to establish a coherent and comprehensive overview of water status within each river basin district.
> (2) For surface water the monitoring programme must cover –
> (a) the volume and level or rate of flow to the extent relevant for ecological and chemical status and ecological potential; and
> (b) the ecological and chemical status and ecological potential
> (3) For groundwater the monitoring programme must cover monitoring of chemical and quantitative status."

There is also a section on 'river basin management plans: public information and consultation' (section 12, page 70-71). This includes a wide range of public bodies to be consulted. One of these groups are:

> "such persons as appear to the Agency –
> (i) to be representative of the interests of those carrying on any business which relies upon the water environment within the river basin district;
> (ii) to have an interest in the protection of the water environment within the river basin district;
> (iii) to have an interest in the promotion of sustainable flood management;…." (Defra, 2003, section 12(4)i, page 71).

Again, water quality, the protection of the water environment and sustainable flood management are linked. The growing awareness of stakeholders in the Aire valley and their involvement in sustainable flood management represents an obvious opportunity to engage stakeholders already very active and concerned in improving the quality of water. This burgeoning interest in rivers, water, natural resources and sustainability is an asset to be tapped in the pursuit of improving water quality and, of course, vice versa.

5.2.2 The flood risk hierarchy

The flood risk hierarchy can be described[6] as:

1. Think catchment-wide; look at land use in catchment;
- sustainable urban drainage, more ponds, more storage;
- more benign agricultural practices;
- more trees, shrubs etc on hillsides;
- retain water for as long as possible near the point of rainfall;
- seek greater urban porosity and rural and upland absorption.

Then reduce the rate at which rainfall converts to river flow:

2. Use washlands and water meadows in the river catchment to reduce the peak and volume of floods in the river;
3. No inappropriate development on the flood plain;
4. Reliable and timely flood warning. Encourage people to act and help themselves;
5. Defences through cities and towns, properly built and maintained (this is the expensive part).

The Environment Agency has a direct stake in levels 5 and 4. It has a strong indirect influence in level 3. The Agency now collects information about cases where its advice is ignored. For the Ridings area, this is infrequent – around 10 cases last year. It seems that PPG 25 has encouraged local authorities to think more strategically about land-use planning for building development and flood risk. Bradford MDC's district-wide flood risk assessment (FRA) is an example of this. The Agency also supports this more strategic direction through the development of 'standing advice' to local authorities.

The Environment Agency also has a direct involvement in level 2 above. Washlands may be directly owned, engineered and maintained by the Agency, or they may be 'informal' and privately owned. The Agency's influence in the vitally important level 1 is much more limited. But its involvement here could increase greatly through its developing role in the implementation of the Water Framework Directive.

Many others have an increasing stake in all five of these levels. Where there is local government interest and concern, then this is of some significance, especially in terms of focusing on level 1. The vast majority of rain, though, falls on land in some kind of agricultural use, whether uplands or lowlands. Therefore, the impact of farming practices, and of rural land use and management of all kinds, is of great significance in terms of both water quality and speeds of run-off. Improving water quality and slowing run-off may both be a matter of strengthening regulation. But significant long-term impacts are also likely to be the result of increased collaboration between stakeholders and communities and involve farmers, landowners and managers in particular. This links directly to the potentially changing role of the farming industry as environmental custodian, together with the development of a more sustainable farming and agriculture (Baines, 2003).

[6] Based on the schema used by David Wilkes, Area Flood Defence Manager for the Environment Agency Ridings Area

5.2.3 Natural, engineered and social systems

The failure to attract the interest of (strategic) land-use planners and decision-makers to the proposed event in autumn 2002 did look like a lack of interest in the subject, especially on the part of local authorities. But it is apparent from our recent work that this is not the case. Other stakeholders, though, have yet to be contacted.

It would also be valuable to compare the 'explorations' undertaken here with other experiences of holistic approaches to river and catchment management. These could include the Mersey Basin Campaign and the Ribble Pilot River Basin Project (in anticipation of the implementation of the WFD). But early signs seem to provide an indication that the main agencies have a growing interest in collaborating together on flood risk and water management and quality.

The patterns of surface and groundwater drainage, and of streams and smaller rivers, make up larger river catchments such as the Aire. These catchments link (in many cases) to form larger river basins – the larger wholes forming the focus of the WFD.

These are our inherited natural water systems – a complex hierarchy of linked and interdependent systems, subsystems, sub-subsystems and so on.

Human intervention (agricultural, urban and industrial), particularly over the past two centuries, has had a considerable impact on these original natural systems. The legacy of these changes is a situation today where the risk of flooding appears to be on the increase, but water quality, thanks to regulation and intervention is, for the most part, improving. Our current 'water' systems – including our use of domestic water and its disposal as grey water and sewage – can now be thought of as a combination of natural and engineered systems (see Wilkinson, 2004 for a longer introduction to systems thinking and perspectives).

The ways in which we now seek to intervene further in these complex natural/engineered systems are also changing, for a whole variety of reasons. These include environmental improvements; addressing flood risk; the pursuit of better water quality; natural habitats, biodiversity and so on. Attitudes to water are also changing. In the past, the pressures were to drain land and urban areas as quickly as possible and to move water that became increasingly polluted as it travelled downstream to the sea in the shortest possible time. The habit was to drain wet areas, straighten rivers, culvert them and turn our backs on them. Now, water is frequently the focal point for regeneration. Our engineered interventions are, for the most part, more geared to working with and enhancing the natural inherited water systems (more created and restored wetlands, SUDS, greater urban porosity and rural absorption to improve groundwater flows and water table restoration, for example).

The Environment Agency and water companies have a more whole-river focus. Addressing the challenges of increasing flood risk, as well responding to the important new external driver, the WFD, are particular pressures on the Agency to

take a whole catchment/basin approach. The pressures on the water companies are likely to be similar, but perhaps not as direct.

Local authorities have long lost their historic functions of supplying clean water and sewage disposal, with the transforming role this had in the massive improvements to public health in the nineteenth and early twentieth centuries. Then, these aspects could be separated out of the whole natural water system and be treated on a more localised basis. But this can no longer be the case, because of the associated issues of flood risk, water quality and enhancing the use of water resources for recreational uses and as the focus of regeneration.

Our research shows that in this study at least, strong connections and networks are being developed between professionals from different agencies, together with communities, community organisations, elected councillors and so on. These appear to be developing within local authority administrative boundaries and are motivated by concerns about flood risk. Exploration of this inevitably leads people to think increasingly 'upstream' and progressively higher up the flood risk hierarchy. Local authorities clearly have a significant part to play in the improvement of water management and quality, as of course do other bodies. This is good news. Even better will be the recognition of the need to collaborate along the catchment, a move that is now a possibility in Bradford and Craven at least.

The new wave of engineered interventions (taking 'engineered' in a very wide sense to include, say, the replacement of mono-culture conifer woodlands and their drainage systems with mixed broad-leafed native trees and increased water holding capacity) aims to work more in harmony with natural water systems. But however local and particular the intervention, these interventions need to be undertaken in the context of enhancing the whole catchment and basin perspectives.

However, our inherited institutional systems and the interconnections between them have not developed accordingly. As mentioned above, there are very active networks with increasing potential for making a 'local' difference. But from a catchment perspective, there are clearly some very obvious disconnections. To make longer-term progress on reducing flood risk and improving water quality, there needs to be a parallel set of institutional and social systems, networks and connections that match developing water management systems.

The interest in socio-technical systems thinking and application goes back as far as the 1950s[7]. These approaches seek to understand the most effective and productive ways of matching technical and human social systems. They have made a significant contribution to organisation development and design (but not meant here as 'restructuring') and the emergence of whole systems thinking and development (Attwood et al, 2003). The suggestion here is that in future attention should focus much more on the interconnections between natural, engineering (technical) and social/institutional systems to support a catchment-based approach.

[7] These evolved primarily from a very productive group of people working at the Tavistock Institute, London in the post war years. They included Fred Emery, Eric Trist, Wilfred Bion and R Bales (Bales, 1950; Bamford, 1951; Trist & Bion, 1961; Emery & Trist, 1965)

The disconnections between existing networks are only disconnections as seen from whole water/engineering/social and institutional perspectives. From a non-catchment/basin/ecological perspective, these are unimportant and all the necessary connections probably already exist.

Given a growing common interest between agencies and those at risk of flooding, together with voluntary and campaigning groups, then the disconnections become more significant in terms of how social and engineering systems work, as a whole, to achieve their increasingly shared purposes and goals.

There is a burgeoning business and management interest in developing effective partnerships, networked solutions and the rapid transfer of learning and knowledge across and between organisations. It is also closely linked to the development of social capital. The disconnections between networks are commonly known as 'structural holes'(Kilduff & Tsai, 2003; Degenne & Forsé, 1999; also see Burt, 2000). Connections involve the development of 'bridging ties' or 'bridging social capital'. This helps describe the work in this study, supported by the Stockbridge NDG.

5.3 Reviewing the earlier hypotheses

Section 3 summarised the hypotheses about the lack of success in the earlier effort to bring more stakeholders together in response to the requests from flood-affected people along the Aire and Calder. (This focused in particular on institutional stakeholders and those who were perceived to have an impact on land use management and planning.) The hypotheses were that:

- Flooding was not a high priority for them;
- There was a lack of connectedness within stakeholder constituencies of interest along river catchments;
- There was a parallel lack of connectedness across stakeholder groups;
- Flooding and flood risk management was not a sufficient focus alone to attract stakeholders to meet together.

The findings to date indicate that, for the Aire catchment:

- Flooding is a growing priority for the local authorities and the regional assembly;
- There is a lack of connectedness within groups of stakeholder along the catchment;
- There is a parallel lack of connectedness between stakeholder groups. This also seems to have been the case, to some extent at least, within individual local authorities. But the higher profile of flooding risk does seem to be leading to better lateral communication. The most direct evidence is from Bradford and Craven;
- Regeneration and the amenity value of water and rivers could act as a positive incentive to bring stakeholders together. This would frame the problems of flooding and flood risk management in a much more positive way.

However, progress is still limited in response to the questions that those flooded at Stockbridge and elsewhere asked about prevention. We are a good deal more knowledgeable about the extent of the interest in and activity relating to these issues, as well as about the institutional fragmentation involved – the 'structural holes' in the human purpose system. The need for an overall and embracing view about catchment management that attracts wider institutional and other stakeholder buy-in seems as important as ever. Many of the professionals contacted for this study seemed to accept this. But they have to be able to legitimise the use of their time, especially where it might include thinking and acting in a way that transcends their own administrative boundaries.

5.4 Further reflections on the emergency response process to the Stockbridge flood

Research illustrates the increased health impacts caused by flooding (Tapsell et al., 2003; Reacher et al, 2004). Reacher et al. in their study report that:

> "Flooding remained highly significantly associated with psychological distress after adjustment for physical illnesses. Psychological distress may explain some of the excess physical illness reported by flooded adults and possibly by children as well." (Reacher et al., 2004, summary)

Tapsell et al (2003) make parallel findings. For instance:

> "When people were asked what had been the most devastating aspect of flooding at a personal level, responses varied from citing financial impacts upon households, to 'lost' time, disruption of family life, losing everything that people had worked for, and the loss of sentimental possessions. Some people referred to the feeling of powerlessness and helplessness and not being able to do anything to stop the flood and save their homes. The Chair of the flood action group (in of one of the areas studied) found it difficult to identify which of the many serious impacts of the flooding had been the worst. For her and others in the action group, dealing with the flood had literally 'taken over' their lives." (page 6).

Summary results from the focus group meeting surveys in the north east of England following the floods between 3 to 5 June 2000, are given in the following table[8]:

Key summary points: attitudes, stresses and behaviour before the flooding
• Before the flooding, there was little awareness or expectation of the risk of serious flooding in Todmorden and West Auckland, and no awareness in South Church; • Though some people had experienced flooding in their properties in Todmorden and West Auckland, this was serious in only a few cases; • Most people were not prepared to cope with the flooding; • People generally felt that the Environment Agency should have made the risk of flooding

[8] Note: this study includes the flooding at Todmorden. Flood-affected people from there were represented at the meeting with others along the Aire and Calder, reported above (page 18).

clearer.

Key summary points: attitudes, stresses and behaviour during the flooding

- During the flood, people had been shocked at what was happening, and at the power, speed and depth of the floodwaters;
- Many people highlighted the risk to life from the flooding;
- Most people had received informal warnings which had allowed some to save a few possessions; apart from this there was little people could do;
- Some got help from emergency services, friends and neighbours, but many had to help themselves;
- Various authorities, including the Environment Agency, were criticised for their lack of support.

Key summary points: attitudes, stresses and behaviour during the flooding

- Damage to property and losses from the flood were extensive. The most important losses were irreplaceable personal items and memorabilia;
- For those who were evacuated from their homes, the experience was stressful, and several people had still not returned to their properties. Little rental accommodation was available locally;
- Those who did not evacuate faced months of living in damp and dusty conditions and the prospect of being surrounded by empty properties. Disruption to daily life was therefore great among both groups;
- Taking time off work to recover from the flood had caused problems for people, not least in the loss of income. But for a few people, going to work offered respite from the flood recovery process;
- Local authorities were generally criticised over what was perceived as insufficient support with the recovery process. The main forms of support required were suggested as being 'manpower', advice and counselling. Voluntary support was generally well-received;
- Key problems were experienced with loss adjusters and insurance companies, particularly regarding differing levels of service offered. Those without insurance faced additional problems;
- Builders and contractors repairing properties were also heavily criticised for their poor standards of service, unreliability, and unpleasant attitudes;
- Strong feelings were expressed of having to 'fight' for any advice and assistance in the recovery process. The effects of this had significant implications in terms of people's health and wellbeing.

(Tapsell et al., 2003, page 11)

In this study, we have not collected comparable data, as this was not our primary focus. But it was evident that the experiences of the flood-affected people of Stockbridge were very different to that of other groups. The key summary points relating to 'before the flooding' and 'during the flooding' would, our study suggests, be pretty similar in all the areas flooded, Stockbridge included. But limited anecdotal evidence suggests that, while the other areas may well match the 'attitudes, stresses and behaviour after the flooding' (above), the Stockbridge responses would be rather different. Central to the differences were the experiences of, and subsequent attitudes towards, the key agencies involved, especially the local authority and the Environment Agency. With the exception of Stockbridge, where the attitude was very positive, the general response to the various local authorities was negative and appears to correspond with the study of the North East Tapsell et al 2003). While the Stockbridge response to Bradford Metropolitan District Council and, subsequently, to the Environment Agency was so positive, this was not the case for others flooded in the Bradford district.

It would have been valuable to have done an in-depth study of the health, psychological and social dimension in the aftermath of the Stockbridge floods. Counselling services were made available through the extensive and intensive relief efforts, but anecdotal evidence suggests they were little used. Extensive studies of personal trauma, disruption, loss and grief suggest a four-stage process for healing and recovery (Kubler-Ross, 1997). The first of these is denial and anger; the next is passive acceptance, often linked to depression – anger turned inwards. The third stage is a more positive coming-to-terms with the situation and a positive acceptance, with the final stage taking the form of moving on to a new future.

A tentative hypothesis is that those who suffered disruptions of flooding at Stockbridge were able to work through the psychological and social traumas more productively than elsewhere because of the development of the comprehensive process. This may have led to lower incidences of mental and physical ill health in this instance (see section 2). It allowed people to express their individual and collective anger, while giving them practical support and help as soon as possible, within an immediately accessible framework of dependable and consistent relationships. Reacher et al (2004) suggest that, “Policies to promote population resilience to flooding where flood prevention has failed must include practical support for flood victims and provision of appropriate psychological support.” The suggestion here is that the collective and individual frameworks of support enabled people to move ‘to recovery’ in the context of providing immediate practical help. It also helps to explain why many regard Stockbridge as a better place and community to live in today than before the flood.

This may be because Stockbridge has now got flood defences. But these general attitudes were being expressed before the defences were planned or constructed. In any case, collecting more detailed data about health from the flood onwards might contribute towards learning as much as possible from the Stockbridge recovery experience. This would enable those who are most likely to be directly involved in responding to flooding events, as with other disasters, to understand and learn about the psychological and social dynamics and processes and how to work towards personal, social and community recovery. The recovery process at Stockbridge was different to what frequently happens, with its focus on intensive practical support within a clear network of relationships. The danger is that the psychological, emotional and social needs of people are divided off and seen as the responsibility of trained counsellors. As an addition to a well constructed recovery process, counselling may well be another form of useful help for some. But in a situation where people’s most fundamental needs for food and shelter are effectively taken away, practical help is of the essence. As Andrew Abbott remembers, “The first thing that hit us when the water came in the house was the numbing cold and the darkness.”

While those who were central to the recovery process in Stockbridge, including individual Environment Agency staff, clearly learned a great deal through the actions they took, there is little evidence that either Bradford Metropolitan District Council or the Environment Agency as institutions have learned from it. It is often mentioned as a good example, but there seems less interest in understanding why this is so.

The recent DTI foresight report predicts long-term increasing flood risk. This seems to be all the more reason for local government and the Environment Agency to try to understand how to construct good flood recovery processes, as well as working towards mitigating and preventing flooding in the first place.

6. Recommendations

6.1 Taking the overview

The themes of systems approaches, structural holes, and social capital are developed further in an internal report to the Joining Up project (Wilkinson, 2004). They also link to issues raised in the Joining Up Thames Pathfinder report (Porter et al., 2005b).

This fieldwork has demonstrated a growing awareness and prioritisation of flood risk and its prevention (see 5.3 above). This is accompanied by a greater willingness on the part of agencies to collaborate both within and across boundaries. Throughout the period of the study, it has been very evident that Environment Agency staff undertake much valuable liaison work with other stakeholders, often involving evening work.

Current dominant models of management tend to favour reductionist solutions to problems. For many technical problems, this is highly appropriate. The approach is to break down a problem into its constituent parts as the basis for its solution. On the other hand, a systems approach to a complex problem seeks to integrate and understand a problem by moving to a higher level (Wilkinson, 2004). The linked themes of water quantity, quality and amenity value provide this systemic integration.

Given its role as 'sole competent authority' for the implementation of the Water Framework Directive, the Environment Agency is in a key position to provide the leadership and sponsor partnership frameworks to foster much greater collaboration between partners at the levels of river basin, river catchment and more locally. It would also be in a position to advocate changes in governance, accountability and regulation regimes, as well as the clarification of responsibilities and the allocation of resources to promote greater levels of collaboration.

6.2 What the Environment Agency should do

What the Environment Agency should do depends on whether it is willing to take a systemic approach to the issues of water quantity, quality and amenity value. It would also need to consider the value of supporting and promoting the creation of social networks and capacity to help it achieve its objectives.

Perhaps there is a tendency to view stakeholder and public participation as important, especially given the external driver of the WFD, but nonetheless as an addendum to an already developed plan, say a Catchment Flood Management Plan. But a systems model of development would suggest early investment in creating the social systems and networks in the early stages to build a much more inclusive and consensual approach that is built on, and that harnesses, common interests and purposes. This might seem more time and resource expensive in the short term, but it could build a strong body of connected inter-agency support and action within the

overall context of the bigger picture. Agreement and implementation could then be far quicker.

This approach would have strong parallels to the Japanese approach to manufacturing, especially for cars of which Toyota is the finest example (Womack et al., 1990). In the design, development and implementation of a new model, potential customers, suppliers, designers, production engineers, sales and marketing staff work together to build a collaborative picture of all aspects of design, manufacturing and marketing. This then provides the context for each to make an integrated picture to a common whole – the emerging product. Far more time is put into the upstream processes involved in doing this than in the Western approach. But development and product delivery are very much better and quicker, and the quality is far higher. The Europeans and Americans have endeavoured to catch up. British manufacturing has, for the most part, found it very difficult, none more so than in car manufacturing. The rest, as they say, is history.

This systems, quality-based approach puts a high value in building the social and institutional frameworks of trust and co-operation and is integral to doing **the task** better. It is rooted in the desire to produce a high quality, highly competitive product at relatively low prices that users want.

6.3 Possible next steps

The Environment Agency could support the development of this project and simultaneously test and reflect on these systemic approaches to river catchment collaborative strategies by taking the lead in convening a 'whole systems' event[9]. The initial lead should probably come from the water quality function. The Agency might choose to work with one or more other supporting partners such as Yorkshire Forward and perhaps also Yorkshire Water and the Local Government Association to create an overarching framework for collaboration. In essence, this would provide new governance arrangements, particularly for networks and hierarchies.

The aim would be to organise a series of events to bring stakeholders together to work on long-term strategies and collaboration towards an overall common purpose in relation to the whole of the Aire catchment. The gatherings would need to seek contributions from as many as possible and strive to understand things as they are now, through the eyes and experiences of the many stakeholders. The longer-term requirements of the Water Framework Directive would help create common purposes and the pursuit of better futures.

During and following this process, the Environment Agency could then:

- Map and understand how its various contributions to water quantity and quality (including point and diffuse source pollution, urban and rural) relate to each other as well as to external institutions and agencies;

[9] See for instance Attwood et al., 2003. This also references a wide literature of practice on whole systems working and large-scale interventions.

- Reflect on the merits of systemic approaches to the issues involved;

- Explore how such approaches could be spread to the unique conditions of each catchment and basin through learning networks[10].

The Environment Agency should also do more to learn from the very successful story of post-flooding co-operation between agencies and local people that came out of the Stockbridge story. At the moment this 'knowledge' is confined largely to those who were directly involved. The lack of institutional learning is probably as great, and more important, on the part of the local authority side. The Environment Agency's role in the aftermath was greatly facilitated by the work of the local authority in this case. Nationally, the Environment Agency should work with the LGA to describe and learn from this and other positive examples. This could then lead to guidance on the process and socio-psychological dynamics involved in effective relief and recovery following flooding events.

[10] For more on learning networks see Wilkinson (2004) and Warburton, Levett & Pilling (2005)

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ANNEX. THE ENVIRONMENT AGENCY'S SOCIAL POLICY

Environment Agency Policy

SOCIAL POLICY

Policy Number: **/03

Policy Statement (This should be read in conjunction with the attached explanatory note and implementation plan for 2003/04)

The role of the Agency is to champion the environment in the context of sustainable development. This is reflected in the explicit duty placed on the Agency through the revised Defra Section 4 guidance to 'protect or enhance the environment in a way which takes account of [economic and] social considerations'. (The Section 4 guidance agreed with the National Assembly of Wales requires the Agency to 'develop approaches which deliver environmental requirements and goals without imposing excessive costs…on society more widely'). (This guidance is relevant to the formulation of approaches that the Agency should take to its work, decisions about priorities for the Agency and allocation of resources. It is not directly applicable to individual regulatory decisions of the Agency.)

The aim of this policy and explanatory note is to set out further clarification of these "social considerations", so that staff can work within a clear set of boundaries.

The Agency's social responsibilities are defined through three principles:

1. Understanding and communicating the social impacts of our work, including opportunities to deliver combined environmental and social benefits.
2. Addressing environmental inequalities.
3. Transparency, information, and access to participation.

Each of these principles is further detailed in the explanatory note attached.

To demonstrate our social responsibilities we will:

- Formulate policy for our regulatory and operational activities in ways which, where appropriate, minimise any negative social impacts and maximise positive social benefits;
- Develop our advice to Government and others in ways that takes account of people, whatever their backgrounds;
- Ensure that our policy development process takes account of the social dimension of the Agency's business;
- Develop evidence to support our work on social considerations;
- Report progress to others, including Government.

Policy Author: John Colvin

Policy Sponsor: Peter Madden

Signature of Authorisation by Policy Sponsor:

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Explanatory Note

Social Policy

Background

The role of the Agency is to champion the environment in the context of sustainable development. The recent revision of the Section 4 guidance (December 2002, under the Environment Act 1995) makes explicit the role of the Agency in contributing to sustainable development. While it is for Government to take the eventual policy decisions which will integrate social, economic and environmental needs (Section 4 guidance, para 3.8), the Agency nonetheless has two key roles to play:

1. "To protect or enhance the environment in a way which takes account (subject to and in accordance with the 1995 Act and any other enactment) of [economic and] social considerations" (para 3.4).
2. In "framing its advice and views to Government, the Agency should…bring its knowledge of the interactions between environmental practice and social [and economic] factors" (para 3.8).

The Government places a strong emphasis on the relationship between environmental and social conditions. The importance of recognising and addressing these links in the UK was highlighted in a recent speech by the Prime Minister (February 2003).
There is also a strong emphasis within the Corporate Strategy on the Agency's role in contributing to quality of life for people. This commits the Agency to:

- taking a more proactive, collaborative approach to building understanding, informing and influencing on environmental issues;

forming close and responsive relationships with our partners and contributing to Local Strategic Partnerships;

- placing a greater emphasis on environmental awareness, and how people experience and perceive the environment;
- contributing to community life, shifting the focus of our contribution to where we can make the greatest difference, especially in low quality and degraded environments, and ensuring that we include the interests of disadvantaged communities and minority groups in our work.

Principles defining the Agency's social policy
The aim of this policy and explanatory note is to set out further clarification of what social considerations are most relevant for the Agency, so that staff can work within a clear set of boundaries. Based on the environmental benefits to be derived from taking social considerations into account, and on the political risks of failing to properly understand these considerations; and drawing also on the guiding principles of the UK Sustainable Development Strategy, set out in the section 4 guidance (para 3.3), the Agency's social policy covers three key themes:

- understanding and communicating the social impacts of our work, including opportunities to deliver combined environmental and social benefits;
- addressing environmental inequalities;
- transparency, information and access to participation.

Reflecting section 4 guidance (para 3.11), the way we apply these principles will vary across the business. 'The requirement to take account of [economic and] social considerations must be seen in the context of the specific activity the Agency is engaged in, and the degree of discretion it has under its statutory powers and duties'.

(1) Understanding and communicating the social impacts of our work: A broad understanding of the social impacts of our work can help deliver environmental benefits, in at least two ways. First, in situations where delivering social improvements also delivers environmental benefits. There are many such areas, for example in recreation, health, education, reducing crime, regeneration and reducing deprivation. In some of these areas – for example recreation and health - the Agency has already established an active programme, whereas in others – for example reducing deprivation - it is at an earlier stage of clarifying the linkages and understanding more precisely where the combined benefits lie. Second, we also need to engage with and gain leverage over other agendas which carry greater political resonance in which environmental priorities are sidelined, but could be 'mainstreamed' by connecting them with politically more popular social agendas. To succeed requires an understanding of the relevant social agendas and of how environmental priorities can connect to these.

(2) Addressing environmental inequalities: While 'combating poverty and social exclusion' (one of the guiding principles of the UK sustainable development strategy) is not a primary responsibility of the Agency, the Agency does have a contribution to make to tackling environmental inequalities. At the very least, the Agency should be able to demonstrate that we have considered any potentially negative social impacts of our work and clarified our responsibilities for mitigating these.

(3) Transparency, information, and access to participation: The way in which the Agency communicates with and involves others in the delivery of its objectives can be critical to their effective implementation. This reflects a move across the public sector towards engaging with others, rather than telling them what to do. Furthermore, transparency is a key to building trust with stakeholders. Providing high quality environmental information enables citizens to take better informed action on behalf of the environment. And effective stakeholder and citizen involvement is increasingly key both to good policy making and to effective delivery on the ground.
The Agency is already working actively in this area. The new Corporate Affairs programme, 'Building trust in local communities', the work in Environmental Protection on 'effective engagement with special interest groups' and the development of a public participation strategy to underpin River Basin Planning (Water Framework Directive) are all current examples.

The level of engagement with stakeholders and the public needs to be proportionate to the environmental objectives we are seeking to deliver. However, this is now a business critical issue for many of our functions, including flood defence, waste, process industries regulation, recreation & navigation and the Water Framework Directive.

We welcome views from our users, stakeholders and the public, including comments about the content and presentation of this report. If you are happy with our service, please tell us about it. It helps us to identify good practice and rewards our staff. If you are unhappy with our service, please let us know how we can improve it.