Partnerships for action in river catchment governance. A case study in the Irwell, UK.

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Partnerships for action in river catchment governance
A case study in the Irwell, UK

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The research presented in this report was developed under the Natural Course project, and funded by DEFRA as part of the EU LIFE IP programme (LIFE14 IPE/UK/000027). The 10-year project is led by the Environment Agency, United Utilities, Rivers Trust, Greater Manchester Combined Authorities (GMCA) and Natural England, who are working together to seek cost-effective solutions to protect and improve our water environment, now and for the future. For further information on the Natural Course project, please visit www.naturalcourse.co.uk.

We would like to thank the research participants, who shared their knowledge and experiences in catchment management, and their organisations for enabling their participation.

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Introduction

The adoption of the EU Water Framework Directive in 2000 was welcomed as an improvement on earlier, piecemeal water legislation in the way that it recognised multiple stakeholders and approached planning at the level of the river basin (Environment Agency, 2002). It committed EU Member States to develop River Basin Management Plans and accompanying programmes of measures by 2009 (and every six years thereafter); and in making operational the programmes of measures, to achieve ‘good’ water status by 2015. In practice, Member States have found the implementation of the Water Framework Directive challenging. The European Commission’s report on the progress in implementation of the Water Framework Directive Programmes of Measures concluded that ‘the approach taken by many Member States — of “moving in the right direction” based (largely) on business-as-usual scenarios — is clearly not sufficient to achieve the environmental objectives for most water bodies’ (European Commission, 2015, p.18).

Significantly, DEFRA asserted a commitment to undertake more actions at catchment level, and announced a pilot phase to test the longer term viability of a ‘catchment-based approach’ (DEFRA, 2011a). The pilot phase concluded in March 2013, and subsequently DEFRA published a policy framework to encourage the wider adoption of the catchment-based approach (DEFRA, 2013). They anticipated that this approach would contribute to the implementation of the Water Framework Directive rather than replace the existing process, although it was not made clear how they would be effectively linked in practice (Watson, 2014).

In 2018, the UK finds itself part way through the implementation of the Water Framework Directive with still much to do to achieve the objective of ‘good’ water status so far as is reasonably possible. In England, although more than 98 percent of the measures summarised in the 2009 River Basin Management Plans were completed by 2015, along with a significant number of additional measures, there was about a 4 percent decrease in overall water status during this time period (Environment Agency, 2015b). It is also evident that there remains an implementation ‘gap’ between the top-down river basin management approach led by DEFRA, and the bottom-up catchment-based approach led by the 100+ catchment partnerships across England. It is unclear how this gap will be resolved in practice during the third planning cycle. Despite significant investment in implementing the Water Framework Directive by many people over almost two decades, there is still no clear progress in England towards meeting its environmental objectives (Foster et al., 2016; Watson, 2014).

In this context, researchers from the Open University have been working with others to better understand water governance and how it can be improved in practice.
Our research

For almost two decades, researchers from the Open University have been working with Government bodies, NGOs, consultants, water industry, academics, and others to improve understandings and practices in relation to water governance in the UK and elsewhere (Blackmore et al., 2007; Foster et al., 2016).

From 2010 to 2015, as part of the Climate Adaptation and Water Governance project (http://www.cadwgo.net), we facilitated a systemic inquiry on water governance in England. Co-operative (or collaborative) inquiry was proposed by John Heron in 1971, and subsequently developed with Peter Reason. It involves researching with people, rather than on people. Thus, participants are able to be involved as co-researchers, and may contribute to the design, implementation, monitoring and evaluation of the research (Heron and Reason, 2001). Systemic co-inquiry is a specific type of co-inquiry which draws on systems theories, methodologies and techniques (Blackmore, 2009; Checkland, 2002; Dewey, 1933; Ison, 2010; West Churchman, 1971). The way we use it, systemic co-inquiry is a mode of investigation that is open to changing situations, pursuing new directions, and engaging with new or different theoretical/methodological frameworks. The inquiry focuses on processes of social learning and the emergence of opportunities, rather than on pre-defined timelines and outputs (Ison, 2002; Ison et al., 2004; Wallis, 2015).

The systemic co-inquiry consisted of two one-day workshops, which focused on the current and future water governance situation in England respectively. The workshops were designed to interactively engage participants in systems thinking, modelling, negotiating and evaluating in order to explore water governance, to formulate problems and opportunities, to identify feasible and desirable changes, and identify opportunities for concerted actions (Foster et al., 2016).

Alongside the systemic co-inquiry, we also led and participated in a series of Governance Learning events, which brought together a diverse range of people from across the world to share their knowledge and experiences in water governance (CADWAGO, 2015; Foster et al., 2015, 2014). Following these events, we facilitated a further workshop which explored the concept of ‘doing more for less’ through local integrated delivery of projects that realise multiple benefits.

Based on the learning from these workshops and events, we developed two conceptual models: a framework for action (F); and methods for action (M) (see pages 6 and 7). Using the Irwell catchment area as a case study (S) (see page 8), the research presented in this report reviews the current thinking and practices in relation to the catchment-based approach against these conceptual models, and makes recommendations for the future.

Right A person (P) (who may be the same as the person who is thinking) engaging with a situation (S) with a framework of ideas (F) and a method (M) (Ison, 2010)
Framework for action

A framework provides the basic structure and guiding principles underlying a system or concept. Evidence suggests that the current governance framework in the context of catchment management is characterised by a ‘gap’ between a top-down approach in which Government bodies decide and dictate what is required to implement the requirements of the Water Framework Directive at national level, and a bottom-up approach led by 100+ catchment partnerships to take actions at catchment scale to achieve these requirements (Foster et al., 2016). Resolving the ‘gap’ remains problematic for all those involved in or affected by this situation.

By physically turning the conceptual model of the current governance framework sideways on a piece of paper (to think about a situation in which the roles and responsibilities of organisations remain the same, but the power situation is different), we realised some important distinctions between the current and possible future governance frameworks:

- Interest-based dialogue rather than position-based negotiation
- Need to begin by working out the must do’s, should do’s and could do’s...
- ...then how we can achieve them in the most efficient way (by sharing knowledge, skills, experiences, etc.)
- Measures of performance should incorporate all of these factors, not just environmental objectives (above and beyond ‘good ecological status’ required by the Water Framework Directive).

Below A framework for action that emerged from our research (Dominic Martyn, Natalie Foster and Damian Crilly, 2015)
Methods of action

The concept of sustainable development emerged in the 1970s from a growing awareness that ‘through ignorance or indifference, we can do massive and irreversible harm to the earthly environment on which our life and wellbeing depend’ (United Nations, 1972). In 1982, the Brundtland Report defined sustainable development as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’. The report expressed the belief that it can be achieved by balancing social development, economic development and environmental protection (WCED, 1987). But more than three and a half decades later, there is still much to do to achieve sustainable development. So, what is required?

- The scope and nature of sustainable development is so great that it can not be achieved by any one individual or organisation; it requires working together across all scales and levels of governance
- There is a need to focus on the process of ‘doing’ sustainable development (including systems thinking, social learning, collaborative action) rather than the outcomes (social development, economic development, environmental protection)
- Sustainable development emerges from shared understandings, shared responsibilities and shared goals

Below  Redefining the pillars of sustainable development with a focus on processes instead of outcomes (Natalie Foster, 2016)
Situation for action

The Irwell catchment is part of the north-west river basin district in England, UK. It covers an area of c.777 km$^2$ and incorporates the rivers Irwell, Croal, Roch, Irk and Medlock and their tributaries. The northern part of the catchment comprises pasture and heather moorland dissected by narrow, steep-sided valleys. In contrast, the southern part of the catchment is characterised by flatter, low-lying land, which is heavily urbanised and includes the post-industrial towns of Bolton, Rochdale, Oldham, Manchester and Salford (Environment Agency, 2017).

Most of the water bodies (rivers, reservoirs, canals and groundwater) in the catchment fail to meet the standards required by the Water Framework Directive. Many water bodies have been physically modified for urbanisation and flood defence. There are also significant water quality issues due to pollution, particularly from wastewater and diffuse urban and rural sources (Environment Agency, 2017).

The Irwell Catchment Partnership (known as the Rivers Return Partnership) was formed in 2011 as one of ten partnerships hosted by the Environment Agency for the pilot phase of the catchment-based approach. It is currently hosted by Groundwork MSSTT and brings together 30 core organisations from all sectors. Since its formation, the catchment partnership has been engaged predominantly in developing its terms of reference, and gathering data and evidence about the state of the environment in the Irwell catchment area. It is now in the process of developing a catchment management plan, and moving further towards the delivery of projects, subject to funding (see www.catchmentbasedapproach.org/north-west/irwell).

For this research, we conducted semi-structured interviews with 17 people who live and/or work in the Irwell catchment, including anglers, farmers, academics, NGOs, water companies, land owners and managers, central government bodies and local authorities. The findings from these interviews provide insights into systems thinking, social learning and collaborative actions in relation to catchment management, and the governance framework in which these activities are taking place.

Left: River Irwell catchment area showing the main rivers (© Environment Agency, 2008 in Irwell Catchment Partnership, 2016)
Our findings

Governance

At the outset, the catchment-based approach was intended to contribute to the implementation of the Water Framework Directive through ‘more action’ by the Environment Agency and other stakeholders at catchment scale (DEFRA, 2011b). But, evidence from this research suggests that the situation is gradually evolving such that implementation of the Water Framework Directive is now a part of the catchment-based approach, rather than vice versa. For example, the research participants reported that they are leading or participating in multiple projects in the Irwell area, almost all of which have objectives which fall within the broader remit of catchment management in general (e.g. natural flood risk management, farming, fisheries, habitat restoration, invasive species, cultural heritage, green spaces, anti-social behaviour), rather than ‘improving water quality’ per se.

This situation reflects the diverse interests and aims of the various people and organisations involved in catchment management in the Irwell area, as well as the overall aim of the Irwell catchment partnership ‘to deliver outcomes for the Water Framework Directive plus wider environmental benefits for the whole catchment’ (Irwell Catchment Partnership, 2016).

However, whilst the catchment-based approach in the Irwell area has generally been successful in terms of engaging ‘core organisations’ in the catchment partnership, some of the research participants were concerned that there is still a need to better engage with more people who have an interest (stake) in catchment management in the Irwell catchment area to ensure that objectives can be delivered now and in the future. These people include individuals, small groups and larger organisations, such as farmers, industry/private sector (e.g. retailers, manufacturers), other government bodies (e.g. Highways Agency) and general public. To this end, one of the research participants suggested that better use can be made of social media to raise the profile of the catchment partnership at a local and national scale; another noted that as the catchment partnership continues to expand (both in terms of membership and the activities and projects that they are undertaking), there is an increased need to clarify the relationship between the catchment partnership and other local initiatives (e.g. Natural Course, Greater Manchester Low Carbon Hub) as well as the roles and responsibilities of catchment partnership members, particularly in relation to the Host Officer and the Catchment Coordinator.

In addition to the above, there were also concerns that measures of performance used for monitoring and evaluation of the catchment-based approach by the Environment Agency are not always appropriate to the activities and projects being undertaken, e.g. reporting on kilometres of river ‘improved’ as a general measure of improvement at local and national level. Thus, there is a perceived need to develop measures of performance that are meaningful to those involved in or affected by such actives and projects.

Right  Relationship between the Water Framework Directive (WFD) and Catchment-Based Approach (CaBA) (Kevin Collins and Natalie Foster, 2018)
Systems thinking

Systems thinking involves looking at the interconnections between parts of a system. Identifying the parts within a system, those in its environment, and the boundary between the two can be a useful means of understanding what is relevant in a situation and what can be changed (Open University, 2006a, 2017). In this regard, two core aspects of systems thinking are: gaining a bigger picture (going up a level of abstraction); and appreciating other people’s perspectives of a situation (Chapman, 2004).

In relation to catchment management, systems thinking might include identifying and exploring the perceived issues within the catchment area from multiple different perspectives, understanding how these issues fit together, and what actions are being taken (or need to be taken) to address them. Are there any conflicting actions happening within and between organisations that might lead to systemic failure at catchment scale? Are any opportunities being missed because of a failure to see the bigger picture? Who has an overview of the bigger picture?

Evidence from this research shows that past, current and planned future activities and projects in relation to catchment management are being designed and delivered by organisations acting independently from the Irwell catchment partnership, rather than as part of an overall catchment management plan. Some of the research participants also observed that catchment partnerships tend to operate in silos, and don’t know – and don’t want to know – about what activities and projects are being undertaken by other catchment partnerships across the UK.

From a systems thinking perspective, this situation means that it is difficult for those involved in the activities and projects to develop systemic awareness about catchment management, i.e. an awareness of the situation as a whole. It is significant that all except one of the people interviewed as part of this research observed that ‘nobody has the bigger picture’ about catchment management in the Irwell. Furthermore, all of those people could identify conflicting activities and projects in the Irwell catchment area (and beyond) which could lead to systemic failure in catchment management over the long-term unless concerted actions are taken to understand and address the cycles, counter-intuitive effects and unintended consequences of these activities and projects.

Social learning

Social learning usually refers to some form of purposeful learning undertaken by a group of people. Such learning may be evidenced by:

- co-creation of knowledge processes, e.g. workshops, symposiums, governance learning events, collaborative action research
- changes in thinking and practices as a result of such processes, e.g. shared understandings, shared (or converging) goals, and more concerted/collaborative actions (Blackmore, 2007).

Over the past few years, there has been significant investment by many people and organisations in gathering data about the state of water bodies in the Irwell catchment area. Some of the research participants perceived that there is now so much data that there is a risk of ‘information overload’ — and although there are still some knowledge gaps, collecting more data (to make sure all risks are resolved) should not be at the expense of moving forwards. In this context, the research participants welcomed a recent shift in focus for catchment management in the Irwell area, from data collection to data analysis and decision-making with the intent of prioritising actions to improve catchment management.

Evidence from this research shows that people are making decisions about ‘what to do’ in relation to catchment management in the Irwell based on meeting their own
organisational objectives. Some research participants observed that these objectives are not always consistent with the objectives of other organisations, the concerns of local people, or catchment management in the Irwell as a whole. Furthermore, such decisions are most influenced by capacity to deliver activities and projects, usually in terms of human and financial resources.

Many of the research participants perceived that there is much enthusiasm in their organisation to deliver activities and projects to improve catchment management, but also a lack of knowledge and/or skills to enable them to do so. This issue is being addressed by organisations in different ways, including knowledge and skills review, academic research, consultancy, training courses, workshops, skills hiring/borrowing, and planning meetings. In most cases, these learning processes were being undertaken within organisations, rather than in conjunction with other organisations in the catchment area.

This situation means that the people involved in or affected by the outcomes of such processes are to a large extent not realising or benefiting from social learning at catchment level, in terms of developing shared understandings and shared goals (and hence, more opportunities for concerted and collaborative actions) that can emerge from ‘learning the way forwards together’.

Collaborative actions

Collaborative action is about people working purposefully together with shared responsibilities to achieve a shared goal. In the context of catchment management in the Irwell area, collaborative actions are occurring as part of the Irwell catchment partnership or as a result of the Natural Course project.

In the Irwell catchment partnership, collaborative actions have mainly occurred in relation to planning meetings for developing Terms of Reference (to establish and define the purpose and structure of the catchment partnership), and subsequently, an Irwell Catchment Management Plan, which is currently a ‘work in progress’ at version 3. Some of the research participants expressed concerns that whilst planning meetings have been key to developing knowledge, they had not yet led to [collaborative] actions to deliver improvements in catchment management on the ground.

It was perceived by those involved in catchment management activities that the general pace of progress in the Irwell catchment partnership hindered the development of more collaborative projects. Furthermore, that a perceived lack of funding has resulted in a situation in which organisations are starting to step outside of their area of expertise — and hence, into the area of expertise of partner organisations — in order to access funding. The latter is considered by some people to cause conflict and unhelpful competition between organisations which could otherwise work together to deliver activities and projects for mutual benefits. The situation is exacerbated by uncertainties (e.g. about Brexit, future commodity prices, funding grants and other subsidies) which prohibit long-term planning, as well as perceptions that collaborative projects require more time and financial resources — and hence, that it is only possible to plan and do small/short-term projects.

The Natural Course project aims to build capacity to protect and improve the water environment in the North West River Basin District over a 10-year programme of work. It was developed to inform and influence national top-down policy through innovations in bottom-up governance arrangements (Environment Agency, 2015a). The Irwell catchment is the main focus for the project in the Greater Manchester area during the first phase of the project. As part of the Natural Course project, data has been collated and analysed in detailed study by APEM Ltd to provide an evidence base for the causes of the main water management issues across the Irwell catchment area, and thereby, facilitate appropriate interventions to achieve Water Framework Directive requirements (GMCA, 2017).
However, despite the good intentions of the Natural Course project, it is seen by some of the research participants as a distraction or diversion from local initiatives, such as the Irwell catchment partnership. Some of the research participants observed that the Natural Course project and the Irwell catchment partnership are ‘largely doing their own thing’, irrespective (or despite) of what the other is doing. For example, the Irwell catchment partnership has separate meetings to the Natural Course project, which means that organisations have to decide where best to apply resources in terms of which meetings to attend. The situation is exacerbated by (mis-)perceptions that the Natural Course project has more funding available for delivering activities and projects on the ground. One of the research participants also expressed concerns about what might happen after the end of the Natural Course project because ‘there is no evidence yet’ that it is leading to sustainable (self-funding) catchment partnerships.

Despite all of the above, the research participants were generally keen to engage in more collaborative actions. To this end, some people and organisations are now actively trying to put aside personal and organisational conflicts so that they can work together more effectively. Other research participants stated that they would be prepared to (re-)consider working in partnership for mutual benefits, even though at present such benefits are not always possible to negotiate or share between partners (e.g. because some organisations don’t want — or have no capacity or means – to engage in collaborative actions in partnership with others).
Our recommendations

Throughout this research, judgements have been made about the past, present and future of the catchment-based approach. It is, therefore, timely to take a step back and reconsider its fundamental purpose; and in doing so, identify systemically feasible and desirable changes. The table below brings together and builds on the concepts and ideas previously discussed in order to compare the existing purpose of the catchment-based approach with what it perhaps ought to be in an improved situation. The main point here is to clarify the researchers’ understandings, to develop possible mutual understandings with others, and to prompt further discussion about the catchment-based approach.

Below Comparison of what ‘is’ the purpose of the catchment-based approach with what it ‘ought to be’ in an improved situation from the researchers’ perspectives (based on a technique developed by Ulrich, 2000)

<table>
<thead>
<tr>
<th>Sources of motivation</th>
<th>Social roles (stakeholders)</th>
<th>Role-specific concerns (stakes)</th>
<th>Key problems (stakeholdings)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UK Government bodies</td>
<td>To meet the requirement of the Water Framework Directive</td>
<td>All water bodies across the UK achieve ‘good ecological status’</td>
</tr>
<tr>
<td>‘ought’</td>
<td>UK citizens as individuals, groups and larger organisations</td>
<td>To facilitate catchment management across the UK</td>
<td>Actions meet the requirements and expectations of UK citizens and lead to continuous improvement in the situation</td>
</tr>
<tr>
<td>critique</td>
<td>The catchment-based approach should serve to meet the needs and expectations of UK citizens and lead to meaningful improvements in the situation, rather than serve to meet UK Government obligations under EU legislation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘is’</td>
<td>4. Decision maker</td>
<td>5. Resources</td>
<td>6. Decision environment</td>
</tr>
<tr>
<td></td>
<td>Organisations acting independently from each other and the catchment partnership</td>
<td>Environmental monitoring data, insufficient funding for environmental initiatives</td>
<td>EU and national legislation, uncertainty regarding future funding</td>
</tr>
<tr>
<td>‘ought’</td>
<td>A representative body of catchment partnership members including experts and laypersons</td>
<td>Capacity and capability to deliver actions to improve catchment management</td>
<td>Transparent national policies, sufficient funding for catchment partnerships and initiatives</td>
</tr>
<tr>
<td>critique</td>
<td>Decisions about catchment management should be made participatively, rather than by those with a vested interest in a particular outcome, to ensure that resources are used to achieve an equitable outcome.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Professional consultants commissioned mainly by UK and local government bodies</td>
<td>Multidisciplinary, but skewed towards scientific and economic</td>
<td>Catchment partnerships informed by professionals through consultation results</td>
</tr>
<tr>
<td>‘ought’</td>
<td>A collaborative group of catchment partnership members with knowledge about the situation of interest</td>
<td>Interdisciplinary, equity between all disciplines, particularly social, economic and environmental</td>
<td>All members have a good understanding of how decisions about activities and projects have been made, and what they are expected to achieve</td>
</tr>
<tr>
<td>critique</td>
<td>Catchment partnerships should be a platform for developing shared understandings through dialogue leading to changes in thinking and practices to improve the situation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Predominantly environmental NGOs</td>
<td>Some people and organisations have no means of engaging with catchment partnerships</td>
<td>Water Framework Directive is binding, as to the results to be achieved, upon each EU Member State to which it is addressed</td>
</tr>
<tr>
<td>‘ought’</td>
<td>Those affected by the outcomes of actions, including appropriate advocates for future generations and non-human entities</td>
<td>Genuine invitation to participate in the catchment partnership with the option to decline without fear of coercion</td>
<td>Catchment partnerships acknowledge that different people will see the same situation differently, and value multiple diverse perspectives</td>
</tr>
<tr>
<td>critique</td>
<td>Values underpinning the catchment-based approach should be robust and transparent as well as foster and encourage stakeholder involvement to achieve more meaningful outcomes in catchment management, rather than be seen to favour the opinions of perceived experts</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Drawing on this critique, we posit that at the most basic level the catchment-based approach is about managing:

- interactions between people about the environment; and
- interactions between people and the environment.

But, applying the broadest definition of the term environment — that which surrounds and affects us and is affected by us — we recognise the potential for catchment partnerships to address the wider issues (not just those relating to the water environment) that jeopardise our common future.

To this end, we suggest a revised operating framework for catchment partnerships (see page 15) based on the following propositions:

- Catchment partnership could offer a standing, open invite to all people — as individuals, small groups or larger organisations — with a shared interest in catchment management within their catchment area.
- Bi-annual members meetings could provide time and space for developing shared goals, formulating actions to achieve these goals, and monitoring and evaluating progress towards them against shared measures of success. The emphasis here is on ‘seeing the bigger picture’ in relation to catchment management at local and national scale, and thereby, collectively making informed decisions about ‘what to do’ now and in the future so far as possible.
- Members could form interest groups to engage in social learning about new and exiting ideas/issues that are relevant to them, e.g. habitats, flooding, anti-social behaviour, health and well-being, culture and heritage. Each of these interest groups represents a ‘situation of
Revised operating framework for a catchment partnership (Foster, 2018)

**Developing shared goals, formulating activities and projects, monitoring and evaluating progress towards shared goals**
- Biannual members meetings organised by the catchment partnership officer

**Members join interest group(s)**

**Social learning about relevant issues and ideas**
- Quarterly interest group meetings organised by the catchment partnership officer

**Members form interdisciplinary project teams**

** Undertaking activities and projects to achieve shared goals**
- Project meetings organised by hosts according to project requirements, supported by catchment partnership officer
interest’ to those involved in the group; collectively, they represent an interdisciplinary situation of interest for the catchment area as a whole from the perspectives of all those involved in the interest groups.

The interest groups could, for example, take the form of a systemic co-inquiry which is a mode of investigation that is open to changing situations, pursuing new directions, and engaging with new or different theoretical and methodological frameworks. In contrast to Task and Finish groups, which tend to focus on timelines and outputs, systemic co-inquiries proceed by enacting a social learning process with those who have a stake in a situation experienced as problematic or as presenting an opportunity. Thereby, they enable participants to begin their investigations in a different emotional space to that which accompanies the emotion of certainty usually associated with programmes and projects. Systemic co-inquiries are flexible and do not always have a specific end-point: there is no ‘right’ way to do a systemic co-inquiry. They can precede, run in parallel with or incorporate a programme or project, and they can be as short as a few hours or run indefinitely until those engaged agree to stop (see, for example, Foster et al., 2016).

- Informed by the members meetings and interest groups, members can form interdisciplinary project teams to deliver actions to improve catchment management.

Project could be hosted/delivered by people or organisations (either individually or collaborative depending upon the project requirements) for the benefit of all those involved or affected by its outcomes.

- Catchment partnership members should attend meetings where the agenda is relevant to their interests; this means that members can use their resources more effectively. Members may attend any meeting, regardless of their area of expertise or interest, if they wish to do so.

- Catchment partnerships should endeavour to engage with other catchment partnerships across the UK to share knowledge and experiences in catchment management, e.g. through online sharing of case studies and other data as well as in person such as at an annual catchment partnership symposium and/or workshops.

Thus, as we look to the future, the catchment-based approach has an increasing emphasis on engaging people in understanding, valuing, caring for, and enjoying their environment. Engaging more people will require significant investment in finding shared understandings, shared responsibilities and shared goals; but ultimately, in doing so, the catchment partnerships will become inherently stronger in their capacity and capability to address the scale and diversity of future challenges.
Summary and next steps

The research presented in this report reviews the current thinking and practices in relation to the catchment-based approach against two conceptual models: an interest-based governance framework; and methods (including systems thinking, social learning and collaborative actions) through which this framework could be operated in order to achieve sustainable development.

The findings from this research show that in the Irwell catchment area, the work of the catchment partnership has evolved to address a diverse range of issues which include, but are not limited to, the implementation of the Water Framework Directive. The research participants reported that they are leading or participating in multiple projects in the Irwell area, almost all of which have objectives which fall within the broader remit of catchment management in general (e.g. natural flood risk management, farming, fisheries, habitat restoration, invasive species, cultural heritage, green spaces, anti-social behaviour). This situation reflects the diverse interests and aims of the various people and organisations involved in catchment management in the Irwell area, as well as the overall aim of the Irwell catchment partnership ‘to deliver outcomes for the Water Framework Directive plus wider environmental benefits for the whole catchment’. However, in this context, the people and organisations tended to plan and deliver activities and projects independently from the catchment partnership. This situation makes it difficult for those involved in or affected by the outcomes of these activities and projects to engage in systems thinking, social learning and collaborative actions at catchment scale.

Drawing on the above, we posit that at the most basic level the catchment-based approach is about managing: interactions between people about the environment; and interactions between people and the environment, wherein we apply the broadest definition of the term environment — ‘that which surrounds and affects us and is affected by us’ — and in doing so, we recognise the potential for catchment partnerships to address the wider issues (not just those relating to the water environment) that jeopardise our common future. To this end, we suggest a revised operating framework for catchment partnerships which facilitates systems thinking, social learning and collaborative actions at local and national scale.

As a next step, we invite all people as individuals, small groups and larger organisations to engage in learning together as a way forward — and taking into account the recommendations from this report, to (re-)explore their own situation in relation to catchment management, leading to changes in thinking and practices to improve the situation.

For further information about the Irwell catchment partnership, see www.catchmentbasedapproach.org/north-west/irwell.

For further information about the Natural Course project, see www.naturalcourse.co.uk.
References


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- A study experience that maximises student success whilst maintaining academic standards
- World leadership in delivering journeys from informal to formal learning through open media

**Enhancing the capabilities of the University**
- Research and scholarship that is externally recognised for excellence and impact
- People and culture that enable us to deliver high performance and respond flexibly and effectively to changes in our marketplace
- Flexible, integrated and robust systems that support the University and its students
- Enhanced financial sustainability through control of costs and greater diversification of net income

**For further information**
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