Exploring the delivery of multiple benefits by Catchment Partnerships

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Executive summary

Catchment partnership working has long been seen as a key means to enable and improve freshwater management, overcoming the limitations of pre-existing regulatory approaches in tackling persistent problems. Recently, there has been growing interest in catchment partnerships as a key means to delivering the European Water Framework Directive (WFD) and also the Floods Directive (FD). It is often hoped that partnerships will be able to involve a range of partners to more effectively or efficiently deliver the statutory goals of these policies, achieving holistic catchment management that provides multiple environmental benefits and ecosystem services.

However, there are unresolved questions about whether partnerships can live up to all the expectations placed on them, and if so, how they may best be planned and enabled. For the last two years we have therefore made an in-depth exploration of four catchment partnerships in the UK, using qualitative analysis of secondary and primary data to ask how they contribute to appraising and delivering multiple benefits, and if so, how this is achieved. Since there is widespread interest in enrolling the private sector to support these outcomes, we gave especial attention to exploring how the mix of different partner types in a partnership may contribute to their achievements.

This report presents the main findings of our study of four ongoing catchment partnerships. The four partnerships studied are the Dee Catchment Partnership (DCP), the Hampshire Avon Catchment Partnership (HACP), Poole Harbour Catchment Initiative (PHCI), and the Spey Catchment Initiative (SCI). Two of these partnerships – the DCP and SCI – are in Scotland. The other two - the HACP and PHCI – are in England, where they are also part of England's Catchment Based Approach (CaBA).

Our data support the idea that catchment partnerships are a good way to bring stakeholders together to identify and achieve shared or overlapping objectives, that may evolve over time. Partnerships can be particularly valuable for going beyond 'business as usual' to tackle complex and challenging actions that cannot be done by individual organisations alone. These actions include Natural Flood Management (NFM) schemes and tackling diffuse pollution. Partner representatives appreciate the learning opportunities within partnerships, on a variety of topics, and the mix of expertise that can be used to find funding or improve the design of specific activities. They perceive partnerships to have useful strengths in stakeholder engagement e.g. with land-managers.

We examined how partner composition affected the partnership achievements, and found that diversity is important, since this underpins learning and resources offered by the partnership. This must be complemented by independent coordinators and/or chairs, to avoid the perception that one or a few interests are dominant. However, partners who input resources usually have

more influence on decision-making: whether or not it is formally stated, partnerships often have two types of partners, with some only consulted or involved in specific types of activities. Partnerships mix partners from the public and third (NGO) sector, with relatively few private sector partners in our sample. Where private sector partners were active, they were greatly valued, for their contributions of finance and expertise. The partnerships' ability to support stakeholder engagement were often associated with the roles of NGO partners.

Although we set out to study the partners' role in partnerships, a strong theme in our data was the role of individuals – and especially coordinators. Skills and capacity to support collaboration, for networking and for knowledge-sharing seemed valued and to underpin many other outcomes of partnerships. Individual motivations, interests and expertise can help explain how partnerships form, and how they evolve, especially when there are staffing changes within partners. However, the ability of individual representatives and the coordinator was often constrained by the short-term and limited funding (both actual and in-kind) available. Compared to the amounts invested in the specific activities, the investment in making partnerships work is minimal, yet our data suggests that a strong and dynamic partnership is a precursor to effective interventions.

Our insights suggest partnerships are strongly affected by the pre-existing interests and constraints not only of their own partners but of the wider governance system. For example, partnerships often apply to public funding schemes reflecting particular policy goals, therefore policy priorities and (non)integration tends to influence what the partnerships can achieve, even if they have a strategic vision. Therefore, enabling partnerships to achieve more, beyond what other initiatives and actors have achieved, paradoxically may require changes by other actors, especially at higher governance levels. Such changes may be aided by strengthening the links between partnerships and policy to enable policy learning for adaptive governance. In our data, partnership members and coordinators shared learning between each other, but there was relatively less evidence of partnership experiences informing learning by other groups.

Our data indicates significant evolution in the composition, structure, focus and processes within each partnership, as well as between partnerships. This suggests that there isn't necessarily one way to do things, no set 'recipe' for a successful partnership, but adapting is important. Successful partnership work depends on a constant balancing act: not only between different objectives such as water quality and quantity, but also between many options and opportunities, such as planning easy actions as well as 'tricky' actions; questioning how far to focus on steering versus delivery; how much to formally document planning and evaluation; how much to invest in existing relationships and networks versus making connections with new potential partners or stakeholder groups. As such, planning for reflection on progress and change within partnerships – as well as ideas learnt from other settings – is an important recommendation. Both partnerships, those who enable them and those who seek to study them would benefit from paying more attention to the adaptive management and evolution of partnerships.

This report begins with a brief description of the context of this work and what is already known about catchment partnerships (section 1). We then describe our methodology and cases studied (section 2). Our results (section 3) are structured in terms of the objectives and aims of partnerships, the characteristics and composition of partnerships, and the effect of the governance setting on partnerships. In section 4 we synthesise and discuss the findings, note potential avenues for future academic work, and articulate several practical implications for catchment partnerships, other partnerships and those who seek to enable them.

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List of text boxes and tables

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List of Acronyms

CaBA	Catchment Based Approach *(link)*
CAR	Controlled Activity Regulation
CLA	Country Land and Business Association
CNPA	Cairngorm National Park Authority
CMP	Catchment Management Plan
CP	Catchment Partnership
CSF	Catchment Sensitive Farming
DCP	Dee Catchment Partnership
DDSFB	Dee District Salmon Fishery Board & Trust
EA	Environment Agency
ELSEG	Ecosystems and Land Use Stakeholder Engagement Group
FD	The EU Floods Directive
FRMS	Flood Risk Management Strategy
FSC	Forest Stewardship Council
FPWDFA	Frome, Piddle and West Dorset Fisheries Association
FWAG	The Farming and Wildlife Advisory Group
GDPR	General Data Protection Regulation
HACP	Hampshire Avon Catchment Partnership
INNS	Invasive Non-Native Species
M&E	Monitoring and Evaluation
MOU	Memorandum of Understanding
NE	Natural England
LBAP	Local Biodiversity Action Plan
LEAP	Learning Evaluation Adaption Plan
LENS	Landscape Enterprise Networks
NBS	Nature Based Solution
NFM	Natural Flood Management
NFU	National Farmers Union
PHCI	Poole Harbour Catchment Initiative
PVA	Potentially Vulnerable Area
RAFTS	Rivers and Fisheries Trusts of Scotland
RBMP	River Basin Management Plan
RLUP	Regional Land Use Partnership
RSPB	The Royal Society for the Protection of Birds
SAC	Special Area of Conservation (designated under the EU Habitats Directive)
SCI	Spey Catchment Initiative
SDFB	Spey District Fishery Board
SEPA	Scottish Environment Protection Agency
SLE	Scottish Land and Enterprise
SNH	Scottish Natural Heritage (NatureScot since August 2020)
SSSI	Site of Special Scientific Interest, a UK conservation designation
SPA	Special Protection Area (designated under the EU Birds Directive)
FRMP	Flood Risk Management Plan
WFD	The EU Water Framework Directive

Introduction

This report is the second output in a two-year project to consider how and when catchment partnerships may enable multiple environmental objectives for water management to be achieved when managing water quality and quantity. It presents our preliminary findings on the work and achievements of four catchment partnerships in the UK. This builds on a report from a year ago that briefly summarises what is already known about catchment partnership working, and some of the relevant theoretical frameworks that can be used to analyse them (Waylen et al., 2019b).

This 2-year project responds to interest from Scottish policy stakeholders in learning more about when and how we can integrate different objectives for flood risk management and water quality management, as driven by the need to comply with the Floods and Water Framework Directives (FD and WFD). These two directives are key drivers of change for the water environment across Europe. For two decades, the ambitious and holistic ecological targets of the WFD have driven substantial change in planning and action to protect the water environment (Carvalho et al., 2019) whilst the more recent Floods Directive strengthens processes to identify and plan for flood risk management (Priest et al., 2016). As these directives encompass water quality and quantity issues – and the WFD encourages participation in some form - there is widespread interest in integrating their delivery (Working Group F, 2014). An additional key influence is the Natura 2000 framework of designations under the Habitats and Birds Directives, which specifies statutory targets for protecting threatened species and habitats. This, and national designations such as Sites of Special Scientific Interest (SSSIs), focus additional attention on vulnerable habitats and species within or adjacent to freshwaters. European Commission (2016) provides a useful overview of their main provisions and potential interlinkages.

The WFD and FD have been similarly influential in Scotland and the rest of the UK, and although the UK is no longer an EU member state they have been made part of UK law. Other policies are also influential. For example, in England, the 25 Year Environment Plan (Defra, 2018) sets ambitions for improving air and water quality and protecting our many threatened plants, trees and wildlife species. This and other strategies, and policies such as England's emergent Environmental Land Management Scheme (ELMS) to replace the Common Agricultural Policy, give emphasis to the idea that our natural resources must be managed to deliver multiple benefits for society, and additionally places emphasis on cross-sectoral collaboration to achieve this. There is similar interest in these issues in Scotland, with additional emphasis on land reform[a] and initiatives for Regional Land Use Partnerships under the Land Use Strategy[b]. These seek to balance private and public interests to achieve sustainable development that supports a fair and just society.

Understanding the potential of cross-sectoral partnerships to deliver multiple benefits is therefore of relevance both within and beyond the water sector.

[a] https://www.gov.scot/policies/land-reform/

[b] The second Land Use Strategy is available from https://www.gov.scot/publications/getting-best-land-land-use-strategy-scotland-2016-2021/ - At the time of writing this is due to be succeeded by the third Land Use Strategy, in in March 2021.

1 What is already known about catchment partnerships

This section summarises what is known about catchment partnership working from the existing academic literature. Note that a longer discussion of the literature was contained in (Waylen et al., 2019b), and provides links to a vibrant empirical literature exploring experiences of collaborative catchment management in practice, and to academic literature suggesting principles on catchment-scale working, collaboration, and governing multiple objectives.

For this research, we define catchment partnerships as initiatives that involve multiple organisational partners, located within a biophysical freshwater (sub)catchment, and working for multiple objectives including improvements to water quality & quantity. Examples of catchment partnerships (also called watershed partnerships, water basin partnerships) can be found across the world, though they may vary greatly in their structure and remit. (There are similarities with the concept of Integrated Catchment Management or Integrated Water Resources Management, but this concept often focuses on the technical means of achieving multiple objectives, rather than the procedural and governance aspects of the challenge.)

1.1 Reasons to focus on partnerships

Interest in partnerships reflects a perception that 'command-and-control' management, i.e. top-down approaches led by the public sector (Diaz-Kope & Miller-Stevens, 2015), may often be inadequate for addressing many complex contemporary challenges. This includes many of the problems afflicting catchment systems, such as diffuse source pollution (Waylen et al., 2015b). There is recognition that actors who have a stake in a problem should work together to tackle it. Related to this, it is accepted that many different problems and goals are interconnected: for example, interventions to alter water quality may also affect water flows, and vice versa. It is hoped that collaborative working at the catchment scale may help to navigate these challenges (e.g. Benson et al., 2013; European Commission, 2014; Fliervoet et al., 2016; Waylen et al., 2019a).

There have been many and varied expectations for what catchment partnerships may achieve. Various sources allude to them being capable of achieving more effective, efficient, sustainable, and/or participatory outcomes (e.g. Conallin et al., 2018; Environmental Communications Ltd, 2010; Rouillard & Spray, 2017). Where national level policy stipulates goals, partnerships may additionally be expected to reconcile 'bottom-up' (local stakeholder based) objectives with top-down (statutory) objectives for catchment management. The hope that catchment working may help to connect and deliver different goals means it is also relevant wherever there is a desire for more holistic or joined-up approaches to water management. However, reconciling different goals may not be simple (Blackstock, 2009), and it is unclear the extent to which this can be achieved by catchment partnerships. Therefore, claims and assumptions about catchment partnerships must be appraised critically and checked empirically (Benson et al., 2013; Molle, 2009).

The principles of catchment partnership working have recently been very popular in Europe, even if some of the expectations of partnerships remain unproven. The UK has also had significant interest in catchment partnerships, and made significant efforts to encourage it, particularly through England's Catchment Based Approach scheme (CaBA; see Text box 1 below). In other parts of the UK there is no scheme exactly comparable to CaBA, though there is interest in tackling challenges through catchment based or decentralised approaches.

In Scotland, Area Advisory Groups were set up by the Scottish Environment Protection Agency (SEPA) in the first cycle of planning under the WFD (Blackstock & Richards, 2007). Since 2009 Local Advisory Groups have been set up across 14 planning districts to advise on Local Flood Risk Management Plans (SEPA, 2012). Both of these are policy-led statutory processes, and rarely map directly onto catchment management partnerships.

Text box 1: Details of England's 'Catchment Based Approach'

The 'Catchment Based Approach' (CaBA), was a scheme first piloted in 2011, and then extended in 2013. These partnerships are led by host organisations, often from the third sector, with the aim of promoting integrated water management. Funding to enable these partnerships is administered by the Environment Agency on behalf of Defra: in exchange the partnerships are expected to help deliver RBMP objectives (Defra, 2015), foster collaboration and "*deliver multiple benefits*" (Defra, 2013). Each partnership receives relatively little money, typically £15,000 in a year, to fund collaboration and planning rather than implementation of actions.

CaBA partnerships are encouraged to produce a catchment plan and follow certain codes of practice (Hurlimann & Wilson, 2018) but have relatively little input from government agencies, and relative freedom to develop collaborations according to local circumstances (Watson, 2015). Over 100 partnerships are now funded, with hosting organisations particularly likely to be Rivers Trusts or Wildlife Trusts (Defra, 2015). The funding has been available to existing and new partnerships in England (and in catchments spanning the Welsh-English border) to collaborate to improve water management. It is believed that the scheme has enabled partnerships to develop in parts of the country where previously there were none.

Although support for these partnerships has emerged from efforts to deliver the WFD, Wingfield *et al.* (Wingfield et al.) suggest that these partnerships are also an ideal means to enable Natural Flood Management (NFM). They argue that CaBA pilots are already carrying out many NFM-relevant interventions motivated by objectives other than Flood Risk Management (FRM), and CaBA has "*always been intended to be a mechanism for better integration of FRM into integrated catchment management*" with this mentioned in Defra's 2013 policy paper (Defra, 2013; Macleod & Hewitt, 2017; Margerum & Robinson, 2015; Waylen et al., 2019a).

1.2 Designing and enabling catchment partnerships

The outcomes and effects of catchment partnerships are likely to be explained both by their own characteristics – e.g. their remit and working arrangements, as well as the wider setting and context of the partnership. A previous report (Waylen et al., 2019b) provides more information about both these internal and external factors, so these are only briefly summarised here.

Firstly, understanding of the 'internal' factors that affect catchment partnerships comes from academic literatures on partnership and collaborative working, plus literatures about integrating or coordinating delivery of multiple objectives (e.g. Waylen et al., 2019a), complemented by insights from existing empirical studies of catchment working. A decade

ago Marshall et al. (2010) summarised 13 principles of good practice for catchment management (see Table 1 below). These principles, derived from studies of catchment partnerships as well as the views of participants in catchment management processes, still provide a good basis for both planning and appraising partnerships. However, good practice is not fixed and definable, and this source suggests taking a flexible and pragmatic approach to definitions (and by extension, to evaluation). Work since then has additionally highlighted the need to understand the formalisation, centralisation and timespan of partnerships, and emphasised the importance of power. These overlapping ideas are reinforced by insights from the Institutional Analysis Design literature, which explores how to enable collective action for common pool resources (Fisher et al., 2010) and is relevant to many natural resource management challenges (Hardy & Koontz, 2010). This literature emphasises the need to expect and plan for learning and adaption, in line with adaptive management.

Table 1: Principles of good practice, adapted from Marshall et al. (2010).

Principles	**Definition**
Accommodate related issues	Identification and incorporation of relevant non-water related issues (e.g. agricultural policy, forest policy, climate change adaptation).
Acknowledge achievement	This may be reported as either internal recognition (awards, newsletter highlights etc.), or external recognition (academic reviews, national recognition etc) with the benefit of encouraging continued involvement.
Adaptive management	The ability to change plans in light of new information or considerations.
Appropriate decision-making process	Decision-making processes should be open, accountable, inclusive, clear and fair.
Appropriate involvement strategies	Strategies to accommodate differences within and between institutions: involvement of different knowledge types ('expert', experiential, local/contextual). Note: it may be easier to show number of groups and type of involvement attempted than to assess how effective the involvement was.
Communication & information flow	Effective reporting mechanisms: this applies within and between the core stakeholders, wider interested parties, and between stakeholder representatives and their organisations.
Conflict management	Identify and understand examples of where a process either provoked or was able to help resolve differences between stakeholders.
Effective use of existing forums	Existing social or stakeholder networks are used, thereby investing in existing trust, understanding, credibility etc. Note: this is dependent on the type of partnerships already acting.
Process efficiency	Available resources (funds, peoples' time, etc.) are used efficiently and effectively.
Process development	Learning through experience and improving practise: i.e. the process may start with problems (e.g. with involvement, planning, managing) or difficulties which if resolved will allow improvements to the process.
Roles & responsibilities clearly defined	Roles and responsibilities are established and clearly defined.
Spatial scale considerations	Identification of interactions between local and larger scale issues within a catchment and implications of these. This reflects the effect of physical scale on management planning, i.e. site, farm, catchment, basin, etc.
Timescale considerations	Separation of long-term objectives from short-term goals to help prioritise resources and define responsibilities. Issues relating to funding and long-term planning can be dependent on external factors, as well as the aims and objectives of a group, and envisaged project length.

Secondly, it is important to understand the wider context of catchment partnerships. As partnerships are a societal initiative, we focus especially on its social and economic context, although biophysical connectivity and changes such as climate change are also of importance. We frame this as understanding partnerships as initiatives within nested multi-level governance systems (Ekroos et al., 2015). The concept of multi-level governance highlights many potential ways in which responsibility and authority for environmental decision-making can be distributed, both *vertically* – between many levels of decision-making - and *horizontally* - across multiple public sector and non-governmental organizations and actors.

Western 20th century approaches to governing environmental resources have been characterised and critiqued as tending to concentrate too much power and responsibility with centralised high-level policy-makers who expect and attempt to govern 'top-down' without reciprocal links or influence. Building on this diagnosis, many have argued that environmental governance will be improved by efforts to spread agency across and/or between levels. Systems where power and responsibility are distributed across units at similar levels are described as polycentric (Heikkila et al., 2018). We note here that *networked* and *polycentric* governance differ in their detailed definitions, but both draw attention to the importance and possibility of actors of a similar type or levels - such as, potentially, catchment partnerships across the UK. In principle, a focus on partnerships reflects and reinforces efforts to embrace new forms of environmental governance that encourage distributed and decentralised decision-making.

The work of Pahl-Wostl et al. (2010) has connected the governance literature with the specific challenges of water management. Some of her most recent work (Pahl-Wostl, 2019) presents criteria that can be used to distinguish idealised modes of governance - hierarchal, network or market. There are six criteria: Motives of subordinate actors; Roles of government; Choice of actors; Source of power; Resources used to steer; Roles of knowledge; and Dominant actor type. The purpose of the study presented here was not to categorise the current system of governance shaping CPs in the UK, but Pahl Wostl's criteria can be useful to help understand how CPs are affected by and interact with wider governance systems.

In summary, it is important to understand both 'internal' and 'external' characteristics to understand the functioning and consequences of catchment partnerships. To understand decision-making processes, internal characteristics that must be understood include strategies for collaboration, communication and conflict management; the set and number of partners involved and their relationships, and the remit of the partnerships – e.g. their geographical scope and scale of problems to be tackled. The progress and outcomes of catchment-level initiatives may be shaped by the external governance setting, such as the resources available from other actors.

The principles and issues summarised above were used as the basis of analytic criteria during our analysis of primary and secondary data on catchment partnerships. The internal characteristics of partnerships are reported in results section 3.2 whilst interactions with the external governance setting are reported in results section 3.3.

1.3 Research questions and focus of this report

Our overall research question is "How does catchment partnership working align or help with delivery of multiple benefits, including the delivery of WFD and FD objectives?". Our specific research questions were:

- What are the partnership goals, do these align with WFD and FD objectives, and to what extent are these being achieved?
- What characteristics of catchment partnerships (including the sectors involved), explain these experiences and achievements?
- If and how are partnership achievements constrained or enabled by multi-level or polycentric dimensions of WFD and FD governance?

To answer these questions, we collected data on 4 catchment partnerships, analysed existing documents concerning these partnerships, and interviewed individuals representing these partners. More detail of this methodology follow on page 12.

The results section of this report explores the breadth of data and insights that arise, structured around these questions. The discussion section then notes some implications for both future research and practice.

2 Methodology

This research focuses on four catchment partnerships in the UK; two in Scotland and two in England. We studied these using a mix of secondary and primary data. We first conducted a desk-based document analysis to gain an understanding of the characteristics and goals of each of these partnerships. This was followed by interviews with some of the main people involved in these, to understand how these partnerships work in practice. This section first describes the four case studies, and then gives more detail about the methods used to study them.

2.1 The four case studies

There are a range of catchment partnerships across the UK, most of which include representation of the environmental agencies, but also include local authorities and non-governmental partners such as environmental NGOs and sometimes water companies. We have already described the diversity of UK catchment partnerships in Waylen et al. (2019b).

To build an in depth understanding of how catchment partnerships may contribute to the delivery of multiple benefits, we focused on understanding four catchment partnerships which represented some aspects of this diversity. This allowed us to explore multiple perspectives within each partnership, whilst also allowing us some ability to scope how partnerships could be differently constituted, and the effect of context. For example, the two English cases participate in the Environment Agency's Catchment Based Approach (CaBA) and have water company participation. We selected partnerships involving multiple organisations, which stated that they had multiple goals. Therefore, we excluded single issue consortia, or initiatives led by single organisations without significant input on decisions from other actors.

The partnerships studied are: the Dee Catchment Partnership (DCP), in Scotland; Poole Harbour Catchment Initiative (PHCI), in England; Hampshire-Avon Catchment Partnership (HACP), in England; and Spey Catchment Initiative (SCI), in Scotland. In this section we provide an overview of each of our case studies. We list the partner organisations that are involved in each of these and categorise them according to what type of organisation they are and their role. However, this categorisation is not always clear-cut, and we discuss this in results section: 3.2.1.

2.1.1 Dee Catchment Partnership

The Dee Catchment Partnership comprises the entire River Dee catchment, in Scotland, from its source in the Cairngorms National Park, to its outlet at Aberdeen harbour. The area is dominated by sub-alpine and semi-natural uplands in the west, and more intensively managed arable farmland and pasture in the east. The majority of the population in the area live in the city of Aberdeen. Land in the east, and around other settlements is a mosaic of small land-holdings, many agricultural. In the uplands land ownership is concentrated in large estates, whose economies mix sporting forestry and hill-farming. Recreation and tourism, such as salmon fishing, are important throughout the river (Cooksley, 2007).

> The overall aim of the partnership is to '*protect and improve the catchment's waters, creating a catchment that can adapt and so continue to thrive under climate and land use change'* (Dee Catchment Partnership, 2017).

This aim is expanded on through a series of objectives, which include both water quality and quantity issues, as well as focusing on particular aspects of aquatic and riparian ecosystems, and are listed on pages 40-41 of the Dee Catchment Management Plan summary (Cooksley, 2007). These objectives are planned to be delivered through projects which are laid out in the partnership's delivery plans. The most recent Delivery Plan (2016-2019) presents twelve projects which focus on Natural Flood Management (Dee Catchment Partnership, 2017).

This Partnership was formed in 2003 when, in light of the WFD and the designation of the River Dee as a Special Area of Conservation, a Steering Group was created to develop the Dee Catchment Management Plan (Cooksley, 2007). Wider working groups made recommendations that were collated in the plan, which was drafted and put to public consultation in 2006 (Cooksley, 2007). The Dee Catchment Management Plan was then published in 2007.

The original Steering Group has evolved into a two-tier structure: a Management Group, and the wider Partnership. The Management Group is comprised of core funders, who contribute financial or in-kind resources. These currently include: public sector organisations – Cairngorms National Park Authority, Forestry Commission Scotland (now Scottish Forestry), SEPA, NatureScot (which at the time of our research was called SNH); and third sector organisations- Dee District Salmon Fishery Board and River Dee Trust, and The James Hutton Institute) (Dee Catchment Partnership, No date). There is a partner from the private sector - Aberdeen Harbour Board - who until recently was in the management group but now is an ordinary partner. The role of this core management group is to ensure the delivery of the Delivery Plan, and to manage the funding and staff.

The DCP has no single leading organisation: according to interviewees who were involved with its formation, when the partnership was established it was a deliberate choice not to be led by the statutory agencies. The current chairperson of the Management Group is a staff member of The James Hutton Institute but previously this role has been fulfilled by other partners from the Cairngorms National Park Authority, and Aberdeenshire Council. The wider partnership is chaired by an independent chairperson, unaffiliated to any of the partners. The James Hutton Institute hosts a part-time Partnership Manager, and is the designated financial controller of the partnership (Dee Catchment Partnership, 2017).

2.1.2 Poole Harbour Catchment Initiative

Poole Harbour Catchment Initiative (PCHI) encompasses one of the three sub catchments in Dorset, in the south west of England (Wessex Water, 2020a), and includes all rivers and streams that drain into Poole Harbour (Wessex Water, 2020b). It is a largely agricultural area, with over 75% of the land being arable and pasture lands. The area contains many sites of local, regional, national and international importance, and tourism is one of the predominant industries in the area. The population is approximately 250,000 people in the Borough of Poole, and 50,000 people living in the more rural upper catchments and county town of Dorchester (Wessex Water, 2020a).

The PHCI is co-hosted by Wessex Water and Dorset Wildlife Trust. It was formally established as a pilot catchment partnership for the CaBA in 2012 (Wessex Water, 2020b). According to interviewee EF, it was selected as a pilot because of its pre-existing well-established partnerships, and because Wessex Water – a key organisation in delivering some of the WFD water quality objectives – was available to host the initiative (public agency. More recently, Dorset Wildlife Trust became co-host: according to interviewee BC, this was motivated in part by allowing the partnership to receive funding from Defra.

> The partnership's aims are to achieve: '*sustainable farming, development, water use and sewage treatment that supports healthy rivers and groundwater in the Poole Harbour catchment; recognition of the ecosystem services that the catchment can provide and an adequate payment to those that manage the land to provide these services; improvement to biodiversity habitats both in the form of naturally functioning rivers, floodplains and wetlands and appropriately located woodland and low-input grassland; and national environmental standards for the benefit of wildlife, users of these waters, and Poole Harbour*' (Wessex Water, 2020b).

This partnership has a multi-tier structure: a Strategy Group, which is shared with another partnership in the same catchment (the Stour Catchment Initiative), is comprised of the regulatory or funding organisations (Wessex Water, the Environment Agency, and Natural England) with an overview of the partnership's strategy. A Delivery Group, comprised of a wider membership of organisations, is involved with the detail of developing and delivering its catchment plan (Poole Harbour Catchment Initiative, 2014b). In addition to the Delivery Group and the Strategy Group, other groups were created, such as an Agricultural and Land Management Group formed in 2014 to increase farmer involvement (Poole Harbour Catchment Initiative, 2014a), and recently formed Fisheries Group and Task Groups, which can involve organisations not part of the Steering or Delivery Groups (Poole Harbour Catchment Initiative, 2014b).

2.1.3 Hampshire Avon Catchment Partnership

The Hampshire Avon Catchment, an area of about 1,750 square kilometres in the south of England, rises in the Vale of Pewsey to the north of Salisbury and flows into Christchurch Bay on the south coast. It has a population of around 230,000 people, with only 2% of the area being urbanised. Within the catchment there are a number of sites designated for their environmental importance, including Sites of Special Scientific Interest, Special Area of Conservation and Special Protection Areas (Hampshire Avon Catchment Partnership, 2018).

> The vision of the partnership is of: "*healthy water bodies within the Hampshire Avon catchment which are valued and nurtured by residents, businesses and the wider*

> *community and which exhibit: naturally functioning flows, high water quality, sustainable and abundant wildlife, fully functioning ecosystems linking rivers with their valleys, and resilience to climate change and future socio-economic pressures".* (Hampshire Avon Catchment Partnership, 2018).

The HACP was established in its current form in 2013, although like PHCI, there were already some forms of collaborative working in the catchment. It is hosted by the Wessex Chalk Streams and Rivers Trust (now known as the Wessex Rivers Trust) (Hampshire Avon Catchment Partnership, No date), and both the partnership manager and chair are members of staff of this organisation, two interviewees for this HACP noted that they aim to find an independent chair. The HACP does not have a formal substructure. However, there is a group of partners that act as the core group of the partnership on behalf of the wider stakeholders (Hampshire Avon Catchment Partnership, 2018). The composition of partners has evolved over time, but at the time of data collection, these included: public sector organisations – the Environment Agency, Natural England, Highways England, Wiltshire County and Hampshire County Councils; the third sector – Wessex Chalk Streams and Rivers Trust, Catchment Based Approach, National Farmers' Union, Wiltshire Wildlife Trust, Catchment Sensitive Farming, Hampshire and Isle of Wight Wildlife Trust, Game and Wildlife Trust, Wiltshire Fishery Association, Cranbourne Chase AONB, Farming and Wildlife Advisory Group South West, Wiltshire Farm Clusters, Dorset Wildlife Trust, Wild Trout Trust, Avon Roach Project, Salmon and Trout UK and Salisbury Green Space Partnership; and the private sector - South West Water and Wessex Water (Hampshire Avon Catchment Partnership, 2018).

2.1.4 Spey Catchment Initiative

The Spey Catchment Initiative (SCI), in the north-east of Scotland, emerges in the Monadhliath Mountains and flows between these and the Cairngorms, through to the Moray Firth and the Spey Bay. The catchment area encompasses an area of around 3,000 square kilometres and has a population of approximately 25,000 residents. The main land uses in the upper catchment are hill farming, forestry and sporting estates, while the lower stretches are dominated by cattle rearing, extensive commercial forestry and arable farming. Two hydro-schemes in the upper catchment extract significant amounts of water from the Spey Dam (Spey Catchment Initiative, 2016a).

> The SCI's website refers to four priority themes: '*Delivering national and local government objectives for 2017-2022; Sustainable flood management, focusing on NFM opportunities and demonstrating NFM techniques; Improving riparian, riverine and wetland environments for multiple benefits; Education, awareness raising & getting people involved in the catchment*.'

These are consistent with the 2016 CMP (see section 3.1) additionally emphasising multiple benefits, sustainable flood management, engagement, whilst helping to deliver policy goals.

The partnership has existed since 1999 and a wide range of agencies, organisations, land managers and community groups published the first Catchment Management Plan in 2003. A subset of these partners (SNH, CNPA, SFB, FCS, SEPA and Highland and Moray councils) formed the early Steering Group (Cairngorms National Park Authority, No date). The current iteration of the SCI was initiated in 2010 as a two-year public-private partnership (Liski et al., 2018). The partnership is run by a Steering Group of the now twelve partner representatives. These include: public sector organisations– Cairngorms National Park Authority, Scottish

Environmental Protection Agency, NatureScot (which at the time of our research was called SNH), the aforementioned Local Authorities, Forestry Commission Scotland – now Forestry and Land Scotland and Scottish Forestry; the third sector – National Farmers Union (Scotland), RSPB, and the recently joined Woodland Trust Scotland; the private sector – Diageo, and the Spey Fishery Board (Spey Catchment Initiative, 2020; 2016a; Spey District Fishery Board, 2017). The SCI's Project Officer is employed by the Spey District Fisheries Board (SDFB) and works closely with their Operations Manager, while the steering group chair is the NatureScot representative.

2.2 Document collection and analysis

For each partnership, we first carried out a document analysis of existing secondary sources including catchment partnership plans and their websites. Using a template we analysed the documents to answer a set of analytic questions about the aims, constitution, context, progress and achievements of each partnership. We also used a template for the main partners involved in each of the partnerships, to answer questions about the aims of these partners, their role and representation within a partnership, and interactions with other organisations. The templates were completed by individual researchers as word documents, discussed amongst the research team and updated if required. They were then imported into an NVIVO 12 project database. Within NVIVO 12 we used the framework analysis approach (Ritchie & Lewis, 2003), where summaries of data from each partnership template are arranged in a grid to compare and contrast key characteristics of the partnerships. This analysis provided an initial understanding of the characteristics of each partnership, but was limited by the data sources not always including the nuances of partnership working, as well as by often not reflecting recent changes in the partnerships. We therefore carried out interviews with those involved in the partnerships.

2.3 Semi-structured interviews and their analysis

We carried out semi-structured interviews with the partnerships' coordinators/officers, chairs and representatives of the main partners: due to resource constraints and to the availability of partner representatives, we could not interview all partners, but we prioritised those who, from our document analysis, seemed to play a significant role in deciding and/or implementing partnership action, and to represent a range of partner types, e.g. statutory environment agency, local authority, third sector, private sector.

Interviewees were identified through the document analysis. We initially contacted the coordinators or project officer of each partnership to invite them to participate in the study, and we then contacted the partner representatives. In some cases, the interviewer already knew some of the participants, particularly those based at the James Hutton Institute. Before each interview we sent interviewees a summary of our findings from the document analysis, to verify our findings and to help steer the interviews towards the gaps in our knowledge. Interviews were guided by a topic guide (Annex A) informed by the literatures on environmental governance, environmental partnerships and collaboration.

Interviews took place between September and December 2019, typically lasted one hour, and were audio-recorded and transcribed with the informed consent of the participants. In total we carried out 21 interviews with 22 individuals (in one case we jointly interviewed two people representing the same partner). We used NVIVO 12 to thematically 'code' the content of these transcripts. To increase the rigour of the approach, we ensured that each researcher

coded transcripts of interviews that they had not conducted themselves, and the team met to discuss our different interpretations of the data. A shorter interim version of this report (Waylen et al., 2020) was returned to interviewees to give them the opportunity to correct any misunderstandings or expand on any of the findings. Eleven interviewees responded with feedback on that interim report.

2.4 Ethics and data management

This work was approved by the James Hutton Institute ethics committee, and the data collected has been processed, stored and managed in compliance with the EU General Data Protection Regulation (GDPR). The partnerships and partners are identified and identifiable in this report, but it is our intention that quotes and evidence cannot be linked with individual interviewees. To this end, within this report we refer to interviewees using pseudonyms, by reference to their organisation or sector, or to the partnership they are involved, but never provide all three items of information altogether since this may jeopardise confidentiality. We are very grateful for the time and willingness to engage with us offered by respondents from the four partnerships.

2.5 Limitations of this research

In this research we chose to carry out four in-depth case studies, rather than studying a larger number of cases more superficially. Our findings are therefore not generalisable to all Catchment Partnerships, particularly those set in different contexts outwith the UK.

Our data are in-depth but nevertheless can never claim to represent all views and aspects of the studied partnerships. Firstly, partnerships vary in the extent and amount of documentation generated and that was publicly available for us to capture and analyse. Secondly, the interviews do not capture every view of partner representatives. We were not able to interview representatives of all partners, due to our resource constraints and to the availability of interviewees, and therefore we may not capture every individual perspective, the study does include representatives from a wide range of partner types, including government agencies both in Scotland and England, local authorities, private sector organisations, and third sector organisations. Further, we only interviewed people who are currently part of the partnerships, and not those who have either left or who have decided not to join. This omits the views of those who do not see the value of participating in a partnership, or who may have had a negative experience as a member. In addition, there are often changes in partner representatives, meaning that the people we interviewed did not always have direct knowledge of past work done by a partnership, and of its evolution over time. Finally, due to time constraints, it was not possible to discuss every topic in depth with every interviewee. Additionally, participants may not have wanted to discuss sensitive or negative issues, particularly those who we did not know prior to this study.

3 Findings

This section first summarises the goals and achievements of the partnerships (section 3.1), and then go on to discuss the characteristics of the partnerships themselves (section 3.2), and finally the interaction with the wider governance context (section 3.3). Within each of these sections, the content is structured in response to the emergent themes and especially issues that seemed relevant to the delivery of multiple benefits. Some themes bubble up in more than one place - for example the importance of coordinators, the effect of external constraints – these are important issues that we return to in the discussion (section 4).

3.1 What are the partnership goals, do these align with policy objectives, and to what extent are these being achieved?

The CPs in our study used "aims" or "goals" interchangeably to describe desired, high level, outcomes for their work. Where "objectives" are stated underneath higher goals, these might be more focussed, but tend not to specify the activities involved. This loose use of terminology might benefit from a more consistent definition of aims, goals, and objectives, for example[c]:

- *Aims:* desired outcomes, general (e.g. improved water quality, restore riparian habitat)
- *Goals:* specific statement of intent, perhaps quantifying the desired progress
- *Objectives:* An action or set of actions required for goals to be achieved

3.1.1 Summarising partnership goals

Comparisons of the Catchment Management Plans (CMPs) demonstrated similar overarching goals for each of the four CPs. These are detailed in Table **2.** There were shared high level aims for improving the water environment in the catchment to provide benefits for both people and nature. Additionally, both Scottish CMPs referred to engagement with communities and wider stakeholders.

Table 2: Partnership aims and objectives as per the Catchment Management Plans.

Dee Catchment Partnership	***Hampshire Avon Catchment Partnership***	***Poole Harbour Catchment Initiative***	***Spey Catchment Initiative***
Aims to protect and improve the catchment's waters, creating a catchment that can adapt and so continue to thrive under climate and land use change. It has three objectives: 1. To protect, enhance and restore the natural processes that maintain the health of the river system - by undertaking project work on the ground. 2. To promote widespread knowledge and understanding of the river system amongst the catchment's communities and interest groups - by	Goal of healthy water bodies within the Hampshire Avon catchment which are valued and nurtured by residents, businesses, and the wider community and which exhibit: • Naturally functioning flows; • High Water Quality; • Sustainable and abundant wildlife; • Fully functioning ecosystems linking rivers with their valleys; • Resilience to climate change and future socio-economic pressures.	Overarching aim to improve the water environment and provide wider benefits for people and nature at a catchment scale – known as a Catchment Based Approach (CaBA). The PHCI aims to achieve: • Sustainable farming, development, water use and sewage treatment that supports healthy rivers and groundwater in the Poole Harbour catchment; • Recognition of the ecosystem services that the catchment can	There are three goals: • Demonstrate integrated catchment scale management by protecting and restoring natural features and characteristics of the Spey catchment; • Raise awareness and understanding of the whole river system and engage with stakeholders and communities within the catchment; • Further development of the Spey Catchment Initiative. There are Eight strategic aims, which are linked and sub-divided further into priority actions in relation to different drivers,

[c] https://bizfluent.com/info-8665605-differences-between-aims-goals-objectives.html

providing information and education and involving people in the work. 3. To achieve shared understanding and common purpose in the use of the catchment's water resources - by promoting, driving and facilitating an integrated catchment management process.	The HACP seeks to realise these ambitions through Four Aims: • Committing to working together for better outcomes for the water environment of the Hampshire Avon catchment; • Ensuring that ecosystem services provided by our rivers are recognised and valued in decisions about land and water management; • Developing a shared understanding of the issues facing the catchment, and a shared ambition to take action to resolve them; • Developing our own measures of success framed around enhancement of natural environment of the Hampshire Avon catchment.	provide and an adequate payment to those that manage the land to provide these services; • Improvement to biodiversity habitats both in the form of naturally functioning rivers, floodplains and wetlands and appropriately located woodland and low-input grassland; • National environmental standards for the benefit of wildlife, users of these waters, and Poole Harbour.	funding and delivery mechanisms: • Water Quality; • Control of River Water; • Fisheries Management; • Habitats and Species; • Farming; • Forestry and Woodland; • Access and Recreation; • Community Economic Development. The 2017 SCI Business plan also refers to four priority themes: • Delivering national and local government targets for the Spey catchment for 2017-2022; • Sustainable Flood Management, focusing on NFM opportunities and demonstrating NFM techniques; • Improving riparian, riverine and wetland environments for multiple benefits; • Education, awareness raising and getting people involved in the catchment.
Source: https://www.deepartnership.org/our-work/catchment-management-planning/	Source: https://wessexrt.maps.arcgis.com/apps/MapSeries/index.html?appid=ce58ac7bbb5c455eb2302633e2890be8	Source: https://www.wessexwater.co.uk/environment/catchment-partnerships/poole-harbour-catchment-partnership	Source: https://www.speyfisheryboard.com/wp-content/uploads/2016/12/SCI-2016-Catchment-Management-Plan.pdf

The goals and objectives of the CMPs are used to help specify and choose activities, although the plans are not necessarily used as a checklist to choose actions. Our CPs varied in the extent and approach by which they analyse and revise their aims and objectives, and the actions within them (see section 3.1.3.1).

3.1.1.1 To what extent – and how – are multiple benefits referred to in these goals?

The high level goals of partnerships all describe the need to improve the water environment for both people and nature. While such descriptions do not explicitly refer to multiple benefits, they establish a holistic starting point that may help prioritise activities that achieve a range of outcomes. For example, removing a migratory fish barrier can potentially provide a range of benefits, e.g. to flow management, river morphology, benefiting other species, etc.

We note the understanding of 'multiple benefits' can be relative. For example, interviewee BC, from PHCI, noted that they began with a narrow focus on water quality and later broadened out to multiple benefits of "water chemistry and turbidity" – this is arguably still a narrow interpretation. Multiple benefits can extend beyond water quality to incorporate other societal goals, such as considerations of water quantity, biodiversity, recreation, education and land-use. Our partnerships can perhaps be described as having a 'core' focus on multiple aspects of water quality and ecology, but all consider other issues such as flood risk reduction or recreation. The term "*ecosystem services*" is widely used in the more recent

CaBA partnership documents to describe our relationship with natural resources, whereas the older DCP and SCI documents talk about river systems and natural features. Terminology continues to evolve, with "*nature based solutions*" increasingly being discussed as a way to mitigate certain pressures or achieve multiple benefits.

Delivering multiple benefits was noted by several in the Scottish partnerships (e.g. interviewee UV from SCI), as a natural outcome of cross-sectoral partnership working. They point out that the drive for efficiency and value for money leads to planning activities capable of realising multiple benefits, something which is reflected in their CMP. Where CMPs list activities with several partners assigned to them, these tend to be the ones delivering multiple benefits, with each partner contributing skillsets or resources to achieve a complex objective or to broaden the benefits of an activity. The partnership provides the *"extra support"* of staff resources and knowledge that allows partners to *"go that step further"* when designing the detail of funded actions (Dee SFB, OP).

Several interviewees from the English CPs suggested that recent changes in funding available were becoming more supportive of activities that delivered multiple benefits, especially Natural Flood Management (NFM). NFM involves: "*techniques that aim to work with natural hydrological and morphological processes, features and characteristics to manage the sources and pathways of flood waters*" (SEPA, 2015b). Additionally, some PHCI interviewees anticipated that the next cycle of WFD and FD related work will provide more opportunity to plan for multiple benefits, especially through river restoration work and NFM, incorporating discussions around land ownership and payment for services. This demonstrates the influence of policy, a theme we return to in section 3.3.1.

Some of our private sector interviewees in the English partnerships reflected that water company involvement in partnerships has resulted from prior organisational learning that water quality problems are difficult or inefficient to resolve separately, and in isolation from other organisations. The business plans of organisations such as Wessex Water now reference the need for catchment-scale solutions, rather than focusing on single issues or assets. Thus, when they join partnerships, they can reinforce the pursuit of multiple benefits. However, from our data, the non-privatised Scottish Water does not much engage with CPs to work in partnership on these issues. The role of the private sector is returned to in section 3.2.1.

In summary, planning for and achieving multiple benefits is often seen as an emergent property of partnership working, particularly in relation to complex catchment-scale problems. Funding sources accessed by partnerships have not always rewarded this, but some interviewees were optimistic that delivering multiple benefits will be more fundable in future.

3.1.2 Are the partnership goals aligned with WFD and FD objectives?

The WFD sets broad and ambitious goals for improving the ecological status of our water environment, whilst the FD sets rigorous procedures for flood risk management. Furthermore, each partnership includes partners with a statutory remit for either WFD or FD (primarily EA, SEPA and Local Authorities – see section 3.2.1). For example, the interviewee UV observed that the SCI emerged out of a strategic alignment of statutory agencies and Local Authorities in the catchment. It is therefore unsurprising that many aspects of CPs' objectives are aligned with these policies – especially the WFD – and reflected to some extent in CMPs.

3.1.2.1 Catchment objectives and the WFD

The concerns and framing of the WFD are a strong influence on the partnerships, though their documentation does not always use WFD terminology (e.g. 'pressures' and 'measures'). Interestingly, only two of the CPs (PHCP and DCP) incorporate or acknowledge harbour and coastal water issues, which is encompassed by the WFD. This may in part reflect appropriate partners being available, such as the Aberdeen Harbour Board for the DCP. Furthermore, the CMPs make it clear that they seek to address local issues beyond those identified in policy, and the Scottish CMPs quite distinctly emphasise their independence from policy.

In England Defra has introduced CaBA (Text box 1) to facilitate partnership working at the catchment scale, and to help align organisational plans, delivery mechanisms and reporting in order to realise WFD outcomes more effectively. This arrangement is not replicated in Scotland. The language and concerns of the WFD are therefore particularly prominent in the English CMPs, especially for the PHCI. The WFD's goal and definition of good ecological status is the major shared focus, and to a lesser extent more detailed provisions. (In particular, it is worth noting that the WFD has within it a remit for supporting business and urban regeneration, which is not mentioned by either of the CaBA-supported partnerships.)

A prior version of this partnership was a Defra pilot for what informed and became the current CaBA scheme. The PHCI's 2014 CMP explicitly states that a desired outcome is for surface water bodies in the catchment to reach good status as per the WFD, by 2027. Perhaps related to this, the PHCI also shows good connection with policy processes (see also section 3.3.1.3), working with the South West River Basin Management Plan (RBMP)[d] Liaison Panel and stating that where possible it aligns actions with opportunities for EU funding at the catchment scale, as well as Wessex Water's 2015-20 business plan. The HACP documentation also references the WFD, and its 2018 CMP (section 3.2) states that the WFD status "*is not detailed enough to work out the specific issues at the local level"* and additionally that the South West RBMP goals are insufficient for its chalk streams with SAC and SSSI designations. Thus, the HACP goals are aligned but more specific than those made directly for WFD policy delivery.

The SCI CMP contains much that is linked to achieving WFD objectives and its coordinator RS finds this valuable, as well as other objectives. Its 2016 review (Spey Catchment Initiative, 2016b) noted that much of the progress until 2015 was oriented towards fulfilling SEPA's WFD remit, or conservation objectives to sites and species where Natura 2000 legislation applied. The current plan (Spey Catchment Initiative, 2016a) explicitly references SEPA data on the waterbodies that did not yet meet Good Ecological Status as of 2014 and the (multiple) pressures associated with these failures, indicating the importance of these metrics in informing priorities and gauging progress.

However, RS also notes that the SCI tends to focus on activities in the upper catchment where fishing interests predominate, reinforcing a potential focus on WFD and fisheries-related goals. The language used here is important: "*alignment*" sounds positive and suggests optimisation of scarce resources, but one interviewee was concerned that giving preference to WFD-related objectives, may detract from other objectives – in other words, a concern

[d] River Basin Management Plans (RBMPs) are the statutory plans made under the WFD. In the UK their geographical scope usually encompasses several individual catchments.

about over-alignment with the WFD. Another interviewee from the SCI (UV) pointed out that some WFD objectives are addressed by other groups. For example, the Scottish Invasive Species Initiative carries out Invasive Non-Native Species (INNS) work on the Spey, which requires awareness of, but not integration with SCI activities. This demonstrates how, from the point of the WFD, CPs may not need to directly prioritise all aspects of and issues entailed by the policy: but knowing this would depend on their awareness of and engagement with other initiatives in the catchment.

3.1.2.2 Catchment objectives and the FD

All four CPs have objectives to manage high flows and the impact of flooding. In the case of the SCI and DCP, these are linked to reducing risks to communities and infrastructure, in line with the concept of Nature Based Solutions (NBS). The CaBA catchments were primarily focussed on flood impacts on biophysical aspects of the catchment, and none of the partnerships engaged strongly with FD's focus on engineered solutions for the built environment, or reducing economic damage associated with flooding in their catchments.

By contrast, Flood Risk Management Strategies (FRMS), the statutory plans made under the Floods Directive, all involve a mix of statutory agencies (SEPA/EA, Scottish Water/Water companies, Local Authorities) each with duties in terms of strategic mapping, flood warning and forecasting, flood protection works and maintenance. Their focus is reducing risk to built infrastructure, so often concentrate on urban and lowland areas. The main spatial overlap with partnership working is in relation to river morphology, obstructions and land-use impacts on water flow and storage.

We consider first the older CPs, the DCP and SCI, whose formation predates the FD. Documents from these partnerships that predate the FD still make some references to flooding, so demonstrating this topic has not been entirely driven by the FD. The DCP's management plan includes specific objectives and several activities to manage water quantity and reduce flood risk (though it predates the FD so naturally could not use any of its terminology or procedural references). Meanwhile, the more recent CMP for the SCI mentions the Flood Risk Management (Scotland) Act 2009, and links to SEPA's relevant FRMS (SEPA, 2015a) in relation to one of the SCI's eight strategic aims. It goes on to state that:

> *"a catchment wide strategic vision for flood management needs further development such that sustainable flood management is achieved wherever possible by the restoration of a more natural flooding regime. The challenge will be to find or develop funding mechanisms that recognise the downstream benefits – including to the Potentially Vulnerable Areas (PVAs) – that derive from appropriate up stream actions (outside the PVAs)".*

Key FD related objectives are incorporated into the CMP, and SEPA, CNPA and Local Authorities are identified as partners where appropriate, with partnership working required to achieve sustainable flood management. However, achieving this had not (yet) been a strong focus for the partnership.

Turning to the English partnerships, their more recent plans both show reference to flooding and specific reference to aspects of FD policy implementation. The 'vision' of HACP's 2019 CMP shows alignment with FRM by advocating naturally functioning flows and flood related climate change resilience, and there is a shared focus on partnership working, awareness

raising and capacity building, albeit with weaker alignment with the FD's economic and social objectives.

The PHCI's 2014 Catchment Plan references the then current Catchment Flood Management Plan and states that it will endeavour to complement the relevant flood risk management policies contained within. It mentions flooding in terms of increased run-off resulting in increased flood risk for properties and land downstream, and contains objectives to promote naturally functioning rivers and floodplains. These refer to effects on riverine ecology, rather than planning activities targeted at mitigating flood risk. It provides a link to the EA's water level monitoring gauges, and describes a small NFM project on Ripley Brook, it makes no mention of the statutory flood risk management plans. Similar to the Scottish cases, interviewee FG from the PHCI considered FD legislation itself to be "*too high level*" for CPs, and more within the remit of the relevant statutory agencies. One of the PHCI interviewees (FG) expected that much of the FD is dealt with via statutory organisations and funding arrangements: *"…flood risk improvements are co-ordinated by the Environment Agency and funded through direct grant in aid, supported by extensive and long-standing networks such as the Regional Flood and Coastal Committees*." However, the PHCI does incorporate some flood related activities (e.g. NFM) as part of local, multi-benefit projects. Two interviewees indicated that they wished for more focus on flooding related activities in the future.

There are some reciprocal links that indicate policy-led processes view CMPs as relevant to tackling flood risks. (Note that in this study the Scottish catchment partnerships fall within the same RBMP but different FRMS, whereas both the English catchment partnerships share the same RBMP and FRMS.) For example, SEPA's Local Advisory Group for the North East, which includes the SCI, discusses FD related work, and the wider benefits of sustainable flood management are recognised in both the FRMS plans made under the FD, and the SCI's CMP. However, the connections do not seem strong, as the formal RBMP and FRMP plans do not reference the CPs. For example, the relevant Scottish RBMP places more emphasis on initiatives such as SEPA's diffuse pollution priority catchments or collaborative activities through the Water Environment Fund, an example of partnership working with land-managers rather than the CPs. In SCI, neither the Local Authority for the lower catchment, nor the catchment coordinator saw the FD as an important driver for their CAP, as NFM was not seen as feasible at a scale sufficient to reduce risk to vulnerable areas. In England, the overarching South West River Basin District FRMP (2015-21) states that it involves working in partnership with local authorities, statutory agencies, Local Resilience Forums water companies, and other land-use interest groups, but makes no explicit mention of either the HACP or the PHCI when detailing flood related issues in these catchments.

In summary, all the CPs showed weaker alignment to FD than WFD policy (and so CaBA is not necessarily crowding out FD considerations). This is also reflected by cross-references but not deep collaboration between statutory planning processes and the CPs. In general there is interest in river restoration and NFM, but this is probably not a strategic choice to align with current FRMS, but rather a reflection of pre-existing partner interests and objectives. The adjusting and presenting river restoration in terms of NFM to signal its multiple benefits is hoped to increase funding opportunities. For example, a local authority partner in the SCI (TU) identified the inclusion of climate change adaptation for flooding as providing a focus for effort to tackle issues related to this across the catchment. Other than this, climate change policy was not much referenced in our data, but is clearly relevant to flooding.

3.1.3 To what extent are these goals achieved - what difference do partnerships make?

All the case-study CPs demonstrated some progress against their objectives, assessed by us both from secondary data i.e. references in websites or publicly available documents and primary data i.e. the perception of interviewees. We start by describing the monitoring and evaluation processes used by the partnerships, before going on to summarise our understanding of their achievements, based on the primary and secondary data.

3.1.3.1 Monitoring and evaluation processes

Reviewing partnership progress against objectives tends to be done by the steering group or equivalent (some or all of the partner representatives) comparing outcomes achieved versus objectives that were detailed in a CMP at least 5 years before. These reviews are not usually based on outputs planned *ex ante* under formal monitoring processes, but rather by tallying activities *post hoc* against objectives, post-hoc, offering an opportunity to reassess priorities, flag continuing issues, and incorporate new challenges. Quantified objectives for specific projects or activities are perhaps more likely to be provided when they have been proposed as part of funding proposals.

A variety of reasons were given for why a more rigorous assessment of achievements against planned objectives could be difficult or inappropriate. These range from: accountability (responsible partner or the voluntary partnership); lack of metrics, given that some objectives are not time bound, or are qualitative in nature; and some activities are easier to get funding for than others, so progress tends to align with funding priorities rather than catchment pressures. Monitoring can be challenging, even when resources allow. Many activities often have a lag until their outcomes will be evident (e.g. waiting for bankside trees to grow). Perhaps some objectives such as 'seek new funding sources' are inherently less easily quantifiable as creating X km^2 of buffer strips, but more specific sub-targets could surely be created under these.

Monitoring can occur in response to external drivers: monitoring of CaBA partnerships focusses on National Success Measures. These focus on partner representation and partnership processes and how these improve the cost-effectiveness of project delivery, as opposed to biophysical WFD targets or progress against planned actions. Assessments of progress against objectives are used to identify gaps, refine priorities, and refocus the partners. The data reported to CaBA are presumably also used there, though it is not clear how. The CPs in Scotland have no external evaluator, except for funders of specific projects.

The attention and approach to monitoring is shifting for some of the partnerships. This can result from internal learning. At the time of our research the DCP was for the first time carrying out a systemic evaluation, grouping activities undertaken, and their progress, under headline objectives (Interviewee NO). There was debate about if and how its ambitious, wide ranging CMP should be updated in light of this. The plan was a decade old yet rewriting it would be an onerous task: the partners were considering a more adaptive approach to objective setting and planning, without making a complete new CMP. With a similar motivation the HACP have recently developed an 'online story map'[e] intended as a dynamic platform to share and demonstrate their plan, rather than creating a standalone CMP

[e] https://wessexrt.maps.arcgis.com/apps/MapSeries/index.html?appid=ce58ac7bbb5c455eb2302633e2890be8

document. At the time of our research it was already live online, though interviewees felt further development and content was needed to represent all of the planned, ongoing and completed projects. Once fully operational it was hoped that it could assist the partnership to monitor and review progress and to update plans as needed. One interviewee (UV) from the SCI even suggested that a future evaluation should consider activities beyond the partnership itself to acknowledge the contribution by others*:*

> *"by other people through other processes such as the Water Framework Directive. I* would be looking at what's happening in terms of the river as a whole and then the Catchment Initiative is one of the mechanisms for delivering positive work but there are lots of others".

Overall, the DCP, HACP and SCI report seem to be moving towards a more adaptive/pragmatic process of rolling updates from partners, steering group oversight, and 'live' management plans. However, a lack of clear baseline and evaluation process may often make it difficult for partnerships (and observers) to evaluate their past achievements in relation to their objectives.

3.1.3.2 Assessments based on documentation

It could be difficult to obtain a good overview of whether activities and achievements by the partnerships matched their objectives, not only for ourselves but also for interviewees. (At the time of our data collection, SCI was the only partnership to carry a systemic appraisal of progress framed in terms of the objectives, and to make that publicly available.) We therefore synthesised the main actions taken by each partnership, based on written sources such as websites and newsletters. These summaries and the source material used can be found in Annex B on page 71.

All of the partners had significant projects or multiple activities related to morphological improvements, e.g. instream or riverbank restoration. For example, restoring physical habitat diversity was a prominent activity for HACP. The partnerships also had activities to improve riparian habitats, especially in the DCP, which had a strong focus on tree-planting as well as INNS removal. As such, restoration projects were often noted to have multiple benefits e.g. to recreation and education, as well as habitats, biodiversity and water quality. Restoration projects can often be expected to have benefits for flood risk management (i.e. through NFM), though this was not a strong emphasis at least in the completed projects. Information sharing was a strong focus for subobjectives related to flooding, perhaps reflecting that this is a relatively recent topic for the partnerships.

Achieving change on the scale required to tackle the problem was noted as a challenge by the PHCI. Although it attempted to tackle the problems of nitrogen and phosphorus pollution and sediment loading, the scope of change did not match what was required, which would entail widespread land use change. By contrast, river restoration was rated as *"getting there*", perhaps because this entails only engagement with landowners adjacent to the river bank. The DCP did mention several activities further away from the riverbank, mainly to improve hydrological functioning through restoring wetland drainage. Perhaps it is not a coincidence that they also had a plethora of activities related to guidance and engagement with local residents, land-managers, fishers and visitors.

3.1.3.3 Partner perceptions of achievements

Catchment Partnerships were generally understood to make a positive difference. It was commonly believed that Catchment Partnerships can assist partners to achieve their own objectives and especially to help agencies to achieve, and in some cases go beyond, statutory requirements.

Interviewees could typically describe several partnership activities or projects – especially those that their own partner was involved in – and could relate these to catchment objectives as incorporated in their formal plans. However, several interviewees – especially those relatively new in their role – were not confident they had an overview of all activities. Progress against objectives is often incremental, as multiple individual projects are needed to contribute towards a larger goal (e.g. removing a % of fish barriers, or planting x% of a target for riparian woodland). This can make it difficult for individuals to confidently gauge the scale and scope of progress. Those that were more confident sometimes felt progress was uneven: for example, QR felt the DCP had "*yes definitely achieved some things and not others".*

The list of outcomes and benefits of partnership working that were mentioned by our interviewees went beyond progress to the headline objectives for water quality and other issues. In particular, during all our interviews, various forms of knowledge-sharing and communication was mentioned as a valued part of partnership working, both between partners and outwith the partnership to landowners, communities and stakeholders. This can be seen both as a benefit in itself and as a means to other outcomes, though hard to capture and measure. "*I do think some of the benefits are a bit intangible because it is the communication, it is the kind of working in a much more joint way* (FG, PHCI partner).

Partnerships were valued as: "*it puts you in contact with other organisations where you can find out things and possibly learn how you can work together*" (OP, a DCP partner). Identifying new funding streams and strengthening applications to them was often cited as something it was useful to learn about, but knowledge sharing went beyond this. Other knowledge-sharing involved: learning about partner priorities, process and resources; sharing data and site-specific knowledge; co-designing and improving planned activities to deliver multiple benefits; and coordinating partners to avoid duplication and identify gaps in planned activities. Forging individual connections seemed important in this. JK, at one of the environment agencies, even talked about facilitating "*relationships*" as the main direct benefit of HACP, enabling other benefits to be achieved. These individual and institutional links were valued in themselves, and could help more efficient use of existing resources.

> *"communication means we work in terms of 'value for money' and making the most of funding posts and the money available to deliver practical work on the ground, we deliver that really effectively".* (HI, a HACP partner)

Good relationships and shared knowledge can also assist in working towards a shared vision and a forum for agreement, ideally moving beyond short term and siloed planning to achieve holistic water management.

The role of the coordinator was frequently linked to communication and knowledge-sharing. For example, the representative of one of the government agencies in PHCI (EF) stated that: "*from my understanding the key part of the Catchment Coordinator post isn't necessarily*

decision making. But it's about sharing information and it's a conduit of information to the Partnership".

Several interviewees felt little additionality would be offered by the partnership, if not for the coordinator. For example, TU, representing a public sector organisation in the SCI thought the partnership had "*massive value"* but was *"99% certain"* that ongoing projects in Strathspey and lower Speyside would not be happening without the SCI and its coordinator.

The coordinator and any other partnership staff could also liaise with other stakeholders, especially land-owners (individually or in groups) and also other local citizens. As GH from HACP put it, the catchment partnerships are regarded as having a "*more neutral perspective*" and not being "*pushy"*, than public agencies or other organisations. The DCP has been particularly active in engaging with other groups, such as septic tank owners and recreational river users. Interviewee PQ said the engagement work of the DCP was especially effective when it was able to employ a dedicated outreach officer.

> *"As a model it's fantastic, as a knowledge sharing thing, I think it achieves a lot more than people realise"* (ST, a partner representative in the SCI)

However, these claims come with exceptions. A handful of interviewees felt that many activities might have occurred without the partnership, either because of statutory requirements or because stakeholders would have instigated their own projects. We note that these few individuals came from organisations that were particularly well-networked, and able to deliver their own work in the catchment. Most exceptionally, a key PHCI partner (EF) could not think of any projects that would not have happened without the partnership and felt that: "*there's lots of join up and coordination, but in terms of delivery on the ground it's still quite ...traditional… The overall sum isn't more than the individual components*".

An interviewee from a DCP NGO partner (OP), felt that the past success of the partnership in building relationships and sharing knowledge meant that partners now knew how to work together for delivery, so the future role and persistence of the partnership should be reviewed. None of the other interviewees expressed doubt of the current value of their partnership. However, even for the majority of interviewees who felt the partnership had and was still making a positive difference, they acknowledged that 'proving' the difference made by partnerships (i.e. its 'additionality') was challenging.

It was also noted that while CPs can make holistic plans that support the delivery of multiple benefits, in practice they may be constrained in doing so by insufficient resources and multiple accountabilities. Firstly, as noted above, a strong theme in our data was the importance of the coordinator or project manager in facilitating outcomes for the partnership; as well as other individual representatives linking and spearheading work. For example, the coordinator of one of the CPs stated: "*nobody else individually has the time to pull it together like that. That's why I'm here. That's absolutely why I'm here."*

However, where delivery relies on the coordinator to manage, their capacity limits how many activities can be achieved, for they are typically employed as coordinators in part-time roles. Conversely, where the coordinator is not responsible for delivery, this means they must rely on partners' interest and capacity. The role of partners and other partnership characteristics is explored in the following section 3.2. Secondly, external events and funding can shape what

partnerships achieve. Partnerships have to be opportunistic to capitalise on new funding streams (SCI partner ST). This may mean that some planned projects are completed, while projects of equal importance may remain on the shelf. Thus, external constraints on partnerships may explain why they do or do not achieve – this is a theme returned to in section 3.3.

In summary, Interviewees feel that, overall, CPs do achieve more in terms of actions on the ground, than if the partners were working separately. This was via providing a coordinator to identify and manage bids for funding, and acting as a means to pool resources (staff, expertise and funding) for specific activities. Other benefits – perhaps less tangible or intermediary – were a variety of types of knowledge sharing, improving relationships between key actors and across sectors; Implementing or improving communication and engagement with land-managers; Improved capability to coordinate and win funding to implement actions.

3.2 What partnership characteristics explain these experiences and achievements?

Partnerships are promoted as being more than the sum of their parts, but understanding those parts is important to understand and explain the achievements of the partnerships. This section therefore considers who were the main partners in the four CPs we researched; potentially missing partners; whether their organisational objectives aligned with the partnership objectives; how the partnerships are experienced; and to what extent the partnership composition affected the partnership achievements.

3.2.1 Who are partners in these partnerships?

The four CPs involve nearly 70 different organisations, albeit not all with the same degree of activity and input to the partnership. These partners come from the public sector, third sector and private sector, thus confirming that CPs are indeed examples of new environmental governance, given the multi-actor involvement. Some partners are present in multiple partnerships, particularly those with a national or regional remit (e.g. Environment Agency, Wessex Water). Some partners can also represent different issues and interests simultaneously, notably NGOs and local authorities, being both riparian land managers and representing wider policies on behalf of their members or elected members respectively. Most partnerships have grown over time, with more NGO interests joining them.

In terms of the **public sector**, there is always representation from statutory environmental agencies that already have responsibility for WFD implementation and nature designations. However, their statutory responsibilities mean they may also be the 'licence giver' to enable interventions planned by CPs. Their participation can potentially make the partnerships seem 'government driven' although the neutrality of partnerships is a key advantage (see section 3.1.3.3). There is an interesting difference whereby Defra had a strong role in setting up CaBa partnerships, whereas there seems to be less direct influence of Scottish Government on the Scottish CPs. This is potentially related to the role of the environmental agencies: SEPA, the lead for WFD delivery in Scotland, currently seems to have a muted role in SCI and DCP.

All partnerships involve two Local Authorities. However, Local Authorities have broad remits and may be involved to make the link with the urban planning processes, road maintenance or their statutory duties regarding biodiversity. The local authorities are also associated with local democracy and a conduit for engaging local communities of place, rather than

communities of interest. It has proved difficult to disentangle, from our data, what role the Local Authorities were expected to play in the partnerships. It seems rather variable: e.g. Moray Council engage specifically for flooding issues, but HACP Wiltshire Council representation focusses on environmental protection, and coordinators didn't know the original expectations for the local authorities when they joined the partnerships. It may relate to the original roles and motivations of individuals who represent them. The SCI also involves a National Park Authority (which is a blend of planning authority and enabling conservation agency). The impact of UK public sector austerity is important particularly for all public sector partners, as it may influence what activities they can support: "*I only just have enough resources to do our bare statutory requirement*." (TU, SCI).

In terms of the **third sector**, all partnerships involved NGO partners, with NGOs hosting or co-hosting all four partnerships within their organisations. These NGOs primarily represent fishery, riparian interests, land management or wider environmental issues. The majority, but not all, are membership organisations. There were also academic partners in 2 of the 4 partnerships, whilst the HACP and SCI don't formally have academic partners but do exchange information with researchers. Unlike public sector organisations, the Rivers Trusts (Fishery Trusts in Scotland) and Wildlife Trusts were often portrayed as "*grass roots organisations"* thus "*in a position to lead on this sort of work*" (GH). This grass-roots identity was important for the positioning of the partnerships as working beyond government policy objectives and reflecting the interests and needs of the membership or wider publics that effect and are effected by catchment management.

As shown in section 2.1, NGO partners host or co-host all the partnerships. However, the interests served by NGOs are diffuse and contested, with some NGOs being potentially representative of 'private' sector members (see section below on problematic typologies).

In terms of the **private sector** partners, only 3 of our 4 partnerships have an obviously 'private' sector partner who provides funding from non-government sources for the partnership: Diageo in the SCI and Wessex Water in HACP and PHCI. The DCP did have Aberdeen Harbour Board on its management group, a quasi private sector organisation, but it had recently stepped down from this role. Diageo is a valued funder for the SCI, yet is only one of the whisky industry companies active on Speyside and there have been questions asked about why other companies do not also support the SCI. A further contrast is between HACP and SCI, whose private sector partners were relatively passive in terms of steering the partnership, and PHCI, where Wessex Water is very actively engaged. It co-hosts the partnership, hosts the chairperson, and is promoting upstream interventions to resolve downstream water quality and quantity issues impacting on their operations. Some other relatively passive private sector partners tended to engage on specific projects (e.g. South West Water in HACP) rather than supporting or attending partnership processes themselves; whilst interview data make reference to other private sector actors (e.g. individual landowners, or other commercial companies) working in the catchment on similar objectives but not part of the formal partnership umbrella organisation. There is a strong English-Scottish divide: both English partnerships involved water companies, including part-funding by Wessex Water but Scottish Water was much less actively involved in Scottish CPs. Therefore, in terms of the current interest in engaging more private involvement, our data suggest that even where there are the same benefits to be had in using a CP to intervene upstream for private sector benefits downstream, in practice this doesn't always equate to

strong private sector involvement in the partnership (see also section 3.2.3 on partner objectives below).

Finally, the combination of the interview and document analysis revealed some problematic categorisations, meaning the above summaries need some additional discussion. Firstly, the definition of partner. The partnerships studied are not all formal constituted partnerships in legal terms: indeed the SCI doesn't use the term partnership precisely to avoid suggesting this formal business arrangement. Therefore, whilst many partnership documents list 'partners' there was no clear definition demarcating a partner from a stakeholder involved in partnership projects. Many of the interviewees weren't sure how the original partners were selected, but a narrative emerged of path dependency, by which the CPs developed out of a group of organisations who had worked on predecessor or parallel partnerships (in the case of HACP, PHCI or SCI); or needed to collectively respond to the statutory drivers of WFD and SAC (DCP). There seems to be an adaptive process of coordinators/catchment managers undertaking stakeholder analysis and inviting organisations where gaps are noted. This process is informal – new partners are not necessarily ratified by the group. Furthermore, interviewees suggest other groups and individuals are welcome to attend partnership meetings to share information. There *are* some clear roles and responsibilities among partners with funding, staff management or project delivery responsibilities, as signalled by the formalisation of 'management' or 'steering' hierarchies (see section 2.1). There is an interesting, often implicit, issue about the distinction between who is an active partner (steering or managing the partnership) and who is a member (participating in or supporting specific partnership activities or task groups). Sometimes the distinction is formally defined – for example, NO talked about an *'inner*' and '*outer*' circle in the DCP, corresponding with their management group and wider partnership. In other cases, the spectrum of roles is implicit. Furthermore, not all organisations identified as partners are equally active. In some cases, delivery of CMPs relies on organisations not always named as partners, whilst other cases, named partners seem somewhat passive or inactive during some phases of the partnership. Lastly, partner representatives may belong to more than one organisation, thus informally representing stakeholders who are not explicitly in the partnership.

Related to this, the unit of analysis for a 'partner' can be unclear. Although we expected an organisation – a single legal entity – to be a partner, in some CPs, other projects delivered by a range of organisations were named as 'partners' – for example documentation for HACP referred to the Avon Roach Project, and PHCI referred to Dorset Local Nature Partnerships. In this project, our analysis has been structured at the unit of the organisation but often several individuals from the same organisation may be involved over the lifetime of a partnership. It is therefore important to consider the role of these individuals and how their backgrounds and histories might influence their partnership working. For example, for Wessex Water in HACP, the formal representative was relatively passive in terms of steering the partnership processes, but Wessex Water was greatly valued as a partner not only due to their financial support but also their scientific staff being incredibly helpful with data-sharing, or participating in meetings. In the DCP, a change in personnel at Aberdeen Harbour Board precipitated a review and then withdrawal from the management group in the partnership: "*So that was probably an example of an individual interest pushing the representation of an organisation and as soon as they left that organisation the Partner dropped out*" (OP, discussing change in the DCP).

Thirdly, it is difficult to attribute some partners to clear categories of 'public' or 'private' sector. One can define them due to intrinsic characteristics e.g. ownership, funding (Government or from shareholders or other businesses) or by the beneficiaries they serve (whether seeking to benefit the wider public(s) or their own members/shareholders). This mirrors findings on debates around different definitions of the 'public good' and the recognition that often such arrangements are 'hybrid' such that both public and private sector organisations act in similar ways in structures such as CPs. Some organisations represent stakeholders from different sectors, e.g. the Dee Fishery Board represents individuals who hold fishing rights but also have a representative from SEPA and SNH.

Therefore, the CPs encompass organisations with a remit to act in the public interest - potentially interested in delivery of more than one public good (e.g. local authorities, statutory agencies); organisations that focus on the delivery of one or few public goods - these organisations may have members but don't act for their instrumental benefit (e.g. NGOs); and finally organisations that act to benefit their members/shareholders/owners i.e. single interest (usually), for whom delivery of any public goods is a bonus (.e.g. Wessex Water, Diageo, NFU(S). Although Fishery Boards and farming organisations are NGOs, they could be considered as representing private riparian and land manager interests. Indeed, they were valued as partners in allowing other partners to engage specific land managers in order to facilitate the smooth implementation of partnership projects.

In summary, we see partnerships engaging with and comprised of a wide and growing range of partners, from all sectors, but mainly dominated by the public sector and NGO partners. Private sector actors may become aligned when it strongly aligns with their perceived business interests. Simplistic counts of partners are insufficient to understand this variety, as there are diffuse types of partner, organisations and individuals involved.

3.2.2 Are there any missing partners?

Most interviewees felt the partnership had the 'right partners'; and many interviewees could not identify missing partners. Scottish Water was identified as an important missing partner in both SCI and DCP:

> *"We, along with all of the other kind of Partnership Groups around, just struggle to have active involvement from Scottish Water. They stand by to help us if we say Scottish Water we would like you to help us with this and then they say right we will help you with that thing. But what they haven't got the resource for is coming to Partnership meetings and being involved in that sort of predictable regular way" (LM, DCP).*

The only counter argument from our data is from partner representative TU (SCI) who argues Scottish Water covers so many aspects that it's hard to know who to send. However, this argument would also apply to other regional and national bodies such as SNH and Local Authorities who do manage representation across a range of statutory and non-statutory interests.

The importance of engaging the land-based sector was shared amongst all the CPs, and this brought out some interesting potential gaps during data analysis. Land-owners and managers (and other small businesses dependent on the rivers) are not direct partners, as individual businesses are too small and too numerous to engage with for the strategic partnership

meetings: instead they are represented via membership organisations e.g. NFU(S), FWAG and Riparian owner organisations. However, the National Farming Union (NFU) or NFU Scotland appeared to have very limited engagement with the CPs. Neither CLA- Country Land and Business Association nor SLE- Scottish Land and Enterprise were much referenced in our data, despite the fact that all four catchments have large estates with potential important roles to play in catchment management. There was also no formal forestry representation (private or public) in HACP despite forestry being important land use; nor were private forestry actors represented in the Scottish partnerships, though Forestry Scotland (now Scottish Forestry) was represented.

Furthermore, there are potential non-rural land-based businesses in catchments that could be but are not partners (e.g. distilleries in Dee Catchment, bio-medical organisations in the Avon). The Ministry of Defence and Building/Development companies were explicitly identified as important missing partners in HACP, and the urban development sector would also be important to the objectives for PHCI and DCP due to the urban developments within the catchments (Speyside is much more rural). There was strong appetite to work with wider private sector companies in DCP and HACP – to leverage private sector investment in natural capital. Trying to realign with the 'private sector' in HACP and PHCI requires the partnership coordinators/managers to learn "*business speak"* (GH, HACP). Quite separately, some interviewees for HACP and PHCI also questioned whether there should be community representation around access and cultural heritage.

There is a link between objectives, particularly widening the coverage of multiple benefits, and the 'right' representative. For example, there was increased interest in flooding within the PHCI (interviewee EF) but most of the individual representatives were focussed on quality issues. Likewise, all catchments have a coastal and marine dimension but this is not in the expertise of representatives. This is linked to issues of geography and scale. Partners tend to have remits that go beyond the catchment boundaries, with mainly only the fishery boards likely to be focussed on the catchment. Regional and national bodies are most dominant with some UK representatives (e.g. RSPB) and one partner with an international remit. The Scottish cases may have proportionately more 'national' than 'regional' remits due to much of the Scottish environmental governance relying on national not regional agencies and NGOs (e.g. compare Scottish Wildlife Trust to Dorset and Wessex Wildlife Trust). There are also difficulties engaging both upstream and downstream stakeholders within one partnership – e.g. PHCI decided to have alternate meetings for marine and freshwater interests, HACP struggled to get downstream actors to fund working upstream; SCI was mainly active upstream; and DCP currently has relatively little estuarine activity.

Over time, the set of partners involved has shifted slightly for all our partnerships. The focus of texts and interviews tended to be the addition of new partners, with less focus on when partners leave or reduce their role in a partnership. Only PHCI has acquired a new private sector partner, the rest of the 'new partners' have been public or NGO sectors. Although only the Harbour Board had officially left the DCP management group, we could discern that other partners have become more dormant or passive (farming and local authority interests in HACP, SEPA in DCP etc). Furthermore, one could have the 'right partner' but "*not necessarily the right people*" (KL, HACP). Individuals come and go, and this changes the dynamics of the partnership and means sometimes they have to renegotiate or explain past choices, but also gain new insights or ideas. This was observed in PHCI and HACP with the change in

Environment Agency staff, DCP with change in SEPA staff and across all four organisations when Local Authority representatives changed.

In summary, most interviewees did not nominate many missing partners, with the exception of Scottish Water for the Scottish CPs. However, sectoral and institutional analysis suggest there could be scope for other engagements e.g. with other land-based businesses, perhaps via membership organisations. Furthermore, some partners, through staff changes or resource constraints may change their type and level of engagement over time.

3.2.3 Are partner objectives aligned with the partnership?

The most common rationale interviewees gave for joining a partnership was that partnerships helped them deliver their own objectives, or reduced their costs through shared delivery. However, this can be nuanced depending on the partners, with a three-way split between stakeholder rationales for involvement in CPs.

Statutory bodies (i.e. EA, NE, SEPA, SNH) have underlying commitments to environmental improvement under WFD and Natura 2000 and flooding under FD. They could benefit by collaborating, by building trust, share information, improve skills in 'new' participatory working etc) and could use voluntary approaches to underpin and extend their regulatory tools. For example, SEPA in the DCP and CSF in HACP have increasingly been working with land managers to inform and encourage uptake of good practice that reduces diffuse pollution. Local authorities can use CPs to help with a variety of statutory objectives: for biodiversity designations, and for flooding, sometimes combining the two by promoting NFM interests in all 4 CPs. These representatives could also push the CPs into issues of community access to blue spaces (HI, HACP), cultural heritage (JK, HACP) or economic development (TU, SCI).

River or Wildlife or Fishery Trusts (NGOs) seemed to be able to more easily obtain funding and clearance if they could demonstrate their projects were developed with a collaborative approach:

> *"The current way that a lot of project, environment improvement projects, the criteria for that funding is through collaborative working and multiple benefits as you've already mentioned. So being part of it just gives…in theory should give access to that network if you like and potentially funding to carry out the work that we're all about doing.'* (GH, HACP)

In particular, funding is often attached to policy (WFD, Floods or Natura2000) objectives, whilst licences may be required to intervene in the riparian or river systems, so having a statutory partner can help with this alignment. Furthermore, participation or managing partnerships can allow rivers or fisheries trusts to ensure coordination and prevent duplication of effort, which national organisations, with less local knowledge, might unwittingly perpetuate. For example, the representative of a fisheries organisation noted that connecting and sharing ideas with others was the reason he wanted to get involved with the partnership. Often the interests of fisheries and NGOs align closely with statutory objectives to improve habitat and water quality.

Private or profitmaking bodies may be motivated by reducing costs (Wessex Water in HACP, PHCI) and gaining multiple benefits from investments (Diageo, SCI; WW, PHCI), or

demonstrating CSR (Diageo, Wessex Water), as well as helping to achieve a public good of better managed catchments (Aberdeen Harbour Board). Corporate Social Responsibility was not considered a sufficient reason to engage or fund CPs (Diageo, SCI), but sharing knowledge, understanding the needs and views of other stakeholders was highly prized, both by Diageo and Wessex Water Representatives. An interviewee from Wessex Water noted that the company understands that current and future environmental issues cannot be resolved in isolation, so WW is increasingly working in partnership to achieve catchment level solutions rather than focussing solely on assets under their direct control.

This alignment is complex and dynamically negotiated. The CPs we examined are not formal constituted organisations in their own right, but voluntary collaborations. Thus, to some extent, all partners need a 'return on investment' of their personnel's time and energy in the partnership. Whilst there may be a MOU or shared agreement, these are rarely invoked and not all partners knew about them. Therefore, these voluntary partnerships become the sum of the partners' interests and objectives rather than the other way around. For example, when describing the evolution of the HACP, the interviewee GH said: "*we have lots of strong individual organisations, so they might not really…the decision making process doesn't necessarily sit with the Catchment Partnership*".

In some ways, voluntary partners only join partnerships if their interests are aligned; and much of the work by the coordinators and/or strategic/steering partners is to find the 'value-added' focus and not try to incorporate all the activities of the partner organisations. The evolution of CPs (noted within following sections) indicates how these alignments can shift over time. The partners' influences have to be managed, particularly when the partnership is managing for public goods, whilst engaging and working with land managers and commercial organisations.

In summary, partner organisations engage when their organisational objectives overlap or align with partnership objectives: participation is never entirely altruistic. Their voluntary and informal nature requires partners to work at alignment, and these synergies can ebb and flow over time. The interactions of partners are valued and can feed into individual and organisational learning (section 3.1.3.3), are also part of this dynamic process.

3.2.4 How are the partnerships experienced?

This section considers issues such as roles and responsibilities, how decisions are made and the learning processes involved, in response to the attributes of good partnership working that were highlighted in Marshall et al (2010).

As section 2.1 suggested, there are a variety of **structures** and associated roles across our four cases. Some partnerships have a formal hierarchy in the partnership structure, with references to differently named 'core' or 'steering' or 'management' partners, whose roles may or may not be formalised (PHCI and DCP have two tier structures, others do not). Even where there is not a formalised substructure, there is often a distinction made between strategic and delivery partners, but there is often a lack of clarity for us about exactly who has authority and decision-making powers, and who does not.

For all our CPs, despite probing, it was not very clear whether or how decisions are made at partnership meetings. There are potentially two **types of decisions**, the first about choosing priorities and actions to be achieved by the partnership; and more procedural issues such as

the funding, management and accountability of staff. The first type, discussed in section 3.1.3.3 above, coincides with a narrative that the CPs are primarily about providing information, persuasion and engagement to make relationships work. Therefore decision making about priorities and projects is collaborative, and focussed on the art of the possible within constraints of project funding and statutory priorities (section 3.3). The second type of choices, about internal management of the partnership and accountability for funding may generate more discomfort: interviewees were less forthcoming about these issues, but the data we have suggest these processes tend to be more bi-lateral, with more influence from the host or a couple more partners. This could potentially generate an informal unspoken hierarchy within a partnership, though there was no critique of this in our data.

All the data seem to agree that the **partnerships are informal** in how they collaborate and how individuals interact, with all stressing the voluntary and friendly nature of the interactions. The SCI is the only partnership we know of with a formal MOU, though that doesn't seem to be enforced or followed by newer partners. A recent move by Hutton to formalise the partnership hosting agreement was driven by legal advice, but several interviewees felt this had distracted the partners from their focus on joint decision making and delivery on the DCP objectives.

There was very little explicit reference to **conflict and conflict management** in our data. There are references to conflict shaping how the partnerships were set up many years ago, but these conflicts have subsided. Whilst individuals might occasionally become frustrated with other individuals or organisations, they keep engaged due to a shared commitment to the partnership and its outcomes. Some even felt some conflict could be useful to generate discussion and improve mutual understanding:

> *"I think we probably all respect each other and know that we're all sitting around the Catchment Partnership table voluntarily because we want to help to improve the river. So anything that's slightly…that's contentious that's brought up in the meeting, we always find a way forward" (HI, a NGO representative in HACP).*

Our data indicate that when 'friction' is experienced, it is not necessarily resolved by a formal mechanism or a vote, but could be downplayed, resolved by providing partners with more information that changes their views, and/or discussed 'offline' with the chair or coordinator, and the organisations involved. This meant the focus of partnership meetings maintained a positive ethos, with a focus on consensus and mutual support, but might also risk some differences were elided when it might have been constructive to discuss them:

> *"There have been some individuals who've deployed whatever tactics they need to get their own particular…priority. You know it's easy within a group where you've got people who just want to do good stuff, who really don't want to argue, and who tend to behave well. It's very easy to influence such a group to take on your own agenda."* A partnership coordinator commenting on their partnership's meeting culture.

Some organisations host **coordinator and chair**, others have independent chairs. Although leadership is often discussed in the academic literature on partnership, our data generally gave much more emphasis to the importance of facilitating rather than leadership. This role

or skillset was linked to both the coordinator and chair roles. The exception was in the DCP, where the leadership of its chair was noted by several as pivotal to setting up the partnership, and later for ensuring partners fulfil their commitments.

> *"Knowing you've committed to certain actions and that you're going to have to report on them is good. As I say a lot of the ones that were written down in the early days have now been overtaken by a requirement to do these things by legislation, but I still think it focuses the mind a bit when somebody comes and says you know 'what have you done about this?' So I think that's really useful."* (PQ, DCP)

The complete independence of the DCP Chair was an important factor facilitating his ability to drive the partnership and hold partners to account, and **perception of independence** of chairs and coordinators was a strong theme across our CPs. For coordinators employed by host organisations, the personal boundaries between their host and partnership could feel "*blurry*", but, as an agency interviewee pointed out, to avoid unpleasant *"issues"* a coordinator had to be perceived not to overly favour one interest or sector. (Co-hosting arrangements in PHCI may be partly a response to this, as well as the practical requirement that CaBa funding must go to an NGO.)

It is clear that having a **coordinator** was highly valued in all four cases: "*I think if we didn't have a person in post, the Partnership would probably struggle to function much"* (QR, discussing the DCP). Note, for simplicity we use only the term 'coordinator' but not all in this role were called this: in DCP and HACP the term used is now partnership manager. Nor were all full-time: for example, the coordinator of DCP is currently employed in this role for 2 days per week, but was full-time when the DCP formed. In the preceding subsection, we diagnosed the partnerships as varying in the extent to which they focused solely on 'steering' or also had a remit for 'steering and delivery'. This correspondingly affects the duties and focus of the coordinators. In the case of steering CPs, coordinators were more like partnership managers, focused on managing relationships and decision-making; in 'steering and delivery' CPs like the SCI, coordinators were more like project officers, additionally or mainly focused on completion of specific activities. Indeed, in the HACP, according to interviewee JK, the coordinator had in the past focused only on delivery, which was now changing. In the DCP there was an ongoing debate about to what extent the role should be about facilitating the partnership or managing the DCP's projects. It can be easier to fund a coordinator whose role is like a project officer, rather than a partnership manager, as project officers are more closely connected to the funding associated with a particular river intervention. Coordinators are valued for the partnership manager role, through their knowledge, networks and influence on project delivery, but this can be difficult to resource from partner or other resources. As a result, coordinators often inhabit an insecure job with annual or limited term funding; resulting in significant staff turnover in three of our four CPs.

Active participation. Holding meetings and having a good mix of partners attending matters because, as noted in the following subsection, the mix of perspectives is valued: *"I think it's really good having the different Partners in there with different interests and different areas of expertise"* (PQ, DCP). Often partners provide information based on their roles in other projects or partnerships, or from their previous work experiences, to identify good practice, help streamline processes, and enable partnership work to be set in a wider context. It also

enables practical support, with participants discussing 'swapping' labour or other in-kind resources (e.g. data) to support other partnerships' project delivery. This kind of sharing whilst a project is being designed or delivered is seen as 'useful' for improving outcomes. However, partner representatives may only attend if they feel that they fulfil a need or have a specific role.

Internal **organisational constraints and changes** affect partners' contribution and experience of the CPs. In all four CPs, limited resources and inadequate funding affected the ability of some partners to attend meetings, or to contribute in other ways, e.g. in staff-time outside of formal partnership or to provide financial resources. In particular, partners were unable to commit funding in the longer term. Partner organisations were also constrained by high turnover rates among their own staff, with implications for continuity. Other challenges partners faced when contributing to a partnership are the difficulty in communicating lessons learnt throughout an organisation; mismatches between the scale of a partnership and the area an organisation operates in; the limitations imposed by regulatory bodies, and for hosts, potentially being liable for the Partnership.

In summary, CPs typically have a core group of partners who input resources and shape decisions, and a wider group of partners who participate only in certain activities or processes. In our data, decision-making processes were relatively informal and – perhaps related to that – relatively opaque, but with a strong focus on building consensus and maintaining a positive ethos of collaboration. There is little explicit mention of conflict in our data, though disagreements are perhaps reflected more by inactive partners or unexamined topics. In all cases, the coordinator role was highly valued, but there are differences in to what extent their focus should be on delivering partnership projects or managing it to deliver things themselves. Partners also value the mix of expertise and experience within the partnership and feel this helps with their processes and outcomes – a point which highlights the importance of partner composition.

3.2.5 To what extent did partnership composition affect achievements?

As described in section 3.1, the four CPs were focussed predominantly on improving the water environment, historically with more focus on the WFD and associated Nature legislation than the more recent flooding legislation. Whilst it was not always easy for the partners and partnerships to attribute positive outcomes for the water environment to the activities of the partnerships, the partners clearly felt that the partnerships had generated outcomes that would not have occurred otherwise. These outcomes were: to win funding for projects; to improve engagement with land managers and to improve mutual understanding of different organisations (e.g. statutory agencies and NGOs).

Mixing expertise: Firstly, the data suggests that the CPs helped to secure funding for projects, which in turn helped partners to achieve their own objectives (e.g. better water quality for water companies and to meet statutory objectives). In turn, CP coordinators were seen as central to the ability to deliver action on the ground, through their abilities and time to write successful funding applications and manage the reporting requirements for external grants or the CaBA scheme. However, partner representatives with different expertise (engineering, ecology, regulatory standards) can give great support to help the coordinator navigate the project process, from tendering to licence requirements.

Providing resources and authority: In general, though the participants argue that the CPs allow a more efficient way to access funding, this access is facilitated by pooling knowledge across the partners, who have varied experience about how much interventions cost, how to choose between options and how to meet criteria. Partners also share datasets, labour and expertise to deliver projects: this requires their organisations to have these resources, and also that the individual representative has the authority and willingness to act as a conduit to allocate organisational resources towards the CP.

Distributing resources and influence: In each partnership, several partners must also contribute to the 'core' costs of the partnership, most significant of which is the costs of employing a coordinator. Diageo and Wessex Water provide a very welcome 'top-up' to funding procured from public sector sources to pay for the CP coordinator/manager. Those organisations that contribute funding have a strong role in deciding what projects a partnership carries out, e.g. in PHCI the Steering Group is composed of regulatory or funding organisations. No partnership had only one or two major funding partners – this would probably convert the process into something led by the objectives of those partner(s).

Crossing sectors - NGOs plus agencies: The CP prioritisation processes, combined with funding application processes, allowed the CPs to 'go beyond statutory requirements' to achieve multiple benefits. For example, the combination of national and local statutory authorities together with NGOs has helped to spur action for more exploratory and experimental NFM approaches, as documented in the Spey, Dee and Hampshire Avon catchments. Again, this has relied on the combination of expertise, by which nature-based organisations (both NGOs and public sector) can highlight how to add biodiversity value to flooding interventions for example. The focus on 'strategic' or 'systems' approach requires the individual partner representatives to be able to look "*at things as a whole not as what was in the past various separate issues and not realising what the best links are*" (interviewee DE discussing their experiences of joined up thinking) something that seems to be partly innate and partly honed by a history of working across organisational and domain boundaries. Without these abilities, the partnerships would not be evolving as they are into NFM or other 'high hanging fruit' – such as NFM or river restoration - the complex systems level interventions that would not be tackled by individual organisations.

Aiding stakeholder engagement: The data suggest that the CPs rely on certain partners to enable engagement with the riparian owners and upstream land managers, who are essential to enabling any project to be delivered. Here the large, mainly statutory agencies but also Wessex Water and Diageo, rely on the catchment-based NGOs. These NGOs have the networks to know which land managers are likely to support projects and which to avoid, and have more credibility with land managers, so allowing them to discuss more challenging topics or persuade land managers to alter or stop practices (e.g. soil poaching). Although some described the CP as a "*great stakeholder engagement tool"* (KL, HACP) it is clearly the fact that these NGOs are part of the CP that allows the CP to offer this benefit. Stakeholders are not only farmers – the importance of engaging local communities and schools was mentioned in many interviews and the DCP had been particularly active in this area, especially when it employed an outreach officer. There may be more scope for CPs to work *with* rather than *for* local communities, though this might also require more partners whose primary focus was community development or educational engagement.

Appraising gaps: The missing partners section (3.2.2) earlier highlighted the relative lack of business partners, both rural and urban. This may constrain the ability of the CPs to access further funding or address other, non-agricultural, pressures on the water environment. In particular, all CPs face urban development pressures, potentially worsening pressures from abstraction and sewage as well as surface water flooding. However, at the time of our research there was little engagement on this topic. The local authority representatives variously represented flooding or environmental portfolios, and did act as a conduit to planning, but were not planners themselves. None of the CPs had private developers as partners to exchange information, provide data or help the CPs add value to proposed green or blue infrastructure processes.

Shared vision versus group think: Finally, there are very rich data on the benefits partners gained from interacting and learning from one another; and this has led, in their perception, to less conflict, less duplication, more 'added value' and increased strategic interventions in the catchment. However, potentially building mutual understanding and a shared vision within a partnership can inadvertently lead to 'group think' whereby potential partners with slightly different perspectives and visions may be inadvertently 'screened out' due to misaligned objectives and worldviews. If this were to occur, it may be especially hard to recognise due the absence of explicit reflection on CP composition, within relatively informal or absent evaluation processes (section 3.1.3.1).

In summary, the mix of partners – from varied sectors and with varied expertise and resources – is essential to the achievements of partnerships, especially when combined with a coordinator. This allows successful funding bids to do action, but also more efficient delivery of those actions in terms of licencing, option appraisal and sharing data or expertise. Some NGOs are pivotal to the engagement role of CPs, but our CPs tended not to tackle urban issues or engage with all land-based businesses. If interest in engaging businesses is to be pursued, new skills may be required for partnerships, either via new partners and/or expanding the portfolio of skills held by coordinators.

3.3 If and how are partnership achievements constrained or enabled by multi-level or polycentric dimensions of WFD and FD governance?

In principle, a focus on partnerships reflects these calls to embrace new forms of environmental governance. In this section we first explore the vertical links affecting and affected by partnerships, before exploring their horizontal links, and their consequences.

3.3.1 Multi-level governance influences on partnerships

National-level environmental policy making has historically been a strong driver of changes to catchment management, and its 'top-down' influence is still strong.

3.3.1.1 Which national policies influence partnerships?

In particular, the need to achieve the goals of the WFD is a strong theme, seen as a "baseline" for partnerships. Implementing the WFD is a specific objective for environmental statutory agencies participating in partnerships, a duty for other public agencies, and also a specific goal for the English partnerships supported by CaBA funding.

In conversations, the WFD was often mentioned in the same breath as biodiversity and nature conservation policy. Specifically, there was frequent reference to the UK Special Sites of Scientific Interest (SSSIs) and the Special Areas of Conservation (SACs) and Special Protected

Areas (SPAs) designated under the European Habitats and Birds Directives, otherwise known as Natura 2000. For our partnerships it seemed these biodiversity policies were nearly equal in importance to the WFD, especially when their protected species and habitats (e.g. for endangered fish) aligned with the specific focus of some partners (e.g. to improve fisheries management). Furthermore, the influence of these two policies is always seen as highly complementary, supporting similar work 'on the ground' such as riparian tree planting.

> *"So the Water Framework Directive, Good Ecological Status and, SSSIs Favourable Conditions and it's about the morphological condition of those rivers to get them into a state of more naturally functioning and natural form that support the ecology that would be expected."* (PHCI, statutory agency representative)

Interviewees mentioned increasing recognition that restoration of catchment functioning can support multiple goals. Although in the restoration works such as river remeandering have often been dismissed as prohibitively expensive or infeasible, recent years have apparently seen renewed interest in the topic. Restoration offers not only to assist in water quality and nature conservation goals, but also has the potential to support Natural Flood Management (NFM).

Flooding, whilst still a secondary objective for our partnerships (page 18), is formally acknowledged in plans relating to each and is becoming slightly more prominent in some plans or discussions. For example, the last business/operational plan of the Dee Catchment Plan was entirely focused on NFM. Thus, the work of the catchment partnerships is becoming recognised as more relevant to flooding policies. However, this perception is not so much because flood policy such as the recent Floods Directive (EU) are influencing the partnerships' goals; rather, changing discourses within the flooding community are giving increased prominence to NFM as part of a paradigm shift towards Sustainable Flood Management (Werritty, 2006). Furthermore, many of the Local Authority partners – who lead on flood risk management – are not engaged in the partnerships in terms of flooding. NFM often offers only marginal or uncertain effects on peak flows, so flooding teams find it difficult to justify investments in restoration in terms of their effects on flood risks (Waylen et al., 2017).

It is interesting to reflect on policies that were not mentioned, or not often, in our data. Firstly, it might be expected that mitigating and/or adapting to a changing climate is prominent in the work of the partnerships, but there were few explicit mentions of climate change. These references were mainly in terms of adaption to its effects on hydrology, such as increasing drought or erosion making it harder to protect water quality and fisheries. A research partner in one of the Scottish CPs described the partnership's attention to climate change as "*new-ish, there's probably more emphasis on yeah resistance to temperature extremes of the water and thoughts of kind of drought maybe, summer water shortages.*"

No specific climate policies were mentioned. This may relate to the WFD and biodiversity policies giving relatively little attention to climate change; or perceptions that relatively little funding is available for catchment managers that is directly framed in terms of climate policy targets (see next subsection).

Secondly, the Bathing Water Directive, which stipulates standards for safe swimming in marine and coastal waters was mentioned in the CMP of the DCP and PHCI, but only

mentioned once in interviews, (HACP_JK), although marine issues were mentioned by some PHCI interviewees. Arguably, bathing water is within the remit of the WFD, but this was only referred to in terms of meeting good ecological status of freshwaters. There was also no mention of other coastal or marine policies, or noted links to coastal partnerships. HACP and SCI also did not have marine-related partners although DCP has the involvement of the Harbour Board by the Dee (and Marine Scotland in the wider partner set) and some harbour and coastal groups have been part of PHCI. This suggests that although the work of catchment partnerships is not much influenced by or focussed on marine policies, the connection is understood.

A third significant policy area that was not mentioned are agricultural policies – notably the Common Agricultural Policy and its instruments such as Agri-Environment-Climate Measures. These were only mentioned once or twice and never in direct response to questions about what drives or constrains partnerships. This is surprising, as agricultural policies have had huge influence on land management practices and their consequences both to riparian and instream habitats, e.g. via deposition of sediments, pollutant loading. It may reflect a siloed approach or limited perspective on what relevant policies are for partnerships. However, accessing some existing AES measures *were* listed in the measures/delivery plan of some partnerships. Furthermore, accessing and engaging with land-managers or farmers was often cited as a strong reason for, or benefit arising from partnerships (section 3.1.3.3). Lastly, interviewee EF (PHCI) discussed the potential for post-Brexit agri-environmental policies to make a significant change by focusing on delivery of public goods, suggesting: *"that will possibly be the biggest driver for change in the Catchment Partnerships… and that's about multiple benefits".* Therefore, land management was clearly seen as relevant to catchment management. However, it is possible that the lack of ability of partners or partnerships to either access or influence CAP funding, has caused agri-environment policy to be disregarded, but this may change in future, e.g. if schemes for collective funding are set up.

Lastly, another area of policy not mentioned as a driver for partnerships were the various policies oriented to societal well-being rather than primarily focused on the land and environment. All the catchment plans alluded to their work being relevant, ultimately, to supporting health, well-being, recreation, tourism and/or education, but this was barely mentioned by interviewees and certainly not as a primary driver of their work. There were also a few specific actions relating to these topics: in particular, the original catchment plan of the DCP contained an action card focused solely on recreation, although mainly about reducing its impacts on the water environment. However, policies on these topics were never mentioned. It is possible that, similar to agri-environment policy, this has been seen as something whose instruments and resources are not directly accessible to or connected with the work of the partnership. It is possible that this may become more important in future, e.g. with the growth in interest of social prescribing by the NHS. One of the interviewees mentioned that another partnership, the Bristol Avon, is part of a pilot with Public Health England to improve well-being through time in the environment, and so to reduce prescription drug use (with benefits in turn for water treatment). The local authorities in the catchment partnerships also work on these issues, albeit via other departments: for example, Aberdeenshire L.A link with the NHS in the Aberdeenshire health and social care partnership, which may also enable further links in future.

3.3.1.2 How do these policies influence partnerships?

Implementing these policies are an important goal for the environmental statutory agencies in the partnerships, and place duties on other public bodies. The primary agencies charged with implementing the policies in Scotland and England are: for the WFD, SEPA and the EA; for nature conservation policies, NatureScot and Natural England; and for the Floods Directive, the local authorities and SEPA or the EA. As these agencies are important partners in all of our partnerships, achieving those designations and statutory goals are thus important influences on what the partnerships identify as priorities, and what the partners can commit to implementing. KL from HACP suggested that details of representation matter, with senior agency staff having more influence on the partnership (and often better placed to connect learning across partnerships – see page 47). Other partners and partnerships as a whole then seek to align their own objectives and activities according to agency priorities and funding.

Perhaps less obviously, the remit and powers of implementing agencies may also cause partnerships to avoid certain topics. For example, the variety of potentially polluting activities subject to Controlled Activities Regulation (CAR) licences issued by SEPA are not discussed in SCI meetings, although individual partners may comment to SEPA about the CAR process. The corollary of this, suggested by several interviewees from all partnerships, is that partnerships may focus their attention on going beyond the requirements of policy:

> *"its really been quite good that a lot of this stuff is now a legal requirement … if you know that sort of core work is being delivered, then you can maybe focus a bit more on the kind of 'added value' bits, the bits where working as a Partnership can make a difference." (PQ, a local authority partner in DCP).*

The original plans of the DCP (Cooksley, 2007) and SCI (Spey Catchment Initiative, 2016a) contained activities that are now superseded by being legally-binding obligations, so these partnerships now focus their energy on activities that are not automatically or easily achieved under existing legislation, such as local priorities or complex actions such as NFM.

Policies are also mentioned as positive and 'important' even if they do not shape or determine the fundamental concerns and ambitions of some partners. For example, prior to the adoption of the WFD, issues such as water quality, tackling pollution and managing fish populations were already seen as a concern by many of the partner organisations, and partnerships formed at that time. However, the WFD's ambitious and binding goals are seen as supportive, perhaps giving more prominence or **legitimacy** to what were pre-existing concerns about water quality. Furthermore, one interviewee referred to the specific targets and timeline specified by the WFD as helpful for focusing planning - as long as these are also backed by resources.

The availability, or otherwise, of **resources** was a strong theme in our data on policy and the drivers of partnerships. Whether or not a partnership claims to be independent from policy-making processes, its ability to act is shaped by the resources it can access to carry out actions – otherwise it may not achieve much beyond making a plan. Sometimes partnerships can autonomously carry out actions using the 'in kind' support from its own partners - for example a Fisheries Trust may install fish passes or contribute to restoration using its own staff time. However, partners typically do not have 'spare' resources to give to actions that go beyond their own organisational priorities. For example, businesses such as water

companies can only invest in actions that meet their corporate objectives, or perhaps support Corporate Social Responsibility. The lack of resources for additional partnership activities is increasingly stark for public sector partners that have experienced a decade of public sector austerity. Reductions in their organisational budgets affect their own internal staffing and externally-available funding and activities. As TU (SCI) put it "*I only just have enough resources to do our bare statutory requirement."*

Therefore, undertaking significant new and additional actions nearly always requires a bid for project funding. This funding, in turn, often relates to funding schemes available in support of policy goals. So, partnerships often align plans with RBMP (or FRMP) objectives *"just from a hard-nosed view, to be able to access money"* (HI, HACP). The funding sources accessed by our partnerships were often set up to support delivery of the WFD or biodiversity designations under Natura 2000. Applications for this scarce and competitive funding often entailed application to some of the same public agencies involved in the partnerships. These partners helped highlight and explain the funding schemes, though this did not mean the partnership was automatically advantaged in their applications. Access to resources designated for flood risk management was less often mentioned. Some interviewees mentioned that local authorities responsible for this must prioritise measures other than NFM, which offer more certain and significant reductions to peak flows. However, growing understanding and familiarity with NFM, coupled with partnerships' growing perception of flooding as relevant to their remit, make it possible that these resources may become more salient in future.

One challenge arises from this dependence on funding linked to these policies, is that the funding schemes often **do not enable a joined-up approach** supportive of projects delivering multiple benefits. TU (SCI) cited the example of a project to improve the management of Fochabers Burn, that delivered multiple benefits, but that was not easily funded from funding schemes aligned with policy silos. Another challenge that all partnerships cited as worsening over time, is the increasing scarcity of public sector resources. This limits the funding that can be applied to, but also the ability of public sector partners to meaningfully engage and contribute to the partnerships.

In general, the influence of policy on partnerships was not cited in any interviews as contributing to a more systemic or holistic approach. However, as noted above, where policies have embedded best practice actions as obligations, this can allow partnerships to focus on other actions such as NFM, and these *may* tend to entail and reflect a more systemic approach. Secondly, partnerships can be a venue where responsible agencies connect and informally negotiate – so helping the policy implementers to improve coherence in the work of their separate agencies, which is part of what is needed to take a systemic approach.

> *"with Natural England focusing on the SAC and SSSI designated sites … the good, the favourable conditions, good morphology; whereas the EA thinks WFD and good status that's good enough; whereas we – especially the non-profit organisations – we feel that that's not good enough for our chalk streams. But its really good to see this debate and we feel that we can sometimes help in that process."* (KL, NGO representative in HACP)

In summary, there is a strong top-down influence from policy which enables and shapes the work of all the partnerships, especially where partnerships have chosen to access CaBA funding, though these influences do not (at least directly) enable systemic approaches that deliver multiple benefits. Where this does occur, it is still within the environmental policy grouping, not crossing silos to other policy areas such as agriculture, transport or planning. However, the effect of policy is also as much about how partnerships react to it to go beyond it, either to plan more ambitious actions or respond to more local priorities, and finding ways to act despite the constraints of policy and policy-linked funding.

3.3.1.3 If and how do partnerships have reciprocal influences?

Our dataset contained some indications of reciprocal influences from the partnerships on policy, though it was much less evident than the 'top-down' influence. For the two partnerships linked to CaBA, significant effort was used in reporting information to the CaBA secretariat. It was not always obvious how recipients used this information (see Text box 2).

Relatively few interviewees thought their partnerships had any influence on the statutory agencies in their approach to policy implementation: specifically, MN (DCP) thought it had influenced SEPA's initial approach to River Basin Management Planning under the WFD, and BC (PHCI) thought that a predecessor of the HACP had encouraged and inspired the creation of CaBA by the Environment Agency and Defra. This suggests that some information sharing and learning is occurring, but knowledge of this link – and indeed whether it happens at all – depends on a few individuals with contacts and a longer-term view. For example, BC (PHCI) has decades of experience in partnerships and also sits on policy advisory bodies. Similarly, in HACP, HI (HACP) was despondent that information reported upwards was not used: "*you just hear nothing*", but IJ (HACP), believed case studies were reported upwards, via the presence of a team leader in national meetings, and the strongest perception of influence came from the well-connected KL (HACP), who believed that the catchment's action plan was informing the EA's planning for the upcoming third River Basin Management Plans.

Text box 2: The effects of CaBA on partnership connectivity

One important distinction between HACP and PHCI, versus the SCI and DCP, was their participation in CaBA (Text box 1, page 9). CaBA is set up to encourage partnership working, without compulsion, so has tended to see updates from pre-existing partnerships and groups already keen to work together. CaBA is set up under the WFD, so is the central goal for partnerships, with the addition of other goals including local priorities, flooding, etc.

Interviewees from our 2 CaBA partnerships appreciated its funding for a coordinator, which as we said above (Section 'How are the partnerships experienced?') seems critical for helping to bring partners together and for the partnership to make a difference. There are also CaBA networking events that should aid information sharing across partnerships. Furthermore, this helps to closely align the partnerships with the WFD, improving their chances of accessing funding for actions aligned with WFD priorities. Lastly, as each CaBA partnership is required to report information upwards, in principle this can enable information sharing from top to bottom. Thus in principle CaBA offers to aid networking within and between partnerships, and reciprocal connectivity across levels.

However, some interviewess saw CaBA reporting as onerous, absorbing partnership resources without obviously being used or being useful for learning. "*To be very blunt, some of the things we have to do, I don't think they necessarily contribute to the Catchment Partnership, a box-ticking exercise"* (KL, HACP). This was not necessarily the view of all in a CaBA partner – one interview found it helpful for demonstrating the outputs of partnerships – but suggests a lack of clarity in the rationale for CaBA reporting. Furthermore, CaBA coordinators did not report learning directly from being in CaBA but used existing or informal networks to connect with other partnerships. Thus, the consequences of CaBA are ambiguous and further work may be needed to maximise its potential to support connectivity across and between levels.

The policy connections may vary over time. For example, BC (PHCI) stated it had developed from existing partnerships that had been influential on Defra's work on the WFD: flooding was now the current focus of their work to influence policy. Varying focus or intensity of influence may also reflect policy cycles: for example, when RBMPs are made every 5 years, the English partnerships in CaBA are required to support "*bottom up information provision*" (KL, HACP). As noted in section 3.1.2.2 there is an awareness of CPs being relevant to flood risk management, though the links are not strong. In Scotland, the DCP and SCI have both fed into prior cycles of the RBMPs, though not in terms of sharing data-sets, but instead by commenting or discussing in the North-East Area Advisory Group supporting the RBMP process. The SCI has discussed FRM and NFM activities within this forum, raising the possibility that the partnerships are helping push policy implementation processes to better integrate the FD and WFD, rather than vice versa.

Often what is planned for by CMPs – for example many of the DCP's activities contained within the original action card focused on the harbour – are now statutorily required. This is not necessarily evidence of the partnerships' influence on policy, but it may be an additional indicator that learning is taken from the "*forerunner*" partnerships to within agencies and policy departments. We know that representatives of local authorities and statutory agencies

are often required to report internally or influence related planning processes. Certainly partnerships' may come to influence or inform specific agency projects and plans: for example, some contributions from the SCI are believed to have informed adjustment to SEPA work plans in specific locations. However, it is unclear when or if that can be equated with policy influence. We know, for example, that EA partnership representatives coordinate internally for all the partnerships they are part of, involving some synthesis and upwards reporting.

Fully understanding the interaction of individual and institutional learning and change would require insights that go beyond our data. However, it is clear that achieving upwards influence – and the ability to detect this – depends as much on individuals as formal institutions, and therefore will vary according to the agency and aptitude of individuals over time.

3.3.1.4 Other 'top-down' influences beyond national policies

In England, drinking water and sewerage is supplied by **private sector** water companies. As a result, legal requirements for drinking water standards, and standards for wastewater treatment, can motivate these companies to seek new ways to effectively and efficiently deliver their corporate goals, which overlap with the public goods of well functioning catchment systems. The regulations on their activities set by OFWAT (the Water Services Regulation Authority) additionally shape and constrain what these companies are allowed to invest in. Other partners could see OFWAT sometimes constrained Wessex Water's plans: "*they control or limit Wessex Water's ability to address some of the issues "* (DE, PHCI). As a result, the combination of regulatory pressures and permissions set in recent years has encouraged many water companies to find new ways of meeting their targets, including by joining catchment partnerships. This is the case in the two English partnerships of HACP and PHCI, which both involve Wessex Water.

By comparison, in both our Scottish cases, Scottish Water – the statutory corporation that provides drinking water and waste water treatment across Scotland – is absent from the SCI and DCP. OFWAT is an independent regulator, rather than a national policy, but can be seen as additional 'top-down' influence on the composition of partnerships, and presumably thereafter their plans and activities. The only private sector actor very active in the Scottish partnerships is Diageo, whose corporate interests (clean water for whisky distillation) are again aligned with the overall partnership goals. This has arisen, in part, because of the overall regulatory framework. As one private sector representative put it *"We don't muck around with regulation so it's a complete game changer."*.

The varying extent of private sector involvement demonstrates the power of policy and regulatory frameworks to influence when and how business interests are seen as sufficiently relevant and aligned to partnership working.

3.3.1.5 Links 'below' partnerships

The bulk of this section and our material has been concerned with partnerships' vertical links, in terms of the links to and from higher-levels of decision-making, principally policy. However, CPs can be seen as intermediate actors with links beneath, to residents and land-managers or place-based interest groups within the catchment. Catchment partnerships were indeed often cited as a means to improve communication with land-managers (section 3.1.3.3).

Partnerships were typically valued by partners – statutory agencies and water companies – as an opportunity to work with and through a relatively neutral and independent body. The partnership could help inform and persuade groups, especially land-managers, who might otherwise be sceptical of information and ideas from state agencies. For example, GH (HACP) thought public agencies were often disliked for their top-down approach, or seen as interfering, whereas HACP was better regarded: *"its reputation is generally probably better."* There could be similar benefits for companies: FG (PHCI) felt that the partnerships and partners sometimes could create "*a more powerful message*" e.g. around issues to do with reducing sewer blockages, than if the companies were to do it themselves.

However, partnerships were rarely referred to as a means to understand and respond to the concerns of these groups, beyond those already represented as partners. In this way, the top-down relationship of policy to partnerships, with relatively little feedback, can be seen to be mirrored by partnerships to local stakeholders.

3.3.2 The polycentricity or horizontal connectivity of partnerships

We first note the connections between initiatives for water management, before going on to consider (potential) connections with other types of regional partnerships and planning processes. Although we focus on partnerships themselves - and connections are recorded in partnerships' plans - the connections and interactions that shape the partnership are in practice made by the partner organisations. Thus, details of partner organisations, their internal and external connections become important: we return to these issues at the end of this section, under the headings of representation and coordination. Local Authorities are particularly likely to have experience of lots of other types of partnerships.

3.3.2.1 Connections with other partnerships for water management

The plans for all four catchment partnerships note links with other types of partnerships, including other catchment partnerships. For example, the DCP and the Spey CI liaise with each other and other Scottish partnerships: the website for the DCP states '*we work closely with the Tweed Forum, Spey Catchment Initiative and South Esk Partnership*'. Meanwhile, the two English partnerships are formally connected by being part of CaBA, which offers some opportunities for information-exchange (see Text box 2 on page 45).

Local Authorities are particularly likely to have experience of lots of other types of partnerships. For example, Dorset Council, part of the PHCI partnership, is also involved in the Stour Catchment Initiative. Beyond this, it is involved in many and varied partnerships some on related issues – such as the Dorset Nature Partnership, or less directly, the Dorset Waste Partnership – and some on completely distinct topics such as a Rail Partnership, Community Partnerships.

Awareness of flooding policy and priorities was mentioned to some extent by all partnership plans and some interviews (see pages 18 and 39). For PHCI, the local authority representative was praised for helping to connect the partnership with ongoing flood risk management processes, although in other cases local authority representatives were aware of the link but not always closely connected. The Local Plans made for flooding (considering terminology used both pre and post the Floods Directive) were mentioned by the Spey and Dee management plans, but there was no mention of collaboration with any of the collaborative fora that develop these plans e.g. Local Plan District Partnerships.

Lastly, there was no mention of marine or coastal policies and plans, even though all catchments have downstream impacts on the coast. The downstream impacts of upstream catchment were clearly recognised by the Poole and Dee, and also reflected by having one or more partners related to coastal or marine issues. This may partially be due to coastal partnerships covering these in relation to statutory processes, and perhaps a common disconnect between freshwater and marine water in both academic and policy settings.

3.3.2.2 Connections with other types of partnerships or plans

All partnerships are potentially affected by – or may seek to influence – other regional or development plans, and all their plans note some initiatives that were not specifically about catchment management but that had overlapping remits and geographical boundaries. Since these other initiatives vary in their spatial scale, and many are supposed to reflect national planning frameworks or priorities, it is debateable whether they should be seen as a vertical or horizontal connection. We discuss them here as another unit with which CPs could interact horizontally, but acknowledge that complex interactions across multi-level governance systems are not always easily categorised.

Firstly, we discuss development planning. In the UK, local authorities must prepare a local plan which specifies future policies and priorities for land use within the local authority's area. These plans are consulted when new applications are made for development, e.g. of housing, transport or other infrastructure, affecting whether or not these applications are accepted or rejected. Potentially this can have important consequences for catchments, e.g. by affecting effluent loads. However, this planning process was very rarely mentioned in our data. KL, when interviewed about HACP, remarked that local authorities are generally represented by ecologists, but "*it's probably much more useful to have somebody from a Planning Department at the table*". Their recognition of the need for non-environmental representatives was linked to his/her view that the partnership had changes in its orientation over time.

Additionally in Scotland, the National Park Authorities (NPAs) have their own Local Development Plans. Connection with these seemed slightly more prominent, not least as the Cairngorms NPA is a partner in the management group of the DCP (and a previous chair), whose representative is formally allocated two days per month to give support to the partnership. The national park plan for the Cairngorms was not only cited in documents but also mentioned in some interviewees in relation to both the DCP and SCI.

Lastly, there are Local Biodiversity Action Plans (LBAPs). These are made by Biodiversity Partnerships, as the means by which Biodiversity strategy (and related policy goals) are to be implemented at the local level. The geographic scale of these LBAPs are not exactly aligned with those of catchments but may overlap: similarly, their remit overlaps with some of the CP priorities, e.g. in terms of improving water quality to encourage pearl mussel populations in the Dee, or restoring riparian habitat to encourage water vole in the Poole. Lastly, LBAPs can also involve several of the organisations in CPs, especially local authorities, environmental NGOs and statutory agencies. It is therefore unsurprising that LBAPs were cross-referenced in all the plans of our partnerships. However, only one interviewee mentioned them, when discussing the whole complex of interacting or overlapping plans and partnerships (see below). Perhaps the links with LBAPs were literally unremarkable as they neither created additional tensions, nor offered additional resources of opportunities.

> *"Biodiversity partnerships, what everyone calls the LBAP so where their wet habitats work overlaps…there is potential for quite a lot of overlap and hopefully even joint working there. Then…so that's a remit based one as well as a bit area based. Then obviously there's the Cairngorms National Park. There is a National Park Plan and there's also their LBAP which they call Cairngorms Nature. So then that's also got overlap too, then there's the other Catchment Partnerships by name in Scotland, 4 of them which don't overlap in terms of remit but we're all basically tackling the same issues in exactly the same ways. We might meet up every six months and we all know each other well and I'm…very…enthusiastic about trying to find ways that we can work together." (LM,DCP).*

It is worth noting that in this particular case, another partner in the DCP did not see the link between the LBAP and the catchment partnership as particularly strong or active: the connection and any learning was mediated by the coordinator. This exemplifies how the interactions or connections between different plans and partnerships depends on details of interactions by individual partners and by coordinators.

3.3.2.3 Influence on connectivity via partner representation, and evolution

Although this section (and indeed the whole report) focuses primarily on the unit of partnerships, in practice the links of partnerships are made by the partner organisations and individuals within them. Thus, connectivity strongly depends on coordinators and partner organisations, who represents them, and their own internal and external connections.

Partners' ability to make connections – both within the partnership, and beyond it with other partnerships and organisations – depended on the experience and links of individual representatives. For example, both PHCI and HACP share staff resources and governance structures with other partnerships: in the case of PHCI, the Strategy Group is shared with the Stour Catchment Partnership, whilst the individual acting as its coordinator also coordinates the Stour CP, supports the West Dorset coastal Rivers and Streams Catchment and has attended the Wild Purbeck NIA steering group. Local authorities are involved in many partnerships which can offer the ability to share insights and information across sectors or topics, such as with transport or planning, although our local authority interviewees varied in the extent to which they felt they were achieving this, especially for processes and topics that they did not have personal expertise or pre-existing internal connections.

In some cases, the individuals that represent partners have accrued considerable experience of catchment partnerships, as this continuity has value. For example, the Environment Agency hosts a Catchment Coordinator for both the HACP and Dorset Catchment (which includes PHCI). Within PHCI, the representative of Wessex Water also represents the company in other Catchment Partnerships:

> "*I also kind of represent Wessex on a couple of the Catchment Partnerships. So Poole Harbour but also the Somerset Catchment Partnership and I've also done work for the Bristol Avon Catchment Partnership as well so I've been involved with most of the Partnerships in one way or another over the last decade or so*."

Similarly, KL (HACP) sits in multiple forums. This offered a chance to learn about other ways of constituting, organising and appraising partnerships. For example, more than one interviewee

connected to HACP talked about learning what worked from different forums and using that in the HACP. RS talked about using their experience at CNPA to benefit their work in SCI.

However, individuals representing their partners often changed. LM (DCP) noted that staff turnover within organisations had to be accepted as a fact of life. New individuals could relate differently to pre-existing plans and other members, which the coordinator had to accept. LM also noted a couple of examples where individual roles had significantly affected partner roles in the DCP. Firstly, Dee Harbour Board – their original representative had personal interests which made them "*really enthusiastic*" about the partnership: that person has now left the Board, and since then the Board is still a valued "*fantastic*" partner, but less active than formerly. NO (DCP), noted how a previous chair of the management group had become heavily burdened by other work priorities, triggering a change in which partner adopted the chair's role. As noted earlier, in recent years many public sector partners have been increasingly constrained, struggling to provide staff time let alone additional resources to deliver partnership actions: these challenges can also interact to shape their representation and internal interactions.

3.3.2.4 The role of coordinators and partner representatives

There seemed to be a clear benefit of partnerships connecting to other partnerships, especially – though not exclusively – in terms of links between coordinators of different partnerships. As noted earlier, the coordinators were valued by partners as being an essential prerequisite for the partner to connect, and for the partnership to make a difference. For example, ST (SCI) commented that coordinators were "*a great idea"* as partnerships needed someone "*pulling it all together*". Coordinators played a role in connecting the partners internally, but also in connecting the partnership with other partnerships.

Coordinator activities often included some formal or informal networking with coordinators and other contacts working in other catchments. For example, the coordinator of one of the CPs described 6-monthly meetings with other catchment partnership coordinators and also *"occasionally catching up with them and visiting them and others learn from us*.". These interactions gave ideas about new techniques and topics to share with the partnership, and could also be motivating, even spurring competitiveness.

The coordinators themselves could also benefit from these links to other partnerships. Their backgrounds and professional training were not directly about facilitating partnership working but reflected ecological specialities. Formal training on partnership working or coordination was not mentioned by any. Therefore, their ability to effectively coordinate often depended on their own learning within that partnership, sometimes previous roles in other partnerships, and by connecting across to share experiences with those in other partnerships.

3.3.2.5 Interactions between and across levels

Lastly, we reiterate that multi-level and polycentric dimensions of governance closely interrelate and interact. Firstly, this is because many geographically specific partnerships or plans, with similar or overlapping geographical scale as partnerships, reflect and indeed are created in response to national-level policy drivers. This applies, for example, to LBAPs and Local Flood Risk Plans.

> *"we can deliver multiple objectives sometimes and I think that's true of any work of this kind because you get so many different policies, so for example, you*

might have national policy about something so you're delivering a bit on national policy, then you've got regional policy, like the Cairngorms National Park Plan, and you might be delivering against that policy and then you might be delivering against the River Spey Catchment Management Plan and you might also be delivering something that's in the Water Framework Directive. So its not unusual to find that that happens." UV (SCI)

These overlapping plans and administrative units are also reflected by the partners themselves, who may interact with other partners outside of the partnership. In our data it was clear that statutory processes were particularly likely to trigger this e.g. environment agencies must interact with Local Authorities on statutory consultations, which can build mutual understanding and relationships. These relationships and information can then be used in the partnerships.

Secondly, in our sample, the few individuals with seniority and contacts that enabled them to inform higher-level decision-making, also had experience of participating in more than one partnership, either in the past or concurrently. Thus these individuals were potentially playing key bridging roles, potentially learning and sharing ideas across different partnerships, and also feeding them upwards.

Thirdly, external factors that shape partnerships, can also affect both horizontal and vertical connections. Of particular importance is the (non)availability of funding (page 39) to support partnership activities. Resources aligned with the delivery of environmental policies is scarce, and it has been becoming increasingly so in the last decade, in tandem with declining budgets across most parts of the public sector (not just environmental). This affects the public sector's ability to provide staff time to fully engage with and support partnerships, and in our data was especially problematic for some local authority partners. Taken together this means that some partners struggle to attend and really contribute to partnerships. Simultaneously it caused difficulties in finding 'core funding' to justify the time of coordinators, either from partners or project funders, and especially for those coordinators to be doing activities that did not directly support delivery or fund-raising. These in turn affect the networking and links made both by individual coordinators and partner representatives.

Lastly, we note that internal networking and learning within partner organisations, whilst not the focus of our data nor the literature on governance, also affects the partners and hence partnerships. For example, an interviewee from the EA, noted that a team working on flooding had been rehomed to a department working to improve water quality: this practical change arose from a conceptual change in the agency: this had made it easier to connect their subsequent work across policy silos. Similarly, within Wessex Water, the Wessex Water representative said they were "moving away" from tackling issues separately, towards an approach that was more holistic, and also more focussed on tackling problems at source. Their experience with co-hosting PHCI had influenced their plans to take a more holistic catchment approach in their business planning. Of course, by themselves such changes do not directly change the work of the partnerships however, over time they may come to influence their partners' goals and contributions, especially to support and enable systemic ways of working and activities that reflect that such as NFM.

4 Discussion and conclusion

Our analysis of four contrasting catchment partnerships offers a number of insights on how partnership working may help with the delivery of multiple environmental benefits. Whilst there are many positive insights about the potential of partnerships, our insights also illustrate 'wicked problems' which can not be easily or quickly solved by partnerships, or indeed any initiative, and which entail wider systemic change beyond the partnerships.

This section first summarises the results and implications in relation to our original research questions (additionally separating the question of aims versus achievements). We then consider the implications for catchment and other partnerships, future academic outputs based on this work, and future research needs.

4.1 What are the aims and goals of partnerships? Do they align with the WFD & FD?

All four partnerships seek to protect and enhance the water environment for people and nature. They all have fairly broad goals and support a variety of activities to achieve these. Having said that, they all have more focus on water quality and ecological quality, so tend to align more with WFD and Natura 2000 objectives than with the FD or other policies, including for climate change adaptation. Involving the private sector has not fundamentally altered these objectives (see section 4.3.1) though it has influenced plans on how to achieve and fund these objectives.

The obvious implication is that CPs are most likely to reinforce the WFD before other policies, but there are also a number of other goals supported. Firstly, WFD and Natura 2000 considerations are often similar, pushing for stronger environmental protections and restoration, and help partnerships to deliver multiple benefits in the sense of different aspects of ecology and biodiversity (e.g. fish populations *and* riparian biodiversity). Partnerships may also deliver activities that consider other non-environmental goals or local priorities, such as buffer strips for biodiversity *and* recreation.

These actions that deliver multiple benefits tend to be relatively tricky to plan and deliver as they require connecting the goals, knowledge and resources of multiple partners and may need other stakeholder buy-in. Combining objectives can potentially lead to tension e.g. in some cases Natura 2000 objectives might suggest stronger action than WFD – which may have implications for prioritising and agreeing collective action within the partnership, though our data did not indicate this caused significant or overt conflict.

The pre-existing obligations, interests and composition of the partnerships tend to cause a path-dependency in the partnership objectives. However, there are signs that flooding issues are becoming more prominent. Climate change and flooding are becoming more prevalent in CP objectives, and recent years have seen more initiatives to plan or deliver NFM measures such as remeandering. Many NFM projects support ecological restoration, and are also typically in rural upstream locations whose rural stakeholders may already be engaged with the partnership.

However, there is still a boundary demarcation between CPs and FRM policy. Although there is widespread support for FRM policy to support more holistic FRM measures such as NFM, especially in Scotland (Waylen et al., 2017) we know the majority of activity to support FRM obligations still tends to focus on 'hard' engineered infrastructure often installed in or near

urban populations at risk – quite distinct from the activities, locations and stakeholders familiar to catchments. NFM projects are hard to finance and the funding accessed by CPs is still nearly always linked to ecological objectives rather than FRM. The presence of local authorities in partnerships could help promote FD, since local authorities have statutory responsibilities for flood risk management, but their individual representatives are from environmental not flooding departments and may not be able to forge internal connections with NFM colleagues.

In summary, catchment partnerships are not completely overcoming the boundaries between WFD and FD policies, but nor is their explicit mandate or purpose. They do contribute to this as they consider and connect multiple issues that relate to water quality and the activities that promote it: however, they are as likely to prioritise the trade-offs and synergies between local priorities (e.g. for access) and water ecology, as between policies.

4.2 What have partnerships achieved?

Our data show that members from all four partnerships generally feel they have made good progress in relation to their aims. Catchment partnerships can be particularly valuable for focussing on activities that individual organisations can't do alone. These include developing NFM schemes and tackling the causes of low flows that are problematic in themselves and also worsen the impacts of diffuse pollution.

Furthermore, achievements beyond directly improving the water environment are; leveraging increased funding for projects and the personnel required for project management and partnership coordination; sharing environmental, technical and also 'process' knowledge; and building increased legitimacy and transparency regarding how interventions are identified and implemented. This builds capacity in the partners themselves, to better understand the complex catchment system, the needs, priorities and work cultures of different organisations and stakeholders; and to not only access data, but to use knowledge to make more informed decisions.

Unfortunately, it is not always easy, even for partners themselves, to attribute partnership activities and investments with changes in the water environment. This is unsurprising given the problems with monitoring change in complex socio-ecological systems – there are many drivers of environmental change beyond specific interventions; lags in environmental response; and legacy effects of prior or parallel water environment interventions (van Rees et al., 2021). It is also challenging because it is hard to disentangle the partnership contribution versus the activities of partners working alone, because partnerships are often pivotal to knowledge sharing. For example partnership meetings are often the places where partners learn about grants, and a partnership coordinator may put significant effort into winning these, but often one of the partners is legally the actor receiving the funds and delivering work on the ground. These contributions often go unmentioned in periodic reporting – but perhaps should be.

4.3 What characteristics of partnerships (and sectors involved), explain these experiences and achievements?

Our data suggest there is **not a single recipe** for a successful catchment partnership: as exemplified by the differences between our partnerships, within partnerships over time, and interviewee views. Any single factor may affect other aspects of a partnership design – e.g.

geographical scope such as whether it is useful to form local or topic subgroups. What is important is that the partnership consciously considers such interactions and consequences that arise from certain choices, and from pre-existing context or constraints.

Our data generally reinforce suggestions about the characteristics that help to understand partnership working (see section 1.2), although we note that some factors about decision-making processes seem hard to separate in data collection and analysis. We do not further discuss here, except to note that this could be expanded upon in further academic outputs. We do think it is important to note two characteristics of our partnerships that are particularly prominent in our data and less so in prior literature on catchment partnerships: firstly, the importance of coordinators, and secondly the importance of the legal standing and constitution of the partnerships. These may be worthy of more attention for others seeking to set up or study partnerships. Additionally, there are two characteristics of our partnerships which previous studies suggest are important but did not come through strongly in our data: a focus on adaptive management, and conflict resolution. Below we discuss each of these issues in turn.

Our data suggest that the single most important factor for any type of partnership is the capacity and skills and resources for organising, administering, communicating and connecting – activities that are the responsibility of the coordinator. Our data therefore strongly highlight the **importance of a coordinator role,** and additionally relational work by all partners, for allowing partnerships to make a difference. As such, it is important to recognise the role of individuals in making partnerships work. Many achievements - regarding sharing knowledge, finding funding proposals, making interventions more strategic and working at scale, require particular skills in navigating multiple organisational cultures or structures to find common ground and act on the opportunities. The role of the coordinator or partnership manager appears to be vital, regardless of whether the partnership focuses on steering or delivery, though often constrained by short-term or non-core funding (see below).

The varied **legal standing** and preferred scope of the partnerships affects the extent to which partnerships can go beyond plans to formally own and deliver activities. There were also varied views between our interviewees about how far partnerships should aim to do this, i.e. for a coordinator to supervise activity on the ground. Certainly, a catchment partnership should always act as a steering process, that strategically identifies opportunities, spots gaps or duplication in activities, and so on. Some partnership coordinators go beyond this to also deliver or project manage their own projects (e.g. SCI) whilst others rely on individual organisations or smaller groups to act (e.g. DCP). The 'pure' steering model can focus the partners on strategy and learning, yet may result in the charge that actions on the ground would have happened anyway. Conversely the steering-and-delivery model may be perceived as overlapping or even competing with the partners activities and funding streams, and is constrained by the capacity of a single person coordinator to supervise delivery. Whatever the approach is taken, it is to be expected that change in scope or way of working may vary over time. This should be expected and discussed by the partnerships themselves: our data suggest there could be disagreement between partners about the role of the partnership, that without discussion could over time erode the collective working.

All our partnerships have changed and evolved in ways that support **adaptive management** (Williams & Brown, 2014) though there may be opportunity to embed this further. This was

illustrated through the issue of catchment management plans. Making these is the initial focus for all partnerships, whose focus then switches to delivery. No partnerships had frequently revised their plans, but the longer-running partnerships had all had at least one formal evaluation and/or supplementary shorter-term operational plans. However, the point at which activity should be evaluated and/or the plan should be revisited is unclear, and explicit reflection on the partner set, the remit and organisation of the partnership was often not part of this, or was informally prompted by specific events or partners. Committing to self-evaluation and reflection on the scope and modus of the partnership, as well as learning on the delivery and the balance of specific activities, would be important for any partnership.

Although descriptions of partnership processes supported most aspects of decision-making in line with Marshall et al. (2010), **conflict resolution** – and the presence of conflict itself – was rather muted in our data. We found very little explicit conflict between partners in our data, and an emphasis on seeking consensus to resolve conflicts and issues wherever possible. In part, this is likely due to partnerships being comprised of self-selecting partners who wish to participate – only those who already agree with the broad objectives and modus operandi of the partnership will choose to join it. However, conflict can be useful to identify problems and there is a danger of 'group think' if only those with shared interests in catchment management work together. The silent or inactive partners may signal latent conflict. For example, having farming groups as partners on paper but not in practice illustrates the divide between the CP focus on improving the water environment and individual land manager priorities. However, it does raise the question whether more explicit recognition of conflict and strategies for conflict resolution may sometimes be needed. CPs could be seen as a forum to illuminate tensions that already exist, and we could use CPs more explicitly to resolve these tensions.

4.3.1 The types of partners and sectors involved in partnerships

Our analysis illustrates that all partnerships involve the three broad sectoral types: (i) Government, i.e. national government agencies and local authorities); (ii) Non-government Organisations, i.e. membership organisations representing both environmentally minded publics and sectoral interests; and (iii) Private sector, i.e. Water and Whisky Industry. These types form or join CPs when their needs align – to enable government partners to deliver their statutory obligations; for NGOs to deliver the sustainable use of the environment and for private sector to improve the resilience of their value chains. Beyond these benefits, the increased capacity and understanding of individuals is common across all three types. Geography is important here – the CPs allow place-based delivery for national policy and commercial objectives, tapping into the wider lessons about polycentricity and multi-level governance (see below).

We note partnerships involve two types of partners. Some organisations provide funding and managing or hosting staff have formal/legal responsibilities; but also tend to have influence over the direction of the partnership (at least from the perspective of some interviewees). The other type of partner are organisations that are consulted or engaged in setting and implementing partnership objectives, but also tend to have less influence. Partners from any sector can be in either role. However, there can be important fiscal benefits from having NGOs hosting catchment partnerships, since they may be eligible for charitable tax benefits or funding applications. These practical and organisational arrangements interlock with the role of CPs in reconciling bottom-up and top-down objectives for the catchments.

We found the terminology of the 'private sector' covered two different roles for commercial actors – firstly actors that might invest funding in restoring the water environment; and actors who might alter their activities to protect the water environment. Often it is large national or international companies who were (or might) provide the funding; but individual land or riparian managers who were being asked to change their behaviour or implement measures on their property. Most fishery rights are privately owned and managed, making fisheries a 'private sector' actor. Fisheries seem to be an important bridging sector between the environmental objectives for CPs and land based activities, since riparian owners have an interest in both land and river management.

However defined, there was less involvement of the private sector than anticipated when we originally designed this research, and engaging business in partnership working remains a challenge, as for many 'green' initiatives (Smith et al., 2020). This suggests a mismatch between the rhetoric of having more private sector involvement in partnerships, especially to fund them, and what we actually found – though where there was investment – e.g. by Wessex Water and Diageo – this was perceived as essential or invaluable. Financial resources were a major constraint on all partnerships, and entailed much of the time of the coordinator in sourcing, applying for and reporting funders. Core funding i.e. of coordinators could be especially challenging to find, as contributing partners faced their own internal budget cuts. In this context, some private sector investment in the partnerships was relatively long-term i.e. 5-years, and when this occurred it was greatly valued for providing stability beyond the rolling one-year funding often provided by government agencies.

There are limited examples where private investment is motivated by return on investment and/or protecting their value chain aligns with delivery of public goods beyond water quality and GHG mitigation (carbon markets). There do seem to be some further opportunities for partnerships to involve new private sector partners, e.g. for riparian woodlands and peatland restoration for payments under the Carbon Code, which offer reduced water processing costs and more stable flows - but these are not limitless. Furthermore, it should be checked whether pursuing these funding streams would balance or further skew the partnerships objectives away from their holistic objectives (e.g. public access, health and well-being, or biodiversity).

Lastly, we note the issue of partner selection and especially missing partners. This was not often a topic explicitly reflected on by partnerships, and – perhaps related to that - very few interviewees could identify any missing potential partners in their partnership. There are also issues in partners who are not or cannot engage as thoroughly as might be beneficial for them and the partnership. Firstly, our analysis also suggested some inconsistencies in how forestry and estate interests were engaged as partners; and in many cases some partners representing land managers were listed but were not active. Secondly, local authorities cover multiple policy and physical domains and may struggle to resource all of these, sometimes leading them to not be as active as they or others might like. Any such relatively inactive or under-engaged partners can also be understood as another type of missing partner, with consequences for what the partnership achieves.

4.4 If and how are partnership achievements constrained or enabled by multi-level or polycentric dimensions of WFD and FD governance?

Partnerships are independent voluntary initiatives who make their own plans. That said, our data make clear that they are strongly affected by other governance levels – policy is still an especially strong driver on partnerships – and well-connected to other partnerships and networks.

Partnerships are a voluntary coalition of the willing, whose objectives often reflect local priorities as well as priorities that relate to policy objectives. However, the work they can achieve is often dependent on the resources that partners can bring and that they can access from elsewhere. Funds available from the public sector, linked to environmental agencies and policies are typically what partnerships and partners apply for in order to resource actions. Whilst it is excellent that such funding can be applied to, dependence on it shapes and can constrain what partnerships can achieve: even if partnerships have holistic and strategic plans, their actions may not be so if funding sources are siloed and reflect one or few priorities. This can be especially problematic in a climate of public-sector austerity, and when even core funds for coordinators are hard to source. Where partnerships can access few resources, they risk becoming 'paper partnerships' whose achievements fall far short of their visions. (England's CaBA is good for funding coordinators albeit some benefits are offset by reporting requirements.) National policy and regulatory frameworks (such as OFWAT) are influential by shaping objectives and providing associated resources; and also by framing the space for voluntary action, often encouraging regulated industries to go beyond regulatory standards (water, whisky) and helping to drive the widening of the partner set in partnerships.

There is a lot of learning and sharing of good practice between other catchment partnerships and other partnership working in general, that helps CPs build capacity, avoid pitfalls and adapt good practice. This polycentricity helps to share learning and identify opportunities in an increasingly crowded governance landscape. However, given the above mentioned constraints on partnership resources, there is a balancing act required between investing time in participation in multiple forums and domains; and having time to act on the learning resulting from these forums. This is generally driven by the initiative of coordinators, often relatively informally.

In this web of partnership connectivity, the less evident connections were those upwards. For example, many catchment partnerships lack means or opportunity to share their learning beyond their networks of catchment partnerships e.g. to agencies and policy-makers. Whilst there were examples of partnerships having influence on national policy, the process was murky to those involved and the result of particular individuals having positions that allow input to national policy; and the skills to link to wider debates. This may lead to missed opportunities for knowledge sharing and policy learning, limiting adaptive governance (Chaffin et al., 2014). This is important as there is no single 'optimum' scale of intervention to achieve policy objectives, as already suggested by work on the integration of the higher-level River Basin and Flood Risk Management Plans (Waylen et al., 2019a). Instead we must see, CPs are part of a nested and multi-dimensional network of governance processes. This complexity needs to be acknowledged by CPs (see section 4.6.1) but the governance processes themselves should also, ideally, be responsive and adaptive.

Making connections both vertically and hierarchically relies on the skills, aptitude and energy of the individuals involved. The partnership literature often discusses the need for a champion or inspirational leader (Leach & Pelkey, 2001), but our data places more emphasis on facilitation or brokerage, which is not necessarily quite the same thing. Our data suggests that in fact, successful CPs have multiple champions working to cross boundaries within their organisations; or between different partnerships; or between local and national bodies. Likewise, successful CPs need multiple 'policy entrepreneurs' who seek not only to influence policy design but also policy implementation processes. This perhaps unpicks the disconnection between multi-level and polycentric governance: it is not either/or influences that matter, but the dynamic set of multiple connections seeking to deliver common strategic objectives in ways adapted to specific places.

Other potential gaps in the policy and sectoral engagements of CPs are climate, agriculture, coastal/marine, and health. For example, despite a common focus on engagement with local land managers; CPs do not explicitly engage with agricultural policies or agricultural forums – PCHI has a farmer subgroup but the coordinators don't usually attend mainstream agricultural partnership forums. Post-Brexit and as part of a green post-Covid recovery, these policy domains may be associated with significant political and financial resources. Similarly, there is limited interaction with coastal partnerships and forums; and little with marine interests. Likewise planning and development policies and forums, which may influence future land uses of relevance to river restoration and NFM.

The gaps in networking are very understandable. Broadening the range of objectives to work on and networks to work with might well make an already complex process of finding and agreeing objectives even more problematic, and increase the potential to crowd out the difficult-to-fund public goods like aquatic biodiversity. There is a tension between partners with shared freshwater/rural water environment objectives and missing opportunities associated with other forums and partners. Furthermore, there is a fundamental problem in that whilst reaching out to new forums may offer additional opportunities for partnerships to achieve influence and perhaps receive funding, the reverse is not true: it is hard to see where private agricultural and development interests might align with the remit of current CPs about restoring and protecting water quality, aquatic ecology and environmental flows. Finding a common purpose – perhaps through climate mitigation and adaptation, may assist, together with ensuring coordinators have the skills and resources to extend their networks in new domains. Otherwise, connections are unlikely to arise, and until wider land use governance frameworks and policies also push the interests of land managers and other actors to more closely align with those of sustainable catchment management.

A final opportunity was not addressed in the data, except very tangentially. In future there may be further opportunities through private finance, albeit not as straightforward and plentiful as some current narratives suggest. There is increasing divestment from carbon-based energy which is resulting in financial assets seeking new 'green' investments. Notwithstanding the mismatch between a desire for return on investment and the partnership focus on public non-market goods, there is also growing interest in finding sufficient restoration projects at scale to respond to the need of investment financiers, such as the Routemap to One Billion 'riverwoods' project. This could be a major opportunity for CPs, who could act as brokers in these processes. However, although engaging with 'natural capital approaches' was noted by some interviewees, it would appear that there is little

capacity being built to do this; nor were our candidate CPs closely associated with explicit private investment partnerships such as LENS. This is another example where capacity to broker investment in CPs could be created. However, doing so would require additional support and resources to increase the networking and partnership maintenance activities, and it is also important to avoid crowding out the existing 'glue' that holds successful partnerships together.

4.5 Implications for future academic outputs and research

The approach of this report has been to present an overview of our data, rather than focus on analysing the data in relation to particular academic questions and concepts. However, there are several potential avenues to do so, which will enhance our understanding of partnership working and allow us to contribute to debates in the literatures on environmental governance.

- Firstly, this study can help understand the difference made by voluntary partnerships or collective working, where there is already a crowded institutional landscape. Do partnerships go beyond what existing governance frameworks can achieve? Are they enabled, impeded or do they transcend pre-existing arrangements? Our insights suggest partnerships *are* useful but are strongly affected by the pre-existing interests and constraints not only of their own partners but of the wider governance system: therefore enabling partnerships to achieve more, beyond what other initiatives and actors have achieved, paradoxically may require changes by other actors, especially at higher governance levels. These can also be framed in terms of the perennial challenge of the right scale and level to 'do' policy integration - or indeed any initiative for joined up holistic environmental management (Waylen et al., 2015a).
- Our data (and framing literatures on which we draw), illustrate that successful catchment management needs to move away from 'optimising' measures in time and space to a more relational approach that considers collective preferences and objectives; as well as recognising conflicts and wicked trade-offs; and the human/social processes required to identify and manage these relationships. The 'soft' skills and informal practices of individuals in partnerships; could be related to the importance of policy entrepreneurs for success of policy implementation - going beyond just setting objectives (Huitema & Meijerink, 2010), and the agency highlighted by the literature on 'street level bureaucrats' or 'interface bureaucrats' (Hope & Hill, 2007). The selection and relations of individuals with each other matters, as well as within their organisations and wider context. This framing relates to the practical point above, about valuing these skills and investing in capacity for coordination, and also measuring and valuing the 'soft' outcomes.

Related to this, we also note several avenues that may be productive for future research. Below we highlight three possibilities.

- Partners and partnerships give a variety of overlapping reasons for why to choose or join a partnership, even if their headline objectives in relation to water are very similar. Different 'logics of intervention' can underlie these narratives and justifications, sometimes implying varied theories of change about what partnerships can deliver and why. For example, one partner may emphasise a rationality of more efficiently delivering their own outcomes, whilst a partnership coordinator might emphasise additionality and inclusion. To some extent this is reminiscent of varied logics that seem to underlie other initiatives ranging

from Nature-Based Solutions, Ecosystem Approach or Natural Capital Approaches, which vary in their focus on economic rationality and collective action. However, such varied aims can be in tension (Blackstock, 2009). Different logics may be productive and help foster balanced delivery, or may impede partnership progress – whether and how partnerships should respond to this is unclear.

- The 'private sector' label can represent a variety of actors, each with varied and potentially multiple motivations for involvement. In our studied partnerships, there is no mention of altruistic funding from individuals, which we believe reflects the other partnerships and the literature on it. Instead, the focus on private investments tends to allude to corporate involvement (to protect and enhance water services that support their corporate objectives), or influencing private riparian owners. Studying volunteering and donations (from individuals and business) might be further useful lenses on 'private' involvement.
- The partnerships we studied show signs of adaptive management – e.g. updating their actions and sometimes periodic explicit appraisal of success – and there may be scope to productively do more e.g. considering catchment change and the wider context, the partner set and partnership processes. Without formal reflection there may be missed opportunities to achieve the holistic goals of partnerships, yet appraisals and making new plans can be resource-consuming and distract from tangible progress. As a result it is unclear how often and how thoroughly a partnership should revise its plans, remit and way of working. Further, work to further connect the principles of adaptive management (e.g. Williams & Brown, 2014) with the practical realities of partnerships would be valuable.
- For natural resource management, adaptive governance is often argued to be as important as adaptive management – and an important enabler of adaptive management (Chaffin et al., 2014). Understanding when catchment partnerships do and do not support policy learning, in connection with the reasons why policy learning and change do not occur, could be a valuable means to better understand the constraints and opportunities for adaptive management by partnerships.
- Lastly, extending the data set of this study over time, and also to include other types of partnerships could help to test and deepen the understanding of our insights and emergent issues. It may be useful to look at other partnerships with strong private sector interests – to understand the circumstances when this comes about – and with different characteristics. The Tweed Catchment Forum may be particularly interesting as a partnership with a strong presence and influence from fisheries interests. Most fishery rights are privately owned and managed, making fisheries a 'private sector' actor that bridges environmental and land based activities (since riparian owners have an interest in both land and river management).
- It will also be relevant to look beyond the catchment, to consider commonalities in other partnerships seeking to shape the environment and landscapes.

We plan to contribute on some of these topics in manuscripts for academic journals during 2021 and beyond. We also hope to explore some of the emergent issues in future research.

4.6 Practical implications for Catchment Partnerships and their Funders

In this section we note separately implications for catchment partnerships, other types of partnerships, and those who seek to enable or fund partnerships.

4.6.1 For catchment partnerships

Working in and for a catchment partnership is a constant balancing act between many options and opportunities. Whilst these balancing acts or tensions may seem self-evident to many of those involved in partnerships, they are often formally unacknowledged.

- Partnerships should prioritise designing and delivering difficult complex actions (e.g. river restoration and NFM, tackling diffuse pollution), which partnerships are uniquely placed to facilitate. However, these activities are slow and frustrating to achieve. Therefore, a mix with other actions is likely required to maintain motivation and signal progress.
- It is valuable to invest in coordinators or similar roles. A full-time post is not necessarily needed, but it does need someone to 'champion' and push for change. The interpersonal and organisational skills needed should be valued as much as scientific or technical skills.
- Partnerships vary in the extent to which they focus on steering and strategy, or also directly manage and deliver their own projects. In both cases, since partnerships work with a coalition of the willing, the model must be chosen that is preferred by partners.
- The objectives of partners and partnerships are rarely in direct conflict, but not everything can be achieved in the face of limited resources. Explicit acknowledgement that trade-offs and tensions are inevitable may assist in maintaining delivery whilst retaining partner buy-in. Delivering complex projects, with new partners and working with different policy domains, may increase tensions but also generate greater outcomes.
- Partnerships are part of a nested and multi-dimensional network of governance processes. This complexity needs to be acknowledged but also navigated, with CPs explicitly identifying their role in this governance network and understanding both their responsibilities but also their boundaries beyond which they do not wish to engage.
- A strength of partnerships is in their ability to forge connections across levels, which include but are not limited to policy sectors such as WFD and FD. Increasingly, agricultural and climate policies may be as important for catchment partnerships.
- Partnerships can only work now with those who are already willing, but can focus their awareness raising with those whose support could be valuable in future- e.g. peer-to-peer demonstration with farmers, or forays into business sectors such as agri-food corporations, urban developers or private finance. This requires recognition of the many and varied types of actor within the 'private sector' ranging from big agribusiness, fisheries, through to individual land-owners. Any further work to engage with the private sector should reflect these differences, since they require very different engagement strategies. Doing so consumes more resources but in the longer term could bring in new supporters and sources of funding.

All these issues would benefit from periodic appraisal over time; since the appropriate balance may well vary over time. The need for change is to be expected, and in line with adaptive management. Monitoring and evaluation is often focussed on in relation to technical learning about specific measures installed in a catchment: however, it can include learning about how to organise collaboration and decision-making (e.g. Waylen & Blackstock, 2017). The strategy for monitoring and evaluation should be part of early planning, to maximise later

learning. A LEAP (Learning Evaluation Adaptation Plan) may be a useful practical guide[f]. We do recognise that there is always trade-off between investing in monitoring and evaluation, and between planning and delivery actions. This needs to be recognised by funders (next section). However, monitoring and evaluation is essential to help capture and respond to learning, and to assist partnerships in maintaining a strategic overview in the face of external influences which may reflect a dominant policy area, or non-joined up thinking.

4.6.2 For other types of partnerships

In general, the insights and ideas listed above are also likely relevant to other types of ongoing and planned partnerships, such as Landscape Enterprise Networks (LENS), or Scotland's planned Regional Land Use Partnerships (RLUPs). The single most important point is that investing in a coordinator is essential to sustain significant benefits and progress.

Facilitating and participating in partnerships is always likely to be a balancing act, e.g. between partner priorities, steering on strategy versus action, internal versus external networking. One advantage that catchment partnerships have is that their geographic scope derives from a biophysical boundary, as is usually a relatively uncontested starting point for the joint work of the partnership. Furthermore, most of the partners have a shared interest in aspects of water ecology. Whilst this also presents challenges and the risk of group think, other partnerships may need to work harder to specify the boundaries of their mission and find a focus.

Potential commonalities with other types of partnership working were discussed in January in a mini workshop with Scottish stakeholders in the Ecosystems and Land Use Stakeholders Engagement Group (ELSEG)[g]. This discussion confirmed there were likely shared challenges and lessons for different types of partnership working, though bounding the partnership may tend to be a greater challenge for non-catchment partnerships.

4.6.3 For those funding partnerships

Partnerships are worth investing in to help support holistic joined-up catchment management. However, since partnerships are strongly affected by wider governance networks, those who fund or enable partnerships must consider the effect of their influence and mandates.

- Through dedicated support and funding catchment partnerships could be encouraged to more explicitly address flooding/ multiple policy objectives. One role of CPs could be to design co-benefits arising from meeting national policy objectives more explicitly. However, this requires strengthening the feedback loop from CPs to national policy makers to allow policy silos to be integrated, and to link funding and other policy levers together more easily in single projects.
- Related to the above point, we note that pushing partnerships to further focus on statutory obligations could crowd out their additional non-statutory or local objectives. CPs are often seen as having an important and unique role in connecting the top-down and bottom-up (Rollason et al., 2018) so any such action to tie them closer to policy delivery

[f] https://www.scdc.org.uk/what/leap

[g] Notes from this discussion are available at https://www.hutton.ac.uk/sites/default/files/files/2021%2001%2025%20ELSEG%20workshop%20report(1).pdf

would need careful appraisal and monitoring. (Doing so should be an important consideration for England's ongoing CaBA scheme.)

- Resourcing the 'core' costs of coordinators is a key challenge for partnerships. We therefore support England's CaBA scheme for providing funding for partnership coordinators.
- Partnerships can be seen as an example of giving more attention to procedural issues and the role of the environment in delivering to a wider range of societal challenges, as per the NBS ethos. Funders often have strong influence over monitoring and evaluation activities. In line with formative evaluation, we support giving even more explicit prominence to these considerations in funding and evaluation e.g. evaluating procedural outcomes such as quality of networks, as well as outcomes such as better water quality (Waylen & Blackstock, 2017), albeit without tying up all resources in monitoring and evaluation.

In short, committing to periodic self-evaluation and reflection on the characteristics and composition of the partnership, as well as learning on the delivery and the balance of specific activities, is important for any partnership. The needs and priorities for each partnership will naturally evolve over time.

4.7 Conclusion

Partnerships are promoted both as being more than the sum of their parts, and delivering more than other initiatives. Our study suggests that understanding those parts – namely the partners and the detail of their internal interactions and representation – is important to understand what they can deliver.

We note there were relatively few private sector partners across our CPs, though they were greatly valued where they were active, and it may be challenging to increase participation from other private actors. Various partnership structures and remits are possible, but whether they are effective strongly depends on skilled coordination, and on mixing the expertise and resources of partners. Whether or not a partnership achieves 'joined up' management that delivers multiple benefits also depends on the wider context; external drivers, especially policy-linked funding offer opportunities to deliver actions, but can also constrain and reinforce any pre-existing silos.

As a result, working in or for a catchment partnership is a constant balancing act between many options and opportunities. Most obviously, this entails planning activities that support a range of objectives – including but not limited to policy objectives of water quality and flooding, and also such top-down goals with bottom-up priorities. However, many other interconnected tensions must also be negotiated, including: connecting the logics of action of different partners; focusing on steering versus delivery; committing to relatively easy actions as well as 'tricky' actions; planning formally versus informally flexing; investing in internal partnership connections versus external networking; and when externally networking, reinforcing existing relationships or making connections with new stakeholder groups.

Some of these balancing acts or tensions may be obvious to those involved in partnerships, but are often formally unacknowledged. Finding the 'sweet spot' between all these issues requires active work, and is likely to change over time and between partnerships. No partnership can do it all, so it is important that partnerships – and those that enable them – are encouraged to explicitly reflect and share learning on these issues.

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Annex A – Topic guide used to guide interviews

The topic guide below was written for interviews with partnership coordinators. It was adapted slightly for use with partner representatives and to take into account any specificities.

Overview of the topics to discuss in interview.

Thank you for the opportunity to discuss your experiences of partnership working. Below we describe our study and how your input will contribute towards it. We then list the main topics that we would like to discuss, followed by a summary of what we already know based on reading websites and other documents available online. The aim of our interview is to understand more about your partnership and its origins, your views on the internal processes of collaboration, and the achievements of the partnership, especially in terms of how multiple goals are delivered.

Summary of our research and how your input will be used

Thank you very much for taking the time to participate in this interview. As already explained, this interview is to help us better understand the workings and outcomes of the XXX Partnership.

This work is part of a broad programme of Scottish Government funded research on integrated management of natural assets, particularly water. We have previously carried out research on policy and planning integration that suggested catchment partnerships are seen having an important role in integrating delivery of multiple benefits.

Therefore, we would like to interview you to better understand the experiences those involved in catchment partnerships, and the difference made by partnership working. We aim to speak to representatives of several partners in each of the 4 partnerships that we study. Although we have already reviewed publicly available material, we understand that there is much we may have missed because formal documents do not capture all experiences and things evolve, often more quickly than can be captured in formal documents.

This interview is voluntary, so you do not have to participate. However, we would really value your time and insights to ensure our work is based on a comprehensive understanding of how the partnership works, which we do not feel we will get from desk-top studies alone. Our outputs will identify the partnerships we have studied, but quotes will not be attributable to any particular individual or partner organisation. The research has been approved by the ethics committee of the James Hutton Institute.

Feel free to ask questions at any time. As this interview is voluntary, you are of course free to stop the interview or skip questions if you do not wish to answer. We do not necessarily need to discuss the topics in the order presented below. Assuming you are happy to participate, please don't forget to complete the consent form.

1. **Your background**

We would like to understand a little bit about you and your background, how you came to be coordinator for the Partnership.

We understand that….

2. **The role of the coordinator within the partnership**

We would like to understand your hosting arrangements and how your post is funded, and how you have gone about developing the role to support the partnership.

We understand that….

3. Your views on the partnership's progress and achievements

We would like to understand the origins, organisation and objectives of the partnership, and how this may have evolved over time. We would like to check on the progress towards objectives, and what factors may have affected this.

We understand that…

4. Understanding the processes and practices for collaboration

We would like to understand the practical procedures and arrangements that allow the partners to meet, take decisions and work together. We are interested in any reflections on the working styles of different partners, and how any disagreements or conflicts are handled.

We understand that….

5. Wider interactions and networks of partner and partnerships

We are interested to know if the partnership itself links with other partnerships, networks or other initiatives: in addition, are there any interactions with to 'higher' level processes such as policymaking. If so, how do these occur and are there any effects on the partnership?

We understand that….

6. Discussing an example to explore how the pship works to achieve its aims

Sometimes it is easier to discuss a specific example, so we would like to talk through a specific action implemented by the partnership, to understand how it was identified, prioritised and implemented, and the overall difference made by partnership working.

When reviewing the management plan, we saw that action XXX might be interesting to discuss, since it involved several partners. Of course, you are welcome to suggest a different or additional example!

7. Wrap-up

We conclude our discussion with a chance for any final thoughts and reflections about partnership working. This is also an opportunity to ask me any questions!

Annex B – Synthesis of achievements of each catchment partnership

This information relates to the results on achievements, section 3.1.3.

DCP achievements

The DCP website flags many projects and activities progressed or completed since 2007, but with different levels of detail for these making it difficult to disentangle completed from ongoing projects, and some activities do not have quantifiable objectives. Our summary of the most prominent projects and activities is in Table 3. Some activities have defined or quantified objectives (e.g. the Pearls in Peril project aims to create 45km^2 of new buffer strips in the middle Dee). Open ended or less tangible activities e.g. "seek new funding sources" are not presented in such terms.

The DCP had a significant number of activities related to improving river morphology (e.g. in stream or river bank restoration). Activities on the riverbank also included much riparian tree-planting, INNS removal, but there were also activities further from the river to improve wetland drainage, and hence hydrological functioning. Much of this was linked to research, reflecting the contribution of the James Hutton Institute partner. Guidance and engagement with local residents, land-managers, fishers and visitors was also a major focus of their work. At the time of our research, a systematic review of achievements versus objectives was ongoing.

Table 3: Summary of DCP achievements, derived from its website & updates.

Morphological improvements (in stream or river bank restoration): • Removal of barriers to fish such as the 1750 Culter Dam • Agricultural buffer strip creation and River Bank fencing e.g. as part of the Pearls in Peril project. • Upper Dee morphological improvements
Other activities to change/restore catchment hydrological functioning: • Peatland restoration on Mar Estate • Developing Urban wetlands in Aberdeen as BGI to alleviate local flooding, as part of the INTERREG BEGIN
Activities to enhance/restore aquatic and riparian habitats: • Riparian Treeplanting • Removal of INNS incl supporting the Scottish Mink Initiative
Research: • Supporting /carrying out research into NFM • Mapping recreation hotspots and damage
Guidance and information campaigns aimed at various groups: • Septic tank guide • E.g. Visiting tourists in person to tell them how to reduce impacts • Guidance for canoeists and fishermen • Work with schools, e.g. giving them 'RiverBank boxes' • "Yellow fish" campaign for drain care • Supporting SEPA Pilot catchment initiative and Diffuse pollution priority catchments

HACP achievements

The HACP lists four projects as completed, three ongoing, and two planned soon (Table 4:). The completion or initiation of projects related to riparian habitat restoration, and remeandering to improve morphology, was prominent for HACP. Several of their projects were noted as relevant to education and engagement, as well as for habitats, biodiversity and water quality. It was not easy for us to assess their progress in relation to their priorities.

Table 4: Summary of HACP achievements, derived from its online activity map[h].

Completed: • River Avon at Sopley - Habitat Enhancement, Phase 1 (WCSRT lead) • River Avon at Downton - Habitat Enhancement (no reference to WFD or SAC) (WCSRT lead) • River Avon at Durrington - Snakes Bend Restoration (no reference to WFD or SAC) (WTT lead) • The River Avon Restoration Plan (EA lead)
Ongoing: • Ripley Brook Natural Flood Management to reduce risk of flooding but additional benefits of Habitats and biodiversity, Water quality, Education and engagement. (WCSRT lead) • River Avon at Ellingham - Habitat Enhancement (restoration of old water meadows). (WCSRT lead) • Garden Meets River's Edge: educate and engage riparian owners with additional benefits for Habitats and biodiversity and water quality. (WTT lead)
Planned: • Crystal Clear Ebble - part of Cranborne Chase and Chalke Valley Landscape Partnership project for habitats and biodiversity, with additional water quality, education and engagement benefits, (proposed to start in 2020, Cranbourne Chase AONB lead) • SERENA - Sediment Reduction in the River Nadder – led by WCSRT – for water quality but also benefits for Education and engagement, Research and evidence (planned to start in 2019, WCSRT lead)
Proposed: • New Forest Streams Project for habitats and biodiversity (WFD and SAC objectives) but additional benefits of reducing flooding through NFM. • Salisbury Community Rivers Project: community focused river corridor enhancement schemes have been identified for Education and engagement with additional benefits for Habitats and biodiversity, Water quality (WFD and SAC objectives) Council and the Wiltshire Fishery Association. • Restoration of the Avon at Woodford: to enhance habitat for SAC species and additional benefits for water quality, education and engagement. • Improving natural river functions at Durnford Mill on the Avon: restoration or mitigation of impoundment and changed land management for SAC species, improve WFD status. • Wild Figheldean: restoration options for former mill hatches for SAC and WFD habitats and biodiversity, but also education and engagement. • Upper Avon Restoration Project: 6km improved SAC habitat and water quality with additional benefits of reducing the risk of flooding. • River Restoration on the Avon at France Farm: 2nd phase of River Avon Restoration Plan for biodiversity and habitats (SAC) and water quality. • Western Arm of the Avon at Wilsford - Restoration Project – lead WWT for habitats and biodiversity. • Protecting the Till Project: bring SSSI into favourable status and help wider SAC for habitats, biodiversity and water quality but additional benefit of reducing the risk of flooding. • The River Wylye (Heytesbury & Knook) Project: restore fish passed and create new wetland for habitat and water quality. • Increasing longitudinal connectivity in the Wylye at Boreham Mill: habitats and water quality (links to WFD and SAC) and additional benefits to reduce risk of flooding. Reference to revising planned work by WWT in 2017 and to connect with completed EA restoration project. • THRIVE (Teffont Hatches River Easement): address fish barrier for SSSI and SAC plus WFD with additional education and engagement benefits (WCSRT lead). • River Nadder INNS: Himalayan balsam, Japanese knotweed, Giant hogweed, American skunk cabbage and water fern removal to improve habitats and biodiversity, and including education and engagement (WWT lead). • Sediment pathways & SEdiment REduction on the river Nadder.

[h] https://wessexrt.maps.arcgis.com/apps/MapSeries/index.html?appid=ce58ac7bbb5c455eb2302633e2890be8

PHCI achievements

A review of progress was documented in their 2014 catchment plan (at the time of writing it appeared that a 2019 plan was due soon). A steering group review of progress on key issues is the basis of the summary in Table 5. Progress in discussed in relation to five major issues (column 1). Tackling pollution and sediment loading was seen as difficult, with the scale of work achieved by the partnership often felt insufficient, since widescale land use change may be entailed. For the objective of managing water quantity (including flooding), more understanding and knowledge was required. By contrast the steering group felt they were 'getting there' for river restoration.

The PHCI have plans for an internal monitoring group of at least 12 organisations to coordinate implementation of a monitoring programme for the catchment (*interviews did not confirm whether this was active yet*). It is intended to focus on reviewing data held collectively within the catchment and will be used to develop and maintain an evidence base to inform decision making and allow an assessment of the benefits derived from actions. In parallel to this the PHCI Coordinator reports that they use EA data to assess projects' progress (using a traffic light system) towards WFD goals using EA data on the state of the catchment. They note that outcomes from certain types of action may not be realised for several years.

Table 5: Summary of PHCI achievements, based on its 2014 catchment plan.

Nitrogen	Steering group consensus was that we were 'nowhere near' reaching these targets and as such nitrate is the most pressing issue facing the catchment. Existing activity will be insufficient to solve the problem and a significant change in approach is required to deliver long-term solutions.
Phosphorous	Steering group consensus was that we are 'getting there' for phosphorus but further reductions are required from diffuse sources throughout the catchment. Phosphorus is still just above target levels for the River Frome SSSI so options are being appraised for phosphorus removal at sewage treatment works in the Frome catchment and more sustainable approaches such as reed beds/constructed wetlands and catchment management are favoured if technically feasible. It is the intention to install phosphorus treatment in the next Wessex Water asset management plan period (2015-2020) at Maiden Newton, subject to the approval of Ofwat.
Sediment	Steering group consensus was that we are making ground with the issue although some believed we are nowhere near solving it. Further land use change or land management mitigation measures are required, particularly targeting critical flow pathways in high risk areas. Some of the measures proposed for nitrogen and phosphorus reduction will also deliver substantial sediment reductions.
Channel and habitat alterations	Steering group agreed that we were 'getting there' for river restoration. The Dorset Wild Rivers partnership would benefit from additional resources to increase its coverage and further attention on the Frome headwaters, River Cerne and Lower Piddle is required.
Water quantity	Steering group believed that further work is required to understand the potential impacts of high flows with regards to flood risk since peak flows are inherently difficult to attenuate.

SCI achievements

In 2016 the partnership compiled the SCI Review (Spey Catchment Initiative, 2016b), using a structured process that referred back to the objectives set in its original 2003 CMP. The overarching objectives that were reported against in detail were: Water Quality; Control of Water; Fisheries management; Habitat and species; Farming; Forestry and woodland; Access and recreation; Community/economic development. Progress against sub-objectives within these was rated as follows: 14% 'complete', 42% 'good', 40% 'some progress', and 4% 'none'. Within subcategories of these objectives, more detail describing which activities were time-bound and completed showed there was some progress against all their headline objectives (Spey Catchment Initiative, 2016b).The only sub-objectives set out in the 2003 CMP that were rated 'complete' related towater quality or flooding, however it seems this resulted primarily via parallel or external processes (e.g. discharge consents under RBMP, identification of Potentially Vulnerable Areas under the FRM (Scotland) Act 2009). Delivery of many other objectives also relied in part on statutory, policy or funding developments although the role of the SCI in coordinating responses and assisting in processes is evident. The only two objectives with little progress reported were determining the extent of contaminated land (Local Authorities now hold the data on this) and improved pike fisheries management (subsequently addressed by Scottish Government legislation).

This review also flagged future priorities that were incorporated in the most recent CMP (Spey Catchment Initiative, 2016a). This retains the same eight overarching objectives and carries over ongoing SCI activities from the previous plan. Its executive summary emphasises the need to increase resilience to climate change impacts including flooding, and that policy drivers are opportunities to deliver improvements through partnership working.