

Land Use Partnerships using a natural capital approach: lessons for Scotland

Mark S Reed¹, Kerry Waylen², Jayne Glass¹, James Glendinning¹, Rob McMorran¹, Leo Peskett³, Hannah Rudman¹, Brady Stevens¹, Abigail Williams¹

¹ Scotland's Rural College, ² The James Hutton Institute, ³ University of Edinburgh

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Gallow Hill and Mayen Wood from Fourman Hill, Aberdeenshire, © Prof Mark Reed

Executive summary

Aims

Regional Land Use Partnerships (RLUPs) are being set up in Scotland to help achieve Scotland's climate change targets through land use change and a natural capital approach¹. These partnerships facilitate engagement between local and national government, communities, landowners, land managers, and a range of other relevant stakeholders. Five RLUP pilots will produce a Regional Land Use Framework (RLUF) by

¹ <https://www.gov.scot/policies/landscape-and-outdoor-access/land-use/>

2023 using a natural capital approach which considers key natural assets and the benefits these provide to communities and the regional economy.

This project examines evidence from the UK and Europe for the use of the natural capital approach in successful partnership-working across multiple sectors and landownership boundaries. It focuses on outcomes for climate change, biodiversity and benefits to local communities.

Findings

Benefits of a natural capital approach: Based on our analysis of case studies, a natural capital approach can help:

- build a balanced overview of the range of ecosystem services and benefits to communities and stakeholders that land and natural assets can provide;
- understanding of how different services may interact in response to projects and interventions, leading to multiple benefits or negative unintended consequences;
- contextualise and respond to the different priorities and interests of specific partners and stakeholders, helping pre-empt and manage conflicts of interest;
- act as a stimulus for local investment by partnering with local businesses and others who can align their funding and objectives with the activities of the partnership; and
- bring stakeholders together to co-produce plans that can meet multiple objectives, helping pre-empt and manage conflicts of interest and generate opportunities that would not have been possible without taking a natural capital approach.

How the case study partnerships took a natural capital approach: Although none of the partnerships studied claimed to have taken a full natural capital approach, the majority included key components in their decision-making processes:

- Most collected information about natural assets and ecosystem services and their interactions, typically using existing secondary data drawn from their partner organisations and other public sources.
- All of the case study partnerships identified drivers of change, including both historic/current drivers and likely future drivers. Although the focus was largely on social and environmental aspects of the landscapes and communities in their area, some also considered business drivers as part of their work.
- Many partnerships sought to understand dependencies between the interests and needs of their stakeholders and natural capital. They explored the potential for the partnership to protect or enhance natural capital assets and services, in some cases leading to the generation of new revenue streams from ecosystem services.
- Partnerships relied primarily on public resources, and contributions in cash or in kind from partner members (only one partnership drew primarily on private investment).
- The majority of stakeholder and public engagement took place during the initial phases of setting up, visioning and planning the work of the partnerships, for example via surveys and workshops. Subsequent engagement tended to focus more on partners, with some partnerships already so inclusive that it was deemed legitimate to focus only on partner engagement.

- All partnerships engaged extensively with the land management community, to influence land use and management decisions where relevant and improve understanding of landscapes and prioritisation of issues.
- Decision-making around the development and implementation of plans for each partnership was informed by the data they collected on natural capital, drivers of change, funding opportunities from natural capital and stakeholder engagement.

Selected lessons for RLUPs

Each of the following selected lessons is drawn specifically from the case studies, where more detailed guidance and context may be found (see Appendix 3).

- Plan together – in collaboration with a cross-section of stakeholders – by identifying shared priorities, principles and plans. Be inclusive and collaborative, identifying and assessing stakeholders, to target those who are influential, may be hard to reach, or whose goals may not be aligned with those of the RLUP for early engagement. Work with trusted intermediaries to reduce transaction costs and facilitate greater levels of engagement than would otherwise be possible.
- Recognise the breadth of different sources of information and knowledges. Some RLUPs may have access to extensive datasets on specific issues; whilst helpful, these rarely represent the entirety of ecosystem services and processes underlying natural capital in a landscape, and may especially neglect how human drivers and activities shape landscapes. Alternative approaches which emphasise stakeholders' perceptions and values may also be as productive.
- Identify priority issues and locations for action using a natural capital approach. This can be used to identify 'hotspots' where drivers of change and other issues coalesce to have an impact on the natural environment and the interests of local communities and other stakeholders.
- A focus on valuing natural capital assets can be useful to build business cases and negotiate payments from ecosystem service buyers. However, it is possible to generate significant income from natural capital without formal valuation, for example via price negotiations between buyers and sellers, where the buyer will receive a return on their investment, a reduction of risk or the provision of other services that they value. This information can also be used to prioritise locations and projects for funding as part of a wider partnership plan.
- Use ecosystem markets to fund projects with care. Work with expert advisors and intermediaries to assess carbon and other ecosystem market opportunities. Balance the needs of the RLUP, landowners, local communities and investors, as these might not always align when designing natural capital projects. Ensure landowners and other rights holders are protected in ecosystem markets, where possible engaging with UKAS accredited ecosystem markets such as the Woodland Carbon Code and Peatland Code. Encourage landowners to retain their rights to the carbon they save or sequester, unless they need to pre-sell units to fund their work.
- Plan systemically but work specifically. Strategic plans are important, helping build a shared vision and focussing conversations with wider stakeholder groups. However, sometimes it is necessary to focus on local level site delivery, or respond to events.

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Acronyms

ECP	Eden Catchment Partnership
GGLP	Galloway Glens Landscape Partnership
LENs	Landscape Enterprise Networks
LNP	Local Nature
NC	Natural Capital
NP AONB	North Pennines Area of Natural Beauty
PANN	South Downs People and Nature Network
RLUP	Regional Land Use Partnership
SCI	Spey Catchment Initiative
SRUC	Scotland's Rural College

1 Introduction

Regional Land Use Partnerships (RLUPs) are being set up in Scotland to help achieve Scotland's climate change targets through land use change and a natural capital approach². These partnerships facilitate engagement between local and national government, communities, landowners, land managers, and a range of other relevant stakeholders. Five RLUP pilots are being established:

- Cairngorms National Park
- Highlands Council Region
- Loch Lomond and the Trossachs National Park
- North East Region
- South of Scotland Region

They will produce a Regional Land Use Framework (RLUF) by 2023, doing so by taking a natural capital approach that considers key natural assets and the benefits these provide to communities and the regional economy.

The goal of this project was to develop a range of case studies that show how partnerships, working across multiple sectors and landownership boundaries, can deliver climate change targets, alongside other environmental aims. These other aims include biodiversity and other ecosystem services and benefits to local communities, using a natural capital approach.

We studied six case studies to explore a range of themes, including:

- How case study partnerships were developed and operated to deliver multiple benefits from land use whilst avoiding trade-offs between ecosystem services;
- How natural capital risks, dependencies and benefits were identified for different stakeholders and/or investors to drive funding for natural capital projects;
- How the value of natural capital and ecosystem service benefits were appraised;
- How projects were delivered at scales appropriate to the needs of landowners and managers, investors and local communities; and
- How they drove engagement across diverse stakeholder partnerships, including dealing with conflicts of interest between members of the partnership.

Our analysis was based on both existing published (grey and peer-reviewed) literature and also interviews with members of the selected case study partnerships to provide a critical narrative that considers both strengths and weaknesses of the approaches used and its potential application to the Scottish RLUPs context. Our methodology and analytical framework are set out in Appendices 1 and 2.

2 The Natural Capital Framework

There are many different ways of describing a “natural capital approach”, but based on a review of multiple frameworks in the literature (Appendix 2), we identified the following key elements:

- **Context and framing:** A natural capital approach requires an appreciation of the context within which decisions are being made. In addition to the biophysical

² <https://www.gov.scot/policies/landscape-and-outdoor-access/land-use/>

context, frameworks consider the social-cultural and policy contexts which may frame decisions differently over time or for different groups. It may also be important to consider governance arrangements in place for managing stakeholder engagement and conflict.

- Scope and aims:** Boundary setting is crucial to determine the stakeholders who need to be involved in decision-making and the natural capital assets and ecosystem service flows that may be affected by decisions. This may include the identification of dependencies between stakeholder interests and the natural environment, which could lead to benefits or negative impacts for either the environment or society. Goal setting in a natural capital approach should involve stakeholder engagement to achieve a balance between environmental, community and other relevant benefits, using a range of mechanisms (e.g. funding sources or advisory services).

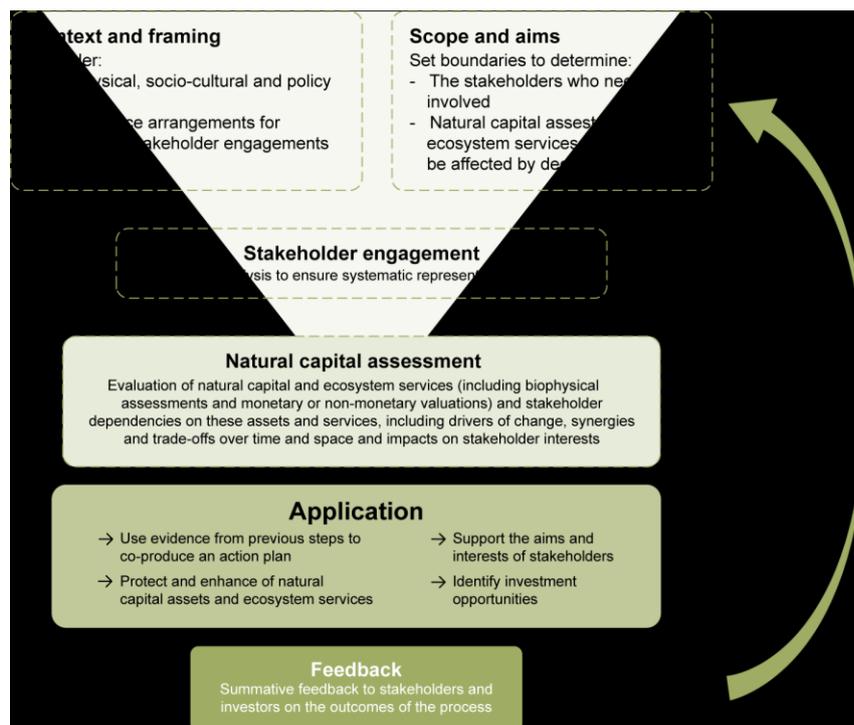


Figure 1: An integrated framework that could be used by RLUPs to guide use of a natural capital approach

- Stakeholder engagement:** Based on the previous two steps, it is possible to identify relevant stakeholders who can be engaged in further scoping the context, framing, system boundaries and aims of the work, and in shaping the natural capital assessment, application and monitoring phases that follow. Stakeholder analysis methods may be used to ensure systematic representation of stakeholder interests (e.g. those representing different land uses and rights holders, with differing levels of influence and likely to be impacted in different ways by the work of the partnership). Plans can then be developed to work with stakeholders to anticipate and manage potential conflicts of interest and drivers of change. The level of engagement will need to be adapted to the context and purpose of the work and the resources available, managing power dynamics and empowering all stakeholders to learn from each other and engage actively in decision-making.

- **Natural capital assessment:** A natural capital approach typically involves an assessment of natural capital and ecosystem services, including drivers of change, synergies and trade-offs over time and space and an assessment of the consequences of changes in these assets and services on the goals and interests of different stakeholders. This may include biophysical assessments and valuations, including non-monetary methods to assess shared, cultural values, in addition to more traditional monetary valuations of natural capital impacts and dependencies.
- **Application:** The natural capital approach is designed to inform decision-making and action, leading to plans (e.g. catchment management plans), strategies, frameworks or other programmes of work (e.g. RLUFs) that protect and/or enhance natural capital assets and ecosystem services and support the aims and interests of stakeholders. This may involve investment, whether from public or private sources, in some cases using assessments of natural capital and ecosystem services (see previous step) to facilitate investment, for example via carbon or other ecosystem markets, or green finance.
- **Monitoring, evaluation, accountability and learning:** Although absent from some frameworks, monitoring and evaluation is an important component of a natural capital approach, and should be incorporated into any plans produced by partnerships using a natural capital approach. This can provide summative feedback to stakeholders involved in decision-making and investors on the outcomes of the process, and providing formative feedback to inform future applications of the approach.

3 The case study partnerships

Each of the case study partnerships studied here shared a rootedness in landscape, all intersecting numerous habitat types, land uses and administrative boundaries. They included designated landscapes (e.g. AONBs and National Parks), river catchment and other place-based partnerships, and an approach to building partnerships using the natural capital approach that is now being applied across multiple landscapes across the UK. They all involved a wide cross-section of partners from across different sectors who shared interests in working together to deliver multiple benefits for the locations in which each partnership was based. The case study partnerships were also selected to represent a variety of spatial scales, time horizons, funding models, and governance approaches and applications of the natural capital approach.

Partnership	Aim or goal (abbreviated)
Eden Catchment Partnership (ECP)	To identify and prioritise the action(s) needed over the next ten years to manage Eden's rivers sustainably whilst improving the natural ecosystem services of the catchment.
Galloway Glens Landscape Partnership (GGLP)	To drive sustainable economic development by connecting people to their natural and human heritage.

Partnership	Aim or goal (abbreviated)
Landscape Enterprise Networks (LENSs)	Building business partnerships for resilient landscapes
North Pennines Area of Natural Beauty (NP AONB)	To 'conserve and enhance natural beauty' of the AONB, by creating, implementing and monitoring a statutory management plan
South Downs People and Nature Network (PANN)	"To protect, enhance and create a network of green and blue spaces which sustainably meet the needs of local communities, support natural ecosystem services and respects the special qualities of protected landscapes by proposing the strategic principles for planning, delivery and management of natural capital assets in the area."
Spey Catchment Initiative (SCI)	<p>(1) Demonstrate integrated catchment scale management by protecting and restoring natural features and characteristics of the Spey catchment;</p> <p>(2) Raise awareness and understanding of the whole river system and engage with stakeholders and communities within the catchment;</p> <p>(3) Further development of the Spey Catchment Initiative.</p>

As a result, case study partnerships ranged from recent and ongoing, time-limited partnerships (e.g. Galloway Glens Landscape Partnership (GGLP)), to longstanding partnerships with secure ongoing funding that had operated in their landscapes for decades (e.g. North Pennines Area of Outstanding Natural Beauty (NP AONB)). Each of the partnerships had a different statutory footing, with NP AONB and South Downs People and Nature Network (SDPNN) having statutory obligations and powers (e.g. development planning), while the other partnerships had limited statutory power other than the powers assigned to statutory bodies who were members of the partnerships. However, those with statutory powers did not rely on these powers to facilitate their work, preferring to build trust with their stakeholders and publics and work where possible via consensus or collaboration.

The rest of this section focuses on common themes arising across the cases, and where differences between the cases may prove illuminating for choices to be made by RLUPs. Full descriptions of the case studies are all available in Appendix 2³.

³ For each case we describe: (1) the scope, aims and context (in the introduction); (2) stakeholder engagement; (3) activities related to a natural capital assessment; and (4) resources used to deliver plans. We also highlight lessons for RLUPs from each case study.

3.1 Natural capital assessment

A key element of the natural capital approach outlined in Figure 1 is natural capital assessment. To assess the extent to which case studies conducted a natural capital assessment, whether explicitly or implicitly, Table 2 considers how each case study collected information about: 1) natural capital and ecosystem services, and their likely trade-offs and synergies, 2) how drivers of change were influencing or might change these assets and services in future, 3) monetised natural capital or ecosystem services, and 4) sought to understand stakeholder values (whether via qualitative or valuation methods) in relation to natural capital. The rest of this section explores these in greater depth, and subsequent sections discuss how each of the case studies managed stakeholder engagement more widely, and integrated other forms of funding into their work.

Although none of the case study partnerships claimed to have followed the full natural capital approach, most carried out some form of natural capital assessment, as can be seen from Table 2, and had covered the majority of the key components, as outlined in Figure 1.

3.1.1. Gathering information about natural capital

The majority had collected (and in many cases mapped) information about natural assets and ecosystem services and their interactions (including trade-offs and synergies in some cases). Most used existing secondary data drawn from their partner organisations and other public sources (e.g. earth observation data), compiling these via reports, maps and webpages. Only one of the case studies collected additional primary data to assess their natural capital and ecosystem services: NPAONB conducted peat depth surveys, vegetation and bird surveys, drone mapping, and elicited inputs from stakeholders, leading to the creation of an interactive map on their website.

3.1.2 Drivers of change in natural capital

All case study partnerships identified drivers of change, using a range of approaches, for example including analysis of secondary data (including literature review) and workshops. This included both historic/current drivers (e.g. population and behaviour change) and likely future drivers (e.g. climate change). Although most drivers focussed on social and environmental aspects of the landscapes and communities in their area, some also considered business drivers as part of their work with ecosystem service investors. This was particularly evident in the Eden Catchment Partnership (ECP), Landscape Enterprise Networks (LENs) and the North Pennine AONB case studies, which were working actively with water and carbon investors. LENs, the South Downs People and Nature Partnership (SDPNN) and Spey Catchment Initiative (SCI) also used their analysis of drivers to identify risks in their landscapes and catchments which needed to be addressed via the work of the partnership (SDPNN prioritised “hotspots” for future work where multiple drivers intersected), or might represent investment opportunities for companies exposed to those risks (e.g. risks to infrastructure or supply chains perceived by LENs investors).

3.1.3 Generating revenues from natural capital

To achieve their goals, a number of case study partnerships had enabled partners and landowners to monetise ecosystem services, generating income from carbon offsetting or the delivery of other ecosystem services to private buyers. While this was the main focus of LENs and a major goal of the NP AONB, other partnerships only sought investment in natural capital or ecosystem services for discreet projects. For example, ECP funded reductions in phosphate in river water via United Utilities and funded wider river restoration activities with investment by Network Rail, but the majority of its work was

funded from public sources. SDPNN used payments for ecosystem services to fund a pilot project and SCI worked with The Macallan whisky brand to part-fund their Delliefure Burn Floodplain Re-connection and Habitat Enhancement Project. GGLP used valuation work more indirectly to inform business cases to leverage public funding and prioritise work in certain systems. In contrast, NP AONB had successfully monetised significant amounts of peatland restoration via the Peatland Code and were seeking to develop future schemes where payments for other services could be stacked on top of carbon finance (see the case study in Appendix 2 for full details of the approach taken).

Partnerships facilitated payments for ecosystem services in a number of ways, ranging from signposting expertise (e.g. intermediaries and advisors) to actively approaching and negotiating with investors on behalf of landowners and other beneficiaries in their partnership. The extent to which payments were conditional on delivery of ecosystem services varied across different LENS landscapes, and were most tightly coupled in trades with water companies to deliver water quality outcomes. In other cases, payments were only weakly conditional on delivery, with benefits shared across pools of investors (e.g. re-insurance) or combinations of investors (e.g. supply chain resilience to climate change and milk quality for First Milk and Nestle).

3.1.4 Stakeholder values for natural capital

To shape their approach to both managing and monetising natural capital and ecosystem services, case study partnerships sought to understand the value placed on the natural environment by their stakeholders. The majority of partnerships assessed and incorporated the differing values of their stakeholders via consultative and collaborative activities, for example to develop principles or vision statements that could direct the development of partnership plans and activities, or giving local communities and other stakeholder significant power over the co-creation of projects that were designed to meet their needs. However, some partnerships used valuation methods to further understand the value of their natural capital. For example, GGLP assessed the value of fisheries to the local economy and assessed peatland carbon finance opportunities, LENS used price negotiations to value the outcomes sought by local investors, and NP AONB engaged stakeholders in deliberative monetary valuation and qualitative research to value the full range of ecosystem services from peatland restoration. More details of these methods can be found in the full case study in Appendix 2.

Table 1: Elements of natural capital assessment as they were applied in the case studies

Case study	Collected/mapped information on natural assets and ecosystem services and their interactions	Identified drivers of change	Generating revenue from ecosystem services	Understood stakeholders' values for landscapes
Eden Catchment Partnership (ECP)	Scored habitat data to create maps showing opportunities to manage ecosystem services to achieve impact. As part of this, they used existing biophysical datasets from partners (e.g. x, y, z) for natural capital mapping. There was insufficient data on drought and low flow events, and data may be sourced on phosphate and other issues at farm scale via United Utilities FarmScoper tool in future.	Identified processes and risks to rivers and priority ecosystem services, with a particular focus on water quality and phosphate given the interests of United Utilities in the partnership (partly in response to water treatment cost and policy drivers in their business).	Reductions in phosphate in river water were funded via United Utilities and wider river restoration activities were funded by Network Rail.	The partnership was particularly inclusive, involving over 20 statutory agencies, local government, private, non-government, community and academic institutions, so the focus was on engagement with partners, who then represented the values and interests of their stakeholders in the work of the partnership.
Galloway Glens Landscape Partnership (GGLP)	A detailed assessment based on secondary data from partners was included in the Landscape Conservation Action Plan, including landscape types, landownership, access, the extent and quality of different habitats, the status of key protected/iconic species, traditional livestock practices, statutory designations and river environments.	The management plan identifies a number of 'forces of change', including climate, ecology, human population and behaviour, transport, agricultural change, energy and forestry.	Valuation work was used to inform business cases to leverage public funding and prioritise work in certain systems, but to date there have been no direct payments for ecosystem services.	The partnership engaged with stakeholders to refine plans and co-produce projects. An assessment was made of the value that the fishery was delivering to the local economy and their partners, and an economic appraisal was conducted of peatland carbon finance via the Peatland Code.

<p>Landscape Enterprise Networks (LENs)</p>	<p>A network opportunity analysis identifies which sectors and businesses in a region are most dependent on a landscape's natural assets and ecosystem services, systematically identifying natural capital investment opportunities</p>	<p>The LENs entity typically identifies business and environmental drivers of change in its role as demand aggregator to identify and get interested business around the table to co-procure ecosystem services</p>	<p>Although sometimes only weakly conditional on delivery, payments are based on ecosystem service outcomes. In some cases these benefits are shared across pools of investors (e.g. re-insurance), combinations of investors (e.g. supply chain resilience to climate change and milk quality for First Milk and Nestle) and in others, individual investors expect and monitor specific outcomes (e.g. water quality outcomes for utility companies). LENs tends to fully fund interventions without the addition of public funding, though landowners may also receive public funding for other interventions on their land.</p>	<p>The value placed on natural capital by local investors and land-based organisations (often farmers) is explored via price negotiations to reach a price point at which transactions can be agreed. Other stakeholders, for example local communities are not consulted unless the interventions affect them or they are linked to the investment e.g. via local authorities investing in flood risk alleviation</p>
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<p>North Pennines Area of Outstanding Natural Beauty (NP AONB)</p>	<p>Undertook a 'peatland knowledge gathering exercise' including secondary data sources, primary data collection via peat depth, vegetation and bird surveys, drone mapping, and inputs from stakeholders, leading to an interactive map on their website</p>	<p>The AONB and its partners have commissioned a range of reports over the years to examine drivers of change, which they need to respond to in their statutory management plan, including climate and other environmental drivers, social/behavioural drivers and carbon market drivers.</p>	<p>AONB partners have successfully monetised peatland restoration via the Peatland Code and are now looking at developing longer-term projects including biodiversity monitoring via the Wilder Carbon standard, and are seeking to develop future schemes where payments for other services can be stacked on top of carbon finance, designing projects in time and space to ensure additionality rules are not broken for carbon markets they participate in. In this case the scale of potential investment is in the millions, although much of this investment is unlikely to find a home in the AONB as landowners are investing their own capital where possible to retain carbon rights.</p>	<p>The partnership is longstanding and so has long-term trusting relationships with a wide range of stakeholders, including landowners and community/access groups, who have engaged in deliberative monetary valuation and qualitative research to value the full range of ecosystem services from peatland restoration. They subsequently convened landowners/managers, investors, academics and NGOs in a process to identify different ecosystem market models that could layer payments for multiple ecosystem services on top of carbon finance.</p>
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<p>South Downs People and Nature Network (SDPNN)</p>	<p>Assessments included habitat condition, connectivity of priority habitats, ecological status of water bodies. They mapped and audited natural assets using the EcoServ-GIS model, drawing where relevant on earth observation data, and also incorporated information from local plans, strategic initiatives, datasets etc to report on six themes. They used the EcoServ-GIS models to identify natural capital stocks and flows including carbon storage and pollination services, and indicate levels of demand and the capacity of the ecosystem to deliver needed services.</p>	<p>Conducted a separate exercise to identify drivers of change, and where these “coalesced” to identify “hotspots” for strategic investment, which they identified as “natural capital investment areas”.</p>	<p>A skilled finance officer within the Park Authority developed a set of natural capital accounts and combined with the application of earth observation data to monetise ecosystem services as part of a pilot that ended in 2020. There has not been budget since then to go back to it but they expect to revisit it as it was a valuable area of work. SDNPA worked with the UK National Parks through their Climate Change and Energy Group to investigate carbon investment and are working with an international company to develop a carbon trading platform.</p>	<p>Their planning process involved public consultation and stakeholder co-creation of a regional vision and high-level principles, informed by discussions on 'natural functions of the landscape and ways to achieve multiple benefits'. Methods included a Citizens Panel survey, workshops, pop-up consultation stalls and consultation events targeting hard-to-reach groups e.g. young people, to ensure their values and perspectives were included.</p>
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<p>Spey Catchment Initiative (SCI)</p>	<p>The Catchment Management Plan drew upon a broad base of existing statutory assessments and plans including the river basin management plan, a flood management plan, habitat assessments and fish surveys, and identified potential trade-offs and synergies between ecosystem services, including maps of water quality and land classifications.</p>	<p>Drivers of change were considered explicitly, including climate change, diffuse pollution from livestock, existing abstraction rights, which reduce flow rate, and further pressure from the built environment. This was used to identify key risks in the catchment that had not already been addressed in other plans (e.g. under the Water Framework Directive).</p>	<p>Private sector funding was leveraged for certain projects under the plan, for example, The Macallan whiskey brand contributed funding to the Delliefure Burn Floodplain Re-connection and Habitat Enhancement Project.</p>	<p>The Catchment Management Plan was developed through public and stakeholder consultation, working groups and workshops to ensure that a range of values and perspectives were incorporated. Thereafter, stakeholder inputs to the operation of the partnership were indirect via partner organisations.</p>
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3.2 Approaches to public and stakeholder engagement

All case study partnerships achieved strong stakeholder buy-in, although this was more inclusive in some partnerships than others. Engagement often took place in two phases:

- Most engagement took place during the initial phases of setting up, visioning and planning the work of the partnerships, including both stakeholder and public engagement, for example via surveys and workshops. It was during this initial phase of work that wider public engagement was most likely, for example SDPNN included a Citizens Panel survey, workshops, pop-up consultation stalls and consultation events. This helped them target hard-to-reach groups e.g. young people, to ensure their values and perspectives were included in their plans. Although all attempted to consult as widely as possible, some did this systematically using stakeholder analysis tools to ensure the full range of interests were represented, vulnerable groups identified and power dynamics could be managed effectively during the engagement process.
- After this initial phase, engagement tended to focus more on stakeholders and partners. In some cases, the case study partnerships were already so inclusive that it was deemed legitimate to focus only on partner engagement, assuming partners would then engage with their own members and stakeholders, indirectly ensuring wide and representative engagement. The ECP and NP AONB partnerships both included over 20 statutory agencies, local government, private, non-government, community and academic institutions, and ECP commented that managing such a diverse partnership was a significant enough challenge in its own right. Although the GGLP had significant funding for public and stakeholder engagement, this was not as well-resourced in other partnerships, and may explain the emergence of this two-step approach to engagement, focussing resources in the early stages, where engagement can most significantly shape partnership plans.

3.2.1 Pre-existing relationships

It was common for case study partnerships to build on pre-existing bilateral relationships, such as the agencies and environmental NGOs in the ECP. Indeed, one strength of partnerships is that they are generally viewed by others as relatively neutral; this means they may be judged better-placed to create new connections and relationships.

Frequent, multi-level communication with stakeholders was emphasised by a number of case study partnerships, including events and work with local media to help shape the narrative around their work and “hand-control the message”⁴. In addition, partnerships emphasised the need to proactively engage with high-level stakeholders including politicians and other influential figures, for example via site visits to the NP AONB; stakeholder analysis helped them to systematically prioritise stakeholders for engagement, and adapt engagement strategies to their interests.

3.2.2 Trust

Trust was a key factor in successful stakeholder engagement. Both GGLP and ECP talked about the importance of partnership branding to facilitate stakeholder engagement with their work, given the mixed relationships and perceptions associated

⁴ a GGLP interviewee

with some member organisations. This was particularly important where there were strained or distrustful relationships, for example with statutory bodies, and the partnership branding was able to create a “clean slate” for engagement with groups that would otherwise not engage with activities linked to certain partners. LENS often employed trusted local organisations to facilitate interactions with land-based organisations to generate interest in, negotiate and promote natural capital opportunities. Given the distributed nature of farming stakeholders across landscapes, working with trusted intermediaries helped to reduce transaction costs and facilitate greater levels of engagement than would otherwise have been possible.

3.2.3 Motivations and barriers

Motivations for engagement with case study partnerships among stakeholders were broad. Stakeholders who engaged as full partners typically shared strategic and/or operational goals in common with the objectives of the partnership (often as a result of the co-production of partnership plans), for example the engagement of water companies in partnerships like ECP, LENS and SCI that sought to improve water quality. Wider stakeholder engagement varied from time-limited and specific engagement in issues of interest to them, to more continual input via engagement with events and ad-hoc meetings across a wider range of issues on a more continual basis. This stakeholder engagement was based on intrinsic motivation where values and priorities aligned, for example where partnerships enabled stakeholders to achieve existing goals, such as a desire to improve the environment or plant hedges among some LENS farmers. Engagement was also driven by extrinsic incentives where case study partnerships were able to provide funding or other benefits from engagement, for example engagement from landowners and managers with partnerships that offered payments for ecosystem services (see next section).

Barriers to engagement were also diverse, including:

- Compatibility issues between the goals or operational context of stakeholders and the goals and opportunities offered by the partnership (e.g. unattractive contract lengths in LENS);
- Barriers to engagement by tenants and other rights holders, given the decision-making power of landowners over the land they use, regulatory factors that may constrain the application of certain interventions or initiatives in certain locations (e.g. designated sites); and
- The additionality criteria in some ecosystem markets that prevent stacking of payments for multiple ecosystem service outcomes.

3.2.4 Building a shared vision

Case study partnerships sought to build shared visions, though they did not expect to achieve unanimous agreement from all partners or stakeholders across all issues, given the diverse interests and values of their members. Specific tools or approaches were rarely badged explicitly as being for conflict resolution and consensus building. Instead, information and perspectives from partners and stakeholders were often integrated with or presented alongside more traditional sources of evidence, such as the analysis of secondary data, in partnership documents and decision-making processes. This is important as many partners and stakeholders were in conflict on some issues prior to the establishment of the partnership. The integration of different perspectives was done partly through the design of partnership activities to ensure representative inclusion across different interests, and partly through the facilitation of these activities by skilled individuals who were widely trusted across the partnership. The SDPNN noted the need for bespoke approaches to engagement in different locations within the park, and

although commenting on the expense of such “involved” engagement, commented on the value of this engagement as part of the evidence-base for their planned work, and the power of such local engagement in bringing people together around the partnership.

3.2.5 Knowledge sharing for co-delivery

The case study partnerships all fostered knowledge sharing between their members and stakeholders, from the creation of a shared vision or set of high-level priorities to collaboration on partnership activities. Approaches ranged from workshops and interviews, to longer-term structural mechanisms such as working groups and the creation of online platforms. In some partnerships, methods were adapted to different groups, for example LENSs typically shared knowledge of investment opportunities and co-created procurement propositions via workshops with potential investors, but used a trusted intermediary to get feedback from land-based organisations via one-to-one conversations, workshops and surveys to co-create the interventions that could deliver outcomes for investors and the design of the scheme.

Case study partnerships were not likely to have every possible stakeholder involved in all meetings, so it was useful to identify when to connect with other organisations on an ad hoc basis. For example the SCI works with Scottish Water on specific issues, such as water quality, but Scottish Water are not involved in most of its catchment planning. It can also be useful to inform, learn from and complement with other overlapping initiatives, so as to improve plans and make use of resources. For example, the SDPNN coordinates with the Local Nature Partnerships (LNPs) within its area, and the LNPs are often more closely associated with delivery.

All case study partnerships engaged extensively with the land management community. Engagement with land-managers can also improve understanding of land use, landscapes and prioritisation of issues. Giving stakeholders more agency in the planning and delivery will also tend to foster their buy-in, for example, the enthusiasm for the LENSs approach was largely predicated on the agency it gave land-managers.

3.3 What other resources do partnerships draw on?

Case study partnerships varied in their financial scope:

- some with uncertainty over how their future core costs would be sustained for any period in future (e.g. partners trying to negotiate a new LENSs trade);
- others had some security over their core secretariat funding for a few years but were not assured of future funds for delivery (e.g. the SCI);
- unusually, the Galloway Glen had considerable funding for delivering as well as planning, albeit only for a defined period.

Case study partnerships relied primarily on public resources, and contributions in cash or in kind from partner members. LENSs were the only partnership to draw primarily on private investment to fund its activities. The rest, including NPAONB which was successful in obtaining significant private investment, drew primarily on public funds for their work. Some, like the ECP, expected partners to bring their own funding which could influence the focus of their work; for example the ECP’s substantive focus on flood risk alleviation was due to the availability of funding via one of their partners, the Environment Agency. Public funding is normally time limited, typically for the duration of the partnership or projects funded or based on annual funding cycles. Although core funding was secure for SCI as a result of private investment in the partnership, annual funding cycles created uncertainty for this partnership as they sought to top up this investment and appoint a Project Officer.

While all case study partnerships were seeking funding to remain operational for the long-term, GGLP discussed their time-limited nature as a benefit, providing them with an urgency that facilitated early engagement with stakeholders who did not want to miss the opportunity presented by the partnership. They also talked about how they had reframed the concept of legacy as the lasting benefits of time-limited work, rather than defining this in relation to the longevity of project activities.

The breadth of partners engaged enabled case study partnerships to create a multiplier effect where they were able to identify funding sources with complementary goals and achieve economies of scale by integrating these sources to generate projects at a larger scale or with a wider scope and impact. The added value was particularly evident where partners would not have been aware of funding opportunities or synergies in the absence of the partnership. An example of this was business opportunities arising from contracts with the GGLP which went on to generate additional value through the contribution of these businesses to the wider work of partners they built relationships with via GGLP.

3.4 Wider constraints

Finally, it is important to discuss some of the wider constraints experienced by the case study partnerships we reviewed. Several issues were mentioned during the interviews that show the limits to what can be achieved. Firstly, government policies and frameworks matter. The priorities and resources attached to policies – especially environmental policies – have been a strong influence on what parts of plans partnerships can deliver, since much action has been funded by applying to public grants. Flexing to respond to different funding streams and priorities was described by one as a “*pragmatic*” approach for partnerships, but even where there is flexible pragmatism, there may ultimately be limits to what can be achieved. However, as noted above, there is quite a diversity of agencies and funds that can be accessed – for example, Network Rail – so it is worth thinking broadly about the possibilities. Additionally, the governance of land tenure and land rights is influential, as this affects land-managers’ ability and willingness to participate in or receive benefits from some changes in land use.

Secondly, events – such as Storm Desmond, which raised the profile of flooding in the Eden Catchment Partnership – can change priorities and concerns of local people and politicians. Partnerships cannot anticipate specific events, but as some of the partnerships were public bodies (e.g. NP AONB), they do now have an obligation to plan for the impact of a changing climate on their operations, and so adaptation is likely to be a priority for RLUPs.

4 Implications for RLUPs

We conclude that it is feasible for a natural capital approach to be considered by place-based partnerships such as RLUPs, which have to deliver on local priorities in specific geographical locations. Even in constrained funding environments, a natural capital approach can enable partnerships to generate positive outcomes, especially through collective learning and identifying new opportunities and synergies between partners and funding sources. In particular, a natural capital approach can help:

- Build a balanced overview of the range of ecosystem services and benefits to communities and stakeholders that land and natural assets can provide;

- Understanding of how different services may interact in response to projects and interventions, leading to multiple benefits or negative unintended consequences;
- Contextualise and respond to the different priorities and interests of specific partners and stakeholders, helping pre-empt and manage conflicts of interest;
- Identify new opportunities and funding sources to deliver tangible benefits from nature; and
- Act as a multiplier for local investment by partnering with local businesses and others who can align their funding and objectives with the activities of the partnership

There is a large range of participatory decision-making frameworks available (see Reed et al., 2018 for a review), but in comparison to these, the natural capital approach explicitly considers links between social and ecological systems, enabling synergies and trade-offs to be understood and incorporated into the decision-making process. In this way, the natural capital approach increases the likelihood that conflicts of interest will be pre-empted and new opportunities for funding and action will be identified.

Delivering a natural capital approach is not necessarily a daunting or completely novel process. In particular, principles of good stakeholder engagement and consensus building are essential and already familiar to many. Furthermore, primary data rarely needs to be collected, and complicated secondary data sets do not always need to be used, though it may be helpful to incorporate where the skills exist to use these data sources. The language of natural capital need not necessarily be used, though for clarity, consistent terminology should be employed where possible. Nor is it always necessary to value or monetise ecosystem goods and services, though doing so can help fund and justify actions. Below we list specific recommendations for RLUPs, to help them achieve a natural capital approach. Each of the following lessons is drawn specifically from the case studies, where more detailed guidance and context may be found (Appendix 3).

4.1 Structuring partnership working

Plan together: For partnership-based delivery of complex ecosystem services, multi-stakeholder engagement and action is vital. Every partner has a role to play in creating as well as delivering the plan. This should be made clear to all partners at the beginning of the RLUP. Identifying cross-cutting priorities between stakeholders results in stronger engagement and action. The co-development of a high-level, evidence-based vision or set of principles is a useful way to ensure strategic coherence in the funding, planning and delivery of projects within a wide-ranging partnership, whilst enhancing the buy-in of partners and stakeholders. However, there are challenges when applying/delivering visions at the local scale. A bespoke approach in collaboration with local stakeholders is needed, as it can be hard to translate high-level principles into practical action at this scale.

Drill down to local and specific issues: Drilling down to a local level and understanding the unique context and priorities of an area can help pick apart 'high level' plans and make action more relevant and targeted. It is acceptable to have quite broad-brush data at the regional level, but this needs to be much more granular at the sub-regional level to facilitate more detailed planning and engagement. Creating sub-groups (e.g. linked to sub-catchments or local communities) or thematic or issues-based working groups can ensure meetings are targeted, enjoyable and efficient, and more likely to engage in areas that are of particular interest to the priorities of partners and stakeholders.

Coherence and integration between projects funded by the RLUP must be maintained to ensure efficient working, so that synergies between projects can be exploited. This needs to balance the identification of projects from the bottom up to meet local needs with the need for strategic oversight, provided by themes and working groups representing the interests of multiple projects.

Value the role / input of partnership coordinators: Networking within and between RLUPs, seeking funding, and sometimes overseeing delivery, depends largely on coordinators or secretariats. Funding these roles is often challenging in a climate of austerity, but their skills and time are essential to what is achieved.

Work towards enduring benefits rather than securing ongoing funding for funding's sake: Where it is not possible to maintain funding for activities, reframe legacy as the benefits that endure from these activities and celebrate these, using project end dates to focus minds and drive early engagement rather than viewing the discontinuation of funding as a failure.

4.2 Planning engagement

Be strategic in engaging key stakeholders: Be inclusive and collaborative, identifying and assessing stakeholders, to target those who are influential, may be hard to reach, or whose goals may not be aligned with those of the RLUP for early engagement. While seeking to facilitate change, RLUPs also need to be aware of the reasons why some groups may wish to protect the status quo, in order to engage sensitively and early with these groups to avoid later conflict.

Early stakeholder engagement is critical: Early stakeholder participation in the consultation process tends to result in stronger plans, that are more likely to be implemented and leave a lasting legacy, by improving understanding of issues, balancing stakeholder interests, and helping to dispel conflict by identifying contentious issues early. The natural capital approach focuses on engaging stakeholders around existing natural capital and future changes that could protect those assets and enhance the provision of ecosystem services. Given the likelihood of trade-offs between assets and services arising from the work of the RLUP, it is essential to engage early to pre-empt and manage conflicts of interest between stakeholders. Without this, it may be difficult to get buy-in to plans and implement plans on the ground.

Communication and branding can engender buy-in from stakeholders, and is especially useful to help distance RLUPs from the individual brands of partners where stakeholders hold prejudices against certain organisations in the partnership.

The landscape is your showroom: Take public and private sector stakeholders on landscape visits and show them what can be done in practice to protect natural capital and enhance the provision of ecosystem services that have value to them and their organisations. Shout about what is being done, and tailor benefits to match the stakeholder.

4.3 Collecting and working with evidence

Integrate natural capital data with local knowledge: Seek out pre-existing data but do not be skewed or constrained by any unevenness in what is covered by specific datasets – stakeholder engagement can help plug gaps in the data with local knowledge and their perspectives can help interpret data and maintain a more holistic focus on the interactions between people and their landscapes. For example, stakeholders may have access to data that would otherwise not be available to the RLUP, and where there is no

available data, they may have expert knowledge that can feed into decision-making in the absence of data, helping ensure plans are actionable and evidence-based, drawing on the widest possible range of information sources.

Strategically identify priority issues and locations for action: A natural capital approach can be used to identify ‘hotspots’ where drivers of change and other issues coalesce to have an impact on the natural environment and the interests of local communities and other stakeholders. This can help target efforts on key locations, using both regional evidence and local insights. Figure 2 shows Natural Capital Investment Areas identified using this approach in SDNPP, showing where drivers of change and other issues coalesced, to have an impact on nature and natural processes. The hotspots also tended to be protected areas. Each area was regarded as having a unique set of environmental challenges that needed a bespoke management approach.

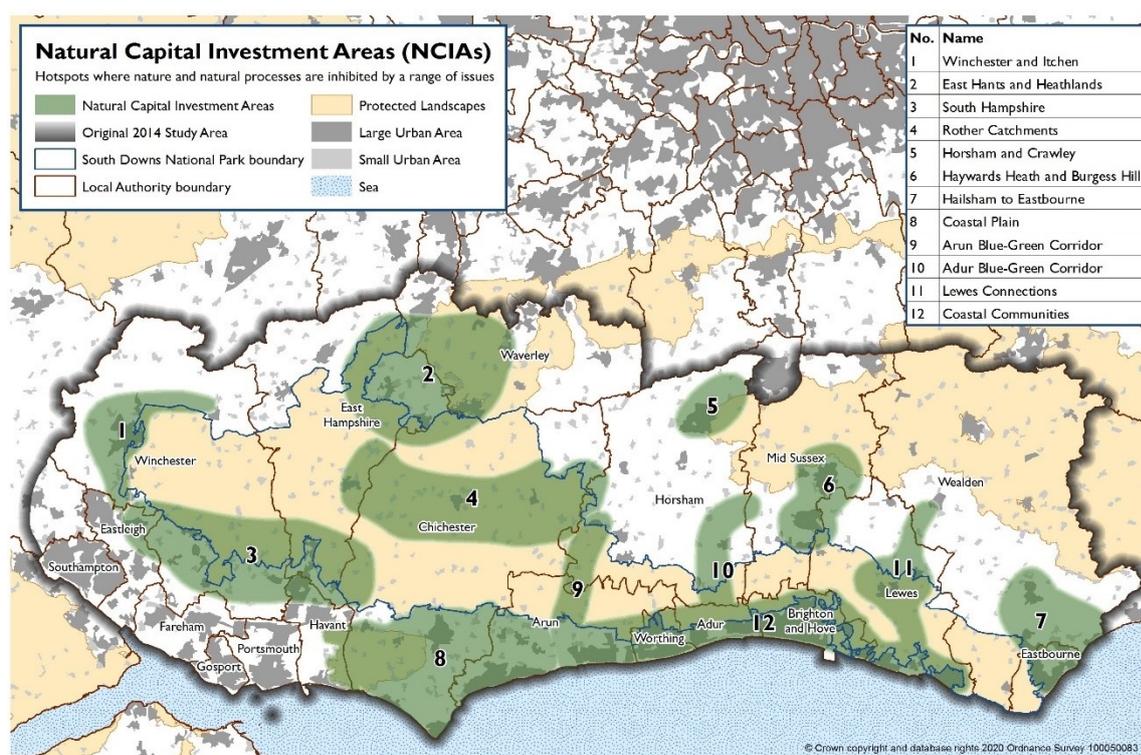


Figure 2: Map of the PANN area and the 12 NCIAAs

Valuation is not compulsory: Valuing natural capital assets can be useful to build business cases and negotiate payments from ecosystem service buyers, but it is possible to generate significant income from natural capital without doing valuations. Rather than focusing on “valuation”, it may be more helpful to think about the “evaluation” of benefits from natural capital from the perspective of different stakeholders. In this way, it is possible to recognise a wider range of benefits from nature, including cultural and social benefits that are hard to quantify or value, and build these into value propositions that can be more effectively targeted to buyers who are likely to value and be willing to pay for specific services. This may expand the range of ecosystem services and buyers available to the RLUP.

4.4 Use ecosystem markets to fund projects with care

Stack payments from multiple natural capital buyers where possible: Where activities are funded by carbon markets (such as the Peatland Code or Woodland Carbon Code), additionality rules may make it difficult to exploit additional income streams from other ecosystem markets, for example water companies seeking water quality benefits from the same work. Stacking payments from multiple buyers is possible, as long as they each pay for additional work leading to specific outcomes that would not have been delivered without their investment. Alternatively, it is possible to identify different parts of a landscape for the delivery of outcomes to different buyers, for example peatland restoration and valley woodlands in upper catchments via the Peatland Code and Woodland Carbon Code respectively, with tree planting on floodplains for natural flood management via payments from a local authority, and farm management interventions to improve water quality via payments from a water company. This cannot be prescriptive due to the need for landowners to engage with these schemes on a case-by-case basis, but by identifying opportunity maps in this way, it may be possible to engage landowners with opportunities they might not have previously considered.

Ensure landowners and other rights holders are protected in ecosystem markets: Where possible, encourage landowners and others interested in ecosystem markets to engage with UKAS accredited markets such as the Woodland Carbon Code and Peatland Code. Where necessary to engage with other markets (e.g. for water quality, biodiversity or flood risk alleviation), draw on external expertise to draw up contracts to deal with issues such as non-delivery, additionality and permanence. As part of these contracts, consider benefit sharing arrangements between landowners and tenants (or other rights holders), to ensure fair distribution of benefits and strong engagement from all who will be needed to deliver the necessary outcomes.

Create baselines, whether or not you want to engage with ecosystem markets now: Beware that many of the companies being supplied by farmers are setting net zero targets and demanding emissions reductions or carbon sequestration from their suppliers. Although many companies are willing to pay for interventions, there is a danger that some may make buying decisions conditional on the delivery of net zero targets. If landowners have already sold their emission reductions and sequestration to offsetters via carbon markets, they may not be able to deliver the reductions their suppliers demand in future, putting contracts at risk. To ensure that any benefits can be captured and used to meet these future demands, it is important to create robust baseline data prior to implementing any intervention that might reduce emissions or sequester carbon.

Help landowners keep their options open, in case they want to monetise ecosystem services later: Even if you are not using carbon or other ecosystem markets to fund interventions, if your goal is to reduce emissions, sequester carbon, enhance biodiversity, improve water quality or reduce flood risk, it is important to collect baseline data prior to implementing interventions, and create documentary evidence that the work is being undertaken for this purpose in the expectation of future funding from ecosystem markets. Where such evidence exists, it is often possible to retrospectively generate credits that may have value in future. Where case study partnerships had not advised landowners about this, there was backlash from landowners who could not now claim carbon credits for work they did with public funding.

Encourage landowners to retain their rights to the carbon they save or sequester: Although it is possible to pre-sell carbon in some markets, to pay for the costs of delivering projects, there are now financial products that could enable landowners to

raise their own carbon finance in order to retain their carbon for future sale as verified units, which are likely to be significantly more valuable.

Work with expert advisors and intermediaries to assess carbon and other ecosystem market opportunities: Although secondary data can help identify priority locations and ecosystem services for natural capital projects, more detailed assessments including the collection of primary data, for example via field surveys, are typically needed to develop a project for market. Advisors and intermediaries have the necessary expertise and can do this work for the RLUP, building their costs into the cost of the project that is offered to investors. RLUPs can then use this information to engage with landowners about opportunities relevant to their land holdings, to help deliver the aims of partnership plans.

Influence how markets shape land use for community benefits: It is important for RLUPs to retain a landscape-scale overview of land use change, especially as investment funds are increasingly seeking large-scale land acquisitions for tree planting, motivated by timber and carbon markets. Where large-scale changes in land use would compromise the interests of other stakeholders, we suggest that RLUPs may be able to convene landowners to offer land for sale across a landscape, at a more attractive scale for investors, in return for tangible benefits for local communities e.g. via a community wealth fund or a series of projects prioritised by communities alongside afforestation plans that they help shape.

4.5 RLUPs as balancing acts

Looking across the issues listed above, it is clear that partnership working entails many balancing acts. In other words, many aspects of RLUP planning and delivery reflect a dynamic trade-off between different considerations. Finding the ‘right’ balance is something that may vary for different RLUPs, and may vary for each partnership over time. There is no single or best recipe for delivering a natural capital approach, but the following issues may be sources of tension, and so need consideration:

Focus on place but consider connections. By definition, all the case study partnerships studied in this research, similar to RLUPs, were rooted in specific landscapes. This gave them the ability to capitalise on stakeholders appreciation and connection to place – or indeed their physical or business dependency on place. Place identity can be powerful. However, it is important to consider connections within and even beyond the landscape, e.g. the ECP and SCI plan upstream work considering downstream priorities, and LENs considers businesses whose offices may be physically outside of a landscape but whose supply chains may be dependent on it.

Plan systemically but work specifically. Making strategic plans are important and may consume much effort by RLUPs. They are a focal point for sharing knowledge and ideas by partners to build a shared systemic vision. They are also often the ‘object’ around which an RLUP can focus a conversation with wider stakeholder groups. However, sometimes it is necessary to focus on local level site delivery, or respond to events (many case study partnerships found it useful to have small-area and/or specific topic sub-groups to progress work on specific issues). This can make good use of everyone’s time as long as ideas are reconnected at some point. The need to break things down can be especially likely for RLUPs covering a large area (as NP AONB and ECP experienced). However, it is important for RLUPs not to lose sight of their strategic framework, so that they can facilitate integrated land use rather than numerous discreet and disconnected projects.

Balance structures with relationships. Based on the experience of case study partnerships, RLUPs may benefit from regular meetings with a 'core' or management group of partners (for example, four times per year), potentially supplemented by other specific working or thematic groups. Having well organised and skilfully facilitated meetings can be essential to keep momentum and ensure a productive process -and regular meetings can help to appraise progress and update operational plans. However, although some formalities (e.g. terms of reference documents and constitutions) are important for transparency, that does not mean that partnership working should be expected to be dry and entirely formal. Instead, building relationships both within and beyond the RLUP is likely to be valued by stakeholders. Based on the case study research, the ability of coordinators or officers in the RLUP to foster interpersonal connections often seems crucial to unlocking many of the other benefits of partnership working.

Aspire to consensus but acknowledge conflict and differing views. Achieving the goals of RLUPs will entail influencing land use and management at some point, but RLUPs rarely have any direct control over land. Therefore, creating relationships, especially with land-managers, is pragmatically essential to have a chance of achieving change. It can be awkward when some of these or other stakeholders disagree, but this is all the more reason to engage early. Examples of contentious topics that did not prevent case study partnerships from planning included grouse shooting and dredging; consensus is not always possible, and disagreement should be acknowledged.

Build a vision but prepare to flex. Building a shared vision is an important activity for RLUPs; it helps to prioritise issues, and is often a means to help connect stakeholders that may disagree on specific contentious issues. However, most case study partnerships evolved over time, often reflecting events (for example, after terrible flood events, this became more prominent in the Eden) new concepts (such as ecosystem services or natural capital) or new needs or learning within the partnership (e.g. updating plans to reflect slow progress on certain issues). This flexibility and adaptability over time will be equally important for RLUPs.

Balance the needs of the RLUP, landowners, local communities and investors, as these might not always align when designing natural capital projects. Where investment from landowners and/or public sources can deliver the goals of the RLUP alongside public and local community benefits, external private investment may not be needed and should not be seen as an end in itself.

Mix different datasets and knowledges. Some RLUPs may have access to extensive datasets on specific issues; whilst helpful, these rarely represent the entirety of ecosystem services and processes underlying natural capital in a landscape, and may especially neglect how human drivers and activities shape landscapes. Alternative approaches which emphasise stakeholders' perceptions and values may also be as productive. In general, consider how data can unlock delivery. Some case study partnerships mentioned that commissioning improved datasets on specific issues, or monetising specific actions or benefits, is often cited as useful for justifying an action or investment to a potential funder. For example, demonstrating the cost-effectiveness of peatland restoration on water quality in NP AONB helped water companies to choose to invest in this instead of industrial chemical treatment plans. However, one case study partnership made monetised natural capital accounts that have not been used. It is important to be clear about why an improved or different dataset is needed and how it will be used: quite often case study partnerships did not need detailed datasets in order to set their priorities, and commissioning new datasets on natural capital or particular natural assets may not produce any change. On the other hand, with expert advice from intermediaries, natural capital data can be used to identify new investment opportunities

and business cases. Although it is expected that RLUPs would typically use secondary data to identify potential opportunities, they may also be able to facilitate connections with companies who can provide decision-grade data to landowners as part of the subsequent development of projects for ecosystem markets.

There is no single right way of partnership working, and what is right for one RLUP may change over time. Therefore, it is useful to plan to periodically appraise and reflect on the process and outcomes of partnership planning. By reflecting on changes in the landscape, society and within the partnership itself, the partnership will be better placed to update its vision and react to new opportunities. Place-based partnership working is an inherently dynamic process.

5 Conclusions

This project synthesised evidence from natural capital frameworks to develop an analytical framework that could be used by RLUPs to both evaluate and guide more effective decision-making around natural capital. Following a natural capital approach, RLUPs will be able to better understand how natural capital can be managed to deliver benefits for stakeholders, including new income streams from natural capital where relevant. Six case studies were researched, based on literature and interviews, to provide a critical narrative that considered both strengths and weaknesses of the approaches used and their potential application to RLUPs. Future research might usefully compare the natural capital approach, as applied by RLUPs or the case studies studied in this project, to comparable partnerships that did not take a natural capital approach, to further explore the added value of this approach.

Although none of the case study partnerships claimed to have done a complete natural capital assessment, the majority included key components, including analysis of secondary data about natural capital, drivers of change and natural capital funding opportunities, and stakeholder engagement to shape the management of natural capital and its benefits for the partnership region. Based on the analysis of case studies, it was possible to identify a number of practical lessons relevant to RLUPs, around how they structure partnership working, plan engagement, collect and work with evidence, engage with ecosystem markets and balance different needs and priorities across the RLUP. Of particular importance was:

- The need for long-term, core funding for RLUP co-ordinators with either the expertise or networks necessary to facilitate natural capital assessment and identify ecosystem market funding opportunities to supplement core funding;
- Availability of sufficiently detailed, existing secondary data to determine the natural capital assets and their condition, to help focus RLUP activities, in collaboration with stakeholders; and
- Early, systematic and effectively resourced and facilitated stakeholder engagement, to ensure buy-in, coproduction of plans, implementation and both fair and robust decision-making.

By using these lessons, RLUPs should be able to apply a natural capital approach in the development of their Regional Land Use Frameworks, helping deliver climate change targets, alongside other environmental aims and benefits to local communities.

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Appendix 1: Methodology

Based on the evidence review summarised in the previous section (and given in full in Appendix 1) and stakeholder feedback, six case studies from across the UK were identified as likely to offer insights relevant to RLUPs.

To do this, the project and proposed analytical framework was discussed with Scottish Government and RLUP colleagues during an online workshop, helping to identify challenges, opportunities and constraints to a natural capital approach in the context of each RLUP, which could further guide the research. During this workshop, a long-list of possible case studies was presented, with stakeholders invited to supplement this list and discuss selection criteria, which were proposed initially to match key themes in the analytical framework. The resulting selection criteria were:

- Application of key aspects of a place-based natural capital approach (implicitly or explicitly);
- Providing community benefits as part of their natural capital approach;
- Operating at a landscape or ecosystem scale (or broader);
- Inclusion of multiple biophysical contexts (e.g. ecosystems, habitats, landscapes), land uses and land tenures (e.g. tenant farmers, in-hand farms, estates, owner occupiers) and land based economic sectors (e.g. different farming sectors, water management, forestry, tourism, carbon management);
- Inclusion of governance approaches to include multiple stakeholders and manage conflict;
- Using a range of tools and approaches to manage land use change (e.g. including private and public finance, consensus based approaches or advisory services); and
- Sufficient level of available documentation and interviewees.

These criteria were then used to score and ultimately shortlist case studies for in-depth research. Scoring was done by members of the research team and Scottish Government steering group on a Likert scale for each criterion, with scores averaged where multiple members of the team were able to provide a score. As a result, all the case studies were place-based partnerships attempting to deliver multi-functional landscape management, and were deliberately selected to vary in terms of their structure and approach to natural capital. The six cases are listed in Table A1.

Table A2: Place-based partnerships studied by this project

Partnership	Aim or goal (abbreviated)	Website link
Eden Catchment Partnership (ECP)	To identify and prioritise the action(s) needed over the next ten years to manage Eden's rivers sustainably whilst improving the natural ecosystem services of the catchment.	https://www.edenrivertrust.org.uk/eden-catchment-partnership/
Galloway Glens Landscape Partnership (GGLP)	To drive sustainable economic development by connecting people to their natural and human heritage.	https://gallowayglens.org

Partnership	Aim or goal (abbreviated)	Website link
Landscape Enterprise Networks (LENs)	Building business partnerships for resilient landscapes	https://landscapeenterpriseenterprisesnetworks.com/
North Pennines Area of Natural Beauty (NP AONB)	To 'conserve and enhance natural beauty' of the AONB, by creating, implementing and monitoring a statutory management plan	https://www.northpennines.org.uk/
South Downs People and Nature Network (PANN)	"To protect, enhance and create a network of green and blue spaces which sustainably meet the needs of local communities, support natural ecosystem services and respects the special qualities of protected landscapes by proposing the strategic principles for planning, delivery and management of natural capital assets in the area."	https://www.southdowns.gov.uk/national-park-authority/our-work/partnership-management/people-and-nature-network-pann/
Spey Catchment Initiative (SCI)	(1) Demonstrate integrated catchment scale management by protecting and restoring natural features and characteristics of the Spey catchment; (2) Raise awareness and understanding of the whole river system and engage with stakeholders and communities within the catchment; (3) Further development of the Spey Catchment Initiative.	https://www.speycatchment.org/

Data collection for both the literature review and interviews was guided by a common proforma (Appendix 3), that was designed to capture themes from both the analytical framework and case study selection criteria above. As a result, there was a strong focus on understanding key issues in partnerships' design and planning processes, with a focus on understanding activities related to natural capital assessments and stakeholder engagement. A total of 6 individuals were interviewed across the case studies (no interviews were conducted for Landscape Enterprise Networks which were included on the basis of secondary sources only, given the intimate involvement of team members in this case study). Interview data was collected in compliance with SRUC ethics/data security guidelines /with approval by the SRUC Social Science Ethics Committee. Any personal data collected was managed in accordance with GDPR. Contributors are not identifiable in the findings report that follows below. A comparative thematic analysis of the completed templates was carried out, supported by Nvivo 12 for KAW. The main themes guiding evidence collection structured a framework to facilitate reading across cases. Project findings were discussed with RLUP stakeholders in a final workshop, in which training needs were identified, for future delivery by the project team.

Appendix 2: Analytical framework

A2.1 Introduction

Land-based initiatives to meet climate change targets require a cross-scalar approach to ensure good understandings of complex social, ecological and institutional interactions (Diaz-Kope and Miller-Stevens, 2015; Reed et al., 2015; Hunsberger et al., 2017). Meeting climate objectives is therefore likely to rely on effective collaboration that bridges scales and sectors, in a way that co-produces knowledge and informs advocacy at multiple policy levels (Kaisera et al., 2017; Peskett, 2021). Although there are many examples of partnership working across landscapes and at different levels and scales, they can amplify longstanding issues relating to land use governance and require understanding of the increasingly complex interconnections between drivers of land use change and management (Dwyer and Hodge, 2016; Rollason et al., 2018; Waylen et al., 2019; Peskett, 2021).

Recognising these complex interconnections, a natural capital approach to making decisions is gaining academic and political traction to support multiple stakeholders who increasingly need to work together to negotiate future land use change (Liquet et al., 2013; Bateman and Mace, 2021; Defra, 2021). Based on a consideration of the stock of natural assets, and not just the flows of ecosystem services they produce, this approach to decision-making can enable stakeholders to appraise “spending options where the requirement is to secure benefits for people beyond those immediately affected, including future generations” (Bateman and Mace, 2020, p.776). Emerging within UK policy and decision-making as a shift from ecosystem services to thinking of “nature as an asset, or a set of assets that benefit people” (Defra, 2021, p.5), “spatial planning informed by natural capital” was seen as potentially valuable in the Dasgupta Review (2021, p.461). Bringing the concept into a wider collaborative governance approach may therefore lead to the adoption of the concept in practice within policy and decision-making and the spatial development of land-based initiatives (Scott et al., 2021).

In Scotland, Regional Land Use Partnerships (RLUPs) aim to facilitate collaboration between local and national government, communities, land owners, land managers, and wider stakeholders, to help achieve Scotland’s climate targets through land use change and the management of natural capital. Five RLUP pilots have been tasked by Scottish Government with producing Regional Land Use Frameworks (RLUFs) by 2023, using a natural capital approach. This requires RLUPs to consider key natural assets and the benefits these provide to communities and the regional economy.

For the RLUPs, using a natural capital approach promises improved understanding of, and decision-making on, the use of natural capital assets: realising this is the focus of our research. To do this, it is important to understand the role of decision-making in RLUPs and similar integrated land use partnerships/mechanisms. This is because they must work across multiple sectors and land ownership boundaries, integrating multiple stakeholder interests, land uses, habitats and ecosystem services, to deliver climate change targets alongside biodiversity, other services, and benefits to local communities. Working with the resultant complexity is part of what makes RLUPs so valuable yet also means they are likely to face challenges, and so require guidance.

The aim of this evidence review is therefore to develop an analytical framework for evaluating and guiding decision-making in place-based initiatives, such as RLUPs, that operate across multiple sectors and landownership boundaries, integrating multiple stakeholder interests, land uses, habitats and ecosystem services. We focus on relevant learning to support RLUPs seeking to establish and improve their collaborative decision-

making processes as they seek to harness natural capital to deliver climate change targets alongside biodiversity and other benefits to local communities and society.

To do this, this report aims to:

- Critically review a range of widely used decision-making frameworks that have been applied to place-based initiatives working with natural capital, with a particular focus on the Natural Capital Protocol, as one of the most widely used frameworks in policy and practice;

Compare these frameworks, using insights from relevant theory, to analyse their strengths, limitations and differences;

Propose an integrated analytical framework that could be used by place-based partnerships like RLUPs to facilitate more effective decision-making around natural capital under conditions of uncertainty; and

Discuss how the proposed analytical framework can be used as an evaluation tool to evaluate case studies and provide formative feedback to enable place-based initiatives to manage complex stakeholder engagement processes for the delivery of outcomes for local communities and wider society using a natural capital approach.

A2.2 Theoretical frameworks to guide complex natural capital decision-making processes

A wide variety of theoretical frameworks could be applied to explain how and why multi-stakeholder decision-making processes lead to beneficial outcomes for the natural environment, local communities and society. These frameworks have also been used to guide decision-making processes that seek to manage natural capital across stakeholder groups, landownership boundaries and sectors. In this section, we provide a brief overview of some of the most relevant theories, which we then use as lenses through which to critically appraise the analytical frameworks that follow.

A2.2.1 Stakeholder theory, social learning and socio-technical innovation

First, there is a rich literature on stakeholder theory that attempts to explain “what works” in multi-stakeholder decision-making processes. Some of the earliest and most radical work on stakeholder participation in decision-making processes was by Arnstein (1969), whose “ladder of participation” highlighted the manipulation and tokenism at the heart of many so-called participatory processes. She argued for the empowerment of participants to engage and where possible control the process. However, Arnstein’s ladder has been critiqued for being value-laden (Dean, 2017) and conflating the types of participation with explanations about what works (theory) (Reed et al., 2018). Instead, Reed et al. (2018) proposed a “wheel of participation” in which levels of engagement are matched to the purpose and context of the decision-making process. Their theory of participation contends that engagement outcomes vary according to the extent to which they account for context, power dynamics, and temporal and spatial scales and how the engagement process is designed (e.g. including transparent, structured opportunities for stakeholders to engage in decision-making).

Other theoretical frameworks focus on the procedural fairness of decision-making processes. For example, Pops and Pavlak’s (1991) model of fair decision-making processes emphasised equality of access to the process, neutrality, transparency, efficiency and right to appeal, and Bies and Moag (1986) argued for a more important role to be given to the behaviour and perceptions of decision-makers, including whether decisions they make are truthful, treat people with respect, and are able to justify the decisions that are ultimately made. Similarly, Bell’s (2014) Procedural Justice Indicator

list suggests that any participatory process that seeks environmental justice should involve all parties were affected by environmental decisions with equal respect and value, giving them access to sufficient material resources to enable them to participate equally.

This has parallels in the deliberative democracy literature, which focuses on the inclusivity of decision-making processes (Dryzek, 1990; Cohen, 1989). This literature argues that to effectively represent the needs and interests of stakeholders, decision-making processes need to be deliberative, free from domination or deception, and that all participants should be empowered to fully participate in both making and questioning arguments, with outcomes based primarily on the strength of the arguments made (Habermas, 1984). Participatory politics (sometimes referred to as “parpolity”) draws on deliberative democracy to argue that people participate in decision-making based on the principle that every person should have a say in a decision proportionate to the degree to which she or he is affected by that decision (Albert, 2003; Hahnel, 2005; Shalom, 2010), using tools like participatory budgeting (Fung and Wright, 2001). Kenter et al. (2016) extended this argument, building on social-psychological theory to argue that deliberation may lead to both positive (e.g. learning) and negative (e.g. social desirability bias) outcomes, and argues that deliberative processes need to engage with the “transcendental” values and beliefs of participants, empowering them to translate these to more specific contextual values that can then influence the deliberative process, enabling decisions to be underpinned by a wider range of values than would otherwise be possible.

Building on this literature, Bell and Reed (2021) argue that much of the stakeholder theory literature overlooks the importance of context and temporal issues, which can be difficult to implement and often only focus on certain parts of the decision-making process (e.g. ignoring factors before, after or outside the decision-making space). In their “tree of participation”, they developed a “situated theory of participatory empowerment” that emphasised the role of factors prior to and after the decision-making process. This may include, prior to a decision-making process, the creation of safe spaces that foster trust, taking steps to ensure any process is as inclusive as possible of marginalized voices and identifying and overcoming barriers to engagement, such as cost, language and cultural barriers. Post-process, factors influencing the ultimate outcomes of a decision may include, for example, accountability, ensuring that decisions are fully implemented and reflect the group process, and feedback loops to keep people informed about outcomes of the process.

These wider factors influencing the outcomes of decision-making processes are considered in social learning theory and socio-technical innovation. Both literatures consider how decision-making processes play out at and are influenced at the scale of social units, for example communities or society. Social learning theory argues that decision-making processes are ultimately learning processes, and that when conducted in a multi-stakeholder context, the process enables participants to learn from each other, leading to changes in understanding at different levels (from the ability to recall information to deeper changes in attitudes, world views, frames or beliefs), which become situated within wider social units or communities of practice within society (Reed et al., 2010).

The concept of the different levels or ‘loops’ of social learning can be a useful heuristic for considering the degree of learning and change entailed by embedding a natural capital approach. The idea of single-, double- and triple-loop learning represents moving from relatively consolidative learning, i.e. learning how to make incremental improvements to a problem-solving approach, through to changes in reference frames, i.e. considering new ways to solve problems, and then to challenging existing

paradigms, i.e. a new view on what problems need to be solved (Pahl-Wostl, 2009). For some stakeholders or institutions, foregrounding natural capital into decisions may entail quite significant changes in framing - akin to third loop learning. This is not easily achieved and cycling through single and double-loop learning is both more common (e.g. Brown et al. 2016) and may be a necessary precursor to any more transformative reframing. The literature on systems thinking (e.g. Kogetsidis, 2012) is also relevant as RLUPs are tasked to deliver multifunctionality, thus new learning and decisions should ideally embed and reflect a systemic or holistic view of nature and society, rather than focus solely on one natural asset, ecosystem service or goal. This additionally emphasises the need for creativity and explicit emphasis on multiple methods to capture multiple views and aspects of systems.

Socio-technical innovation literature argues that these social learning processes typically take place in safe spaces, known as “niches”, in which experimentation and experiential learning leads to the refinement of ideas in real world settings (akin to the way decision-making is described in the adaptive co-management literature; Armitage et al., 2010; Geels, 2004). Over time, typically in response to external stimuli, windows of opportunity emerge where innovations flourishing within niches become relevant to address issues in the wider social landscape and others with an organisation, social group or society adopt and mainstream these innovations, leading to a wider transition of the socio-technical system to a new state.

A2.2.2 Understanding internal and external drivers of land-manager decision making

The successful implementation of land use policy and related frameworks relies heavily on aligning policy goals and aspirational land use outcomes with the motivations, attitudes and values of land managers (Mills et al., 2013; Thomas et al., 2015). A variety of internal and external factors can influence land manager decision making, including mechanisms (such as natural capital assessments) which offer scope for developing new understandings of land use benefits and trade-offs (Hussain, 2020).

External contextual factors influencing how individuals behave in a decision-making process may include, for example, the objectives of the decision-making process, social-cultural factors, political-governance factors, spatial and temporal contexts, the history of prior engagement (including power dynamics therein), and levels of external support available to facilitate their engagement in the process (Kochskämper et al., 2017; Rust et al., 2020; Bell and Reed, 2021).

Internal factors influencing the level and outcomes of engagement in decision-making processes include the risk perception of participants, which may in turn be influenced by: their personal capabilities, characteristics and related demographic factors; their access to social capital (e.g. access to expertise and levels of connectedness and trust in social networks); cognitive biases such as the availability heuristic, where risks that can be easily called to mind tend to be over-weighted compared to risks that are less familiar (even if they are in fact more likely); and confirmation bias, where risks are interpreted in a way that confirms existing preconceptions; or the general tendency to overweight very low probability risks and underweight very high probability risks (Tversky and Kahneman, 1992; Sutherland et al., 2012; Wheeler and Loble, 2021).

Other important internal factors influencing the level and outcomes of engagement include: levels of perceived self-efficacy (i.e. a participant’s belief that they will, through their actions, be able to influence or implement the decision outcomes successfully) and agency (i.e. freedom of choice to opt in or out of the decision and its implementation); pre-existing attitudes of participants towards options being deliberated (Mills et al., 2017; Rust et al., 2020).

A range of behavioural theories and decision-making frameworks have been applied to studies of land manager/owner behaviours, which may offer insights for the implementation and uptake of natural capital approaches. These include the Theory of Planned Behaviour (TPB) (Ajzen and Madden, 1986) and the transtheoretical Stages of Change (SoC) model (Prochaska, 1979; Prochaska and Diclemente, 1983), both of which have a predominant focus on the *individual* as the agent of change (O'Brien et al., 2017). Traditional models of land use decision making often placed economic factors (and the potential for individual economic gain, for example from uptake of incentives) at the heart of land manager decision making (Clark and Lowe, 1992; Edwards-Jones, 2006). However, these approaches have been criticised for ignoring the values and intrinsic goals of the individual (Clark and Lowe 1992), with an increasing emphasis on a broader set of values in recent decades, including approaches building on the Theory of Planned Behaviour (see Hardeman et al 2002; Nisbet and Gick, 2008 for reviews).

Contrasting with the individual-cognitive centred approach of the TPB, the Diffusion of Innovation Theory (DIT) (Rogers, 2003), focuses on behaviours (or 'innovations') themselves as agents of change, while Social Practice Theory (Reckwitz, 2002; Shove et al., 2012), contends that 'practices' (routine behaviours and habits) are the outcome of shared experiences and relationships (Reckwitz, 2002; Shove et al., 2012). Practices represent multiple inter-connected elements, including materials (resources, technology etc.), meanings (interpretations and norms) and procedures (knowledge or competencies), which collectively form people's behaviours. From a behavioural change perspective, this focus on the interactions of 'social practices' and 'material contexts' suggests a need for a reduced focus on specific 'interventions' to influence choices and a greater emphasis on outreach and mechanisms which encourage critical reflection (Morris et al., 2012).

Reflecting this 'practice' perspective the Diffusion of Innovation (DoI) theory focuses on innovations (ideas, practices etc.) as agents of change and proposes four main elements of behavioural change: innovation, communication channels, time and social systems (Rogers, 2003). According to DoI theory, innovations are more likely to be adopted when they: i) offer an advantage over existing options; ii) are compatible with existing values/practices; iii) are straightforward; iv) can be tested/trialled; and v) have observable results (Morris et al., 2012). Whether or not innovations are adopted also relates to perceived risk and trust – necessitating an emphasis on peer-to-peer communication and the role of social networks as routes to diffusion of innovations. While shared understandings and trust (i.e. 'strong ties') are important to communication across networks in relation to managing natural capital, variation in viewpoints and stakeholder diversity (i.e. weak ties) are also required to ensure new knowledge is acquired and innovations are diffused across the network (Prell et al., 2009). Rose et al. (2018) highlighted the temporal dimension of diffusion across networks, with innovators or early adopters the first to adopt an innovation followed by 'early' and 'late' adopters, who decide on whether to adopt by monitoring their peers (Morris et al., 2012).

Knowledge therefore represents a filter through which land managers perceive the full range of influencing factors, with their respective knowledge also influenced by their land management culture (i.e. which knowledge is used, retained and accepted and which sources and forms of information are trusted) (Dandy 2012). Further key insights from the behavioural change literature relating to the roll out of natural capital approaches include the importance of personal (one to one) interactions (with trusted contacts/sources) in influencing behaviour, with these social interactions facilitating knowledge exchange and promoting critical reflection on how and why activities occur (Mills et al., 2017). In addition, effective leadership and knowledge transfer at regional scales offers considerable potential for influencing land managers through their networks over time, which offers scope for driving incremental change and challenging embedded

land use models when opportunities arise (e.g. following a change in ownership or in response to perceived threats such as flooding or climate change).

Taken together, the theoretical insights from the literature reviewed thus far have the capacity to explain how and why stakeholder participation in environmental decision-making processes leads to outcomes that are beneficial (or not) for the environment, local communities and wider society. We note Cundill's work (2012) usefully connects the social learning, adaptive management and systems thinking literatures reviewed above, to propose five key activities as relevant to achieving adaptive systems management:

- situate the problem in its social and ecological context;
- raise awareness about alternative views of a problem;
- encourage enquiry and deconstruction of frames of reference;
- undertake collaborative actions; and
- reflect on learning.

The next section uses these insights to critically evaluate a range of analytical frameworks that can be used to guide and evaluate natural capital decision-making processes, using a natural capital approach. The goal is to provide a comprehensive and nuanced critique of each framework, whilst identifying shortcomings that could be addressed in an integrated analytical framework, which is proposed in the subsequent section.

A2.3 Analytical frameworks to support natural capital decision-making processes

A natural capital approach typically includes valuation of natural capital (whether via monetary or non-monetary methods) but goes beyond valuation or market-based approaches to consider the wider value of natural capital to society. It is a place-based approach, providing an assessment of natural capital and ecosystem services in a land use system with clearly defined boundaries and stakeholders. By viewing nature as an asset that provides flows of services to society, the natural capital approach seeks to reduce the likelihood that decision-making ignores risks to the natural environment, appreciates dependencies on natural capital and leads to decisions that deliver win-wins for environment and society (Defra, 2021).

In this section, we consider a range of analytical frameworks that have been used to apply a natural capital approach, with a particular focus on the Natural Capital Protocol, which is now widely used in policy and practice around the world.

A2.4 The Natural Capital Protocol

The Natural Capital Protocol was published in 2016 by the Capitals Coalition, which emerged from the 2008 United Nations initiative 'The Economics of Ecosystems and Biodiversity' (TEEB, 2008), and is a legal entity in 2020 with over 380 member organisations. Over 900 businesses are now signatories to its Business for Nature Coalition with 26% of S&P 500 companies engaged in the Coalition's work (Capitals Coalition, 2021a). It has been used to shape government policies on natural capital around the world, including the creation of natural capital accounts and valuations in the UK, France, Japan, South Africa and Costa Rica, public funding schemes in China, Israel and New Zealand, the transition to a blue economy in New Zealand and increasing private investment in natural capital in The Netherlands (Capitals Coalition, 2021b). NatureScot has developed Scotland's Natural Capital Pilot Programme

(NCAPP), working with the Protocol and testing its application in practice⁵, and Crown Estate Scotland has used the Protocol in a trial on its rural estates in Moray (Cumulus Consulting, 2018). It is thus the dominant and obvious framework to test and build on.

The Natural Capital Protocol is a framework intended to guide decision-making, that:

“enables organisations to identify, measure and value their direct and indirect impacts and dependencies on natural capital” (Natural Capital Coalition, 2016).

Organised around four stages (Frame, Scope, Measure and Value, Apply – see **Error! Reference source not found.**), the Protocol acknowledges that collaboration is essential to address global challenges such as the climate and biodiversity crises. The four stages of the Protocol are broken down into nine steps, which contain specific questions to be answered when carrying out a natural capital assessment. Building on existing approaches that help businesses measure and value natural capital⁶, the Protocol focuses on improving internal decision-making and does not recommend specific tools or methodologies.

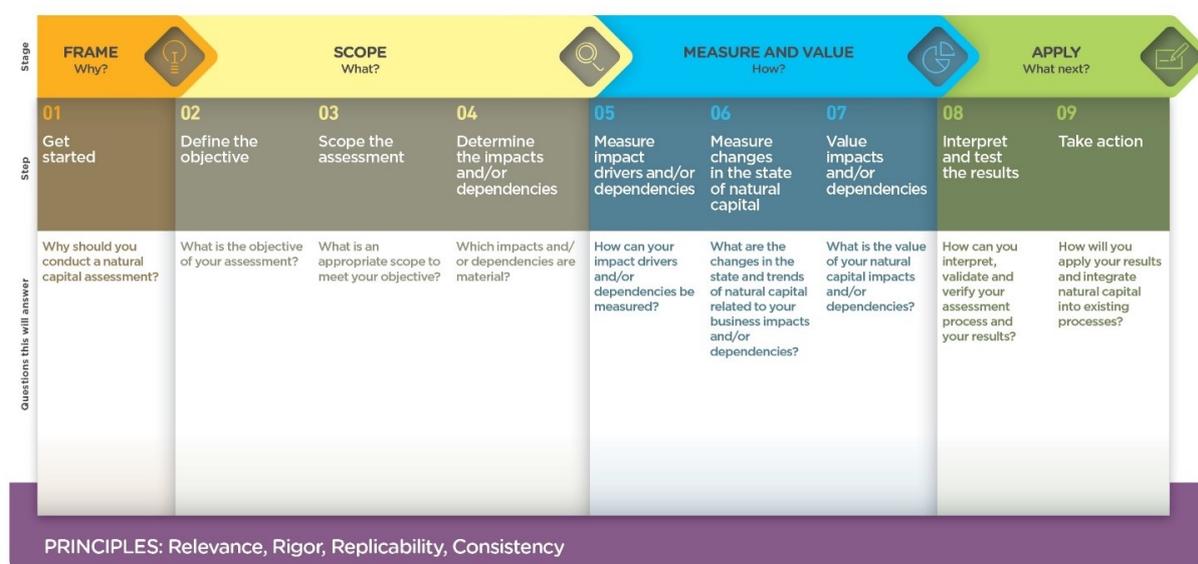


Figure A2: The Natural Capital Protocol Framework (source: Natural Capitals Coalition, 2016)

A2.5 Strengths of the Protocol

A key strength of the Protocol is its focus on improving internal decision-making. It provides a standardised process with built-in flexibility, including the integration of other recognised standards in the '01 Get Started' stage, such as the Common International Classification of Ecosystem Services (CICES)⁷ and the Final Ecosystem Goods and Services Classification System (FECS-CS) (Landers and Nahlik, 2013). The Protocol also includes both direct and indirect impacts of, and dependencies on, natural capital. By separating biodiversity and abiotic services from ecosystem services, the Protocol recognises published critiques that argue for the explicit inclusion of abiotic flows in

⁵ See NatureScot: 'Scotland's Natural Capital Pilot Programme (NCAPP)'.

⁶ Including the Corporate Ecosystem Services Review (Hanson et al., 2010) and the Guide to Corporate Ecosystem Services valuation (WBCSD et al., 2011).

⁷ See European Environment Agency: 'CICES: Towards a common classification of ecosystem services'.

ecosystem service classification systems, given their role in underpinning the provision of ecosystem services and the direct benefits to society arising from many abiotic flows, such as sediment loads, mineral resources, drinking water and thermal energy storage capacity (van der Meulen et al., 2016). Moreover, the Protocol particularly emphasises the value of biodiversity for business (including impacts and dependencies).

The Protocol provides practical guidance that is relatively straightforward to apply, even for those with limited expertise in natural capital or ecosystem services. By using indicators to measure impacts and dependencies in Stage 3 'Measure and Value', the Protocol provides a cost-effective approach that makes it accessible to a range of businesses, and with an appropriate selection and combination of different indicators should provide sufficiently robust evidence of changes in natural capital from baselines to inform action. In theory, this makes the Protocol accessible to SMEs as well as larger corporates. However, there is limited guidance on specific tools in some parts of the Protocol, which we note in the next section.

Where these indicators are used to assess future change, the methods proposed for evaluating the likelihood of these changes (in Stage 3 'Measure and Value', Step 6.2.4 'Select methods for measuring changes') and testing assumptions (Stage 4 'Apply, Step 8.2.1 'Test key assumptions') should also help ensure appropriate actions are taken on the basis of indicator-based projections. While the lack of standardised metrics makes it difficult to compare assessments between different users of the Protocol, this flexibility enables the selection of indicators (with appropriate methods for measuring each indicator) that are valid, understandable, transparent, fair, adaptive and reproducible (Wouters et al., 2019), and are tailored to the needs and capabilities of each assessment and user (Reed et al., 2006)

The guidance also recommends a range of monetary and non-monetary methods (including deliberative and qualitative social science) to appreciate the range of values held by stakeholders for their natural environment (cf. Kenter et al., 2015), both during Stage 2 'Scope' and Stage 3 'Measure and value'. Awareness and appreciation of stakeholders' values can enhance legitimacy, effectiveness and transparency of evidence and help manage risks.

A2.6 Weaknesses and/or gaps

In general, the Protocol does not explicitly list or recommend specific tools or methodologies, although there is some structured guidance in some sections. For example, instructions are provided in relation to carrying out a stakeholder analysis (in Step 2.2.2 'Identify stakeholders and the appropriate level of engagement'). While this flexibility in application of the Protocol may be seen as an opportunity to tailor the approach to suit different place-based projects, this limits the opportunities for the Protocol to be used as a reporting standard.

Moral or value judgements are also outside the scope of the Protocol and there is limited guidance on how to navigate these issues. This is important given the emphasis on stakeholder engagement in Stage 2 'Scoping', which will inevitably raise conflicts of interest and/or differing perspectives on the relative value of different stocks and flows of natural capital in the assessment. The guidance on value perspectives (Step 3.2.3 'Specify whose value perspective') encourages users to consider both business value and value to society but does not seek to understand stakeholder values. These may include the instrumental value of natural capital to different groups (e.g. the value of extracting versus conserving fish to anglers and divers respectively), as well as more deeply held values and beliefs that shape how different stakeholders both value and engage with natural capital. These values and beliefs will be shaped by a range of

factors, including place-attachment, place-identity, and cultural and spiritual benefits from ecosystems (Kenter et al., 2015). These values may however be considered if users adopt qualitative, deliberative and other non-monetary valuation methods, as suggested in Box 3.1 in the Protocol (in Step 3.2.5 'Decide which types of value you will consider').

The guidance on stakeholder analysis mentioned above (Step 2.2.2) also falls into a trap that is prevalent in the literature and guidance on this subject, where influential stakeholders are prioritised over potentially important stakeholders who have limited or no influence (Reed et al., 2018a; Kendall et al., in prep.). These groups may be vulnerable or hard to reach but may have a strong interest in the assessment and may be significantly impacted (either positively or negatively) by the outcomes of the assessment.

Moreover, there is limited guidance on how stakeholders who have been identified as part of Stage 2 'Scoping' should be engaged in the assessment, raising concerns that the use of the Protocol could lead to tokenistic engagement or may further marginalise already powerless groups, rather than proactively engaging stakeholders in the co-production of aspects of the assessment (cf. Reed et al., 2018b). The Protocol's guidance on stakeholder engagement states that "*external stakeholder input can provide greater robustness and credibility to results*" (Step 2.2.2), which could encourage tokenistic engagement to legitimise rather than shape the assessment.

Elsewhere, stakeholder engagement is encouraged only for "*specifically local issues and decisions that may significantly alter local sites/resources or access to them*", limiting their engagement with the assessment (Step 3.2.4). Despite a well-developed literature on the normative arguments for and pragmatic benefits of engaging stakeholders in natural capital assessments (Guijt et al., 1998; Estrella and Gaventa, 1998; Yvonne et al., 2010; Reid et al., 2006), stakeholders are not engaged in the validation or verification of the assessment. Indeed, Step 8.2.4 ('Validate and verify the assessment process and results') suggests this should only be done by technical "*experts*", the consideration of who is likely to be affected by the outcomes of the assessment (Step 8.2.2 'Identify who is affected'), or the development of actions that could affect stakeholder interests (Step 9 focusses on communicating actions to stakeholders rather than engaging them in co-producing actions).

As such, if the Natural Capital Protocol to be used as an analytical framework to guide and/or evaluate decision-making processes in multi-stakeholder partnerships such as RLUPs, significant attention should be paid to stakeholder engagement. Guidance in the Protocol would need to be supplemented with good practice guidance and associated capacity building on: the identification and representation of stakeholder needs and interests, including marginalised and hard-to-reach groups; empowering disempowered groups to participate in decision-making on an equal footing with more powerful actors; facilitating effective deliberation and social learning between participants, including structured elicitation of (both implicit and explicit) knowledge and management of power dynamics; processes for eliciting and taking into account the transcendental values and beliefs of participants, including management of conflicting value systems, for example through the use of non-monetary valuation methods and professional facilitation; the creation of safe spaces for engagement that value and respect contributions from all participants; and the management of post-process engagement to ensure participants are involved in the implementation and evaluation of decisions in practice, wherever possible.

A2.7 Other natural capital approaches that support decision-making

In addition to the Natural Capital Protocol, there are several other natural capital approaches and frameworks that support decision-making. This sub-section reviews a selection of international and UK initiatives and projects that have used an alternative natural capital framework relevant to RLUPs and distils some key learning points from evidence related to their application. It is beyond the scope of this project to review the vast literature on natural capital and ecosystem service valuation methods and accounts, particularly as describing national-level accounts and accounting practices is unlikely to be of relevance to initiatives at the RLUP level.⁸ However, we first briefly consider some examples of valuation and accounting practices that are relevant to RLUPs.

A2.8 Valuation and accounting at landscape and regional levels

Natural capital approaches are nearly always associated with quantified and monetised valuations of natural assets and the services that flow from them. However, it cannot be assumed that RLUPs will have significant financial resources to commission new valuation studies for their regions. Furthermore, if such investment were to be made, care would need to be taken because partial or incomplete valuations can be misleading, especially if the challenges of valuation are not well understood (Nijink & Miller, 2017). For example, values for carbon sequestration are relatively easy to calculate in comparison to generating values of some other potential ecosystem services.

If there is both interest and available resources for valuation, then there are suggestions for valuation methodologies – of varying complexity and scope – contained within the Natural Capital Protocol. Notably, these include the Guide to Corporate Ecosystem Valuation led by the World Business Council for Sustainable Development (2011). Additionally, Ovando Pol (2021) reviewed natural capital accounting approaches suitable for land-based businesses, a report which contains a short list of valuation tools selected as relevant to farm business (in Appendix 3, p.67). For RLUPs, it is helpful to briefly consider four selected landscape scale and land manager-focussed examples which may be relevant for understanding if and how valuation would be feasible in the work of the partnerships.

Firstly, Ovando Pol (2020) also demonstrated application of the Natural Capital Protocol on Glensauigh Farm. This showed how the Protocol – including valuation – could be usefully applied both retrospectively and prospectively. However, this was enabled by Ovando Pol's research expertise and ability to source data from the Environmental Change Network (ECN), farm accounts and reports on site-specific indicators of land management and environmental performance. This analytic capability and financial/staff research resource may not be available to RLUPs.

Secondly, the ongoing work with farmer-led pilots, by NatureScot within its NCAPP set of initiatives, offers more surety that some form of scored or quantified description of natural assets is feasible and relevant, even without new or scientifically-driven data sets. However, we understand it will not involve monetisation of the value of the natural capital managed by the farmers (even if some aspects of natural capital may be

⁸ We note that some work on this topic will be carried out in future Scottish Government Strategic Research Programme work (D5-SRUC-2).

incentivised by payments, this is not to be equated with a monetary value for natural capital). NatureScot have also tested a natural capital approach on their rural estate as another part of the NCAPP programme mentioned above (Dickie et al., 2019). Quantifying benefits related to food, recreation and tourism, education and volunteering, climate regulation, renewable energy production, air quality, human health and well-being, the resulting account was developed with readily available data and GIS analysis within NatureScot and can be repeated over time.

Thirdly, the INCASE project in the Republic of Ireland has successfully applied the System of Environmental Economic Accounting-Ecosystem Accounting (SEEA-EA) to four catchments. However, we note these catchments were selected for being data-rich and again have benefited from considerable investment of researcher time, not typically available to RLUPs.

Finally, Scottish Water (working with the rest of the UK water industry) has sought to understand, develop and use natural capital within a natural and social capital accounting framework (Scottish Water, 2020). Drawing on the accounting principles of the Natural Capital Coalition, this has enabled the industry to set out guidance on its deployment, and Scottish Water has shared this with the Scottish Forum on Natural Capital. The approach seeks to understand a system, such as a catchment, and to identify the range of management approaches that may be taken to deliver beneficial outcomes. Outcomes are considered in terms of not only financial, natural and social capitals, but also manufactured (built assets), human and intellectual capitals.

Currently being trialled with SEPA and other stakeholders, the approach draws on 'One Planet Choices', a new method that brings natural capital into decision making. Based on Six-Capitals thinking, it is being used with Dundee City Council to evaluate a blue-green infrastructure strategy to reduce flood risk and support development within the St Mary's area of the City. One Planet Choices enables the understanding of the range of social and environmental benefits (including biodiversity and placemaking) within the long-term plan for the city.

Based on this brief analysis, if resources are made available to RLUPs to carry out valuation studies, however limited, it may be worthwhile to adopt the participatory and deliberative methods described in Section 0 (e.g. Kenter et al. 2016; 2017), to encourage balanced appraisal across all natural assets and potential services.

Natural capital frameworks offer considerable scope for assessing land use benefits, as well as increasing understanding of key risks and trade-offs to inform decision making, but there is limited evidence to suggest these frameworks have (as of yet) directly impacted on land use outcomes (Hussain, 2020). In addition, while natural capital accounting offers a structured approach to supporting decision making, it is currently constrained by complexity, costs and lack of relevant available data (Hussain, 2020; Langan, 2016). Nevertheless, natural capital frameworks can encourage collaboration and knowledge sharing and provide opportunities for a rounded appraisal of the societal and environmental impacts of projects or land use change (Crown Estate Scotland, 2018; Ovando, 2020). The application of natural capital frameworks therefore offers considerable scope for influencing social learning among land managers peer groups. Reflecting the discussion of land manager behavioural theory above, developing natural capital approaches across land manager networks and involving stakeholders directly in the process (e.g. data gathering, participatory design), therefore offers considerable scope for facilitating behavioural change and sustainable land use change outcomes.

A2.9 Market-based approaches

We differentiate between valuation methods, which can provide theoretical understanding of the value that might be placed on natural capital and ecosystem services by members of the public (e.g. via willingness to pay surveys), stakeholders (e.g. via choice experiments) or society (e.g. using shadow carbon prices), and market-based approaches, where data is based on actual prices paid in carbon, ecosystem or environmental bond markets. Although often lower in value and more volatile, this evidence may be particularly useful, if accompanied by contextual information that can be used to apply lessons to the development or application of carbon or ecosystem markets, or the use of green finance mechanisms as part of a natural capital approach. As many of these markets are in their infancy, data is often drawn from case studies, and although this limits the transferability of data and insights to new contexts, case studies can enable wider lessons to be learned, which may increase the likelihood of success.

Broadly speaking, there are three types of market-based instrument that may provide evidence on the value of natural capital and ecosystem services and insights into the application of an ecosystem approach that seeks to leverage private investment in partnership activities (Reed et al., in press):

- Carbon markets: although a number of international voluntary carbon markets can in theory operate in the UK (e.g. methodologies approved by Verra and Gold Standard), the majority of transactions operate via domestic carbon markets. Two domestic markets currently operate in the UK; the Woodland Carbon Code and the Peatland Code. Others, including a Farm Soil Carbon Code, Saltmarsh Code and Hedgerow Code are under development. Carbon prices are typically between £15-20 in UK domestic markets, with £25 the highest price paid to date under the Peatland Code. Although most projects under these Codes operate in isolation, Reed et al. (2017) describe projects funded under these Codes could be used as part of an ecosystem approach;
- Ecosystem markets: markets now exist for other ecosystem services, including water quality, flood risk alleviation and animal welfare. These are typically managed on a contractual basis between buyers (e.g. water companies) and sellers (e.g. farmers), often via intermediaries (e.g. Entrade) (Gosal et al., 2020) to deliver outcomes of value to the buyer (e.g. reduced nutrient loads). Alternatively, these projects may seek to reduce risks to buyers (e.g. from climate change to infrastructure and supply chains), with less well defined monitoring, reporting and verification (Reed et al., in press). Pricing and payments are not typically published, but case study research on one approach, Landscape Enterprise Networks, shows positive feedback from both investors and landowners, who were more likely to adopt private payments for ecosystem services via these Networks than publicly funded agri-environment schemes (Coyne et al., 2020; Kendall et al., under review).
- Green finance mechanisms: a diverse collection of finance products is now available, providing risk-adjusted returns on investment for national and international investors, who are typically willing to accept lower than market rate returns. These mechanisms include green bonds, insurance products, impact investment funds and habitat banking. They finance a wide range of ecosystem service outcomes, including for example, prevention and removal of invasive species, urban green space, sustainable urban drainage systems and

development of peat free composts. There is limited information available publicly about either payments to landowners or returns on investment, and few published case studies (Reed et al., in press).

In addition to these three types of market-based approaches, land acquisition for carbon (in the UK, mainly afforestation of lower quality agricultural land under the Woodland Carbon Code) may have impacts on food sovereignty and local communities. In contrast to this “land sparing” approach, market-based approaches that take a “land sharing” approach, for example restoring peatlands that can still support extensive grazing by sheep, is more likely to be compatible with the multifunctional objectives of land use partnerships.

A2.10 Learning from other approaches

The Ecosystem Approach is perhaps the original and first concept for management, which explicitly endorsed the ethos of achieving sustainable management of land and natural resources, for the benefit of all sectors of society, and also contained principles for achieving this (CBD, 2000). The Ecosystem Approach is ambitious (Waylen et al., 2014) because it combines recommendations for working with dynamic natural systems (e.g. Lackey, 1998) together with arguments for decentralization and involvement of stakeholders and their knowledge (Fish, 2011), in an adaptive co-management process (Armitage et al., 2009). It has 12 principles – known as the Malawi principles (see **Error! Reference source not found.**) – by which it is supposed to be achieved.

- Principle 1:** The objectives of management of land, water and living resources are a matter of societal choices.
- Principle 2:** Management should be decentralized to the lowest appropriate level.
- Principle 3:** Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.
- Principle 4:** Recognizing potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context.
- Principle 5:** Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.
- Principle 6:** Ecosystem must be managed within the limits of their functioning.
- Principle 7:** The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.
- Principle 8:** Recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the long term.
- Principle 9:** Management must recognize the change is inevitable.
- Principle 10:** The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.
- Principle 11:** The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.
- Principle 12:** The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

Figure A3: The Malawi Principles⁹

Although the term natural capital is not incorporated explicitly in the main descriptions of the Ecosystem Approach, the Malawi principles (especially Principles 4 and 5) emphasise the need to take into account the benefits and services for humans that arise from nature (ecosystem services) whilst also recognising and protecting nature and biodiversity. Thus, the Malawi principles can help to embed long-term sustainability of society and nature, similar to the intention when using a natural capital approach. There were relatively few initiatives that attempted to achieve the Ecosystem Approach in practice, but in the UK it is interesting that many examples were considered equivalent or very similar to approaches inherent in catchment management. Integrated catchment management, where interpreted as a collaborative holistic endeavour (Watson, 2014) has a very similar ethos and offers a more extensive body of examples and experience to learn from. Some of the main insights from these experiences include the need for multi-level support for catchment-scale management, and the importance of attention to process, especially, facilitation tailored to context (Marshall et al, 2010; see **Error! Reference source not found.**).

⁹ See Convention on Biological Diversity: [Ecosystem Approach Principles](#).

1. Accommodate related issues
2. Acknowledge achievement
3. Adaptive management
4. Appropriate decision-making processes
5. Appropriate involvement strategies
6. Communication and information flow
7. Conflict management
8. Effective use of existing forums
9. Process efficiency
10. Process development
11. Roles and responsibilities clearly defined
12. Spatial scale considerations
13. Timescale considerations

Figure A4: 13 good practice principles of integrated catchment management (Marshall et al. 2010)

More recently, the concept of Nature-Based Solutions (NbS) has gained popularity, building strongly on the Ecosystem Approach and assigning more attention to the objectives of meeting societal goals; and with internationally-endorsed guidance guiding the process of planning, achieving and evaluating goals (IUCN, 2020). The limited progress that was made in achieving the Ecosystem Approach in practice were a result of several challenges (Waylen et al. 2015). These relate to limited acknowledgement of the legacy effects of pre-existing institutional, political and cognitive factors, which tend to constrain and slow attempts to achieve new transformative change. These challenges may also bedevil attempts to achieve NbS. However, in current discourse, research and pilots associated with NbS, there is notably more attention being paid to the challenges of 'upstreaming' and 'mainstreaming' – i.e. involving more sectors and working at greater scales. Natural capital is employed within this discourse as a concept anticipated to be salient when engaging with business and other sectors that historically have not always valued nature in their decision-making.

Another framework for 'sustainably efficient and equitable decision-making' developed by Bateman and Mace (2020) represents the relationships between natural capital, ecosystem services, the economy and human well-being (see

). Although the authors acknowledge that the framework is a simplification of the interactions, feedbacks and non-linearities of the whole system, the application of the framework has three components:

- efficiency, assessing the flow of benefits and costs arising from alternative decisions;
- sustainability, the effects of those alternative decisions upon natural capital stocks; and
- equity, assessing the distributional aspects of implementing alternative decisions.

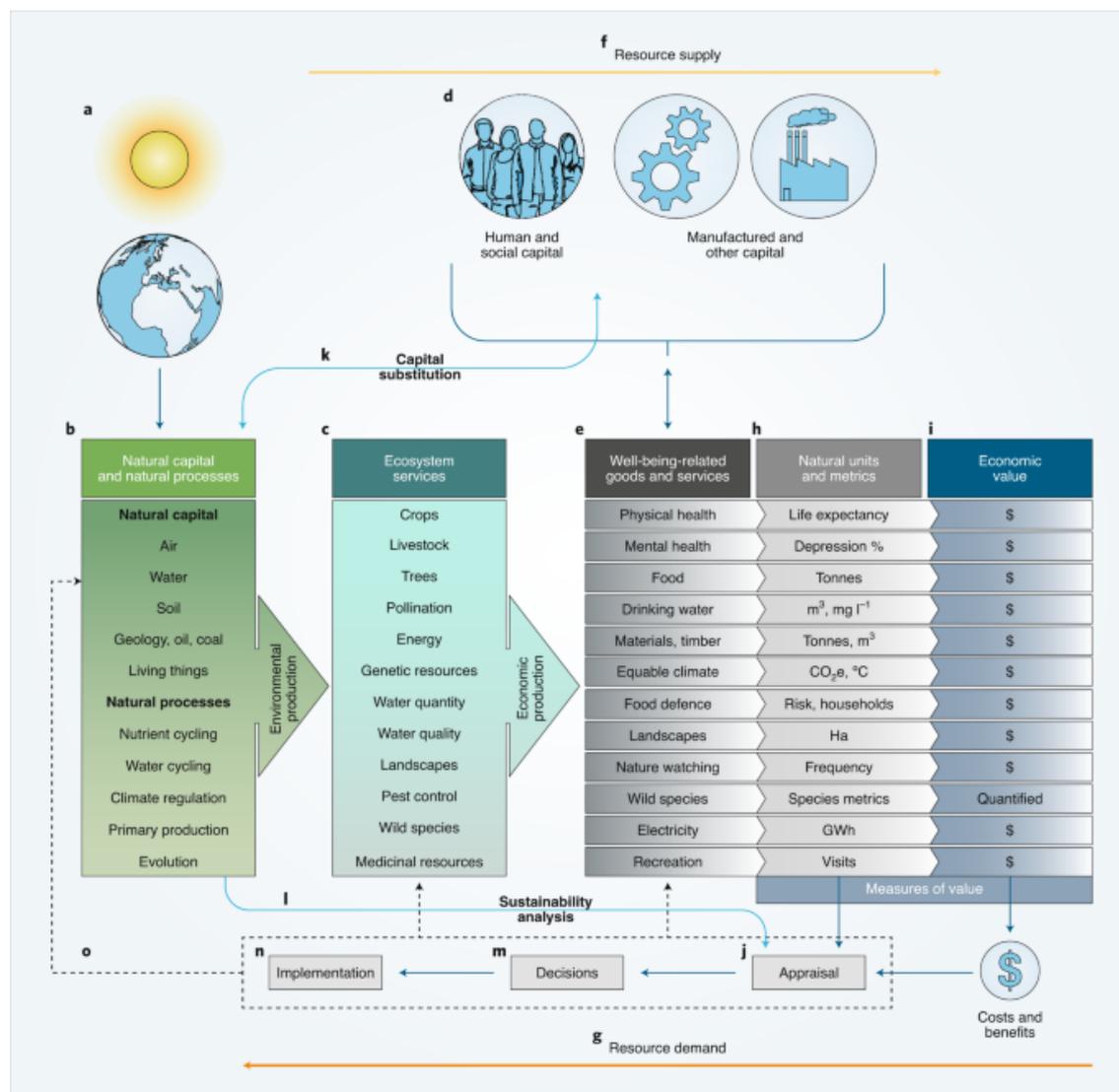


Figure A5: The natural capital framework for sustainably efficient and equitable decision-making (Bateman and Mace, 2020)

The third component recognises the importance of capturing the “*distribution of benefits and costs across society, revealing impacts on disadvantaged groups*” (p.780), as well as incorporating how individuals may change their behaviour in response to whatever decision is made. This once again highlights the importance of incorporating moral and value judgements into a natural capital approach, as discussed in Section 2.2. While the components set out by Bateman and Mace could be used to evaluate the work process and outputs of RLUPs, or by RLUPs within their own discussions or planning, they are unlikely to be usable as criteria to guide their work.

The Green Growth Knowledge Partnership (GGKP) has also developed a set of criteria to compare platforms and tools that have the potential to support integration of natural capital in green growth planning (GGKP, 2020). The results of their analysis of 28 natural capital data platforms and tools highlight how the effectiveness and usability of these in supporting policy making is affected by four key qualities:

- the relevance of outputs and the clarity with which they are communicated;
- accessibility of the information for a general audience;
- transparency of the information; and

- flexibility of the platform or tool to be used with different data and metrics to suit specific user requirements.

Recognising the lack of capacity to use spatial data and natural capital data in governments, preventing platform and tool uptake, the GGKP analysis also highlights the importance of developing decision support guidance to link platforms and tools with natural capital frameworks, policy questions and a common natural capital data language.

A2.11 Integrated analytical framework

In this section, we use the findings of this evidence review to develop an integrated analytical framework for evaluating how place-based natural capital projects work across multiple sectors and landownership boundaries, integrating multiple stakeholder interests, land uses, habitats and ecosystem services, to deliver climate change targets alongside biodiversity and other services, and benefits to local communities. The framework is designed to: i) analyse and compare case studies of land use partnerships that have used an ecosystem approach; and ii) to provide practical guidance for RLUPs that wish to use a natural capital approach to develop Regional Land Use Frameworks.

To analyse and compare case studies, and provide insights that can inform decision-making by land use partnerships to deliver benefits for the environment and local communities, it is necessary that any framework includes:

- Factors known to influence environmental and community outcomes from land use partnerships, based on evidence from theoretical and empirical literature and experience in policy and practice;
- Key methodological steps that are commonly found in natural capital approaches; and
- Criteria that can be used to assess the comparability (or otherwise) of case studies, so that significant differences between case studies can be identified and taken into account in any comparative analysis.

By evaluating whether case studies conform to evidence from the literature on factors that lead to successful outcomes for the environment and communities, it may be possible to both test and extend current thinking, and provide more nuanced guidance to RLUPs, that is specific to land use partnerships in comparable contexts. By evaluating whether case studies conform to common steps taken in natural capital approaches, it may be possible to adapt the natural capital approach and provide tailored methodological guidance to RLUPs seeking to use this approach. By systematically evaluating the characteristics of the case studies being analysed, it may also be possible to ensure the analysis takes contextual factors into account, providing guidance that can be adapted to a range of contexts.

Based on the evidence review, several factors may influence how successfully land use partnerships deliver outcomes for the natural environment and local communities. These include:

- How partnerships were developed and operated to deliver multiple benefits from land use whilst avoiding trade-offs between ecosystem services;
- How natural capital risks, dependencies and benefits were identified for different stakeholders and/or investors to drive funding for natural capital projects;

- How the value of natural capital and ecosystem service benefits were negotiated in such projects, and the costs and benefits of the approaches they used (including distribution of benefits);
- The extent to which partnerships managed ecosystems within the limits of their functions to protect natural capital assets and ecosystem service flows, and considered how partnership activities may affect adjacent and other ecosystems;
- How partnerships anticipated and adapted to change, including environmental, policy and economic change, to maintain ecosystem functions and land use outcomes in line with the needs of stakeholders;
- How projects were delivered at scales appropriate to the needs of landowners and managers, investors and local communities;
- How they drove active and inclusive engagement across diverse communities of stakeholders, incorporating diverse knowledges and perspectives;
- The extent to which the level of stakeholder engagement was designed to match the aims and context of the partnership;
- How they managed power dynamics and dealt with conflicts of interest between stakeholders and members of the partnership;
- The extent to which decision-making in the partnership was decentralised to the lowest appropriate level, created safe spaces for deliberation, was fair and transparent, gave relevant parties equal access to the process, empowered them to participate equally and influence decision outcomes, and was accountable to those who informed the decision, feeding back on its implementation and ultimate outcomes; and
- How decision-making and other engagement processes enabled stakeholders and partnership members to learn from and influence each other, experiment and innovate, leading to changes in understanding, decisions and behaviours.

Although many of these lessons are implicit rather than explicit in literature and initiatives that take a natural capital approach, as a framework for decision support, a natural capital approach “clearly offers the potential for substantial improvements over commonly applied alternatives such as reliance upon markets and prices” (Bateman and Mace, 2020, p.781). The natural capital frameworks reviewed in the previous sections show how a natural capital approach can be used to inform decisions relating to the natural environment that meet many of the success criteria outlined above. Drawing on methodological steps that were commonly found in these frameworks and the success criteria listed above, we propose an integrated framework that could be used by RLUPs to both evaluate and guide decision-making using a natural capital approach (see Figure 6).

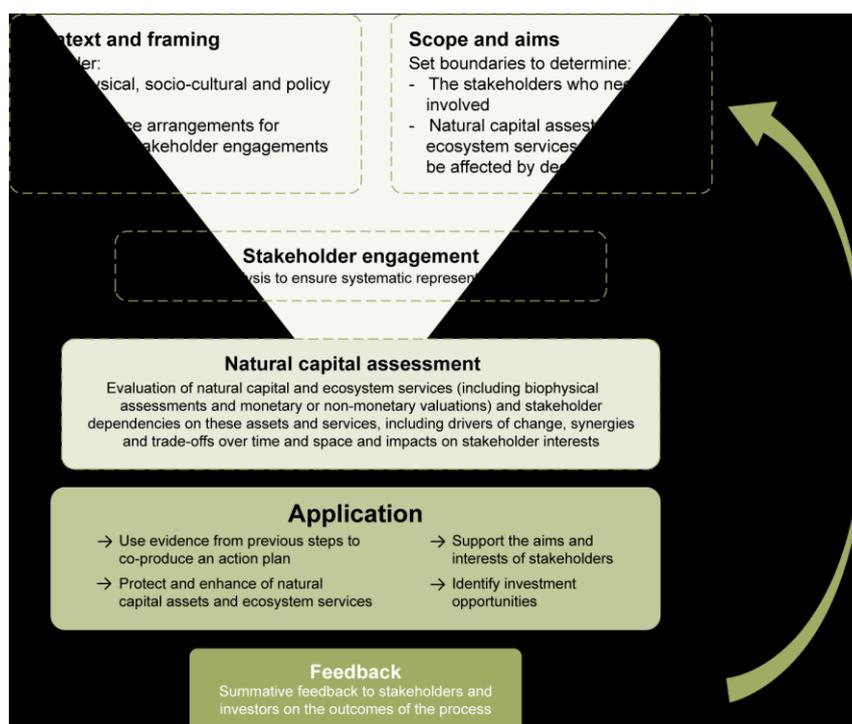


Figure A6: An integrated framework that could be used by RLUPs to guide use of a natural capital approach

The steps in the framework are as follows:

- **Context and framing:** a natural capital approach requires an appreciation of the context within which decisions are being made. In addition to the biophysical context, frameworks consider the social-cultural and policy contexts which may frame decisions differently over time or for different groups. It may also be important to consider governance arrangements in place for managing stakeholder engagement and conflict.
- **Scope and aims:** boundary setting is crucial to determine the stakeholders who need to be involved in decision-making and the natural capital assets and ecosystem service flows that may be affected by decisions. This may include the identification of dependencies between stakeholder interests and the natural environment, which could lead to benefits or negative impacts for either the environment or society. Goal setting in a natural capital approach should involve stakeholder engagement to achieve a balance between environmental, community and other relevant benefits, using a range of mechanisms e.g. funding sources or advisory services.
- **Stakeholder engagement:** Based on the previous two steps, it is possible to identify relevant stakeholders who can be engaged in further scoping the context, framing, system boundaries and aims of the work, and in shaping the natural capital assessment, application and monitoring phases that follow. Stakeholder analysis methods may be used to ensure systematic representation of stakeholder interests, and futures methods may be used to work with stakeholders to anticipate and manage change. The level of engagement will need to be adapted to the context and purpose of the work, managing power dynamics and empowering all stakeholders to learn from each other and engage actively in decision-making.

- **Natural capital assessment:** a natural capital approach typically involves an assessment of natural capital and ecosystem services, including drivers of change, synergies and trade-offs over time and space and an assessment of the consequences of changes in these assets and services on the goals and interests of different stakeholders. This may include biophysical assessments and valuations, including non-monetary methods to assess shared, cultural values, in addition to more traditional monetary valuations of natural capital impacts and dependencies.
- **Application:** The natural capital approach is designed to inform decision-making and action, leading to the protection and/or enhancement of natural capital assets and ecosystem services that support the aims and interests of stakeholders. This often involves investment, whether from public or private sources, in some cases using assessments of natural capital and ecosystem services (see previous step) to facilitate investment, for example via carbon or other ecosystem markets, or green finance.

Monitoring, evaluation, accountability and learning: Although absent from some frameworks, monitoring and evaluation is an important component of a natural capital approach, providing summative feedback to stakeholders involved in decision-making and investors on the outcomes of the process, and providing formative feedback to inform future applications of the approach.

Appendix 3: Case studies

Case study: Eden Catchment Partnership

Introduction

The Eden Catchment Partnership is a Catchment Based Approach (CaBA) that works with government, local authorities, utilities companies, businesses, and local communities to maximise the natural value of the environment. The Eden Catchment Partnership is just one of several CaBA partnerships in England and Wales that work across a total of 100+ river catchments.

The Eden catchment sits between the Pennines and the Lake District covering an area of approximately 2400 m². The focus on rivers has changed over time in the area and the structure of the partnership and catchment plans/manifestos produced reflect shifting priorities.

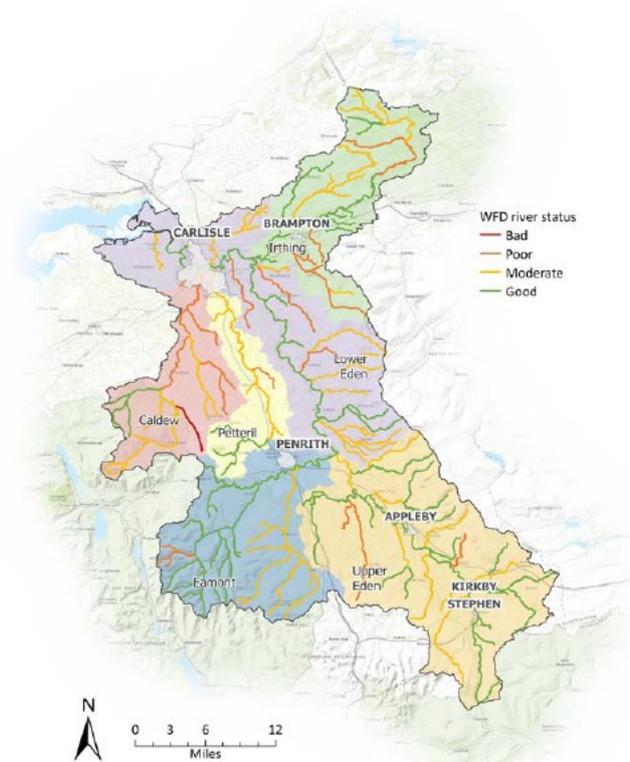


Figure A7: Map of the Eden Catchment Partnership Boundaries and WFD River Status

In 2013 the first holistic plan for managing water in the Eden catchment was developed – ‘Saving Eden: A Manifesto’. This process was led by the Eden Rivers Trust and involved a diverse group of stakeholders with the primary focus of ‘improving the ecological and social value of the River Eden’. However, in the wake of Storm Desmond in 2015 the Saving Eden Coalition’s focus moved towards dealing with the significant impact of flooding in Cumbria and setting up structures to deal with this. A new partnership was created, mirroring the 2013 structure but with the addition of flood groups as stakeholders. In 2020 the Eden Catchment Plan was published – ‘Revitalising Eden’ – which encompassed biodiversity, environment, and flood management. The purpose of this new catchment plan was to look across all ecosystem services, identify risks, priorities and highlight specific activities where the greatest difference could be made in making the Eden catchment more resilient as well as making the most of the partnership’s collective resources. Action plans were also included for six sub-catchments, providing specific detail on the sub-catchments’ contexts and potential opportunities to improve ecosystem services in each area.

The partnership goals identified in the catchment plan included:

- Improving water quality;
- Managing water quantity such as flood and drought;
- Supporting ecological networks;
- Improving carbon capture and storage (sequestration);

- Recreation and leisure – e.g. Improving access to recreation and leisure sites and enabling sustainable tourism; and
- Combining ecosystem services.

Stakeholder engagement

The partnership included over 20 organisations working together for integrated catchment management and is led by the Eden Rivers Trust as partnership chair. The role of the chair was not to make decisions on behalf of the partnership but to work on diplomacy, networking and getting the right people speaking to one another.

The majority of stakeholders in the partnership were familiar with working bilaterally however the Eden Catchment Partnership was a new effort to help all stakeholders understand what working together on a catchment scale meant and how this could be achieved in practice. The focus for the Eden Rivers Trust was in consolidating all stakeholders around something solid while learning from the experiences of other River Trusts and catchment plans.

The Eden Rivers Trust noted that there were some significant challenges in bringing together and managing all partners due to the large geographical scale of the partnership, the complex catchment boundaries and multiple catchment partnerships in the area:

“Managing so many partners is very difficult for us as in Cumbria there are four catchment partnerships. One of the hardest things is to get the right level of people in a sub-regional catchment partnership who can make decisions. At the beginning we were not getting the more senior people in the room but now we get the operational people, and we work up”. (Interview quote)

Ensuring all stakeholders had the opportunity to voice their opinions during the catchment plan creation process was important, however competing priorities between stakeholders became apparent and at times created some difficult scenarios. Despite this it remained important for all views to be recorded within the plan as *“this is what being part of a partnership means”* (Interview quote). The ultimate focus for the partnership was in making the plan work on the ground.

Although there were challenges in engaging partners, a number of success stories were noted, particularly the increasing engagement from key stakeholders such as Network Rail and Highways England. Success in engaging partners can be somewhat attributed to the perseverance of Eden Rivers Trust in connecting partners, identifying where there is added value, supporting partners to identify where their priorities overlap and ensuring meetings are entertaining and worthwhile. The creation of the sub-catchment groups helped create focused meetings where those interested in a certain area are much more likely to join and bring a specific item to discuss or contribute.

Although there was limited involvement of stakeholders beyond the official partners in creation of the plan, the engagement and support from the local community, particularly landowners was vital for successful implementation on the ground. Limited time and resources were noted as preventing wider public engagement. Nevertheless, understanding the local context remained important for the success of the partnership: *“In Cumbria the people of Eden have a massive sense of place”* (Interview quote). The attractiveness of branding the group as an ‘Eden’ group in particular, worked well for the group in achieving interest and support from the local community.

Application of a natural capital approach

The Eden Catchment Partnership used an ecosystem services approach that focussed on ecosystem processes rather than on natural capital assets. The methodology was adapted from the West Country Rivers Trust who were recognised as very successful in their catchment-based approach. The methodology did not assess the natural capital of the Eden catchment and it did not value the asset in financial terms. However, the partnership was working with United Utilities to reduce phosphate in the environment and were supporting this by identifying ecosystem processes and interventions that could reduce phosphate in rivers, while assessing the likely cost of this work.

The ecosystem services assessment looked at four ecosystem services: water quality, water quantity, ecological networks and carbon sequestration). Significant amounts of secondary data were used to build up a picture on the current state of the four ecosystem services, including threats, hazards and opportunities for interventions. The assessment was split into two halves, with the first half focusing on a general assessment of Eden, which was useful for certain partners' interests, and then a second half with sub-regional catchment areas for those partners focused on what was happening in their back yard.

The plan highlighted places that were key areas for intervention as well as projects that were already underway. The sub-regional catchment assessments were very stakeholder-heavy and saw active engagement from a wide range of interested parties. This was primarily because stakeholders could sit and ask people in local terms where money needed to be spent and what were the priority areas. Although the Eden Rivers Trust drove this process, there was significant opportunity for local stakeholders to get involved.

The main source of data in the ecosystem services assessment came from the CaBA's data package which holds a large amount of data on all water-related assets. This was managed in large by the Rivers Trust and was accessible to all Rivers Trust partners. A lot of the CaBA data was also linked to Environment Agency data. The partnership did not have enough data on drought or low flow and this was noted in the plan. Although access to future data that helps the partnership understand the financial value of natural capital assets may be somewhat helpful, the Eden Rivers Trust noted that the operational level of the Eden Catchment meant that stakeholders would be much more interested in finding data that helped them measure the natural capital asset of their farm for example.

Accessing resources to deliver plans

For delivery of the plan, each partner was expected to bring their own resources. However, it was highlighted that the Environment Agency was key in enabling the plan's development. This was due to the new structures of funding for flooding in Cumbria, providing more money for the partnership and this was used to build the 2020 catchment plan. CaBA partnerships (including the Eden Catchment Partnership) are also supported to an extent by Defra Funding. The Eden Catchment Partnership received £15,000 per year which contributed to one officer taking on secretarial work for the partnership and the CEO chairing the group. This limited funding meant that no one person could work on the partnership full time. It took the partnership 18 months to produce the Revitalising Eden catchment plan and lack of staffing resource was cited as somewhat contributing to the lengthy process.

Finding funding for delivery of the plan is an ongoing process. For example, there has been some support for the Heritage Lottery and the River Restoration Project with Network Rail. Identifying where the catchment plan overlaps with other organisations'

plans that have potential resources to contribute has helped the delivery so far. Promoting awareness of the partnership, being willing to be a very public facing partnership and continuing to build on the momentum of projects and successes will ultimately help gain support and resources for delivery of the plan:

“For me, a lot of it is around stating what you want to do, even if it's a making it very public and putting yourself up there for scrutiny. And then hoping that more people find out about it as a result of what you're doing. I think it's that momentum around it.” (Interview quote).

Lessons

A focus on natural capital assets through a natural capital approach is not necessary for all catchment based partnership plans. Using an ecosystem services approach for habitats like rivers can help identify actions necessary to create and support natural assets without valuing them financially.

The need to ‘value’ natural capital assets is useful but not vital in creating change on the ground and showing stakeholders the value of engaging in a catchment partnership. The type of stakeholders and interests represented in the partnership will determine the granular level of data required for your plan. Although high-level data may provide some interesting insights, it is not always relevant for understanding local contexts and implementing change.

Drilling down to a local level and understanding the unique context and priorities of an area can help pick apart ‘high level’ plans and make action more relevant and targeted. Creating sub-groups or sub-catchments can ensure meetings are targeted, entertaining and efficient with partners more likely to engage in areas that are of particular interest to their priorities.

Resourcing of partnerships can directly impact the time to ‘get things off the ground’. More flexible funding provided to organisations such as the Eden Rivers Trust would allow plans to be created and pushed through on the ground quicker.

For complex ecosystem services, multi-stakeholder engagement and action is vital. Every stakeholder in the group has a role to play in delivering the plan. This should be made clear to all partners at the beginning of the partnership and the benefits of engagement should also be highlighted.

Identifying cross-cutting priorities between stakeholders results in stronger engagement and action.

The focus of the partnership should go beyond the ‘strategy’ of a plan – the new catchment plan can be used as a practical document for identifying key areas for action on the ground.

The organisation as central partner or chair for a catchment-based approach will benefit from experience as a convenor and facilitator and a reputation with local stakeholders as an impartial voice.

Case study: Galloway Glens Landscape Partnership

Introduction

The Galloway Glens Landscape Partnership is an 800 km², catchment-based partnership in southwest Scotland. Started in 2018 with Heritage Lottery funding (HLF), they have a 5-year remit (2018–2023) and have developed 35 projects across six themes: Heritage Hubs, Visiting, Education and Skills, Natural Landscapes, Accessing, and Understanding.

The central goal of the partnership is to drive sustainable development in the area by connecting residents to their natural and human heritage. The emphasis on both the natural and human histories of the area is unusual. While there is an emphasis on the area's natural assets, there is just as much emphasis on how humans have co-produced the current landscape:

The landscape, which might at first glance appear to be natural, is in fact almost



Figure A8: Map of the Galloway Glens Landscape Partnership area in Dumfries and Galloway

entirely a result of human control and modification. Factors such as the generation of electricity, farming and forestry practices have dictated land use in the past and the area is going through a time of change, with global, national and local factors creating a number of new and developing influences on the local landscape (Galloway Glens Landscape Conservation Action Plan (LCAP) p.3)

The partnership's boundary is based on the catchments of the River Dee and the Black Water of Ken. The true combined catchment areas would be over 1,000 km², so they cut this back to ~800 km² in line with HLF best practices for landscape partnerships (see map below). They have, however, learned to embrace a fuzzy boundary:

"The question you might ask is, 'How ruthless are we with our boundary?' [...] We ended up saying, 'Oh, look, as long as the events take place and the major beneficiaries are in the valley.' So we're getting a bit more mature and confident about not being too pedantic about our boundary. But for Lottery purposes, they do want a line on the on the map, and so we have one." (Interview quote)

The boundary, themes and individual projects were set in part through stakeholder engagement. Communities, agencies, and other local stakeholders were asked what was special about the area, the challenges it faced, and which interventions would address those challenges. By starting the work in this way, this helped generate project ideas that reflected local priorities that could then be reviewed by the partnership board and carried forward.

Although the goals and outcomes of the partnership were set in a bottom-up way, a key lesson learned was to ensure that there was more coordination than a series of discrete projects working in parallel:

“The difference in a good landscape partnership and a bad landscape partnership is just a bag of projects that just happens, vaguely unaware of each other, or whether you have a considered scheme, series of projects. [...] Before COVID came along, we would hold regular projects summits and all the projects would come together, and more useful stuff has happened during the cup of tea afterwards than in the actual formal session.” (Interview quote)

While they established the six overarching themes and working groups to organise workstreams, they also noted that it was important to ensure interaction between projects, themes and working groups, and think of it as one scheme, rather than six themes.

Stakeholder engagement

At the start of their working, the partnership development officer undertook a rigorous engagement plan, attending 106 meetings and presenting to over 750 people (LCAP p.8). The resulting partnership is an agreement between organisations from a range of sectors, including The Crichton Carbon Centre, Drax, Dumfries and Galloway Council Environment Team, Scottish Forestry, Galloway & Southern Ayrshire Biosphere, Glenkens Community & Arts Trust, Historic Environment Scotland, National Farmers’ Union Scotland, Scottish Environmental Protection Agency, and NatureScot.

During establishment, board members were governed through a partnership agreement which set out responsibilities and standards of operation. This was superseded by another agreement for the delivery stage (LCAP p.6-7).

- **The benefits of finite timescale**

Galloway Glens has much to offer in terms of lessons around stakeholder engagement. First and foremost, a key difference between Galloway Glens and other landscape partnerships is that it is being delivered over a finite, five-year timescale. This had major impacts on all aspects of partnership activities and was recognised as helpful in driving stakeholders and partners to action:

“We have settled on this idea, that it is a five year opportunity for value. [...] I don't know what this means for you when it comes to RLUPs, but I think that is one thing that we have really benefited from is an element of urgency and an element of almost ephemeral nature that, ‘We're here; If you want to do something, you'd better do it because we're going.’ (Interview quote)

Stakeholder engagement was carried out with an emphasis on establishing rapport between the partnership and relevant stakeholders. This was recognised as a necessity due to the transitory nature of the partnership and the unknown fate of projects after funded ended:

A focus of the development phase has therefore been a large amount of ‘intangible’ work by scheme staff to get to know the people and communities in the area. This has given the team a great knowledge of the area, and sets the scheme up well to reflect

and meet the issues facing the area on a bespoke and localised basis. Acknowledging the realities of the current financial climate, the long-term success of the scheme will depend significantly on the relationships made around each project. Successful relationships will provide the strongest possible legacy and support the exit strategy of the scheme itself. All work undertaken has and will be pursued in a spirit of engaged, respectful and effective collaboration (LCAP p.14).

This exit strategy (after five years) consists of embedding individual projects with those stakeholders most able or most invested in carrying them forward, including both individuals and organisations who are active in the relevant areas. A representative from the partnership shared an interesting mindset shift regarding project legacy, pointing out that changes and project outcomes do not need to be permanent to be impactful:

“You think of legacy and immediately think of 100% maintenance of activity for infinity, whereas really, what we are about is maximizing longevity. So even if there is, in year fifteen, a tail-off, then you could argue that's still been an effective legacy for that period, and don't immediately think that legacy has to have 100% maintenance at level of activity for infinite numbers of years. [...] What can you add to or do to improve longevity?” (Interview quote)

Most partnerships are set up with the unaddressed assumption that they will continue indefinitely. To have maximum impact and maintain the changes implemented, this is tacitly assumed to be the only option. It is unique and interesting to consider the possible benefits of fixed-term arrangements, assembling the relevant stakeholders and organisations, crowdsourcing the activities and driving changes for a time. After projects have been handed back to communities to take forward, the partnership can disband and members can focus on their other roles.

- **The importance of branding**

‘Galloway Glens’ was the name chosen for this partnership and this idea did not exist before their incorporation. By overlaying this new region on the local authorities and the people inhabiting the area, several opportunities arose, just by drawing a new line on the map and calling it something unique:

“There's a butcher in the high street is selling a Galloway Glens sausage, and you think, that never existed! It's just because we've been hammering ‘Galloway Glens’ and then people, ‘Oh, maybe I do live in the Galloway Glens.’ And the phrase ‘Galloway Glens’ was chosen because it's a non-thing, it doesn't exist.” (Interview quote)

The main benefit of creating this new entity was that it did not come with the baggage of other organisations that were part of the partnership, such as the local authority or council. An element of mystery around the remit, responsibilities, and motives of this new group allowed them to avoid being hamstrung by stakeholders’ preconceptions:

“We've pushed this brand really hard, Galloway Glens [...] because if I turned up at people's houses and said, ‘I'm from the Council,’ then it sort of comes with an element of baggage and you ‘refused my Conservatory planning application fifteen years ago, I'm not going to talk to you about a footpath.’ [...] and I think that means people are left thinking, ‘Well, what is Galloway Glens?’ and you've almost got a blank slate of engagement to do with.” (Interview quote)

The partnership made the most of this blank slate by continuing to push the brand and closely monitoring the language they were using. For example, while the partnership area lies within the local authority of Dumfries and Galloway, the word ‘Dumfries’ does not appear in their communications, as their area is in the historic Galloway region.

“I think that people in Galloway love that, because [...]. Dumfries and Galloway is sort of a construct of the Local Authorities Act anyway, and people who live in Galloway don't feel any connection with Dumfries but it's quite good to be able to tailor what we do for a specific area, which would be a challenge when it comes to engagement of RLUPs and things.” (Interview quote).

Language and word associations can help or hurt when it comes to building stakeholder trust. Another step they took to garner trust was to establish an office; a brick-and-mortar location with a sign on the door that reads, ‘Galloway Glens.’ This was considered to be helpful in differentiating themselves from the other partnership groups active in the overlapping regions, e.g., South of Scotland Enterprise, National Parks, or the Galloway and Southern Ayrshire Biosphere Reserve.

A specific recommendation for RLUPs was to ensure frequent communications to all audiences, including local communities. A representative framed this as ‘the best defence is a good offense’ (paraphrasing), explaining that telling the press, stakeholders, and other interested parties what the partnership was currently progressing (even if it may seem unexciting) was an opportunity to shape the message and narrative surrounding the partnership and its activities:

“My takeaway point for RLUPs [...] not a swagger, but a confidence. Go, hand-control the message, push it hard.” (Interview quote)

Application of a natural capital approach

The Galloway Glens partnership did not undertake a comprehensive assessment of natural capital assets within their boundary. It was highlighted in the interview that this sort of baselining would have taken place when the partnership was at its inception in 2018 and ‘natural capital’ as a concept and had not yet entered the vernacular of this space. The partnership did, however, undertake a Landscape Character Assessment (LCAP p.10) as well as other, isolated stock-taking exercises:

“Feels like no time ago since I was writing the [Landscape Conservation Action Plan] but it was 2017, and it feels like natural capital has come on massively, even in the last three to four years. I think, with the development of the scheme, there's a lot that we did which could probably be classed as natural capital now. We did some very simple sort of assessment of fishery value in in the valley: What does it drive? The local economy, by the benefit of local fisheries, and so they've got some sort of nice figures in there, but then I was trying to talk about quality of life and things as well [...] Basically, the whole thing was written without the phrase ‘natural capital’ in mind, I think because it just hadn't really come up.” (Interview quote)

The Galloway Glens Landscape Conservation Action Plan (LCAP) presents detailed descriptions of the regional context, including climate, human history (pre-history through to modern), habitat types, and other landscape features and services which are certainly natural capital assets (see LCAP p.14). It is an impressive document and there is much that RLUPs could learn from it, especially their unique, dual emphasis on human and natural heritage. However, Galloway Glens did not quantify their total stocks and flows of natural capital in any systematic or rigorous way:

“There was a lot going on at the time and the aim was to try and get a handle on when the different landscapes that we had. But this is coming really from a landscape point of view. [...] I think really it was more of a stocktaking than anything that would have existed already. [...] I think it's frustrating, we should have pushed it the next step and done some more of that. But no, we didn't do it here.” (Interview quote)

- **Accessing resources to deliver plans**

The Galloway Glens is a landscape partnership funded through HLF. It is a five-year scheme of work with a target of £5.2M in expenditure, of which £2.7M was a contribution from HLF (LCAP p.4). The required match funding comes from a range of public and private sources:

“We’ve got a massive cocktail of funding and it depends on each project. We try and find a match funding for the relevant project. If you are a landowner, we’re doing a footpath on your site, it will be at no cost to you, obviously. [...] To an extent, we’ve almost shielded some of our partners from the funding challenge, in the knowledge that it’s on us to do it.” (Interview quote)

The partnership is very flexible and successful in terms of accessing different forms of funding, although payments for ecosystem services are not currently used or planned.

- **Acting as a multiplier for local investment**

One of the key realisations made through actioning the many projects over the course of this partnership has been that the residents of the area do not only benefit from the outputs of the projects (e.g., infrastructure improvements, knowledge exchange), but also from the economic activity required to deliver them:

“We’ve spent about nearly £3 million now and more than 75% of what we spent has been with Dumfries and Galloway businesses, and so I’m trying to say to people that, ‘That is Lottery money from across the country, drawn in to be spent in Dumfries and Galloway.’ So, to an extent, that is helpful when you’re talking to someone who possibly doesn’t care [...] So yeah, 190 businesses in D&G have been used through the Galloway Glens scheme, which varies from people building a bridge for £40,000 through to someone providing lunch. [...] Even with Regional Land Use Partnerships it’s exactly the same, it’s hearts and minds as much as anything, and no one, nothing wins hearts and minds like actual economic activity with a with a pound sign beside it. So it’s been good to do that locally.” (Interview quote)

In addition to the short-term benefits delivered through the use of local businesses, Galloway Glens highlighted the longer-term opportunities that have been created through businesses engaging with the partnership:

“Sometimes you get a new local supplier who’s never worked with the Council before, and we’ve got the resource is to work with them, get them set up as a sort of registered supplier, and then they can then bid for work in other departments at the Council. [...] There’s been lovely stories about small businesses getting set up, getting a contract with Galloway Glens and then going on to do work for broader council, that local company.” (Interview quote)

These previous examples highlight the multiplier benefits that investing in local areas can have. Most of the Galloway Glens projects used as examples during the interview were infrastructure improvements and public access (e.g., footpaths, bridges, restorations of historic buildings) or events (such as classes and webinars). Multiplier effects, however, often depend on the alignment of both funding and objectives of multiple partners, and where objectives are not aligned, conflict rather than funding may be multiplied; a challenge likely to be pertinent to RLUPs as they implement land use change:

“We’re doing a project with the National Trust for Scotland that’s called Threave Landscape Restoration project and there’s 81 hectares of land which, until now, is just being sort of silage fields, slurry sprayed on, sileage. And that’s all been

taken out, we're taking fences out, we've breached the flood embankment as well, so the river is actually flooding onto the site in the way that it would have done historically. [...] And so, to certain people, that lands very well. But then a comment I had was, 'Oh, how are you going to offset the economic impact of taking that land out of silage?' And you think, 'We are going to knock it out of the park with the economic benefit!' People are going to come from across the world to see what's going on at this site. We're going to have studies, we're going to have tour groups [...] and not to mention it's still going to be used as valuable, as providing meat and things like that. But there's a natural, the immediate response was, 'Well, you're going to have to balance off that...' [...] But it struck me that, wow, we need to change our thinking, look at the whole site, see the whole board." (Interview quote)

This final example highlights a few additional lessons for RLUPs:

- As above, business cases can be a persuasive tool, and by developing these in collaboration with stakeholders, RLUPs may be able to identify co-funding opportunities with organisations that share similar goals
- It is important not to underestimate the economic impact of partnership activities, considering both positive and negative effects for different groups across the partnership's area
- It is therefore important to also be sensitive to those who wish to keep things as they are. They take this position for a reason, and the current system is likely to be delivering benefits that they value, which need to be understood in order to engage with land use change opportunities

Lessons

Communication and branding can engender buy-in from stakeholders, and is especially useful to help distance partnerships from the individual brands of partners where stakeholders hold prejudices against certain organisations in the partnership.

Coherence and integration between projects funded by the partnership must be maintained to ensure efficient working where synergies between projects can be exploited, balancing the identification of projects from the bottom up to meet local needs with the need for strategic oversight, provided by themes and working groups representing the interests of multiple projects.

A clear end date for a partnership can focus minds and help achieve early stakeholder engagement without compromising the legacy of the partnership if a positive legacy is viewed as enduring benefits rather than ongoing activities from projects.

Partnerships can act as a multiplier for local investment by partnering with local businesses and others who can align their funding and objectives with the activities of the partnership.

Conflicts can be pre-empted and tackled early. Where goals are not aligned, especially where these involve funding, conflict is likely, but can be pre-empted by analysing the interests of influential organisations in the area. While seeking to facilitate change, partnerships also need to be aware of the reasons why some groups may wish to protect the status quo, in order to engage sensitively and early with these groups to avoid later conflict.

Case study: Landscape Enterprise Networks (LENs)

Introduction



Figure A9: Landscape Enterprise Networks

Landscape Enterprise Networks (LENs) create regional ecosystem markets through geographical partnerships between businesses and land-based organisations who can deliver place-based outcomes of value to local industry and society.

There are now 10 LENs landscapes channelling private investment into sustainable agriculture and nature conservation in England, Scotland, Italy and Hungary, with investment totalling £5M to date. The LENs landscapes in Cumbria and SW Scotland work with >80 farmers covering 8% Scottish and 2% UK dairy output, with other LENs landscapes focusing on arable farming and catchment management.

In a similar way to a lead or convening organisation in a partnership, a LENs operator engages trading partners and negotiates transactions that deliver the nature regeneration or ecosystem services needed locally. LENs operators are typically existing

organisations that are already trusted by both local businesses and landowners and managers. As such, LENs can create new partnerships or provide a mechanism for existing partnerships to generate revenues from ecosystem services, leveraging their existing relationships and local knowledge. A proven and practically tested methodology exists, including contracts development and governance documentation, developed for any LENs entity. For example, models for Community Interest Company (CIC) special purpose vehicles already exist, set-up to structure the trades and ensure fiduciary governance. The intermediation costs are covered in the costs of the trade as an allocation – see the LENs website¹⁰ for models and documentation.

Stakeholder engagement

Some LENs operators engage with both the investing businesses (aggregating demand to create investment pools) and land based rural businesses (aggregating the supply of land on which interventions can be applied). In some LENs, separate “demand aggregators” are appointed with the networks and trust needed to connect with farmers and other landowners across a landscape (e.g. 3Keel acted as demand aggregator and the Game and Wildlife Conservation Trust acted as supply aggregator in the Cumbrian

¹⁰ <https://landscapeenterprisenetworks.com/>

LENs, in the Eden Valley). The supply aggregator typically negotiates on behalf of suppliers to reach a price at which the majority are willing to transact at, engaging intensively with both buyers and suppliers as part of this process. As such trust between the supply aggregator and landowners is crucial to the engagement process.

Evidence from interviews in the Cumbrian LENs suggested that despite limited input to the design of interventions, farmers preferred private investment via LENs to publicly funded agri-environment schemes¹¹. The main reasons they were engaging were: i) the additional, stable income for easily planned and reported activities that were flexible and compatible with their existing management; and ii) they were motivated to join the scheme because they wanted to improve environmental outcomes and animal health. The Hampshire LENs was less prescriptive, offering farmers a more comprehensive list of over 50 interventions as well as the opportunity for them to feed into scheme design and suggest interventions that, based on their farming experience and knowledge, could deliver Phosphorus reductions in river water. Farmers valued the opportunity to co-develop the scheme, as well as an opportunity to seek funding for a wide range of priority activities, with farmers reporting to have made multiple applications to the scheme¹². Active co-development through LENs ensures interventions are easy to implement and reflect variations in land types, scale, management practices and align with variations in levels of participant engagement readiness, to guarantee acceptability and high levels of engagement.

Having said this, interviews with LENs participants have identified a number of barriers to engagement¹³, including:

- Operational factors (i.e. contracts length, payment levels and scheme requirements);
- Landownership barriers (tenants are unable to enter contracts themselves unless they negotiate benefit-sharing arrangements with their landlords);
- Regulatory factors (e.g. it may not be possible to implement many interventions on land that is designated as a Site of Special Scientific Interest);
- The need for interventions to be additional (i.e. they were not already being done) was considered unfair by some farmers who felt this rewarded historic poor management and degradation. Moreover, while one study claimed that many of the interventions, like hedge planting, were already being conducted prior to the introduction of LENs in Cumbria¹⁴, another study demonstrated the additionally of this LENs, finding that the scheme achieved planting rates of ~12,000 km yr⁻¹ compared to just 425 km in 2019 by publicly funded schemes¹⁵.

¹¹ Coyne L, Kendall H, Hansda R, Reed MS, Williams DJL (2021) [A mixed-methods study to explore the role of agri-environmental schemes on the resilience of the English dairy sector](#). *Land Use Policy*

¹² Kendall H, Reed MS, Rodgers C (under review) Collaborative landscape-scale environmental land management: Farmer and landowner perspectives and experiences of privately funded ecosystem service markets. *Land Use Policy*

¹³ Kendall et al. (under review)

¹⁴ Coyne et al. (2021)

¹⁵ Biffi, S., Chapman, P.J., Grayson, R.P. and Ziv, G., 2022. Soil carbon sequestration potential of planting hedgerows in agricultural landscapes. *Journal of Environmental Management*, 307, p.114484.

These factors are not unique to LENSs rather they have wider implication for farmer engagement with both public and privately funded collaborative environmental land management approaches.

Application of a natural capital approach

LENSs start with a systematic process for understanding which sectors in a region have most at stake as a result of landscape performance, which landscape assets underpin that performance, and where there are crossovers in interest for different businesses or sectors in the same landscape assets. The objective is not about building up a comprehensive picture or plan. Rather, it is about using data, intelligence and insight to identify the most promising place to start building a network. The process is as follows:

Step 1: Network Opportunity Analysis

This involves a systematic process for understanding which sectors in a region have most at stake as a result of landscape performance, which landscape assets underpin that performance, and where there are cross-overs in interest for different businesses or sectors in the same landscape assets. The objective is not about building up a comprehensive picture or plan; it is about using data, intelligence and insight to identify the most promising place to start building a network.

Step 2: The Basic Operating Unit – a collaborative value chain

This step focuses on building a first (anchor) value chain. The process involves working with 'demand side' interests to define a common specification for services and with the 'supply side' to define a service proposition. Then working with both, to broker a deal. The supply side works best when coordinated through 'supply aggregators', who help land enterprises work together as a group and create a joined-up proposition.

Step 3: Growing and formalising the regional network

Building a functioning first anchor value chain creates momentum and interest, and leads naturally to both extending the first value chain – by attracting more customers and suppliers – and building the next. It is at this point that some form of organisational infrastructure, and governance is required to manage and broker trades in an equitable, transparent, and locally accountable manner. This is an active area of development for the LENSs programme in SW Scotland. LENSs works with 'demand side' interests to define a common specification for services; then with the 'supply side' to define a service proposition; and then works with both to broker a deal.

Accessing resources to deliver plans

They all look at the landscape from the perspective of business need. Based on the risks and opportunities that landscapes present to individual businesses, they invest to reduce risk (e.g. to infrastructure or supply chains) and realise opportunities (e.g. increasing resilience to climate shocks or improving the quality of milk or water). LENSs links management and investment in landscapes to the long-term needs of business and society. It does this by helping businesses to work together to influence the quality and performance of the landscapes in which they operate. As such, LENSs provides a market-driven framework encouraging co-operative land management across large geographical areas. LENSs are non-prescriptive and give investors the freedom to design transactions to align directly with their requirements and engagement motivations. Farmers and other landowners are valued as business partners, engaging in a business proposition with outcomes representing tangible benefits to farm businesses.

LENSs offer a transparent way of funding the delivery of a broad range of ecosystem service interventions. They support competitive pricing through price negotiations. They consider a broad range of factors in defining the price for delivery, including the

production value of land, delivery expectations and permanence requirements of investors. They provide a framework for integrating payments for multiple benefits (stacking) and allow for multi-year payments to be index-linked. LENS separates out the payment for primary products from the land, and creates a new market for the ecosystem services, so businesses that need the land (e.g. for developing housing and linear infrastructure) come in to pay for ecosystem services a farmer might provide as a secondary product.

The 10 LENS Labs have created value chains with benefits widely distributed across stakeholders:

- Businesses gain risk management, efficiency, and an evidence base of good ESG behaviour.
- Public sector organisations and NGOs gain efficiency by partnering with private sector buyers
- Farmers and land managers gained farm business resilience, shared agency and support. For example, some farmers have reported the personal satisfaction and enjoyment that they felt from seeing the improvements to biodiversity that resulted from the interventions that they had delivered¹⁶. LENS also fulfilled a useful role in supporting farms to reach regulatory compliance (e.g. slurry storage) and allowed farms to make improvements that would have otherwise lacked priority.
- Benefits for local communities are indirect via the positive environmental outcomes of LENS, and the economic benefits for rural businesses in their community.

Lessons

LENS enables stacking of payments for multiple ecosystem services without breaking additionality rules because buyers pool their investment to co-procure multiple outcomes from a landscape through a package of interventions that can be carried out together. However, this makes it difficult to integrate carbon and biodiversity markets with strict additionality rules into LENS, and this may be a barrier to investment from companies seeking carbon offsets or insets.

Free-riding is minimised in LENS because more beneficiaries pay but transaction costs are high and experience shows that it can take significant time and experience, often including expert market intermediaries, to operationalise this approach.

The collaboration required in LENS can promote knowledge sharing and help drive more effective and efficient outcomes from landscapes.

Costs of measurement, reporting and verification (MRV) of outcomes are typically lower for LENS than voluntary carbon markets because costs can be split between multiple sellers at scale, and buyers tend to be more focussed on risk mitigation than offsetting or inseting which is typically associated with more stringent MRV requirements.

Contract lengths tend to be shorter in LENS than for voluntary carbon markets, where contract lengths are often a major barrier to landowner engagement.

Legal mechanisms may be used to increase farmer confidence and reduce risks associated with engagement, dealing with issues such as non-delivery, additionality and permanence. These should also build in longevity into land management decisions, improving incentives for tenants and landlords to work together to improve the quality of

¹⁶ Coyne et al. (2021)

the land and the benefits it provides to society, and sustain this beyond the life of agreements.

It is important to identify and engage with appropriate supply aggregators to manage transactional relationships. They can tailor the way schemes are presented to take account of different farmer motivations and value orientations, and advise farmers on blending with public funding for environmental management.

Case study: North Pennines Area of Natural Beauty Partnership

Introduction

The designation of the North Pennines Area of Natural Beauty (AONB)¹⁷ was confirmed in 1988 and at 1983 km², it is the second largest of the 40 AONBs in England and Wales. One of the most remote and unspoilt places in England, it lies between the National Parks of the Lake District, the Yorkshire Dales and Northumberland with the urban centres of County Durham away to the east. It lies mostly within the political boundaries of Durham, Northumberland and Cumbria County Councils, and the districts of Eden and Carlisle, with 2.6 km² in North Yorkshire around Tan Hill. The area is also a UNESCO Global Geopark. It is a landscape of open heather moors and peatlands, dales and hay meadows, upland rivers, woods, with distinctive birds, animals and plants, among vestiges of a mining and industrial past.



Figure A10: North Pennines Area of Natural Beauty

The partnership created and monitor a management plan for the AONB. It is a statutory plan, and legislation states that it should be used to formulate the policy of local authorities in relation to the AONB. The goals of the management plan are to conserve and enhance the natural beauty of the area, including wildlife, landscape, cultural heritage and biodiversity. The plan states what actions the partnership is going to take to achieve these objectives, and a staff team of 46 (all employees of Durham County Council) are responsible for executing the plan. Stakeholders in the partnership include 24 public bodies, statutory agencies and voluntary organisations, 5 local authorities, farmer co-operatives, landowners, Defra, the Environment Agency, Natural England and NGOs such as RSPB, and the Wildlife and Rivers Trusts. The NPAONBP does not own any of the land in the area it is responsible for. The Executive Management Group of

¹⁷ <https://www.northpennines.org.uk/>

stakeholders meets quarterly, to action and measure progress against explicit key performance indicators which they collectively developed, and are published in the statutory Management Plan.

The ebbs and flows of trends in conservation mean that the partnership has changed in its identity through the years – for example, Dark Skies have become important over the last few years. About five years ago, peatland restoration became a focus, when the Pennine PeatLIFE project was funded £7m by the EU LIFE Programme. The landscape assets and ecosystem services remain the intrinsic value, the markets direct which assets can be traded. Recently, 900 km² of peatland restoration was traded in an innovative payment for ecosystem services trial. The public funders shape what conservation activities NPAONB get grants for – currently for tree planting to support national targets is ongoing. NPAONBP has followed the trends in conservation and regeneration, gaining a viable business model from doing so.

Stakeholder engagement

The methods, mechanisms and techniques that were used to ensure all relevant stakeholders are engaged, including those who might be considered hard-to-reach or vulnerable to being left out of decisions were described as “multiple layers of interactions”. On the ground with the local families and keepers and land managers, it was useful to have a local person on the staff of the NPAONBP staff to make connections between the agenda of the partnership and interests of local communities. The partnership needed to communicate with stakeholders to let them know when, for example, when there were visits from politicians or others who needed to see projects on land they owned.

Maintaining good communication channels was key, and it was important to develop relationships and co-design activities, rather than informing people about decisions from the top-down. The staff team took special care of this “ecosystem of relationships”, and invested time developing relationships with groups who may have been opposed to some of the goals of the partnership, like the local grouse shooting industry and sheep farmers, who at first thought that the restoration work would damage their activities. Engaging local politicians and other decision makers with influence, such as water companies, has been crucial to these groups understanding of the importance of the work being done. This has resulted in their buy-in, and in many cases funding for the partnership.

The partnership is longstanding and so has long-term trusting relationships with a wide range of stakeholders, including landowners and community/access groups, who have engaged in deliberative monetary valuation and qualitative research to value the full range of ecosystem services from peatland restoration. The goal of this work was to value services other than carbon and climate change mitigation arising from peatland restoration, including water quality, biodiversity, flood risk alleviation and cultural services such as tourism, recreation, cultural heritage and place attachment/identity. To do this, they worked with a team of do a researchers to do a stakeholder analysis, to systematically evaluate the interest and influence of different stakeholders and publics, including the identification of hard-to-reach and vulnerable groups. These groups were then invited to workshops

They subsequently engaged landowners and managers (including tenants) from the AONB and wider National Park to develop and propose natural capital assessment methods that could be used by farmers in the English Land Management Scheme (ELMS) as part of a Defra Test and Trial project, and convened landowners/managers, investors, academic and NGOs in a process to identify different ecosystem market

models that could enable them with their Great North Bog partners to layer payments for multiple ecosystem services on top of carbon finance via the Peatland Code.

Application of a natural capital approach

NPAONBP started with no data, but invested in a significant data collection effort, which they mapped as part of the area's first natural capital assessment. They undertook a Peatland Knowledge Gathering exercise with specialists, which took 2 years to gather remote sensing data and drone footage, and put it into GIS maps. This is currently being updated by the Environment Agency for the Great North Bog¹⁸ project. Because of these assessments, NPAONBP knew the extent, condition and location of peatland in the area, and was able to evaluate the restoration work that would be needed to reduce GHG emissions, and restore water quality and biodiversity to these sites. The mapping showed the scale and nature of the restoration challenge, and showed that new restoration techniques would need to be designed so that the partnership could conserve the area's natural beauty and other ecosystem services. The natural capital assessment mapping and research, provided a baseline from which progress could be measured and helped the partnership prioritise funding applications and resources to the most degraded areas. However, it should be noted that despite this baselining work, it has not been possible for landowners who restored peatland using public grants to retrospectively generate carbon credits for their work under the Peatland Code, because there was no evidence that they did the work in the expectation of future carbon finance (and so the work does not meet the additionality criteria of the Code).

NPAONBP's approach to natural capital assessment was pragmatic, working with different partners to address their specific issues and concerns, adding value and in some cases enabling these organisations to prioritise funding for the work of the partnership. For example, they worked with Yorkshire Water and Northumbrian Water who were both concerned about sediment arriving in their reservoirs and water colour issues in their treatment works. The partnership made the case that investment in peatland restoration could reduce water colour issues, enabling them to work with the water companies to tackle these issues at source in the upper catchment area of the AONB. The partnership were also able to show that investment in peatland restoration in the moors could reduce flood risk downstream in Newcastle and Durham, and worked with the Environment Agency to facilitate restoration to reduce flood risk for these cities. Working with the Great North Bog, the partnership also commissioned research to assess different carbon and ecosystem market models that could help fund further restoration efforts. Making business cases to stakeholders with varying interests in the landscape enabled the partnership to scale-up funding for a wide range of activities with benefits for stakeholders as well as generating public goods. The NPAONBP turned the recommendations from their natural capital assessment into a plan by being pragmatic and ensuring that peatland restoration delivered the benefits that funders wanted.

The natural capital assessment showed that the most significant benefit that the partnership could deliver was likely to be peatland restoration outcomes, even though there might be a loss of certain types of habitat e.g. dry dwarf shrub, or the potential to disturb the historical record held in the peat. However the partnership brought together a wide range of parties, including those with conflicting interests, to ensure that the management plan delivered benefits for the widest possible range of stakeholders, including tangible benefits for local communities such as local flood risk mitigation, green jobs, and supporting a local supply chains for plants and trees linked to restoration activities.

¹⁸ <https://greatnorthbog.org.uk/>

- **Accessing resources to deliver plans**

A range of public and private resources have been accessed to date by the partnership. Public sources include funding from the Environment Agency for flood risk reduction, Defra for statutory funding, and the EU for peatland restoration. Public sector agencies invest in projects that enable them to achieve their targets, such as natural flood management, biodiversity and climate change mitigation.

Private sector funding initially came from water companies for the improvement in water quality that the partnership delivered. Recently, NPAONBP has been approached by three FTSE 250 companies, including a construction company and a large global corporation, to talk about how they could invest their ESG funds and carbon offsetting budgets in peatland restoration. A 10-year £600,000 per annum deal has got to Memorandum of Understanding stage. As part of this, Peatland Code projects are being developed which blend at least 15% private carbon finance with public funding (up to 85% of total project costs). A number of landowners are using their own capital to supply the necessary carbon finance, so that they are able to retain the carbon units for sale at a later date, when they are likely to be worth more as verified Peatland Carbon Units, rather than preselling the carbon as Pending Issuance Units at a lower price. Although this protects the interests of private landowners, it limits the supply of carbon units to the market and so limits flows of external investment. Where landowners do not have sufficient capital of their own, they are considering selling a proportion of the carbon as Pending Issuance Units or seeking repayable investment via financing facilities that enables them to retain the rights to the carbon.

In addition to this, the partnership are investigating the potential to stack payments for water quality, flood risk alleviation and biodiversity with carbon payments in ways that do not break the additionality rules of the Peatland Code. Given the challenges of making this work, they are considering models where different parts of the AONB are restored for different purposes and buyers, depending on the balance of benefits that can be provided, for example prioritising bare and eroding peat for carbon markets or water companies, where the greatest carbon and water quality benefits are likely to be provided, and blocking drainage ditches for biodiversity, given that the carbon benefits are less significant for these restoration activities.

Lessons

- Get natural capital mapping done early to help prioritise the development of business cases for different ecosystem services, depending on where these can be most efficiently provided across a landscape.
- Identify and if possible quantify the widest possible range of ecosystem services in collaboration with a cross-section of stakeholders e.g. via stakeholder analysis, deliberative monetary valuation and qualitative analysis of interviews, to capture multiple income streams from ecosystem services.
- Identify opportunities and constraints around stacking payments for multiple ecosystem services. Additionality rules in many carbon and other ecosystem markets may preclude the sale of benefits to multiple buyers if the additional benefits would have happened anyway without funding from these buyers.
- Balance the needs of the partnership, landowners, local communities and investors, as these might not always align when designing natural capital projects. Where investment from landowners and/or public sources can deliver the goals of the partnership alongside public and local community benefits, external private investment may not be needed and should not be seen as an end in itself.

- Be inclusive and collaborative, identifying and assessing stakeholders, to target those who are influential, may be hard to reach, or whose goals may not be aligned with those of the partnership for early engagement.
- Take public and private sector stakeholders on landscape visits and show them what can be done in practice to protect natural capital and enhance the provision of ecosystem services that have value to them and their organisations. Shout about what is being done, and tailor benefits to match the stakeholder.

Case study: South Downs People and Nature Network and Natural Capital Investment Areas

Introduction

The People and Nature Network (PANN)¹⁹ is a co-ordinated and strategic approach to help the South Downs National Park Authority (SDNPA) and its partners “ensure nature is able to function effectively”. The partnership spans the National Park, not just the statutory designations within it. The network was intended to be a catalyst for co-ordinated action, building upon existing partnership working and bringing new partners together. Originally developed within a green infrastructure and ecosystem services framework, the PANN incorporated a natural capital approach, “because that was something we were mainstreaming with the [Park] Authority” (Interview quote).

The 12 Natural Capital Investment Areas (NCIAs; see Figure 1)²⁰ provided a way to focus on “hotspots” where drivers of change and other issues coalesced, to have an impact on nature and natural processes. The hotspots also tended to be protected areas. Each area was regarded as having a unique set of environmental challenges that needed a bespoke management approach.

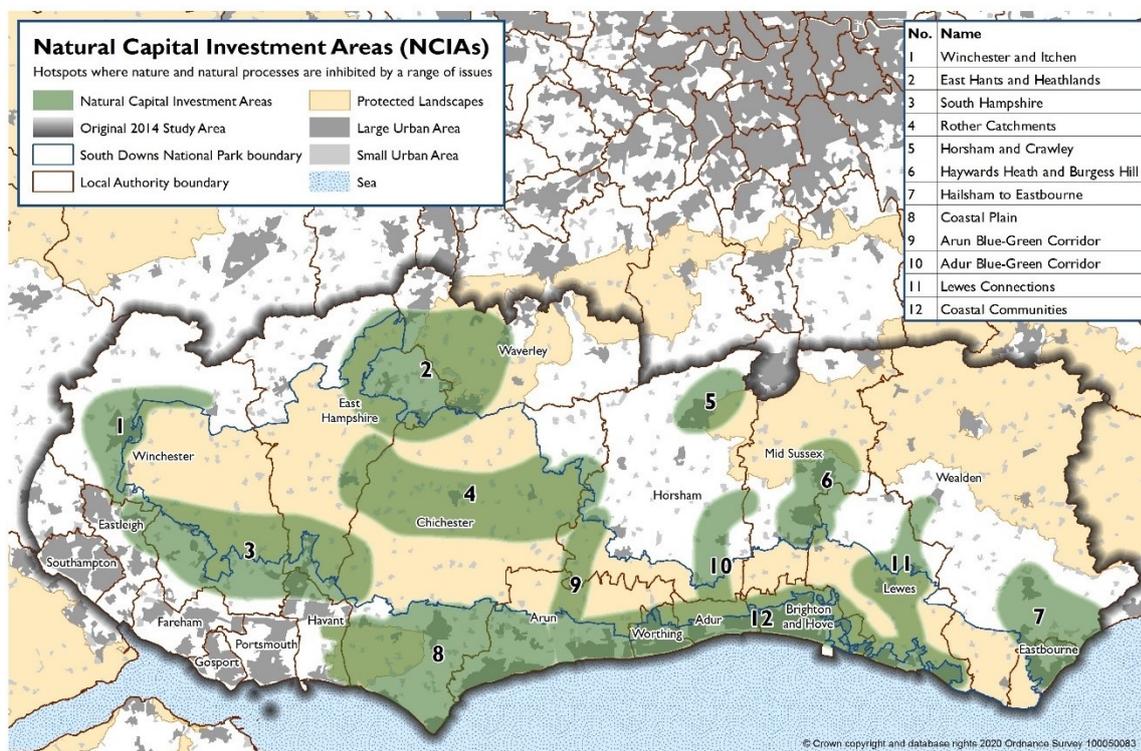


Figure A11: Map of the PANN area and the 12 NCIAs

Five high-level principles guided the work of the PANN and these were developed from evidence collected from across the Park (see next section). Localised strategies, plans and projects were encouraged to align with these high-level principles. This was to enable delivery of shared aims across the partnership. The overarching principles also

¹⁹ <https://www.southdowns.gov.uk/national-park-authority/our-work/partnership-management/people-and-nature-network-pann/east-winchester-landscape-conversation-stakeholder-consultation-report/>

²⁰ <https://www.southdowns.gov.uk/south-downs-national-park-launches-major-plan-for-nature-recovery-across-south-east/natural-capital-investment-areas-ncias-2/>

guided planning, delivery and management of the NCIAAs, with work in an NCIA sometimes triggered by an external force or threat (e.g. a national infrastructure project or planned housing development). The principles also provided a common framework to attract and guide investment in natural capital. As a result, there is strong promotion of consistent and joined-up management of larger-scale natural capital assets that cross administrative boundaries.

Stakeholder engagement

In 2014, consultees were asked whether a sub-regional approach to green infrastructure planning should be developed and, if so, what form it should take. There was a high level of support for this approach to be adopted (80% of responses). The resulting PANN actions and evidence report²¹ is described as a ‘collaborative document’ that was developed with input and advice from many partnership organisations and a Technical Working Group. The technical group and a smaller Steering Group included self-selected representatives from the SDNPA, the unitary and local authorities, government agencies (Environment Agency, Natural England, Historic England, Forestry Commission), NGOs (Woodland Trust), representative bodies (Country Land and Business Association, National Farmers Union) and others (Brighton and Lewes Downs Biosphere, Arun and Rother Rivers Trust). The groups met three times in 2015 to agree the aims and objectives of the network. The development of the aims and objectives, and the subsequent review of evidence for the PANN actions and evidence report, was guided by the steps shown in Figure 2.

At the local level, in-depth stakeholder engagement²² was carried out in 2019 in relation to NCIA1 (East Winchester). This involved:

- Three workshops with 40-50 local stakeholders (including the Parish Council, local access forum groups, local authority landowners, local NGOs, Public Health England, Natural England). The workshops were called ‘Scoping, Shaping and Sharing’ and were used to draw together local perspectives on the regional level evidence collected in the PANN report. They also enabled discussions about how the regional-focussed approach can be implemented locally;
- A SDNPA Citizens Panel Survey;
- Pop-up consultation stalls with the public in Winchester city centre; and
- Young Persons consultation event at Winchester Science Centre.

The process co-created a Forward Plan²³ for NCIA1 and a series of initiatives that will help to deliver that plan. Consensus was not reached on every aspect but there was agreement on the five ‘key principles’ and broad support for the ‘direction of travel’ (particularly as the stakeholder engagement process mobilised people who were concerned about the impacts of a planned infrastructure development in the area). There was also a shared understanding of how the various stakeholders experience and view the issues in the landscape.

²¹ <https://www.southdowns.gov.uk/national-park-authority/our-work/partnership-management/people-and-nature-network-pann/people-and-nature-network-evidence-and-action-report/>

²² <https://www.southdowns.gov.uk/national-park-authority/our-work/partnership-management/people-and-nature-network-pann/east-winchester-landscape-conversation-stakeholder-consultation-report/>

²³ <https://www.southdowns.gov.uk/wp-content/uploads/2022/02/6.-The-Stakeholders-Forward-Plan-and-Conclusion.pdf>



Figure A12: Excerpt of the action plan for the PANN

The in-depth stakeholder engagement in NCIA1 was vital for generating a wider evidence base at the local level. This reflected the need to take a bespoke approach in each NCIA because each hotspot had different stakeholders and different issues/drivers”

“...what we found actually was that not only was the desktop evidence completely aligned with what the experience of local people was, they also added enormously to that evidence base.” (Interview quote)

However, the process in NCIA1 was very expensive and ‘involved’. Despite these challenges, *“inevitably, all of [the NCIA]s will need to have that kind of engagement really to bottom out what the issues are and bring the partnership together”* (Interview quote).

The process also highlighted the importance of thinking more about working together within the SDNPA: *“It is about looking at how we work collectively together, the 120 of us or so and we are kind of doing different roles and are we coordinating on these areas effectively.”* (Interview quote).

Application of a natural capital approach

The main approach to natural capital assessment was the regional evidence collection for the PANN report. This involved mapping and auditing natural assets (using the EcoServ-GIS model²⁴). This enabled the SDNPA to map where ecosystem services occur and to indicate levels of demand (need) for a given service and the capacity of nature to deliver that service. Other evidence included:

²⁴ Developed by the Wildlife Trusts.

- National and international legislation, policy and guidance;
- Strategies, Local Plan documents and evidence documents from all local authorities;
- Feedback from questionnaire to local authority partners;
- Strategies and evidence from stakeholder organisations;
- Review of primary datasets;
- Input and comment from Technical Working Group, Steering Group and from the Stakeholder Workshop of October 2014.

All this evidence was reviewed and evaluated to understand the needs, opportunities, threats and pressures across the PANN area, within six themes. The evidence evaluation enabled the identification of ‘targeted investment areas’ (the NCIAAs), which were hotspots for environmental interventions. As the NCIAAs were developed from a sub-regional scale review, they provided the opportunity for local level planning within a wider strategic context. Each NCIA underwent a SWOT analysis, to guide future interventions and/or management.

The SDNPA also developed a set of natural capital accounts, using the National Audit Office approach. The interviewees explained that this was possible because they had a good finance officer in their team who could implement the methodology. They combined the accounts with Earth Observation data to monetise ecosystem services in a pilot project that ended in 2020. Although the SDNPA saw this as a useful exercise which they hope to revisit, there has been a lack of available research budget since then.

Interviewees repeatedly emphasised the importance of the drivers of change in an area when thinking about potential for local investment:

“We have still not been able to answer a lot of the fundamental questions around effectively putting figures on a lot of this but in a sense it hasn’t really mattered as much as I thought because like I said it depends on the driver [...] there is usually a driver that suggests there is an alignment of a finance or mechanism and usually it doesn’t matter in a sense which one you go with because you are going to be delivering multiple public benefits which can be combined together.”
(Interview quote)

The SDNPA conducted a separate exercise that considered a range of environmental, economic, social, policy and institutional drivers for change. Indeed, each NCIA was presented in the main PANN report in the context of the drivers of change that mean that an NCIA required specific attention.

- **Accessing resources to deliver plans**

The PANN report provided a common framework to attract and guide investment in natural capital. The SDNPA hoped that the strategic PANN approach would enable a broader range of delivery funding models and tools to be sourced. However, there has not been a formal review of progress yet.

SDNPA had success in getting the PANN actions/approach adopted at a strategic level. The overall approach was generally “*top-down and policy-focused*” and was expected to gather pace over the next few years. However, there had not been the same success at the local level. There had been some progress at the local level, though, particularly through collaborative work with the LNPs. The PANN work enabled the LNPs to make use of the evidence base and adopt a natural capital approach. Projects included

mapping ecological networks and natural capital investment strategies for Surrey LNP²⁵ and Sussex LNP²⁶.

They feel that the challenge is scaling-up in terms of delivery, and this is where blended finance plays a key role.

“A good example, you know, if you are talking about peatland restoration, most National Parks have done previous peatland restoration projects but they have been very small scale, you know, a matter of two or three thousand hectares or whatever over 10 years but the scaling up of that to be ten times that amount does present a challenge for National Parks which is why we have got to tap into if you like major investment funds, it can’t be done through public funding alone, it is that blended finance, private sector, public sector and other resources brought to bare really.” (Interview quote)

SDNPA worked with the UK National Parks through its Climate Change and Energy Group. This group has been looking at carbon investment and working with an international company to develop a carbon trading platform. The interviewees emphasised the importance of pilots to demonstrate delivery, again noting the need for local delivery (which they were struggling with). For them, the LNPs were key in looking at carbon trading platforms at the local level.

Lessons

- The co-development of high-level, evidence-based principles is a useful way to ensure strategic coherence in the funding, planning and delivery of projects within a wide-ranging partnership.
- A natural capital approach can be used to identify ‘hotspots’ where drivers of change and other issues coalesce to have an impact on the natural environment. The identification of ‘targeted investment areas’ in this case study has been a constructive way to bring stakeholders around the table and recognise that a bespoke approach is needed at the local level. For RLUPs, a similar approach could help to target effort onto key areas within each region, using both regional evidence and local insights (see the next point).
- Evidence collected at the regional level can be used to gather local perspectives and understand any complementarities/differences between evidence at those scales. In this case study, the desktop, regional evidence aligned with the experiences of local people and engagement with them was seen to add significantly to the evidence base and shared understanding of local perspectives. This is an important point for thinking about how RLUFs align with local perspectives/evidence.
- In-depth and effective stakeholder engagement at the local level is very expensive, although it can yield excellent results, particularly for tailoring regional-level plans/strategies to the local level. The engagement around future plans for NCIA1 in this case study provide some excellent insights for how to run an ‘involved’ stakeholder engagement process focussed on the local context within a region. For RLUPs to be able to run such processes, they are likely to

²⁵ <https://surreynaturepartnership.files.wordpress.com/2018/03/natural-capital-investment-plan-for-surrey.pdf>

²⁶ <https://www.brighton-hove.gov.uk/sites/default/files/2021-05/OD52%20Natural%20Capital%20Investment%20Strategy%20Dec2019.pdf>

need financial and other support from funders/local authorities (or others). It is not likely to be something they would be able to deliver within their current budgets.

- Regional level principles/objectives and a shared vision are effective for mobilising actors within a shared approach. However, there are challenges when applying/delivering these at the local scale. A bespoke approach is needed as it can be hard to translate high-level principles into practical action at this scale. Again, stakeholder engagement is important and RLUPs are likely to need more support to deliver this.
- Local organisations are often well-placed to attract and direct funding and the role of the partnership is to facilitate, leverage and co-ordinate this activity. The PANN appears to be a very effective knowledge-sharing vehicle and offers much potential for *combined advocacy*. RLUPs can learn from this by considering the extent to which they facilitate other actors at local levels to deliver projects/attract investment, within the shared vision for the region. Again, a ‘hotspot’ approach, like that used in the South Downs to target investment, may be appropriate. In this case study, two Local Nature Partnerships were effective in implementing regional priorities at the local scale and attracting investment (within a natural capital approach). Within the RLUP areas, there is scope to think about local level actors and how they can be formally integrated into the delivery of the RLUP at the local level (e.g. local biodiversity groups).

Case study: Spey Catchment Initiative

Introduction

The Spey is one of Scotland's most iconic rivers, renowned for salmon rod fishing and with great significance to whisky and wildlife. Rising in the Monadhliath mountains, the Spey flows between these and the Cairngorms through to the Moray Firth and Spey Bay. With a catchment of 3,000 sq. km, the Spey is the seventh largest river in the UK. Half of the Cairngorms National Park lies within the Spey catchment and approximately two-thirds of the catchment lies within the National Park. Administratively, the catchment falls between two local authority areas, Highland and Moray.

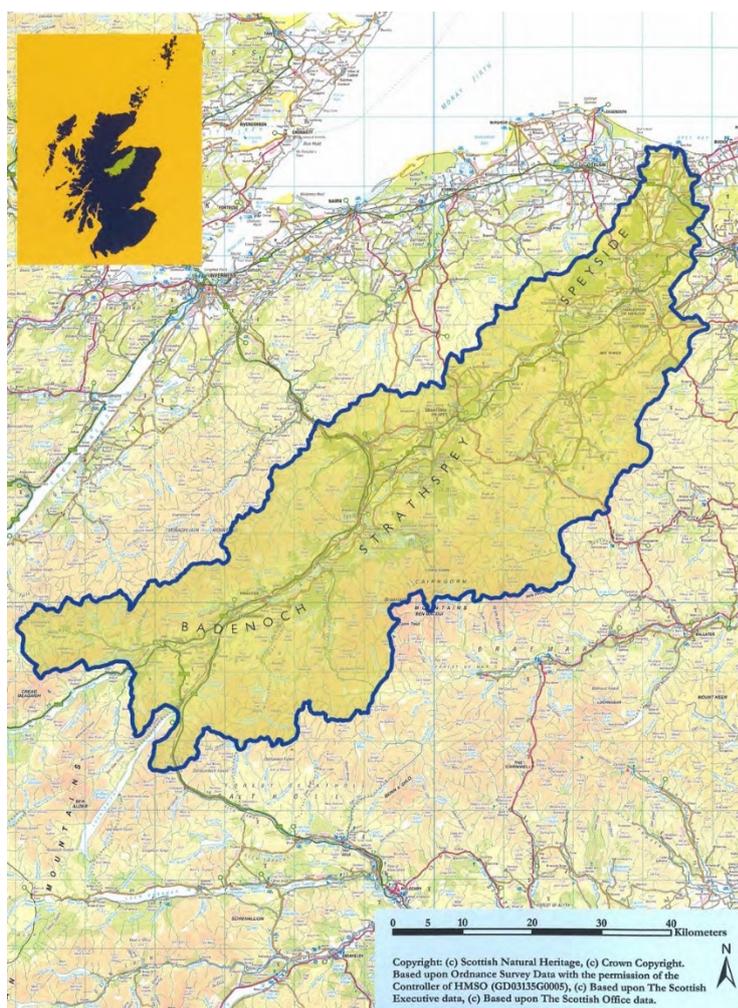


Figure A13: Spey Catchment Map

Land uses within the catchment are constrained by topography. The primary land uses in the upper catchment are hill-farming, forestry and sporting estates; around 50% of the catchment is mountain and moorland. As the valley floor widens in the lower catchment, land uses become more diverse and cattle rearing, commercial forestry and arable farming become more prevalent.

The main stem of the catchment is designated as a Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC) on account of the important populations of Atlantic salmon, sea lamprey, otter and freshwater pearl mussel. These designations (including the National Park status) reinforced the need to develop an integrated approach to managing the water resource.

The Spey Catchment Initiative (SCI) brings together a broad coalition of actors. An initial impetus was given by the alignment of regulatory agencies

and local authorities with respect to Flood Management Planning. Reflecting its conservation designations, the SCI arose from recognition that a collaborative, integrated approach offered potential for addressing catchment-wide concerns, including increasing future demands on freshwater, invasive species and fisheries management, access and recreation pressures, and the role and impacts of forestry and wider land management in the catchment.

Current SCI membership comprises the Cairngorms National Park Authority, Diageo, Forestry and Land Scotland, Highland Local Authority, Moray Local Authority, National Union of Farmers Scotland, NatureScot, RSPB, SAC Consulting, Savills, Scottish Forestry, SEPA, Spey District Fisheries Board, and Woodland Trust.

Ways of establishing collaboration between member organisations

A Steering Group, comprising the fourteen members meets three or four times a year to decide strategy and approve projects. The group is chaired by a representative of NatureScot, who has held the role since 2010. The SCI has also employed a Project Officer in a coordinator role since 2010. The Project Officer divides time between managing project delivery, planning future projects, liaison, fundraising and outreach.

While sometimes referred to as a partnership, the SCI is not formally constituted as such. A provision of the catchment management plan is that it poses no additional responsibility on any of its members. Rather, the SCI is entered into on a positive-sum basis. While this may serve to forestall potential conflicts of interest, a consequence of this arrangement is that neither the SCI itself, nor any single member, holds final responsibility for the management plan. The lack of a partnership designation may also blur the distinction between members and wider stakeholders²⁷. As it stands, a handful of members provide direct funding, staffing and management oversight, and in this respect may constitute the core group of members.

The structure of the SCI and the approach taken to developing a Catchment Management Plan (CMP) can be considered as broadly reflective of an ecosystem or natural capital approach²⁸, including in relation to the emphasis throughout the process on stakeholder engagement, collaborative management and developing an adaptive and integrated approach to landscape scale catchment management. Section 2 of this case study expands on the stakeholder engagement processes undertaken, and Section 3 outlines how the SCI and CMP processes can be understood in relation to a natural capital approach.

Stakeholder engagement

Key stakeholders identified were those regularly using and managing the catchment - fishers, farmers, foresters, landowners and members of the public. An important mechanism through which stakeholders were engaged was the consultation process leading to the first catchment management plan, which progressed according to the following stages²⁹:

- An initial public consultation sought the views of local people on key water resource management issues;
- Five working groups, comprising representatives of agencies and organisations alongside members of the public, were then set up to discuss themes which arose during the consultation;
- This led to a workshop in May 2002;
- While the fourth and fifth stages each sought further consultation on a draft CMP.

Early stakeholder engagement was regarded to have produced a stronger plan, by enabling better and earlier understanding of contentious issues, reducing the potential for future conflict³⁰.

In terms of on-going management, stakeholder interests were addressed through member representation. For instance, to better represent the interests of land-managers NFUS were approached and brought in. RSPB is a long-time member and itself counts

²⁷ Waylen, K., Marshall, K., Juarez- Bourke, A., and Blackstock, K. (2021) [Exploring the Multiple Benefits by Catchment Partnerships](#), The James Hutton Institute, SEFARI.

²⁸ SNH (no date) Demonstrating the 'Ecosystem Approach' Catchment Planning on the Spey.

²⁹ Ibid.

³⁰ SNH (no date) Demonstrating the 'Ecosystem Approach' Catchment Planning on the Spey.

a wide membership, while the Woodland Trust also recently joined. Where issues warrant it, further stakeholders such as Scottish Water were being consulted. The SCI considered this model a pragmatic approach due to the time and resource burden of ongoing direct involvement.

Developing specific projects required engagement with landowners, and often local communities. In this respect the SCI greatly benefited from being able to draw on partners' collective knowledge, and the professional networks of key members such as the Spey Fisheries Board. Previous research notes that the greater perceived neutrality of the land use partnership may enhance the effectiveness of this form of engagement, and that for the SCI specifically the Project Officer's liaison with landowners was instrumental to the outcomes achieved³¹.

Application of a natural capital approach

A catchment management group existed for the Spey since the late 90s. The first catchment management plan was published in 2003 (for a summary see Box 1), and accordingly the consultation and engagement process through which strategic aims for the SCI were developed pre-dates the current policy prominence of natural capital. As a result, the management plan did not explicitly take a natural capital approach. Nevertheless, the development of the CMP was retrospectively seen to meet the broad principles of a natural capital assessment. Stakeholder engagement was key to this process, to ensure systematic representation of interests, acknowledge diverse ways of valuing nature, and legitimise the process of natural capital goal setting.

- **Mapping the Catchment Management Plan using a natural capital approach**

In key respects the development of the CMP met the principles of a natural capital approach. The overall vision reflected an aim to understand the catchment holistically as a resource that provides benefits to diverse stakeholders³². The plan was developed collaboratively through several rounds of stakeholder engagement (see Section 2). It drew upon a broad base of statutory assessments (see Box 1) which assessed the biophysical status of the catchment and, as discussed subsequently, the plan further identified trade-offs, synergies and drivers of change.

³¹ Waylen, K., Marshall, K., Juarez- Bourke, A., and Blackstock, K. (2021) [Exploring the Multiple Benefits by Catchment Partnerships](#), The James Hutton Institute, SEFARI.

³² NatureScot demonstrate that the development of the CMP followed an 'ecosystem approach', which conceptually shares much with the current natural capital approach (SNH, no date)

Box 1. SCI Catchment Management Plan

Vision	Developed in collaboration with a range of stakeholders, the CMP draws on existing assessments to identify pressures and opportunities in the present state, and by fostering collective working, aims to protect and restore natural characteristics of the catchment to deliver benefits across the wider stakeholder group.
Biophysical Assessment	<p>The CMP draws on a broad base of regulatory assessment, including:</p> <ul style="list-style-type: none"> ● SEPA’s River Basin Management Planning.³³ ● The Findhorn Nairn and Speyside Local District Flood Management Plan.³⁴ ● Habitat assessments undertaken by NatureScot in relation to SSSI and SAC Designations.³⁵ ● Fish passage monitoring and catch surveys undertaken by the Spey District Fisheries Board.³⁶
Strategic Aims	<p>Reflecting the aim to understand the catchment holistically, the CMP identifies Eight Strategic Aims, acknowledging a broad set of reasons for valuing the catchment. Towards each of the Strategic Aims the CMP identifies a series of objectives, actions towards those objectives, key partners associated with that action, and associated objectives:</p> <ul style="list-style-type: none"> ● Flood Management ● Economic Development ● Farming ● Habitats & Species ● Water Environment ● Communities ● Fisheries Management ● Forestry & Woodland

³³ SEPA (2020) [The draft river basin management plan for Scotland 2021 – 2027](#). December 2020.

³⁴ Moray Council (2019) [Findhorn Nairn and Speyside Local Flood Risk Management Plan 2016 -2022: Interim Report](#)

³⁵ NatureScot (no date) [River Spey SSSI](#) [accessed 07/02/2022]

³⁶ Spey Fishery Board (2014) [Adult Monitoring](#) [accessed 07/02/2022]

One respect in which the SCI approach may fall short of applying a natural capital approach is in relation to performing a natural capital assessment, with a lack of emphasis evident on measuring stocks of natural capital or quantifying flows of ecosystem services. CMP objectives (see Box 1) follow more traditional management categories than would a classification based on ecosystem services. Water quality and flood risk are sometimes identified as distinct ecosystem services; however, “Habitat”, “Forestry” and “Farming” are seen to be more cross-cutting, and collectively influence the provision of multiple ecosystem services. This inter-relation of objectives (and potential trade-offs) is recognised within the CMP.

In contrast, an aim of natural capital accounting methodologies is to be discrete, in order to mitigate double-counting³⁷. Accordingly, while the CMP objectives, draw upon biophysical assessments to reference future desired states, conceptually there remains some distance between the CMP and a comprehensive assessment of ecosystem services. Other respects in which the SCI approach may fall short of current guidance, are a lack of emphasis on distributional aspects or further steps to ensure the inclusion of marginalised communities in the engagement process³⁸.

Overall, however, the development of the CMP is broadly reflective of a natural capital approach, and, as can be further seen from discussion of synergies below, in this partnership, the lack of a comprehensive assessment of ecosystem services, has not prevented the development of projects which enhance the provision of ecosystem services and generate community benefits.

- **Finding synergies**

The core focus for direct projects was restoration work in the upper catchment, which aimed to restore natural river morphology, remove barriers to fish and introduce riparian planting. Restoration projects sought to generate synergies between multiple ecosystem services, for instance riparian planting was understood to sequester carbon, provide habitat, contribute to natural flood management, control erosion, and reduce heat stress to aquatic ecosystems.

Restoration of natural river morphology may in some instances provide direct benefits to landowners, through reduced management costs³⁹, however, synergies are potentially more significant downstream. Restoration work in the upper catchments may: contribute to flood risk mitigation by reducing peak flows; can further provide habitat for juvenile fish, with direct benefit to sport fishers and the aquatic ecosystem more generally; and by influencing water temperature and erosion, can improve water quality to the benefit of downstream users.

Synergies may further exist between the SCI and other landscape partnerships such as Cairngorms Connect, and similarly between SCI members themselves, given overlapping remits and differentiated capabilities. For instance, land for planting was considered more of a constraint to Woodland Trust objectives than securing funding for trees. In this respect, assisting with SCI restoration work may be mutually beneficial. Similarly, the Cairngorms National Park Authority maintained a budget for work within the National Park yet preferred not to manage projects directly. Accordingly, by providing funding, the park authority may sometimes act to engage the SCI as a delivery partner

³⁷ ONS (2017) [Principles of Natural Capital Accounting](#).

³⁸ Defra (2020) [Enabling a Natural Capital Approach | Excel Template for carrying out a Green Book 4- Step Natural Capital Assessment](#) [accessed 05/02/2022]

³⁹ For instance, stretches of river which have previously been canalised might otherwise require ongoing work to control erosion and address localised flooding due to the transfer of silt.

toward meeting its own objectives, while further benefitting from SCI relationships with landowners.

Identifying trade-offs and drivers of change

The CMP identified issues and pressures to the River Spey, highlighting that existing land management practices influence river health and the provision of ecosystem services. Key pressures included: diffuse pollution from livestock held in proximity to water bodies; existing abstraction rights, which reduce flow rate; and further pressure from the built environment.

Climate change was understood to be a driver of change in the catchment. The UK Climate Program predicts that the seasonality of precipitation will become more pronounced in Northern Scotland, with an expected increase in winter mean precipitation of 13% and decrease in summer mean precipitation of 11%⁴⁰.

The impact of heavy abstraction related to hydro power was understood to be a risk factor that is being exacerbated by the increased seasonality of climate impacts. Lower flow rates increase the severity of heat stress to aquatic ecosystems and serve to concentrate pollutants. Two dams account for 91% of water abstracted from the Spey, and it is estimated that these schemes can reduce natural flow rate by 24% at Boat o' Brig near Fochabers and 61% at Kingussie⁴¹.

Growth in the built environment was further understood to be a driver of change. High demand for housing creates pressure to build on inappropriate locations such as floodplains and may further require additional infrastructure for water supply and wastewater treatment. Scottish Government commitments to dual the A9, between Perth and Inverness by 2025, and the A96 between Inverness and Aberdeen, may also be expected to impact on the river during construction and potentially beyond, as sections of both roads run alongside or cut across the Spey⁴².

- **Accessing resources to deliver plans**

The SCI had secured core funding for the project officer and overheads for the next few years, whilst direct projects were funded on a project-by-project basis. As chief fundraiser, the Project Officer performed a vital function, and the workload associated with this post was therefore recognised as a constraint to the scope of projects that could be funded and delivered. Securing long-term funding for the Project Officer position was challenging as funders are generally more willing to fund direct projects than staff, although core staff funding was relatively secure at the time of interview.

Private sector resources were highly significant, with SCI member Diageo providing 24% of the funding for the Project Officer Position and guaranteeing this funding for 5 years. The degree of stability this provided was highly significant as the remainder was brought in by agency members, who due to funding uncertainty on their own part were generally only able to commit to funding for a single year at a time.

Private sector funds also contributed to project delivery. The Macallan whiskey brand contributed funding to the Delliefure Burn Floodplain Re-connection and Habitat Enhancement Project. Further businesses in the catchment have also been known to

⁴⁰ Spey Catchment Initiative (2016a) [River Spey Catchment Management Plan](#), p.7.

⁴¹ MacDougall (2021)

⁴² Spey Catchment Initiative (2016a) [River Spey Catchment Management Plan](#), p.33.

make more modest contributions to the SCI itself, or indirectly through the Spey Fisheries Board or the Cairngorms National Park⁴³.

Public sector resources were vital to project delivery. Cairngorms National Park Authority provided funding for the majority of projects. Agency members were sometimes able to fund specific projects where these aligned with their spending priorities. For instance, NatureScot were able to support the River Calder Restoration Riparian Woodland Creation project, while SEPA were able to support River Calder Restoration Habitat Enhancement project. Direct resourcing was also provided by the Spey Fisheries Board who contributed management oversight and staffing, and the Woodland Trust, who regularly provided trees where restoration work required planting.

The SCI further assisted the Tomintoul and Glen Livet Landscape Partnership in securing £2.5million National Lottery Heritage funding. A package based around the water environment, led by the SCI formed a significant part of their programme of work, which concluded in 2019. Similarly, the SCI supported the development and delivery of catchment projects as part of Cairngorms 2030, a wide ranging seven year programme funded through the National Lottery Heritage Horizons fund, and also the Cairngorms Connect programme.

Lessons

- Early stakeholder engagement is critical: Early stakeholder participation in the consultation process resulted in a stronger plan, by balancing stakeholder interests, and helping to dispel conflict by identifying contentious issues early.
- Community natural capital benefits: Public-private partnerships such as the Spey Catchment Initiative enable blended public and private finance for natural capital and other projects, and may offer a model which enables communities to benefit from emerging natural capital opportunities.
- Continuity of core staff: The challenge of securing funding for project staff conflicts with the necessity of taking a long- term adaptive approach to managing natural capital, to which continuity of core staff is key.
- Partnership working: SCI's lead in promoting restoration projects in the Spey further demonstrates that, even in constrained funding environments, partnership working can lead to positive outcomes that could not have been achieved in the absence of partnership working, for instance through collective learning, and identifying opportunities to unlock bottlenecks.

⁴³ Liski, A., Melville, N., Metzger, M., (2017) [Understanding the potential for co-ordinated private sector investment in natural capital – lessons from the Spey Catchment](#). Valuing Nature Programme p. 18.

Appendix 4: Template for case study data collection

1. Scope, aims and context

In what context was this partnership created e.g. geographical, sectoral, biophysical, socio-economic or policy settings

What are the aims and scope of the partnership?

What types of stakeholders did you engage?

What management structures did you put in place to collectively develop the aims and scope of the partnership between partners?

Was there anything else about the context in which you developed your partnership that has significantly influenced your approach?

What lessons could other partnerships learn from how you understood and managed the context within which you developed your scope and aims?

2. Stakeholder engagement

What approaches (e.g., methods, mechanisms, techniques) have been used to ensure all relevant stakeholders are engaged, including those who might be considered or hard-to-reach or vulnerable to being left out of decisions which affect them?

What other good practice lessons could other partnerships learn from your engagement with stakeholders?

3. Natural capital assessment

Did you do any form of natural capital assessment (or draw on existing assessments)?

To what extent did this assessment tell you about drivers of change and how these might interact over time and across the landscape?

What were the main factors that influenced your approach to natural capital assessment?

How did you turn the recommendations from your natural capital assessment into a plan?

What are the most tangible benefits for local communities that you expect to arise from your work in parallel with your work on natural capital?

Where your partnership has already achieved some outcomes, how do you think your natural capital assessment / approach influenced these?

What lessons can other partnerships learn from your approach to natural capital assessment?

4. Accessing resources to deliver plans

What types of public or private resources have you accessed to date or enabled landowners and organisations in your partnership/area to access?

How were benefits distributed – were there particular winners/losers among partners or wider stakeholder group?

What lessons could other partnerships learn from your experience?

- Key lessons

What are the key lessons for RLUPs arising from this case study?

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Scotland's centre of expertise connecting
climate change research and policy

ClimateXChange, Edinburgh Climate Change Institute, High School Yard, Edinburgh EH1 1LZ

✉ info@climatexchange.org.uk
☎ +44(0)131 651 4783
🐦 @climatexchange_
🌐 www.climatexchange.org.uk