Mainstreaming Nature-based Solutions

Collaboration Workstream

Scoping and Update Report

May 2025

Revision: V-D

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Mainstreaming Nature-based Solutions

Issue & Revision Record

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A	12/09/2024	Alex Lane, Izzy Radley	Workstream Scoping Report for partner comment	Frankie Irvine	Granville Davies
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Contents

1. Context

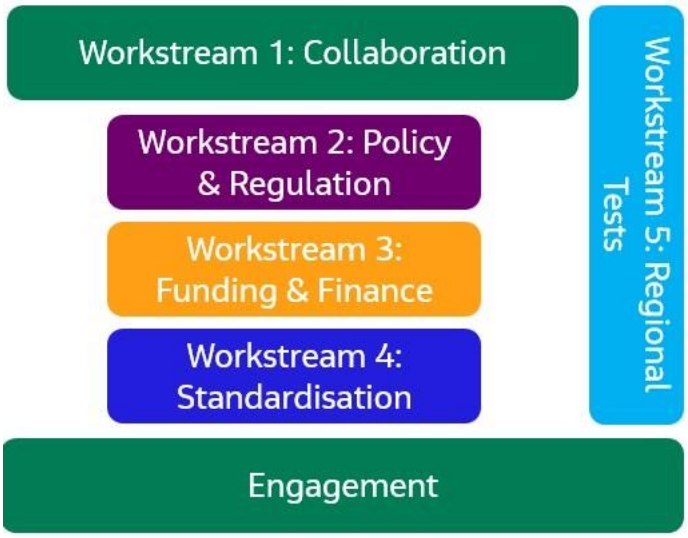
The Mainstreaming Nature-based Solutions (NbS) programme is a five-year programme funded by the Ofwat Innovation Fund (under the Transform Stream). It began in September 2023 and will run through four phases until September 2028.

NbS have the potential to provide many socio-economic and environmental benefits by tackling flooding, drought, water quality and other issues. The Mainstreaming NbS programme brings together multi-sector expertise to identify, create and test new solutions to remove barriers to NbS, including through Regional Tests. Working with 22 partners including water companies, regulators, consultants and non-governmental organisations (NGOs), it aims to ensure that delivering NbS becomes business-as-usual, enabling delivery of greater value for people and the environment.

The Collaboration Workstream is one of five workstreams that make up the Mainstreaming NbS programme (see Figure 1-1). Workstreams 1 to 4 will develop potential solutions that are then applied iteratively in Regional Tests in different regions of England as well as Wales and Northern Ireland (Workstream 5). The Northern Ireland test commenced in April 2025 and as such, this report does not yet include perspectives from Northern Ireland. It will be updated in due course.

The Collaboration Workstream (Workstream 1) is an umbrella workstream that aims to address the current lack of a strategic direction for the water and environment sector in relation to NbS, and to enable a national coordinated approach to NbS decision making and partnership working. It recognises that the mainstreaming of NbS cannot be achieved by a single organisation working in isolation, but rather that organisations need to work together with a common vision to understand challenges, develop solutions, implement projects and sustain them into the future. These principles are also reflected in criteria of the 2020 IUCN Global Standard for NbS.

Through initial engagement with programme partners, a series of requirements and ideas to mainstream NbS have been identified and are being explored by workstreams 1 to 4. The need for one output, a common total value framework, has already been defined and is being developed so that it can be ready for application in support of the 2029 price review (PR29).



Note: In addition to a focus on collaboration, Workstream 1 also includes activities related to how the programme engages with stakeholders. This aspect of Workstream 1 is not discussed in this report.

Figure 1-1: the workstreams of the Mainstreaming NbS programme

The Mainstreaming NbS programme has a series of intended outcomes linked to a Theory of Change developed by the partner organisations. Workstream 1 has direct or indirect links to all six intended outcomes (Table 1-1). The Theory of Change is a live tool that will be updated throughout the programme as more information and insight becomes available.

Table 1-1: intended outcomes of the Mainstreaming NbS programme and relationships to Workstream 1

Intended outcome of the Mainstreaming NbS programme	How Workstream 1 supports the outcome
Increased sector-wide and cross-sectoral collaboration in support of NbS	Direct link • Better understanding of how to engage stakeholders • Potential to develop guidance to form and sustain collaborations • Input to regular communications and awareness raising
Cultural shift in support of NbS	Direct link • Better understanding of what constitutes a cultural shift and how to achieve it in different stakeholder groups • Input to regular communications and awareness raising • Partner and wider interviews to assess changing perceptions
Greater long-term financial flows from a wider range of sources to fund NbS projects	Indirect link • Better understanding of how to involve investors in collaborations
Tools and processes adopted which support greater uptake of NbS	Direct link • Potential to develop guidance to form and sustain collaborations
Increased confidence and expertise in the planning, implementation, maintenance, monitoring and valuation of NbS	Indirect link • A framework for effective collaboration could give confidence that change will happen
Regulatory changes which drive greater uptake of NbS	Indirect link • Findings may stimulate regulatory change to encourage / mandate wider collaboration

A Scoping Report published in September 2024 reflected on and summarised recent and ongoing work within and outside the water sector on the topic of collaboration in support of NbS. It aimed to set the context for a further, more detailed phase of analysis to identify actions and potential solutions which could be applied in the Regional Tests (Workstream 5).

To compile the Scoping Note we reviewed existing and past initiatives related to NbS, reviewed insights on blockers to NbS identified by the programme partners, and convened follow-up discussions with several partners to further explore their observations and experiences.

The scoping report was structured as follows:

- A review of other initiatives and programmes of work related to NbS, with the intention that the Mainstreaming NbS programme learns from and builds upon existing evidence.
- An analysis of what constitutes a 'cultural shift' (one of the needs identified by partners) based on an initial consideration of what might constitute a cultural shift for NbS.
- A reflection on blockers and success factors for collaboration in the delivery of NbS.
- A presentation of next steps for the workstream.

The Scoping Report has been supplemented to present recommendations and concepts that could be applied in the Regional Tests. The original sections of the Scoping Report (Sections 1-5) are retained for information with minor amendments to reflect partner comments. Additional sections (Sections 6-9) then follow to explain work done in the intervening period.

2. Existing NbS initiatives

2.1 Context

NbS are a popular topic for research and increasing the adoption of NbS is a widespread aim of environmental initiatives. As such, a number of existing programmes of research focus on NbS.

Over the period from July 2024 to September 2024, we used internet searches and discussions with programme partners to understand what existing and recent initiatives related to NbS exist. We also reviewed those initiatives to understand their focus areas and findings (where available).

In undertaking these activities our ambition was to improve our ability to learn from and build upon existing research themes so that the Mainstreaming NbS programme focusses on remaining gaps (at the theme level).

2.2 Findings

We found 18 initiatives related to NbS, 10 of which are ongoing. The eight completed initiatives date from 2016 to present. Appendix A lists the initiatives we reviewed.

All the initiatives we reviewed involve multi-stakeholder partnerships. Academic institutions, government bodies and environmental NGOs are most frequently involved. There was limited involvement from the private sector, mostly from UK water companies and consultancies.

Funding for the initiatives is primarily grant-based. Notably, the European Commission Horizon Programme provided a significant source of funding for most of the initiatives reviewed (e.g. Connecting Nature, CLEVER Cities, and Urban GreenUp). Other sources of funding include the Ofwat Innovation Fund and funding from various trusts.

By reviewing the initiatives, we were able to understand the challenges to the widespread uptake of NbS they identified and the success factors they explored. Figure 2-1 presents a summary of this information, focussing on the key challenges and success factors. It shows that the frequently identified challenges for NbS broadly align with those that this programme (all workstreams, not just Workstream 1) is seeking to address. It also shows that the workstreams of this programme are focussed on a similar range of success factors to the other initiatives. This means there should be learning to take from the initiatives and insight we can draw on.

The initiatives we reviewed identified four main challenges to the widespread uptake of NbS:

- **Standardisation** – particularly in relation to benefits. The initiatives identify many NbS projects measuring social, economic, and environmental benefits, but typically in different ways.

  Example initiatives: Connecting Nature, Nature4Cities, Urban GreepUP.

- **Implementation (with partners and across sectors)** – challenges associated with implementing NbS projects which require multiple stakeholders, sometimes in different sectors to work together.

  Example initiatives: Agile, Clever Cities, Cities with Nature.

- **Sustaining NbS projects over the long term** – difficulties include monitoring and data collection, funding for monitoring and maintenance, and sustaining partnership working over the longer term.

  Example initiatives: Naturvation and Clever Cities.

- **Scaling up delivery** – the specific nature and design of NbS is location dependent and so scaling up NbS to other locations can be challenging.

  Example initiatives: Connecting Nature, Nature4Cities.

The findings and outputs from the initiatives take several forms including guidance notes, case studies, and spatial datasets. Several initiatives produced similar outputs.

Most of the initiatives were focused on urban areas specifically. There was less focus on rural areas or on implementing NbS across landscapes (i.e. across urban and rural areas in an integrated way).

Across the initiatives we reviewed, six broad success factors were identified to address the challenges. These cover the need for improved policy and regulation, a better appreciation and assessment of the benefits of NbS, improved multi-stakeholder and cross-sector working (there was a strong focus on the need for co-creation of solutions across the initiatives), knowledge sharing and education, and improved access to funding. Collectively, the workstreams of the Mainstreaming NbS programme address and seek to develop solutions related to all of the success factors shown. Figure 2-1 also highlights the need for the Mainstreaming NbS programme to develop effective ways to share the knowledge it creates.

Note: symbol indicates number of initiatives referring to the blocker and/or success factor.

Figure 2-1: blockers and success factors for NbS from other initiatives

3. A cultural shift for NbS

Through the other workstreams of the Mainstreaming NbS programme, we are investigating if and how changes in policy and regulation (Workstream 2), finance and funding (Workstream 3) and standardisation (Workstream 4) can support the wider uptake of NbS. One output, a common total value framework, has already been identified as an important requirement and work is underway to develop it.

It is the view of programme partners that in addition to these efforts, a broader cultural shift is required so that NbS are seen as the default option for a range of water and environment challenges and that their delivery is enabled and supported at all levels of decision making.

Cultural shifts describe changes in beliefs, values, customs, and behaviours that shape the identity of groups and organisations. Cultural shifts can be gradual or sudden, and can be driven by technological advancements, political change, or major natural or human-induced events. Examples include the rise of social media, the awareness of plastic pollution, the rapid shift to remote working associated with the COVID-19 pandemic, and the recent attention directed towards storm overflows and the health of waterways.

Rare and The Behavioural Insights Team (2019) explain that the majority of efforts to address environmental challenges have tended to be top down, relying on regulations, financial incentives or disincentives, and awareness raising. They highlight that whilst these levers have an important role, greater focus should be directed towards how our cognitive biases, emotions, social networks, and decision-making environments influence our behaviours.

For the objectives of the Mainstreaming NbS programme to be realised, we need to understand in what organisations and/or sectors of society cultural change is required. In this context, it is useful to consider three levels at which action can be taken:

- **Downstream:** the public and the way individuals and groups behave.
- **Midstream:** the activities of businesses, local authorities and other organisations, including how they shape and present choices to the public.
- **Upstream:** the policy and legislation under which organisations operate and society functions.

Rare and The Behavioural Insights Team (2019) propose 15 strategies to change behaviour, grouped into three categories: motivate the change; socialise the change; ease the change. These strategies can be considered in the context of the three scales of action to identify potential levers of change in each context.

The following subsections consider which of the three scales (Upstream, Midstream, Downstream) we could focus on to achieve greater uptake of NbS.

3.1 Downstream

Although individuals can physically install some NbS on and around their homes (green roofs and raingardens for example), the majority of NbS will be delivered by organisations operating at larger scales. The direct agency of the public to mainstream NbS is therefore perhaps lower than for other environmental initiatives (reduced use of plastics for example). However, the public are the ultimate beneficiaries of NbS and they still have an important role to play by advocating for and supporting campaigns, policy and ideas which promote NbS. They therefore need to understand the benefits of NbS (against any trade-offs) and recognise how the delivery of NbS aligns to their values and interests.

Although most efforts to enforce or promote environmentally-beneficial behaviours are built on a rational account of human behaviour (Department for Transport, 2011), social psychology and

behavioural economics emphasise the power of social influence on individuals' actions (the actions and expectations of peers and cultures) and the manner in which choices are framed and presented. A range of factors influence behaviour: attitudes, emotions, social, cultural and moral norms, structural factors, cost, habit, knowledge and awareness, capability and self-efficacy (Department for Transport, 2011), and these should be considered when attempting to encourage change.

Research by Mitev et al. (2023) on the implications of behavioural science for effective climate policy provides some useful conclusions on which thinking for NbS could draw. They highlight the potential role of co-benefit framing whereby to boost policy support, policymakers communicate information about the co-benefits of a policy. This might be important for NbS as one of their major advantages is to deliver multiple benefits. The research flags that policymakers need to acknowledge that a person's preferences for co-benefits will depend on their individual priorities (e.g. health, environment) and therefore co-benefit framing needs to be tailored to the population in question, or a focus placed on multiple co-benefits (Mitev et al. 2023). Approaches to encouraging behavioural approaches work best when they are focused on specific behaviours and are highly tailored to specific groups.

A Recipe for Engagement in NbS has been produced by Hafferty et al. (2023), supported by the Nature-based Solutions Initiative and Agile Initiative (see Annex A). It encourages practitioners to first consider the What, Why, Who, How and When of engagement and then to work through nine key ingredients to engagement. Several of the other initiatives in Annex A have also produced co-creation principles for NbS (Connecting Nature, UrbanByNature, Network Nature, Clever Cities for example).

Of the strategies proposed by Rare and The Behavioural Insights Team (2019), those focussed on the **motivating the change** category appear most suited to the Downstream scale. These include:

- Leverage positive emotions such as pride, self-efficacy and gratitude rather than negative messaging such as fear.
- Frame messaging to personal values, identities, or interests to show the benefits of NbS.
- Personalise and humanise messages.

These insights will be used to inform the Communications Strategy for the Mainstreaming NbS programme.

3.2 Midstream

Most of the efforts to design, deliver and maintain NbS will occur at the Midstream scale. For NbS to become the default option, they need to displace and/or work with traditional solutions (typically grey infrastructure). To design and deliver those traditional solutions, many of the asset-intensive organisations and sectors that have a significant influence on our environment have developed strong and deeply embedded decision-making frameworks. The staff that work for these companies have applied these decision-making frameworks for many decades, influencing their ways of working and inherent behaviours. As such, significant organisational change is required to enable NbS to be considered and assessed on a level playing field. Aspects to consider include:

- Change inertia – grey solutions are familiar and the easy option.
- Traditional grey infrastructure is more likely to be able to be delivered in isolation, with less involvement from other stakeholders – this is easier. There is often a cultural disconnect between different organisations working in catchments (Mijic et al. 2022).
- Approaches to option assessment and costing are largely based on grey infrastructure and might not be suited to NbS.
- Understanding of and willingness to accept risk may need to change – risk sharing frameworks are being explored under Workstream 4.
- A perception (real or otherwise) that regulatory systems do not adequately support NbS.

There is a large volume of research into organisational change and a widespread appreciation that organisational culture trumps strategy. Many models of organisational change emphasise the need to create a sense of urgency (Kotter, 2012 for example); a 'burning platform' to force the adoption of new ways of working. Such an approach is fear based and other authors have guarded against it. Ward (2014) argues for an alternative that leverages the fact that organisations rarely have one culture, but rather that they have a diversity of cultures. This means there is a good chance the desired culture is already present in a team or group of individuals and the challenge is therefore to build off and propagate this example.

Of the strategies proposed by Rare and The Behavioural Insights Team (2019), those focussed on the **socialising the change** and **ease the change** categories appear most suited to the Midstream scale. These include:

- Promote the desirable norm - in relation to the role of behavioural science in land use and farming, Mitev et al. (2023) found that a focus on social influence was important. It recommended that Government should employ policies that use social norms techniques such as peer-to-peer learning or demonstrations. In relation to NbS, potential strategies could include demonstrators and awards for good-practice NbS.
- Increase behavioural observability and accountability – more transparent and easilyaccessible data. Learning could perhaps be drawn from the public focus on storm overflows and how this has been stimulated by and encouraged improved data. The risks of data misinterpretation should also be considered. In reviewing the Draft Determinations for the 2024 price review, we found data on NbS schemes hard to locate and compare across the industry.
- Encourage public and peer-to-peer commitments – for example from water companies and local authorities.
- Make it easy by removing frictions – for example associated with regulatory requirements for NbS. Our review of the Draft Determinations for the 2024 price review identified several quick wins, some of which were addressed in the Final Determinations.
- Provide support with planning and implementation of intentions – mechanisms to connect stakeholders and access funding for example. There could be a role for a convenor of strategic plans to align investment plans and deliver wider outcomes.
- Simplify messages and decisions – action in relation to regulatory requirements and expectations may be particularly important for NbS.

3.3 Upstream

A variety of legislation, policy and guidance from government departments and environmental regulators influence the scale and rate of adoption of NbS by organisations (Midstream) and the support of the public (Downstream).

Workstream 2 of the Mainstreaming NbS programme is exploring how policy and regulation needs to change to mainstream NbS in England, Wales and Northern Ireland. This will include how different policies could better work together to provide a national steer on NbS. A clear vision for NbS at the national-level and more coordinated steer on the role of NbS in legislation, policy, strategy and plans is also important. This is acknowledged in Section 4.

The Mainstreaming NbS programme is also analysing the current price setting process in the water sector to understand lessons for the delivery of NbS.

3.4 Takeaways for the Mainstreaming NbS programme

- Programme partners agree that a broad cultural shift aligned to a common vision is needed to mainstream NbS.
- Given the ways in which NbS are delivered and the scales at which this programme aims to see them implemented, changing the culture of organisations, regulators and politicians appears to have greater potential influence than culture change in the public.
- Notwithstanding this point, action at all scales is needed to mainstream NbS. The potential strategies outlined by Rare and The Behavioural Insights Team (2019) can be used as a framework to develop ideas and initiatives.
- At the Downstream scale, opportunities to raise awareness of and support for NbS include engagement that leverages positive emotions, aligns to personal values and emphasises co-benefits.
- At the Midstream scale, there is a need to disrupt traditional ways of working and decision making processes that were designed for grey infrastructure.
- At the Upstream scale, policy and regulation needs to be refined to influence the scale and rate of adoption of NbS by organisations (Midstream) and the support of the public (Downstream). This is being addressed by Workstream 2.

4. Blockers and success factors for collaboration to deliver NbS

In addition to the need for a cultural shift, our analysis to date and discussion with Mainstreaming NbS partners has identified several other themes related to collaboration that we think warrant further investigation. Additional themes may be identified in subsequent phases of the programme.

- **Why collaborate?** – collaboration is a benign and frequently used term but what does it really mean and is it always right to collaborate? We need to understand when this approach is and is not appropriate.
- **Working together at the regional scale** – governance structures that encourage and support stakeholders to work together are lacking at the regional scale and this is important if we want to achieve landscape-scale change. They need to be supported by national steer and a common vision for NbS.
- **Sustaining multi-stakeholder initiatives** – NbS need time for their wide ranging benefits to be realised. We therefore need to ensure multi-stakeholder initiatives are effectively sustained.

The following sub-sections consider each of these themes in turn.

4.1 Why collaborate?

Studies of collaboration in management extend back 50+ years. A range of definitions of collaboration have been presented (Gray, 1989; Bardach 1998, Romero, Galeano and Molina 2009; Castañer and Oliveira 2020) however the term can be broadly summarised as two or more parties working together to address shared objectives and deliver mutually beneficial outcomes.

Several authors have proposed that collaboration exists on a scale. Selden, Sowa and Sandfort (2006) consider that collaboration lies on a continuum between co-operation through coordination, collaboration and then to service integration. The Tamarack Institute (2017) defines a 'collaboration spectrum' which links competition at one end with integration at the other (Figure 4-1).

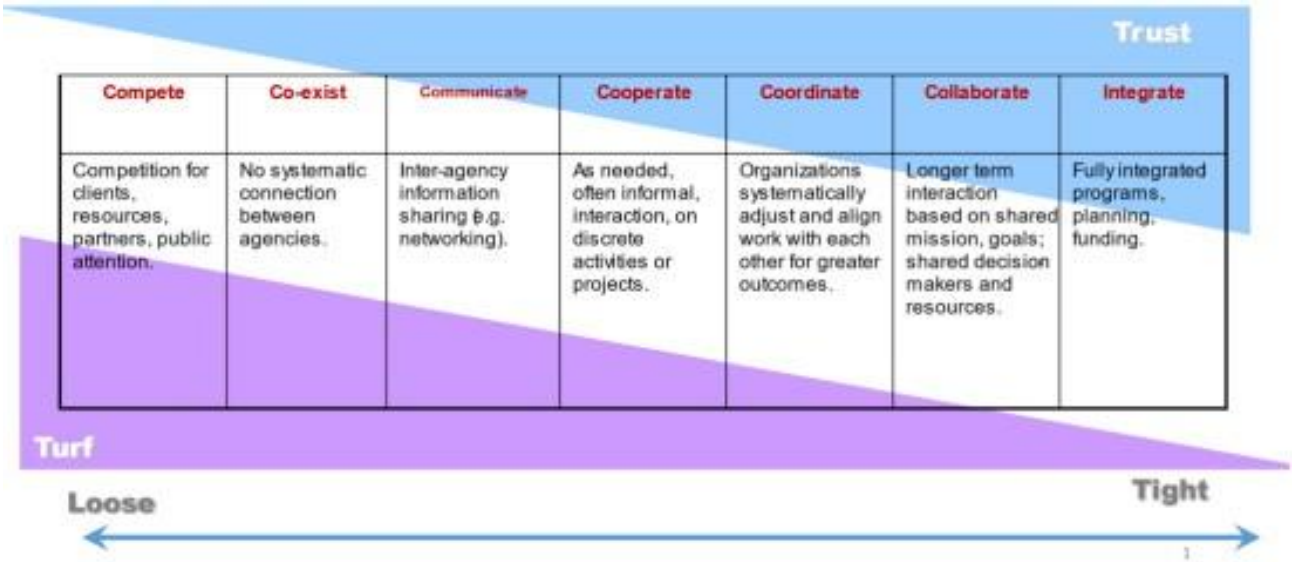


Figure 4-1: the collaboration spectrum (Tamarack Institute, 2017)

In these models, true collaboration requires different stakeholders to work together to understand challenges and develop solutions. Collaboration therefore requires common ways of working that take time to develop and embed. Effective collaborations also require trust, something that is time-consuming to establish but can be damaged very quickly. In fact, because true collaborations are resource intensive and take time to establish and refine, Huxham and Vangen (2004) guard against working collaboratively unless it is required.

Table 4-1 summarises the characteristics at each of the stages of a way of working continuum. It is not intended to be definitive, but rather to highlight how approaches other than collaboration might be suited to certain situations.

Table 4-1: Different ways of working

Way of working	Characteristic	Suited to
Competition	Entities working in isolation to secure benefits at the expense of others.	Situations when a market can be established.
Cooperation	Occasional and often informal interaction.	Discrete activities which have little interaction with each other.
Coordination	Alignment of activities such that stakeholders work separately to achieve a goal together.	Where common goals can be established and when a solution can be defined and activities are known.
Collaboration	Working together to address shared objectives and deliver positive and mutually beneficial outcomes.	Where common goals can be established but where problems are ill-defined and when solutions are unknown.
Integration	Fully integrated programmes, planning and funding.	Longer-term opportunities to work together that justify the effort in developing single processes and procedures.

Collaborations tend to be well suited to situations where common goals can be established but where problems are poorly defined and solutions unknown. They require advanced skills such as building trust, creativity, innovation, and effective conflict resolution.

In contrast, coordination is characterised by stakeholders working separately to achieve a shared goal. It requires a clear process for execution and accountability. As an example, the National Framework for Water Resources (2020) sets out the need for regionally-coordinated planning. Supported by other policy and legislation it has an emphasis on integrated, multi-sector supply and demand planning that reflects all elements of water management including public water supply, other water users including agriculture and industry, flood defence, environment and landscape management, and support to housing development and economic growth (Baringa and Mott Macdonald, 2022).

In contrast, competition can be effective in situations when a market can be established for particular goods or services. The efforts to establish nature markets are a good example but highlight the difficulties involved, for example where nature is undervalued leading to inefficient use. The Taskforce on Nature Markets (2023) concluded that one part of the solution to the

climate and biodiversity emergencies is to accurately and consistently price the value of nature in economic decision making across the global economy to incentivise nature-conserving market behaviour. A common value framework is being developed as part of the Mainstreaming NbS programme. The mobilisation of finance to support NbS is being considered by Workstream 3.

Understanding when to collaborate, or when an alternative way of working together might be more appropriate necessitates that stakeholders understand why they might need to work together and that they are honest about what their individual and collective ambitions are. Processes such as participatory systems mapping could be helpful in this respect. This process records how, from multiple stakeholder perspectives, different systems function and how they interact (Mijic, A. et al. 2022). On a given project, there might be phases of work during which a collaborative approach is suitable and others where another way of working is more appropriate (coordination for example).

Where collaboration is identified as the most effective way of working, a next step is to consider the factors that enable collaborations to flourish. Antecedent conditions for effective collaborations include foundations like shared goals, trust and leadership. Processes that will help collaborations function include things like communication protocols and governance frameworks. A comparison of frameworks for understanding collaboration is presented by Bryson, Crosby and Stone (2015). Most frameworks are presented as comprising a series of elements which create these necessary antecedent conditions for collaboration, and processes required for effective collaboration.

Huxham (1996) outlines a series of stages for successful collaboration which comprises a total of 20 steps. These begin with consideration of why organisations should collaborate, who is involved, expectations, vision, goals and objectives. Focus is then placed on linking stakeholders to objectives, what each stakeholder can contribute, how new stakeholders are identified and the use of incentives and rewards. Later steps include governance, leadership and administration of the collaboration, barriers to progress and how they can be overcome, training requirements, and publicising the collaboration. The final steps focus on funding requirements and how progress will be monitored.

Takeaways for the Mainstreaming NbS programme:

- Collaboration is not always the most effective way of working. Stakeholders in NbS projects need to be able to identify which ways of working are most appropriate to their situation.
- The establishment of collaborations needs to consider the factors and processes that will enable them to flourish and be sustained. Shared goals, trust and leadership are important foundations.

4.2 Working together at the regional scale

Several Mainstreaming NbS programme partners have identified the important role that NbS can play in supporting transformation at regional or landscape scales. At this scale, a large number of stakeholders from multiple sectors need to come together to help define common goals, fund initiatives and programmes of work (as opposed to individual schemes) and deliver integrated solutions. This is made challenging by limited governance at regional scales.

It is also hampered by the lack of common vision for NbS at a national level, and the lack of a coherent steer from legislation, policy, strategy and plans in different sectors. NbS provide a wide

range of benefits and are therefore valuable tools for improving environmental health and providing societal benefits at broad scales. The need for a national steer applies to aspects of all of the programme's workstreams.

In contrast to the limited extent of regional land and water governance, in England, catchment scale governance is fairly mature. Catchment partnerships are active in each of the 100+ Water Framework Directive (WFD) catchments across England, including those cross-border with Wales and Scotland. Their development has reflected a gradual trend over several decades, influenced by the WFD and supported by Defra's catchment based approach (CaBA).

CaBA focusses on convening a wide range of stakeholders to manage land and water in an integrated way to deliver multiple benefits. Mainstreaming NbS partners identify that with more resources and a clearer mandate, CaBA could convene the full range of appropriate stakeholders as the basis for local coordination of land and water management. Bromwich, Crilly and Banerjee (2022) identify that CaBA has not realised significant changes in catchment characteristics and that private-sector engagement in the process has been patchy at best.

There are few catchment partnerships across Wales (Wye and Usk, Dee, Severn uplands and Teme) and no direct funding for their operation. This acts as a barrier to the delivery of NbS in Wales as catchment partnerships are vital for sharing data and evidence, targeting opportunities in a systematic manner, and avoiding the limitations of siloed delivery. Wales does have Nutrient Management Boards for failing Special Areas of Conservation and these could be reviewed for insight and learning to be applied to other regions.

A report by Natural Course (2021) found that whilst partnership working in land and water management in England has helped identify trade-offs at these local scales, catchment partnerships do not sufficiently influence regional level planning. As such, catchment insights fail to drive the strategic decisions which direct investment in the water environment (i.e. through Environment Land Management Scheme, Flood Defence Grant in Aid, and the Water Industry National Environment Programme). Bromwich, Crilly and Banerjee (2022) explain that although the catchment is the key system boundary for flooding and water quality, business operates at larger scales. As an alternative, they explain that in France, water parliaments for each of the six main river basins are used to aggregate catchment perspectives. They provide a coordinating body at basin level that reflects government, agricultural, municipal and business concerns. In landscapes that cross administrative and national boundaries, collaboration can be more challenging, predominantly due to funding constraints. The Severn Valley Water Management Scheme is a positive example of how cross-border collaboration can work. It is led by a partnership between the Environment Agency, Natural Resources Wales, Powys County Council and Shropshire Council, which is aiming to enhance water management and create resilient environments across the Upper Severn catchment, bringing together NbS with traditional engineering.

The World Wide Fund for Nature's Wholescale approach also acknowledges how interconnected our land, rivers, estuaries coats and seas are to the socioeconomic systems that affect and are affected by them. It comprises criteria to guide project design and implementation with the aim of maintaining a balanced approach in tackling nature recovery, climate change and supporting sustainable communities, maximising synergies and identifying and managing trade-offs

The limited extent of regional governance has been identified as a 'missing middle', a term that has also been used to describe a lack of private sector involvement in land and water management (at all scales). Mainstreaming NbS partners have identified the need for a convenor to bring together regional organisations to identify funding opportunities aligned to regional priorities. Natural Course (2021) identify that priority should be directed towards governance which integrates water into the local economy, creating a more joined-up governance landscape.

Local Nature Recovery Strategies (LNRSs) are currently being prepared for 48 regions covering the whole of England (largely aligned to county boundaries) and could be one scale to focus refined governance on, though county boundaries are often different to catchment ones. LNRSs appear to be an important strategy aligned to government policy; amendments to the Levelling Up and Regeneration Act mean that all local planning authorities have a duty to take account of their relevant LNRS.

The Landscape Recovery initiative has potential synergies with LNRSs. Landscape Recovery is one of the three schemes under the government's Environmental Land Management approach and is focused on long-term, large scale projects (over at least 500 hectares) to enhance the natural environment

The first competitive Landscape Recovery round was run in 2022 and awarded funding to 22 projects collectively covering over 40,000 hectares. The majority of the successful projects involve groups of land managers and farmers, including tenants, working together to deliver a range of environmental benefits across farmland and rural landscapes. They aim to restore over 400 miles of rivers and protect and provide habitat for at least 263 species.

The second round is now complete and will fund projects that support net zero, protected sites, and wildlife-rich habitat. Successful projects progress through a staged series of phases, with the final implementation phase likely to run for more than 20 years. All private land managers and landowners were eligible to apply. Public bodies could also apply, but only in collaboration with private land managers.

A LNRS is an England-only strategy and there is no real equivalent funding to Landscape Recovery in Wales. Wales does have Local Nature Recovery Action Plans at Local Authority level (linked to a National Nature Recovery Action Plan for Wales and supported by national planning policies for Wales) but it is unclear how effective these have been at delivering collaborative action on NbS. The Environment (Wales) Act 2016 includes a number of provisions that support nature recovery, such as a requirement to set objectives for the protection of biodiversity and ecosystems – a legal duty for public bodies to protect and enhance biodiversity. There are seven areas in Wales, including the marine environment. Each area has a live area statement document summarising the challenges and opportunities relevant to that area, first published in April 2020. The delivery of area statements requires a new way of working and relies on successful collaboration with partners and stakeholders. The Wellbeing of Future Generations (Wales) Act 2015 made it a requirement for all public bodies to work towards the seven wellbeing goals and think about how their decisions will affect people living in Wales now and in the future.

It is the view of Mainstreaming NbS programme partners that more could be done to align

Landscape Recovery projects with LNRSs, by requiring one to consider the other for example. This observation is symptomatic of the lack of alignment between initiatives and projects at regional scales.

Acknowledging this problem, Natural Course (2021) advocate for the county scale as the appropriate scale for regional governance citing it as the driving force for the economy and for nature recovery. Catchment boundaries cross county ones and so a coordinating structure would need to sit above and support the co-ordination that already happens at a catchment level.

The 10 river basin management plan areas could also be an appropriate scale for improved regional governance. Under the WFD Regulations, a river basin management plan (RBMP) must be developed by the Environment Agency for each river basin district and reviewed and updated every six years. These plans were first published in December 2009. They were updated in February 2016 and December 2022. The plans will be reviewed and updated again by December 2027.

Under the RBMP Guidance, the Environment Agency should work with other public bodies to strengthen links between river basin planning and other relevant planning processes and strategies, especially for those plans which have a statutory basis (for example development plans, the flood risk management plans developed by lead local flood authorities, local flood risk management strategies, LNRSs, water resources management plans and drought plans). For cross-border basins, such as the Dee and Severn, the Environment Agency collaborates with Natural Resources Wales. In its 2024 report, the Office for Environmental Protection found that RBMPs are complex and hard to navigate, that measures contained in RBMPs are too generic, and that there is little explanation of how it is expected that they will address pressures and achieve the Environmental Objectives at the river basin district and water body levels.

New regional groupings at the river basin scale could include local authorities, Regional Flood and Coastal Committees, regulators, regional businesses, water companies, food supply chain businesses, financial institutions, water resource groups and NGOs, along with agreed representatives of the Catchment and Coastal Partnerships in the region. Such an approach could also align to and enable a more outcomes based approach to water regulation, as explained and advocated for by Frontier Economics (2021) in its report commissioned by Wessex Water.

Takeaways for the Mainstreaming NbS programme:

- Catchment insight has limited influence on governance and alignment of objectives at regional scales.
- Mainstreaming of NbS could benefit from a convening of organisations at a regional scale to identify opportunities aligned to regional priorities.

4.3 Sustaining multi-stakeholder initiatives

NbS deliver a wider range of benefits than traditional grey infrastructure however these benefits often take longer to accrue.

Whereas grey infrastructure benefits are typically realised upon construction and commissioning, for NbS the benefits are partly realised once the NbS is delivered but grow and widen as the solution matures and is used and experienced by people. Navigating this maturing phase requires ongoing management, monitoring and collaboration between stakeholders, aspects that are often overlooked.

Understanding how the initiatives that delivered NbS can be sustained into the future is therefore important and has been identified by a range of Mainstreaming NbS stakeholders. Aspects to consider include:

- Funding and delivery of ongoing monitoring.
- Funding and delivery of maintenance.
- Sustaining engagement with multiple stakeholders and local communities.

Long term partnerships and/or agreements for NbS are rare but the Temperate Rainforest Programme is one. This programme between Aviva and the Wildlife Trusts will run for 100 years and will restore approximately 1,755 hectares of temperate rainforest across the British Isles. The programme will help meet Aviva's Net Zero ambition, create new Wildlife Trust nature reserves, and increase the area of temperate rainforest across the UK and Isle of Man. To date, the programme has acquired more than 150 hectares for rainforest creation plus nearly 160 hectares of other habitats including peatlands, species rich grasslands, heathlands and existing woodlands. The first trees were planted in March 2024. The 100 year time frame of the programme helps to ensure a focus on long-term management, maintenance and monitoring.

To identify how ongoing activities associated with NbS projects can best be delivered between the stakeholders involved, it is useful to understand and appreciate the inherently different styles of water governance that characterise the different stakeholders in catchments. Bromwich, Crilly and Banerjee (2022) explored this concept and presented an approach to understanding where different governance approaches exist on a three-dimensional scale from bureaucratic, egalitarian and entrepreneurial extremes. The authors advocate for the evolution of the water management system to blend all three cultures such that different stakeholders are assigned risks to manage that are most suited to their inherent culture.

Insight from programme partners suggests that stakeholder collaboration between organisations in traditionally discrete sectors is improving, reflecting opportunities associated with recent policy such as on Landscape Recovery and LNRS, the necessity of working together to access larger pots of funding, and an increasing realisation that current, project by project working is not and will not achieve the change needed to address the environment and biodiversity crises.

One particular challenge for sustaining NbS initiatives is their frequent reliance on key individuals. It is the experience of Mainstreaming NbS partners that successful multi-stakeholder initiatives are often characterised by an individual in a leadership role whose passion and hard work plays a primary role in driving the initiative forward. These individuals often go above and beyond to bring people together, remove barriers to progress and maintain momentum.

As much as initiatives benefit from these individuals, when that individual moves on, the initiative often stagnates or fails to sustain the momentum it once had. It is also very difficult to replace an individual that can sustain the prior relationships with stakeholders. This is a particular problem for initiatives involving NbS because the benefits of NbS often take more time to be realised than traditional grey infrastructure. Succession planning if it happens at all, often focusses on traditional skills and overlooks the more human skills that are essential for sustaining successful collaborations.

Takeaways for the Mainstreaming NbS programme:

- As the benefits from NbS take time to accrue, partnerships need to be sustained to ensure NbS are managed, maintained and monitored effectively.
- One particular challenge for sustaining NbS initiatives is their frequent reliance on key individuals. Succession planning is an important consideration.

5. September 2024 Scoping Report conclusions and next steps

The September 2024 Scoping Report identified several action areas related to how stakeholders work together to identify, design, deliver and maintain NbS. It was identified that action is needed in these areas so that the overall objectives of the Mainstreaming NbS programme can be delivered. The action areas were:

- Initiate a cultural shift in relation to NbS.
- Tailor ways of working to the circumstances in question.
- Align behind a common vision and provide national steer.
- Improve governance at regional scales.
- Develop tools / guidance to sustain multi-stakeholder initiatives.

Table 5-1 presents opportunities to explore under each of these action areas.

Table 5-1: Action areas and opportunities for Workstream 1

Action Area	Description	Opportunity
Initiate a cultural shift in relation to Nbs	Changing the culture of organisations, regulators and politicians is important. The public also need to support and advocate for NbS.	At the Downstream scale, opportunities to raise awareness of and support for NbS in the wider public include engagement that leverages positive emotions, aligns to personal values and emphasises co-benefits. At the Midstream scale (in organisations), there is a need to disrupt traditional ways of working and decision making processes that were designed with grey infrastructure in mind. At the Upstream scale, policy and regulation needs to be refined to influence the scale and rate of adoption of NbS by organisations (Midstream) and the support of the public (Downstream). This is being addressed by Workstream 2.

Tailor ways of working to the circumstances in question	Collaboration is not always the most effective way of working and different models / principles may be more effective in certain situations.	Stakeholders in NbS projects need to be able to identify which ways of working are most appropriate to their situation. The establishment of collaborations needs to consider the factors and processes that will enable them to flourish and be sustained.
Align behind a common vision and	Collaborative action across sectors is hampered by the	A clear vision for NbS. Coherent and aligned legislation, policy, strategy and plans.
Action Area	Description	Opportunity
provide national steer	lack of a clear vision and strategy for NbS	
Improve governance at regional scales	Governance and alignment of objectives at regional scales is holding back adoption of NbS at scale.	Mainstreaming of NbS could benefit from a convening of organisations at a regional scale to identify opportunities aligned to regional priorities.
Develop tools / guidance to sustain multistakeholder initiatives	As the benefits from NbS take time to accrue, partnerships need to be sustained into the long term.	Mechanisms to secure longer term funding agreements that can sustain maintenance and monitoring. Ensuring sufficient focus is directed towards partnership succession planning.

The Mainstreaming NbS programme comprises four broad phases:

- **Phase 1: identify and mobilise (2024-25)**

Identify, verify and prioritise key barriers and actions to address them

Phase 2: assess, synthesise and test (2025-26)

Test proposed actions through regional tests

- **Phase 3: consolidate and escalate (2026-27)**

Develop options / techniques / learnings to scale up and apply to other regional tests

- **Phase 4: Evaluate and transition to business as usual (2027-28)**

Recommendations embedded in to policy, strategies, plans and ways of working.

In September 2024, it was identified that the next steps for Workstream 1 in Phase 1 were as follows:

- Collate feedback from programme partners on the Scoping Note to refine action areas.
- Develop action areas in to solution concepts.
- Refine solution concepts considering regional testing opportunities.
- Deploy solutions in Regional Tests (transition to Phase 2).

6. March 2025 Update Report: recent activities

An in-person workshop of MNbS partners was held in September 2024 at which the list of Action Areas from Workstream 1 (Section 5) was presented, alongside initial findings from all other workstreams. The three takeaway messages from the workshop (across all workstreams) were:

- The MNbS Programme needs to engage with Government and the private sector to promote the potential for NbS to deliver multiple benefits, recognising that there are numerous demands on land use and land availability is a key barrier.
- For NbS to become mainstream we need to better understand the backgrounds and business models of key collaborators and show how it fits into their business model or how their business model can be adapted to enable NbS.
- There is a 'missing middle' convenor of different sectors. We need a long-term vision for water and to explore options e.g. creation of convening body/ies, use of River Basin Management Plans, natural capital aggregation tools, etc to achieve this. Doing so could also help unlock housing and growth, and feed into other key Government priorities.

The last of these takeaways directly links to the Workstream 1 Action Areas. Other points raised during the workshop that have relevance to Workstream 1 include:

- There is a need for workstreams to refine their recommendations with reference to all regions (including Wales and Northern Ireland).
- Emerging recommendations need to be linked to the Theory of Change such that we can explain the benefits the programme will and has delivered.
- There is natural overlap between workstreams and we need to develop coherent recommendations that account for these interactions.
- Collaboration in several regions is heavily reliant on the role of individuals with longstanding relationships and ability to influence across multiple stakeholders and stakeholder groups. The role of these individuals could be better understood and harnessed.

In the time since the September 2024 workshop, Workstream 1 activities have focussed on:

- Refining the Action Areas into clearer concepts that could be applied in the Regional Tests.
- Understanding more about the aspirations of the Regional Tests through discussions with the Connectors for each region.
- Bringing the Action Areas and regional aspirations together in a Mainstreaming NbS partner workshop in February 2025.
- Building on a review on the Draft Determinations for the 2024 Price Review to analyse the Final Determinations (published in December 2024) and to develop the concept of a Tracked Programme of work for NbS

7. Development of the Action Areas

After the September 2024 workshop, and considering its outputs, we reflected on the Action Areas and defined a series of steps to refine each. These are shown in Table 7-1.

Table 7-1: Action Areas, opportunities and next steps for Workstream 1

WS1 Action Area	Description	Opportunity	Next Steps to Refine Action Area
1. Initiate a cultural shift in relation to Nbs	Changing the culture of organisations, regulators and politicians is important. The public also need to support and advocate for NbS.	At the Downstream scale, opportunities to raise awareness of and support for NbS in the wider public include engagement that leverages positive emotions, aligns to personal values and emphasises co-benefits.	• Understand any ongoing / planned public engagement in regions. • Evaluate whether emerging regional tests require public engagement. • Consider programme-level communication to public.
		At the Midstream scale (in organisations), there is a need to disrupt traditional ways of working and decision making processes that were designed for grey infrastructure.	• Develop end-to-end process of project delivery steps from project need to construction and operation. • Test the end-to-end process to understand where blockers / barriers to NbS exist.
		At the Upstream scale, policy and regulation needs to be refined to influence the scale and rate of adoption of NbS by organisations (Midstream) and the support of the public (Downstream). This is being addressed by Workstream 2.	• Taken forward by WS2. • Potential role for Workstream 1 in translating policy requirements / expectations into scheme delivery. This could be explored through the regional convenor, below.
2. Tailor ways of working to the circumstances in question	Collaboration is not always the most effective way of working and different models / principles may be more effective in certain situations.	Stakeholders in NbS projects need to be able to identify which ways of working are most appropriate to their situation. The establishment of collaborations needs to consider the factors and processes that will enable them to flourish and be sustained.	• Supplement Risk Framework from Workstream 4 with collaboration guidance. • Explore whether stakeholder mapping activities could help to identify the roles of key individuals in collaborations.
3. Align behind a common vision and provide national steer	Collaborative action across sectors is hampered by the lack of a clear vision and strategy for NbS.	A clear vision for NbS. Coherent and aligned legislation, policy, strategy and plans.	• Taken forward by Programme Management. • Refine vision and mission of programme to articulate why NbS should be mainstreamed. And link high-level vision to schemes.

WS1 Action Area	Description	Opportunity	Next Steps to Refine Action Area
4. Improve governance at regional scales	Governance and alignment of objectives at regional scales is holding back adoption of NbS at scale.	Mainstreaming of NbS could benefit from a convening of organisations at a regional scale to identify opportunities aligned to regional priorities.	• Explore regional convenor potential roles and functions. • Summarise activities of a convenor so that it can be tested in regions. • Consider any work done to date by ongoing initiatives.
5. Develop tools / guidance to sustain multi-stakeholder initiatives	As the benefits from NbS take time to accrue, partnerships need to be sustained into the long term.	Mechanisms to secure longer term funding agreements that can sustain maintenance and monitoring. Ensuring sufficient focus is directed towards partnership succession planning.	• Ensure action area 2 takes a long-term view.

8. Updates on the Action Areas

8.1 End-to-end process

A series of steps describing a typical end-to-end process for developing a solution and then delivering it has been defined based on Mainstreaming NbS partner experience and with reference to industry best practice such as the Institute of Asset Management (IAM) Anatomy (July 2024).

Figure 8-1 presents the steps in the process; from determining stakeholder needs and developing a value framework, through option shortlisting and design, to construction, commissioning and operation. It is recognised that not all steps will be followed on all projects and that some steps might be completed at a programme rather than project level. Nonetheless, it is intended that the series of steps acts as a framework through which barriers to NbS can be considered.

An initial assessment of barriers to NbS against each of the process steps has been conducted (Table 8-1). This should now be tested against the experience of a wider range of Mainstreaming NbS Programme partners, particularly water companies, alongside those they collaborate within catchments and landscapes. Consideration should also be given to differences in approach between different teams within the same organisation.

It is intended that by identifying NbS barriers in this manner, Regional Tests can consider if and where the barriers exist in their processes, making them more able to develop actions to overcome them.

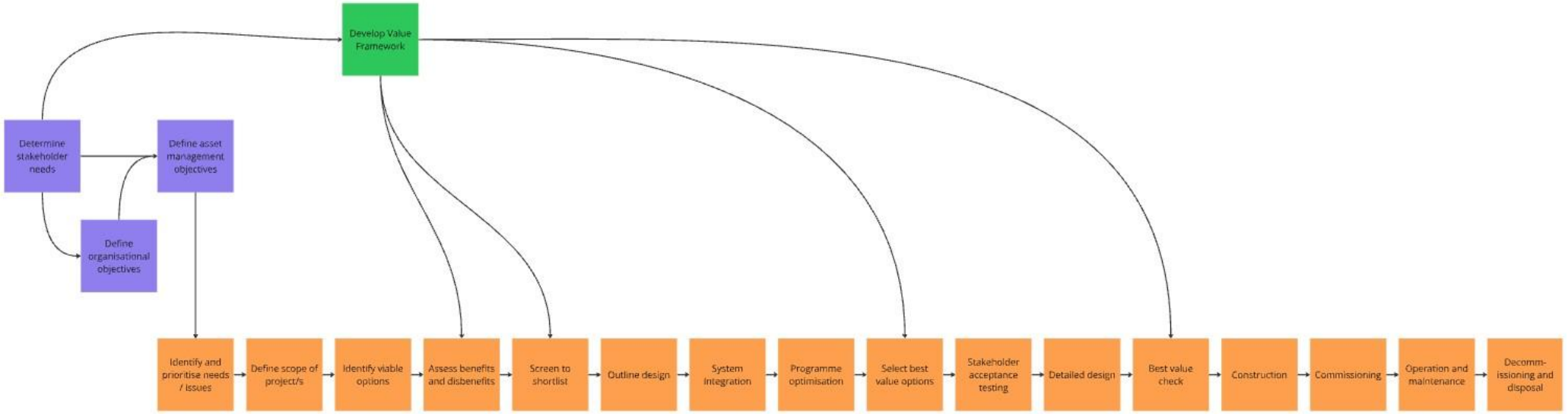


Figure 8-1: End-to-end process

Table 8-1: End-to-end process and barriers to NbS

Step	Description	Potential NbS Barriers
Determine stakeholder needs	Engagement to understand the needs of all stakeholders	• Decision makers / influencers unfamiliar with NbS. • Business planning timeframes not conducive to developing collaborative solutions. Note that at this point, the ambition is often for green infrastructure. This is typically diluted later in the process.
Define organisational objectives	Review of organisational goals and objectives	• New requirements (e.g. WINEP methodology) coming in at later stages. Note that at this point, the ambition is often for green infrastructure. This is typically diluted later in the process.
Define asset management objectives	These should be framed in a long-term context and be forward-looking.	• Confining focus to a single AMP discriminates against NbS (they often take longer to deliver and for benefits to accrue).
Develop value framework	Link outcomes to asset management objectives (and in turn to stakeholder needs and organisational objectives).	• Incomplete accounting of all benefits and disbenefits. • Lack of standard methodologies for assessing wider costs and benefits (which are generally more relevant for NbS). • Limited cost databases for NbS.
Identify needs / issues	Identify and prioritise the problem to be solved	• Are the full range of root causes identified? • Needs (esp. environmental needs) are often defined too late in the business planning process to enable NbS options to be properly evaluated.
Define scope of programme/s	Set the scope of a programme/s to address the problem	• Unclear definitions of NbS – what constitutes an NbS
Identify viable options	Consider TOTEX hierarchy R's of resilience	• Staff might not know what NbS might be and 4 suitable for a given need. • Are green options in the short list? - do people know about them - coarse screening guidance? • Constraints related to changing the option in the business plan.
Assess benefits and disbenefits	Assessment of benefits disbenefits investment.	• Bias towards prioritising short-term capex and • Incomplete valuation across all capitals.

Screen to shortlist	Remove clearly unsatisfactory options with refence to value	• Unfamiliarity with how to score NbS. • Filtering down too quickly - only progressing 1 or 2 options due to a need to move at pace. • Many NbS require working with others – lower framework scores? • Willingness of regulators to engage early enough.

Step	Description	Potential NbS Barriers
Outline design	Outline design of scheme components	• NbS generally non-standard, making design more onerous. • Limited cost databases for NbS. • Expectation that Ofwat will apply cost efficiency. • Need to understand who owns risks - limited understanding of NbS risk.
System integration	Evaluation of how the solution will be integrated in to existing systems	• Unfamiliarity with how to incorporate NbS in to existing systems. • Where do responsibilities and liabilities lie between teams.
Programme optimisation	Where multiple projects exist, optimising across them to optimise overall outcomes.	• Optimisation often focuses on altering projects within a programme and summing project benefits and disbenefits, rather than considering and optimising system performance. • Company management of programme – project by project release of schemes. • Link to procurements and incentives – commercial awareness of NbS to inform better incentivization. • How does pain/gain incentivise NbS.
Select best value options	By applying the value framework	• As for value framework. • Bias towards prioritising short-term capex investment.
Stakeholder acceptance testing	Confirming the best value option	• Limited stakeholder awareness of NbS. • Communication of benefits / disbenefits of grey vs green. • A focus on communicating grey vs green rather than the right balance in catchments.
Detailed design	Detailed design of scheme components	• Lack of technical standards for NbS. • Not the push from Delivery Partners for NbS – do they have the skills?
Best value check	By applying the value framework	• As for select best value options.

Construction	Construction phase of scheme	• Few NbS contractors and traditional contractors may have limited experience / by risk averse. • OTAs instead of permits give some extra flexibility.
Commissioning	Testing scheme to confirm it delivers intended performance.	• Traditional approaches to commissioning won't work for NbS. Incompatibility with regulator expectations.
Operation and maintenance	Full period of operation and maintenance during this period	• NbS often on third party land making O&M more challenging? • Unfamiliarity with how to manage NbS.
Decommissioning and disposal	Process of permanently shutting down the asset, disposing of materials and reinstating land.	• Is this considered for NbS?

8.2 Regional convenor

The Rivers Trust has identified that to link national targets to local catchment planning and delivery, an integrated, regional catchment governance framework is required that aligns funding, data and regulation and coordinates (or at least aligns) planning and delivery across river basins, local authorities and the wide range of stakeholders.

To deliver best value outcomes at the landscape scale, stakeholders from several sectors (each their own system) need to come together to define common goals, develop programmes of work and secure funding to deliver integrated solutions.

This need is hampered by existing processes for identifying, funding and delivering initiatives to manage water resources, improve water quality, provide flood resilience and manage the land which are siloed. Investment planning processes are largely uncoordinated and system-specific. This means investments in one system might provide unrecognised benefits and/or disbenefits to another.

Catchment partnerships in England (limited in Wales) help to convene stakeholders to identify trade-offs at local scales, but we lack regional scale coordination of needs and opportunities. Where regional coordination does happen, it is usually delivered by a single person and is unfunded. Exceptions to this include Natural Course, the integrated water management approach in Greater Manchester and some regional water resources groups.

Several planning frameworks have an influence over water and land management at regional scales. The plans developed through these frameworks are produced and updated at different times. Aligning the timescales of each plan would require extensive change to policy and regulation. Furthermore, it is unlikely the supply chain could deliver the volume of associated work if all plans were produced and updated at the same time.

Mainstreaming NbS Programme partners and wider stakeholders have identified the need for an entity to bring together organisations at the regional scale to address these challenges and to identify funding opportunities aligned to regional priorities.

An existing entity acting as a regional convenor could deliver this role, funded by stakeholders in the region. Work has already been done to develop this concept in the OxCam Arc and Greater London region. The regional convenor could:

- Map the relationships between existing stakeholders in a region.
- Collate information on needs and planned investments across all systems as relevant plans are produced, and make them available to other planning frameworks.
- Identify opportunities to progressively align the planning approaches of different systems.
- Identify opportunities for co-development and co-funding of options with benefits to multiple systems.
- Identify conflicting strategies and opportunities to mitigate disbenefits.
- Coordinate the development of policy recommendations and facilitate implementation of new / changed policy.
- Provide a common voice for water in regional and landscape decision-making forums.

The ways in which a regional convener could be established and might operate as part of a Regional Test need to be evaluated, refined and agreed between the stakeholders of a given region. Tasks could include:

- Understanding the existing information sharing and decision-making forums within a region (and the representatives within them).
- Defining the scale at which the concept could be applied – WFD River Basins, water resources regions, counties.
- Developing a detailed specification of responsibilities for a regional convenor.
- Identifying entities that could deliver the role - may be different in different landscapes / regions.
- Exploring policy and regulatory changes needed to implement the concept.
- Developing performance indicators for a regional convenor and establishing a performance baseline.

The need for improved regional governance has also been highlighted by the Mainstreaming NbS programme in its response to the Independent Water Commission call for evidence. The response identified (among other recommendations) the need to establish (or strengthen) well-funded regional governance, with clearly mandated roles and responsibilities, to align WRMPs, DWMPs, WINEP, land use and other multi-sectoral plans across catchments.

8.3 Other action areas

8.3.1 Collaboration and risk

Workstream 4 (Standardisation) is developing a risk framework to set out standard ways of allocating risk under different types of NbS project. It tests the hypothesis that with a standard risk model to follow, it will be easier for groups to collaborate and set up projects. They may choose to vary their approach and deviate from the risk framework, but by having a baseline model it will be easier to set out what variations are being made.

The collaboration concepts outlined in this report have the potential to be integrated with the emerging risk framework. For example:

- In the Concept Development stage of a project (as defined by the risk framework) entities are likely to be working on the basis of good will and mutual interest, as opposed to through a contract. As such, individual working preferences, values and culture may impart greater weight on the success or otherwise of collaborations (as compared to other project delivery stages where contracts are in place). Guidance for establishing collaborations based on cultural theory could therefore be included at this stage.
- One way to understand relationships at the Concept Development stage could be to create a stakeholder systems map. Stakeholders and stakeholder groups might not be aware of the existing connections that exist through particular individuals. By exposing these connections, groups may be more likely to utilise them and/or formalise them in to funded roles that can be sustained over longer timeframes.

8.3.2 Key messages for the Mainstreaming NbS programme

The Mainstreaming NbS Programme Management team is leading the process of identifying and refining a set of key messages for the programme. Since the September 2024 workshop and at the February 2025 workshop it was clear that Mainstreaming NbS partners consider a clear vision and mission for the programme and important requirement that would enable all partners to work towards a common goal.

For NbS collaborations to be successful, it is important for stakeholders to understand the role we collectively want NbS to play in our landscape. Based on discussions with Mainstreaming NbS partner representatives, and from the perspective of driving effective collaboration, key messages should recognise that:

- NbS deliver broad outcomes that benefit a wide range of stakeholders. They are usually less precise than grey alternatives but deliver wider benefits.
- Therefore, rather than focusing on NbS displacing grey solutions (though this is important in some areas and other Action Areas and workstreams will help to address this) we should aspire to a better balance between NbS and grey solutions across landscapes.
- A better balance should be reached by understanding the natural processes in catchments and how they can be supported and restored. NbS will typically be well suited to repeated application across a catchment supplemented by targeted grey infrastructure where high

certainty and precision is required (e.g. at points of human water consumption, or immediately upstream of important receptors).

- The outcome would be a nature-based system in which NbS and grey infrastructure play important and complementary roles.

These messages have been fed in to the programme-led key messaging exercise.

8.3.3 Tracked Programme for NbS

Following publication of the PR24 Draft Determinations in July 2024, the Mainstreaming NbS programme undertook a review of the scale of NbS included, and the potential for opportunities to increase NbS at Final Determinations. This review identified key actions that could be taken and this contributed towards an increase in AMP8 NbS from £2.2 billion at Draft Determination to £3.3 billion at Final Determination.

In addition to specific actions for the Final Determination, the review also identified two areas that need to be addressed through the early years of AMP8, to ensure that proposals for NbS at PR29 can be assessed on a level playing field to grey solutions. These two areas relate to the quality and transparency of the evidence base for NbS particularly in relation to costs and benefits. The Mainstreaming NbS programme is therefore proposing a Tracked Programme of work starting in AMP8 to:

- Build an Evidence Framework that enables delivery of NbS to achieve regulatory requirements and maximise wider benefits, whilst reducing risk and uncertainty across multiple parties.
- Grow the knowledge on how NbS perform as part of a system, with other types of interventions at catchment/landscape scales.

The concept of a Tracked Programme has been discussed with a number of groups including the Mainstreaming NbS Steering Group, Mainstreaming NbS Policy & Implementation Board, Water UK's Environment Committee, regulators and environmental NGOs and has received widespread support. It has close alignment with recommendations from the recent Corry Review of Defra's regulatory landscape, specially Recommendation 23 which states:

"Defra should conduct a six-month sprint, with industry, on removing the barriers to using NBS to flooding and pollution including planning, benefit-to-cost ratios, orders of magnitude of risk, biodiversity net gain, and licensing, and then propose a way of reducing or removing these."

To scope out which projects and activities need to be included in the Tracked Programme and to define how it will operate, the following key steps are required:

- Define an Evidence Framework – currently ongoing.
- Baseline existing NbS data against the Evidence Framework.
- Identify projects and schemes that can help close gaps in existing data, including identifying potential overlaps and synergies with other proposed programmes.

- Develop an operating structure for how the programme will be managed and delivered.
- Develop timeframes over which the programme will operate and evolve (initially planned to be over AMP8).

A regulator workshop is planned for May 2025 with the intention to secure endorsement of the concept working towards an agreement on its implementation.

8.4 Connecting initiatives from different workstreams

A key role of Workstream 1 is to facilitate join-up of work and outputs between workstreams across the programme. To support this aim, the emerging recommendations of each workstream have been mapped to key Mainstreaming NbS barriers (Figure 8-2).

This map is not exhaustive, and requires further development, but can be used as a basis for further integration between workstreams.

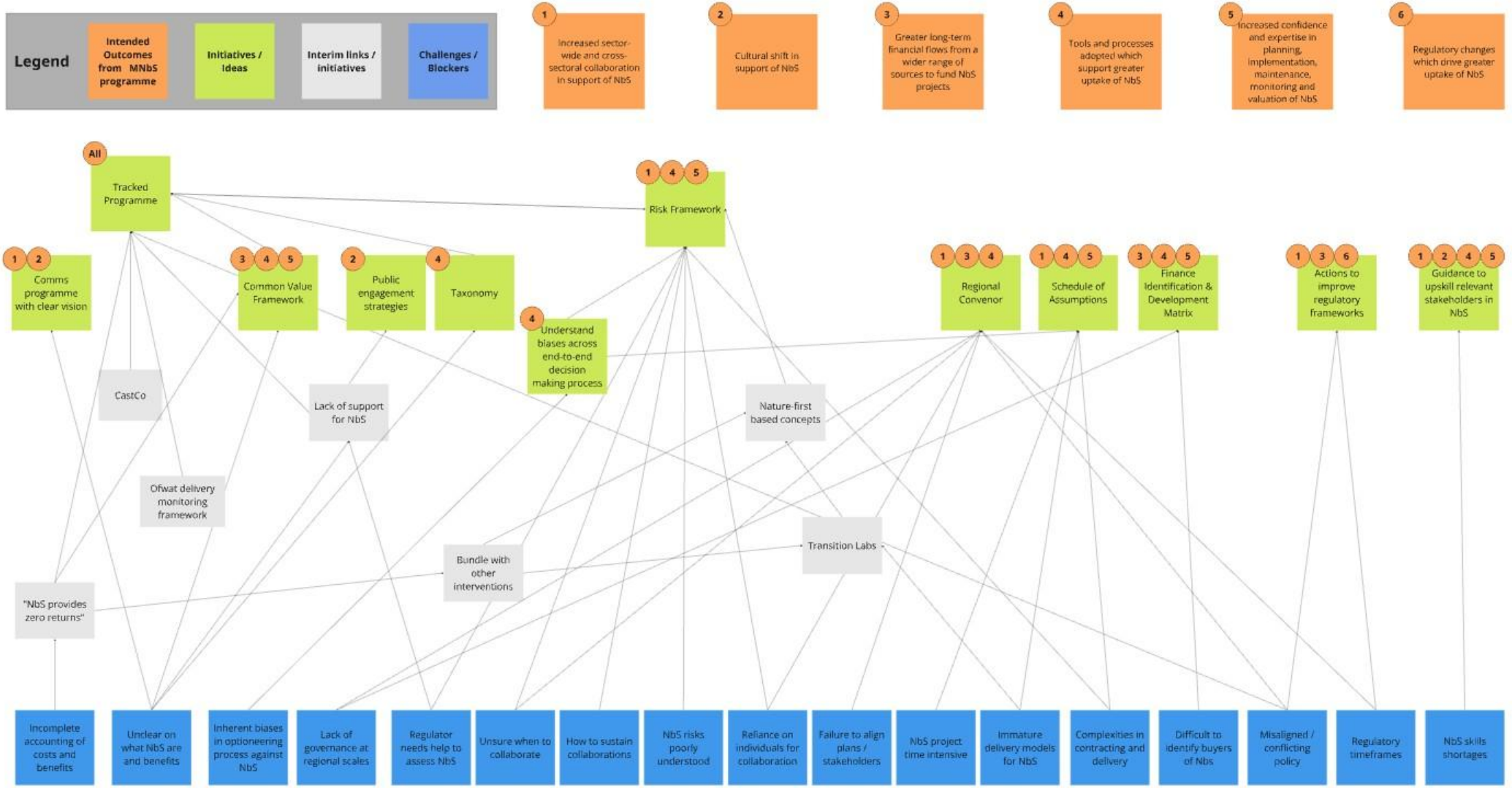


Figure 8-2: Interaction between barriers and recommendations across MNbS programme

9. Update Report: conclusions and next steps

This report has explained how outcomes from the collaboration Scoping Note have been refined in to a series of Action Areas and emerging recommendations for the Regional Tests.

Further action is required to refine recommendations in the period to September 2025 such that Regional Tests can begin in October 2025:

- **End-to-end process:** test the current version of the end-to-end process with Mainstreaming NbS partners and refine the steps. It can then be used in Regional Tests to validate and then target actions to address barriers.
- **Risk framework:** work with Workstream 4 to build in learning from Workstream 1 to the risk framework. This is likely to be focussed on the earlier stages of the NbS delivery process.
- **Vision and mission:** work with the programme management team to clearly define the vision and mission of programme, and link this to the Theory of Change. The Regional Tests will also be linked to Theory of Change outcomes.
- **Regional convenor:** discussions with Connectors to establish whether the regional convenor concept could be applied to different regions.
- **Tracked programme:** secure endorsement of the concept from regulators and water companies. Continue to develop the initial version of the Evidence Framework.
- **Integration:** work to bring the insight from different workstreams together in to a series of coherent recommendations for the Mainstreaming NbS programme as a whole.

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Appendices

Appendix A: Other NbS Initiatives

Name and link	Description	Status
Nature-based Solutions Initiative	Broad initiative with outputs involving a case study bank, funding finding, and opportunity map for NbS.	Active
Agile initiative	Initiative focusing on tools to support the planning, implementation and funding of NbS activities, outputs include a Recipe for Engagement and funding finder tool and an opportunity map creator.	Complete (2022–2023[1])
Connecting Nature	Broad initiative to scale up NbS in cities. Developed a Connecting Nature Framework to help cities shape their NbS solutions through planning, delivery and stewardship. Also developed a Connecting Nature Business Model Canvas.	Complete (2017-2022)
UrbanByNature	Capacity building programme promoting exchange across cities, researchers, SMEs and NGOs. Includes a UrbanBynature methodology and co-creation guide aligned to ISO 37101 Sustainable Development in Communities.	Active
NetworkNature	Broad initiative with products including an NbS policy roadmap 2024 - 2030, needs and gap analysis, tailored capacity-building for local and regional authorities, decisionmakers in governments, businesses and investors, and NbS hubs.	Active
Nature4Cities	Initiative promoting NbS in cities with outputs including planning tools and guidance for implementing NbS.	Active

[1] Further research to be taken forward under the Leverhulme Centre for Nature Recovery https://www.naturerecovery.ox.ac.uk/

Clever Cities	A platform to explore insights, tools, indicators and lessons learned about NbS for sustainable urban regeneration.	Complete (2018-2023)
Cities With Nature	Shared platform and knowledge hub for cities and partners to engage and connect.	Active
SuDS iQ	Initiative will deliver a national online collaborative Sustainable Drainage Systems (SuDS) platform that will support a collective understanding of what SuDS are, how SuDS work, and the benefits they provide. Ofwat Innovation Programme.	Active

Name and link	Description	Status
Water Smart Communities	Initiative will explore and pilot how new roles, partnerships and stewardship agreements might enable Water Smart Communities. Ofwat Innovation Programme.	Active
Reconect	A Massive Open Online Course for NbS	Active
URBAN GreenUP	Urban NbS initiative with products including an NBS selection tool and an NbS scenarios generation tool as well as papers and good practice guidance	Complete (2017-2022)
NATURVATION	Initiative focussed on understanding what NbS can achieve in cities. Created an urban nature atlas and a navigator to assess potential contributions of different types of NbS	Complete (2017-2022)
Phusicos	Initiative focused on demonstrating how nature-based solutions provide robust, sustainable and cost-effective measures for reducing the risk of extreme weather events in rural mountain landscapes.	Active
Operandum	Initiative to develop tools and methods for the validation of NbS in order to enhance resilience in European rural environments. Outputs include case studies, an NbS cocreation pathway and legal frameworks for NbS	Complete (2017-2022)
NAIAD	Initiative to develop assessment framework for testing NbS in support of flood and drought management.	Complete (2017-2022)
Oppla	EU repository of NbS including advice, a marketplace for guidance, software and data.	Active

ThinkNature	A multi-stakeholder communication platform that supports the understanding and the promotion of NbS.	Complete (2016-2019)