Mainstreaming Nature-based Solutions Literature Review
Workstream 3: Funding and Finance

North Star Transition

Chapter 2

May 2025

Issue & Revision Record

Revision	Date	Author	Description	Issued to	Approved by
A	28/03/2025	North Star Transition	Draft issue	MNbS funding and finance task and finish group	/
B	30/04/2025	North Star Transition	Draft issue	MNbS funding and finance task and finish group	Granville Davies
C	21/02/2025	North Star Transition	Rev C following comments	MNbS Technical Working Group	Granville Davies
D	28/08/2025	North Start Transition	Rev D	MNbS Steering Group	MNbS Steering Group

Introduction and Executive Summary

In Chapter 1, we shared insights from our literature review into the current financing patterns for nature-based solutions (NBS). The current approach to financing NBS involves identifying NBS interventions and trying to find finance for them individually or collectively from payments for ecosystem services (PES) and/or public funding.

The current modus operandi for the financing of NBS presents several challenges. Our literature review revealed that most NBS projects rely heavily on public funding and/or generating income from PES. However, it was clear that relying on PES mechanisms (such as carbon credits or biodiversity offsets) as the key source of private finance for NBS is limited. In our view, PES mechanisms:

- Lead to fragmented, small-scale financing which does not attract mainstream investment.
- Provide uncertain and insufficient financial returns for commercial finance.
- Are transactional and short-term.
- Place unfair risk on PES sellers.

Furthermore, reliance on PES encourages siloed interventions that do not address the complexity and interconnectedness of natural systems. For example, nutrient trading markets may reduce pollution initially, but they fail to address its root causes. To achieve lasting, systemic change at a landscape scale through NBS requires large-scale investments that can support systemic shifts in how industries operate. To be sure, other approaches such as integrating multiple small-scale PES and publicly funded schemes can play an important role. However, it will be limited in its capacity to attract and scale new sources of investment as discussed in Chapter 1.

In this chapter, we argue that this approach to financing NBS does not work to attract largescale financial investment. We propose that NBS should be embedded within commercially viable activities, which will be much more effective in the long run than financing NBS projects separately and directly.

By integrating NBS into established sectors – such as infrastructure, energy, agriculture, and water management – we can move beyond fragmented, small-scale interventions and create scalable models that align with mainstream financial markets. In this way, we can ensure that NBS becomes a core component of sustainable economic systems, rather than a standalone intervention reliant on niche funding streams. Standalone NBS interventions, multiple smallscale NBS and publicly funded NBS are still significant, and financing avenues here will be explored further in the MNbS programme (see below for further details).

In line with the 4 Levels Framework developed in Chapter 1 (Table 1), we need to build upon projects that are operating at Levels 1 and 2 and attract mainstream investment for largerscale transformation projects at Level 3 and 4.

Section A of Chapter 2 identifies the barriers to investment which are currently preventing the involvement of mainstream investors and the scaling-up of NBS projects. As it stands, there is a significant gap between what mainstream investors expect from a financially viable project and what NBS projects can offer.

Section B of Chapter 2 explores two potential avenues for progress that could help overcome the investment barriers outlined in Section A. We first propose a new and innovative approach to the financing of NBS: embedding NBS into a broader package of cross-sectoral interventions that, together, form a commercially attractive business proposition. Next, we set out the case for establishing more sophisticated governance structures to enable effective coordination, risk management, and long-term collaboration, across all levels of interventions.[1]

[1] We note that issues of governance are also being explored in other workstreams within the MNbS programme notably Collaboration and the Risk Framework.

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Our Approach

Mainstreaming NBS requires new approaches. Therefore, in this chapter, we suggest a new approach to financing NBS, one that fully integrates NBS within a system rather than treating it as a standalone intervention. This approach could attract the large-scale financial investment which we would need to make a long-lasting impact on environmental systems and unleash the full potential of NBS. This Approach is what this chapter focuses on.

The next step will then be to translate this theory into practice. This will entail meeting project developers where they are at and considering more closely the dynamics on the ground.

In order to do this, we will create a finance identification and development matrix by which Regional Tests can determine how to develop their projects to enable funding or financing. The matrix will include the following key elements:

- Exploration of key sources of finance and other stakeholders across sectors who may be open to either directly investing in NBS or embedding NBS within their existing or planned business models.

- The exploration of business models which either recognise that they rely heavily on NBS or could rely heavily on NBS in future to make their businesses more resilient.

- The identification of potential governance frameworks which address the gaps currently identified as impeding investment in NBS.

The work outlined above cannot be done in isolation of the Regional Tests and will require engagement and feedback from potential financiers and funders beyond current but scattered actors. We are looking to work closely with the Connectors to explore their key stakeholders, the business models which are relevant to them and the specific governance frameworks which could provide a framework within their context.

Table 1 - Four levels of intervention with indicative levels of funding.

Level[2]	Description	Example	Types of finance	Indicative funding scale
1	Small-scale nature-based solutions involving single actor and single solution	A farmer maintaining hedgerow	Subsidies Charities / Foundations Monetization of environmental outcomes (e.g. carbon credits)	£1,000-£50,000
2	Collaborative work focused on a single outcome	Work to restore connected habitats to enhance nature recovery	Subsidies Charities / Foundations Monetization of environmental outcomes (e.g. carbon credits)	£50,000-£20 million
3	Collaborative work in a landscape involving multiple stakeholders and projects in ways that create several benefits through NBS	Projects across a catchment area to enable better climate adaptation through several nature-based solutions	All the above and: National Infrastructure Banks Government funding	>£20 million
4	Projects which transform landscapes by tackling root causes of issues	The transition of the farm economic model to diversify incomes to include e.g. energy (still inclusive of NBS where useful)	All the above and: National Infrastructure Banks Government funding Institutional Investors	>£250 million

[2] Note that this framework is intended merely as a lens through which to visualise an ever developing and increasingly complex sector. The descriptions, examples, actors and figures are indicative examples only. The table is not supposed to be a definitive categorisation.

Section A: Investor Concerns

The key question for mainstreaming NBS from a funding and finance perspective is what makes a project financially attractive to investors. In other words, what kinds of issues do investors consider when they are assessing the financial viability of an NBS project and why are they not investing in NBS as part of the business-as-usual approach?

We have identified six key barriers to investment, a summary of which is provided in Table 2 below. Each barrier is explored in greater detail in Annex 1. All of the barriers outlined in Table 4 and detailed in Annex 1 are well-understood by both project developers and investors. In particular, project developers are clear that under current approaches, they need to find revenue streams for NBS.

However, it is obvious from the barriers outlined above that NBS do not neatly fit within the requirements of the financial sector for an investible proposition. Work may be done to create governance mechanisms, risk sharing frameworks and increase skills, but there remains a fundamental issue that NBS do not generate sufficient revenue at the scale required for mainstream investment. This is due to fundamental attributes of NBS and the economic context in which they sit and can be summarised as follows:

- No method currently exists to translate benefits from nature into financial benefits. This may come in time but requires a rethinking of our economic system which currently treats nature as an externality.

- The benefits of nature cannot be attributed to one organisation or entity.

- Future uncertainty as to what the impacts are of NBS are and inevitable changes to the regulatory framework mean that the majority of investors cannot find the relative certainty or risk / reward models they need to invest.

These key problems should be seen as an opportunity to rethink the current approach to financing NBS and indeed to rethink the system entirely.

In Section B, we explore a new approach to financing NBS which moves away from assuming that NBS should necessarily generate revenue and towards seeking to build on the strengths of NBS in its ability to mitigate risks and protect assets.

Table 2 - Current barrier to large-scale investment in NbS

	What do investors consider?	Current barrier to large-scale investment in NBS
1	What is the target financial return of the investment?	Most current NBS projects do not offer financial returns which are attractive to institutional investors, thereby limiting their appeal to more philanthropically inclined investors.
2	What is the maturity of the investment?	Despite the requirement for significant capital investment at the outset of an NBS project, it may be 1015 years (or more) for an NBS project to deliver returns. This is an acceptable overall maturity for most institutional investors, but not without some form of return in the intervening period.
3	What is the scale of the investment?	In 2023, typical EU-based investment in NBS averaged less than €2 million per project (as per European Investment Bank report).[3] Most institutional investors require project sizes of at least £100m due to constraints such as comparatively large transaction costs, due diligence costs, potential liquidity ,etc.
4	How risky is the investment?	NBS investments are perceived as more risky than other relevant asset classes (for example, grey infrastructure). Given the immaturity of the NBS market, mitigation strategies for these risks are similarly immature/untested.
5	Who is receiving the investment?	Institutional investors want to invest in highly credible entities with robust governance structures and a proven track record. Most NBS investment structures are not yet sophisticated enough to fulfil these requirements.

6.	Will the project be executed successfully?	Even if each of the above issues is adequately addressed, the environmental and financial experience within the project team may be insufficient to ensure successful execution.

Section B: Potential Avenues for Progress

Mainstreaming NBS within a system requires transforming the system itself. This transformation entails a shift from a degenerative model (where with each passing year system functionality diminishes), to a regenerative one (where system functionality is continuously stable if not improving). NBS is a crucial part of a regenerative system as nature is a crucial part of a regenerative system. Any economic activity which seeks to be selfsustaining should incorporate NBS.

Thus, for NBS interventions to attract mainstream finance, they must be integrated directly into commercially viable projects making use of the ability of NBS to mitigate risk and protect assets. This approach does not force NBS to be a generator of revenue, something which in the current economic context it is not. Instead, it makes use of NBS's greatest benefit: the fact that we are fundamentally reliant on nature for a functioning economy and society.

If this approach is adopted more widely, thought will also need to be given to the governance arrangements to allow this kind of investment in NBS. Therefore, we also make the case for more sophisticated governance structures as a crucial enabler for transformative projects at scale.

Integration of NBS to Support Business Viability

Integration of NBS involves embedding NBS into a diverse set of cross-sectoral interventions that, together, form an integrated and commercially viable business proposition. Rather than treating NBS as standalone projects in need of financial support, this model embeds these solutions within larger, investible systems that align with existing investor (and stakeholder) priorities.

All businesses and assets comprise both profit-making and non-revenue-generating elements. This logic should be applied to NBS financing. In this model, NBS may not be a direct profit driver but functions as an indispensable enabler – akin to the foundation of a house – providing the environmental and social underpinnings that allow other economic activities to thrive. Without NBS, the broader system would lack the stability, resilience, and longevity required for long-term success. NBS interventions can stabilise ecosystems, regulate water resources, and enhance biodiversity, all of which create the conditions necessary for infrastructure, energy, and transport projects to function effectively and deliver their returns.

Crucially, unlike NBS, sectors such as water, infrastructure, energy and transport already attract large-scale investment and are well understood by investors. By integrating NBS within these commercially established sectors, we can position NBS as an indispensable component of helping to further de-risk an investible system. In doing so, we can mainstream NBS into financial and economic systems, enabling large-scale adoption and delivering the transformative, system-wide change envisaged by Level 4 projects (see Table 2 above). This approach does not mean excluding potential revenue generated from PES but instead requires strategic use of these payments to add another benefit alongside the multiple benefits NBS can already provide to enable a viable business.

There are three examples below which illustrate the direction of travel and the investment that integration of NBS could potentially attract. It should be noted that these examples are discrete projects spearheaded by single entities within a specific sector. The capacity for investment could be greater if sectors were to work together on their needs which can be met by NBS and implemented solutions in coordination with one another. Nevertheless, the examples below are promising and demonstrate the potential of the integration approach.

Example 1: Offshore Wind Farms – Supporting Marine Regeneration

Offshore wind companies, such as Ørsted, are integrating NBS into turbine infrastructure to improve marine biodiversity and ecosystem services.[4] The types of NBS are varied. Artificial reefs are installed at wind farm bases to support fish populations. Seagrass and kelp restoration actions improve carbon sequestration. Oyster and mussel beds filter water and provide natural coastal protection.[5]

The reasons for offshore wind companies integrating NBS in their projects are varied. One of the drivers is that NBS components increase public and regulatory support for offshore wind projects. Ørsted has also committed to all renewable projects from 2030 delivering netpositive biodiversity. These commitments can improve public buy-in of these projects. Ørsted has stated that "integrating biodiversity measures into renewable energy deployment will be key to ensuring a mandate for the pace and scale of new infrastructure needed to meet net zero carbon emissions".[6] Furthermore, NBS can help ensure that the infrastructure is more resilient against the impacts of climate change, reducing the risk for infrastructure investment.

Example 2: Port of Rotterdam (Netherlands) – Industrial Sustainability & Coastal Protection

The port of Rotterdam, Europe's largest port with a revenue of €841.5 million in 2023,[6] is using NBS to enhance coastal resilience, improve water quality, and reduce industrial environmental impact.[7]

[4] Sykes, B. (n.d.). Offshore wind: At the nexus of solutions for climate change and biodiversity loss. Ørsted. Retrieved April 23, 2025, from https://orsted.co.uk/insights/expert-take/biodiversity

[5] Sykes, B. (n.d.). Offshore wind: At the nexus of solutions for climate change and biodiversity loss. Ørsted. Retrieved April 23, 2025, from https://orsted.co.uk/insights/expert-take/biodiversity [6] Ørsted. (2023). Uniting action on climate and biodiversity. Retrieved April 23, 2025, from https://cdn.orsted.com/-/media/images/tw-web/0914bio/rsted-paper---uniting-action-on-climate-andbiodiversity_web.pdf. Pg.3

[6] Port Technology. (2024, March 14). Port of Rotterdam surpasses €800 million. Retrieved March 26, 2025, from https://www.porttechnology.org/news/port-of-rotterdam-surpasses-e800-million/

[7] Port of Rotterdam. (2023). Port of Rotterdam nature vision. Retrieved from https://www.portofrotterdam.com/sites/default/files/2023-02/port-of-rotterdam-naturevision.pdf

The wide-ranging NBS projects include installation of a reef in the river Meuse; creating tidal wetlands to help filter industrial pollutants and buffer storm surges; and building floating green spaces to improve air quality and offer cooling effects.[8]

The port's aim is to improve resilience by integrating NBS into the port's logistics, shipping, and energy sectors. It has realized that without working with nature, its business cannot be resilient and as profitable as in the past. The integration of NBS within its operational activities points towards an approach to NBS which is aggregated with other interventions.

Example 3: Newcastle Helix – Green Infrastructure in Urban Development

Newcastle Helix is a £350 million urban regeneration project integrating NBS into its design to enhance climate resilience, improve air quality, and attract investment. It has been developed by Newcastle City Council, Newcastle University and Legal & General. The aim is to transform a 24-acre site in Newcastle into a leading hub for scientific research and technological innovation. NBS are integrated into the project in a variety of ways. Green roofs and walls reduce urban heat and improve energy efficiency.[9] Rain gardens and permeable surfaces manage stormwater, reducing flood risks. Urban tree planting enhances biodiversity and creates cooling effects.[10]

The NBS provide a range of benefits within the project. As they are integrated within commercial office spaces, retail areas, and residential buildings, they increase property values and are attractive to businesses seeking office spaces. This also allows for higher rental yields and occupancy rates due to demand. NBS also contribute to long-term costs savings for infrastructure maintenance and energy consumption.[11]

Moving Beyond Revenue Streams

The following compelling examples merit closer examination. They demonstrate the benefits of integrating NBS with other interventions, including grey infrastructure, in an integrated package:

- Financial Returns: NBS revenue streams are often uncertain and slow to materialise. They are not driving investments. Instead, the proposition is based on more reliable, well-established revenue streams from sectors such as renewable energy, transport, or housing.
- Transaction Scale: aggregating interventions can achieve the scale required to attract institutional investment while also unlocking economies of scale.

[8] PortXL. (2024). Rotterdam Reef successfully installed for nature and shoreline protection. Retrieved March 26, 2025, from https://portxl.org/alumni-feature/rotterdam-reef-successfully-installed-fornature-and-shoreline-protection/

[9] UNA City. (n.d.). Newcastle Helix (Science Central). Retrieved March 26, 2025, from https://una.city/nbs/newcastle/newcastle-helix-science-central

[10] Naturvation. (n.d.). A green pathway to net-zero in Newcastle. Retrieved March 26, 2025, from https://naturvation.eu/sites/default/files/a_green_pathway_to_net-zero_in_newcastle_0.pdf

[11] United Nations Environment Programme Finance Initiative (UNEP FI). (2023). Urban areas primer. Retrieved from https://www.unepfi.org/wordpress/wp-content/uploads/2023/11/Urban-areasprimer.pdf

- Investment Horizons: NBS revenue streams (if any) may take decades to materialise but combining them with more immediate revenue-generating businesses that meet both short-term and long-term investor needs will make the overall package more appealing, including potentially de-risking their investment.

- Expanded Investor / Funding Pool: A broader mix of interventions opens opportunities to engage a more diverse pool of investors, each with varying risk appetites and return expectations.

By embedding NBS within a broader set of commercially established interventions, we can overcome the challenge of NBS not being investible on their own. This approach integrates NBS into the systems of a landscape, making them essential components of a larger, financially viable package, while driving transformative change at scale.

As stated above, the three examples provided are promising actions within single sectors or businesses. Combining these actions across sectors to reach Level 4 is the ultimate ambition. While this could unlock the widest benefits, it also presents significant challenges across multiple dimensions:

- Stakeholder buy-in is critical but challenging to secure. Successful integration depends on meaningful engagement with all impacted or potentially impacted parties, ensuring that interventions provide benefit widely to garner wider investment.
- Financially, there could be higher initial structuring costs and uncertainties associated with the novelty of these integrated projects. Additionally, while there is much work to do within specific businesses to integrate NBS, it remains unclear whether financial institutions (many of which specialise in particular sectors) would be willing to invest in cross-sectoral integrated projects.
- Operationally, coordinating a wide range of stakeholders is inherently complex, requiring mechanisms to prevent siloed operations and to standardise interventions across a diverse landscape. This complexity is further compounded by limited replicability if approaches are too specific to a single area or business.
- Regulatory hurdles also pose a barrier, as current frameworks often lack support for cross-issue interventions. For example, Ofwat's strict regulation limits water companies from engaging in activities beyond their core remit.

Overcoming these challenges will require innovative approaches, strategic partnerships, and supportive policy frameworks. Nevertheless, integrating NBS into business plans which have cross-sectoral impact could play a key role in addressing the barriers outlined in Section A and helping to unlock institutional investment into NBS.

Governance for Integration of NBS

Developing governance mechanisms – the broad arrangements which determine how decisions are made - will be crucial to enable the embedding of NBS within businesses and infrastructure projects

Such structures are essential not only for attracting and securing institutional finance but also for ensuring the long-term success of any cross-sectoral, landscape-scale interventions. As noted earlier, investors expect robust and sophisticated governance frameworks to instil

confidence that their funds will be effectively and responsibly managed. Governance is crucial to enable the approach outlined above.

Having said that, it is important to balance investor security with local ownership and stakeholder buy-in. Ultimately, NBS need to be implemented on land which may be owned by multiple people and used by even more. To date, the solution for many financial institutions has simply been to buy the relevant land so that there are no issues of joint decision making. However, buying up land is not a scalable solution which will mainstream NBS. Thus, governance is of crucial importance.

Our work and engagement to date with other work streams has shown that funding and finance are not the only drivers for a conversation around governance. Indeed, all actors have an interest in such complex projects being properly governed. In this section we offer the perspectives from a finance angle, understanding that it is not the only one. Figuring out governance will require collaboration and further input from all parties.

Elements of Governance

To begin this analysis, it is crucial to identify what a sophisticated governance structure for a cross-sectoral transformational plan would entail. In Table 3, we have outlined the key functions that such a structure would need to fulfil, spanning financial, operational, and strategic responsibilities. Additionally, we have assessed whether existing entities could perform these roles or if new institutions would need to be established to meet these requirements.

Table 3 - Key functions for cross-sectoral transformational plan

Function	Key Responsibilities	Potential Body/Entity
Strategic oversight and vision	- Decision-making procedures - Strategic planning	Defra Environment Agency Natural England Local Authorities
Financial Management	- Be a credible entity (e.g., have a credit rating) to receive large-scale finance - Manage financial flows to/from investors and projects	Development / Infrastructure Bank Corporate e.g. Water Company
Operational Management	- Provide support for HR, procurement, technology, etc. – - Handle day-to-day operations of projects	Dependent on the category of intervention E.g., health intervention would require operational management by the NHS; water intervention would require management from relevant water company

Outcomes Management	- Ensure successful interventions across landscape sectors (transport, health, environment, grey infrastructure)	Dependent on the category of intervention. E.g., health intervention would require NHS backing; environmental intervention would require monitoring, reporting and verification from a specialist firm
Stakeholder Engagement	- Engage with local governments, investors, project managers, and the local community (farmers, landowners, etc.) - Facilitate knowledge sharing	Number of potential entities that could help with such engagement. E.g. NGOs, Community-led enterprises
Risk Management	- Ensure compliance with regulations and policies - Manage legal risks (compliance, contracts, IP, disputes) - Structure security packages and manage project risks (e.g., ringfencing project impacts)	Joint work of various functions including government, financial entity, operational entity and outcomes manager.

Four key points from the table are worth emphasising:

- First, a project's specific governance requirements will depend heavily on the types of interventions involved. For example, health-related interventions would require operational involvement and buy-in from the NHS to ensure credibility, whereas waterrelated interventions would necessitate collaboration with relevant water companies.

- Secondly, flexibility in governance structures is crucial to accommodate the unique needs of different interventions and adapt to evolving circumstances.

- Thirdly, successful governance hinges on meaningful community and stakeholder involvement. Any plan must be locally owned, ensuring that those directly affected by the interventions have a voice in decision-making and a vested interest in the project's success.

- Finally, while investors want strong financial governance and experience, to implement NBS local knowledge and environmental expertise are needed. These skills rarely if ever sit within the same organisation or are mastered by the same person. Governance in this context needs to blend these two crucial components.

Further considerations and conclusion

Lack of finance is often cited as a barrier to action. However substantial obstacles often lie further upstream, preventing projects from becoming financially attractive in the first place.

Four key barriers have consistently emerged from our discussions with professionals in water , finance, and engineering. These barriers are hindering the creation of investible NBS projects, placing them at a disadvantage compared to more traditional solutions before they even get off the ground:

- Costings: NBS are often perceived as being disproportionately expensive. The issue is twofold: grey infrastructure costs are systematically underestimated and NBS costs are overestimated. To address grey infrastructure first, the full range of costs associated with grey infrastructure is not calculated at the outset. This leads to a significant underestimation of the long-term financial implications of grey infrastructure. Comprehensive costs assessments should include: future asset impairment, environmental harm, decommissioning and abandonment costs, costs of system failure and cost of relying on supporting infrastructure. If these costs were fully considered for grey infrastructure, this would level the playing field in terms of costs-benefits analysis. In terms of NBS costs being overestimated, this is a symptom of the way the system is currently skewed towards grey infrastructure. Amongst NBS costs are cited partnership working, use of third-party land and an overly precautionary approach to design. But these are not cost issues per se but rather issues with our current ways of working and our understanding of how NBS function.

- Regulatory status quo: industry regulators tend to favour grey infrastructure due to existing policy and standards. These policy and standards set rigid deadlines and metrics for infrastructure projects to meet. This is understandable to a degree as regulators need certainty of compliance. However, to create a level playing field, policy frameworks and standards must allow for greater flexibility to accommodate NBS. This does not mean a lowering of standards but instead flexibility as to the timeline of those standards being met. Policies should also encourage the incorporation of redundancy within systems to enhance resilience and permit adjustments over time as conditions evolve.

- Optioneering: NBS are often excluded from the decision-making process before commissioning of the infrastructure project has even begun. For NBS to be genuinely considered as viable solutions, there needs to be a shift in asset standards, contract specifications and insurance agreements to allow NBS to be included in the decisionmaking process.

- Risk sharing: a recurring question in relation to NBS is: who can be held accountable if something goes wrong? Unlike grey infrastructure, where accountability can be clearly assigned contractually, nature cannot be sued for failure. Addressing this issue requires innovative approaches, such as tailored insurance products, integrating NBS with conventional infrastructure to share responsibilities, creating accountability agreements and establishing robust conflict resolution mechanisms.

Without addressing these underlying issues, NBS projects cannot compete on a level playing field and are unlikely to attract the necessary financial support to achieve scale and impact.

Collectively these barriers highlight the need for systemic changes in project planning, regulatory frameworks and risk management. Addressing them is necessary but insufficient to mainstream NBS. It is beyond the scope of this workstream to look at these issues in greater detail. Nevertheless, other workstreams within MNbS are exploring these issues further.

Annex 1: How and why NBS do not fit institutional finance

What is the target financial return of the investment?

The return on investment is one of the most significant questions for a potential investor. If there is no strong certainty of receiving a sufficient financial return for the life of their investment, then that investor will not be interested. In the world of finance, return on investment equates to financial return on investment and does not (usually) include other social goods. Institutional investors will want to see robust evidence that the proposed NBS project will be able to deliver the promised financial returns or reductions. Amongst other things, this would require project developers to produce financial statements for the project, cash flow forecasts, detailed financial models, and business plans. This is a high evidential burden for project developers and is usually not built into an NBS project from the outset.

The level of financial return that institutional investors expect depends on various factors, from the specific risk profile of the project to the prevailing economic conditions. However, by way of example, last year the UK Nature Fund targeted a 10-12% internal rate of return on its investment.[12] [13] A new fund being launched by Rebalance Earth is similarly aiming for an internal rate of return of 10%.[14] These levels of return are ambitious and, as a 2023 report from the European Investment Bank notes, current NBS projects "do not usually generate the financial returns that traditional investors can get elsewhere or are unable to compete with the existing financial returns and subsidies on existing uses of the land".[15]

The analysis above regarding financial returns does not apply to all investors. Governments, development banks, and philanthropic organisations do not necessarily require the same levels of financial returns – if any at all – nor do they necessarily demand the same degree of robust financial viability. However, while these actors play a crucial role in supporting NBS, the scale of finance they provide is typically insufficient to drive transformational, systemic-level change. They currently offer specific interventions, often politically or optically driven, but they are not the primary conduit for the large-scale, long-term investment needed to embed NBS within broader economic and environmental systems and will not create a market on their own.

What is the maturity of the investment?

NBS projects can entail significant upfront costs, for example to purchase land, structure the NBS project, and implement the environmental interventions. After this initial outlay of capital, there is often a gap of several years before the projects generate revenue (though this of course depends on the nature of the project). This gap can extend to 10-15 years or even more.

[12] "Internal rate of return" is a financial metric to evaluate the profitability of a potential investment.
[13] https://www.ft.com/content/8a2211e7-bde2-42b1-8a17-dcb59766c209?shareType=nongift. Accessed 11 November 2024.
[14] Determined from discussions with Rebalance Earth on 24 October 2024.
[15] European Investment Bank. (2023). Investing in nature-based solutions, p. 119.

Banks prefer shorter-term (5-7 year) investments with lower risk profiles (i.e. loans). These might play a role in an NBS project but will be insufficient in both scale and maturity to fund everything. Institutional investors, in particular pension funds and insurance companies, do have sufficiently long-term investment horizons, but will require confidence in the liquidity of the asset, as well as some form of financial return or growth early in the project which most NBS will find challenging. Conventional Venture Capital and Private Equity funds have very different investment characteristics which are very unlikely to suit NBS, although "impact" funds may be more accommodating. It is also worth noting the recent rapid growth in socalled Private Debt markets which are by design more orientated to being tailored to specific projects, but this market is as-yet untested for NBS to our knowledge.

What is the scale of the investment?

Most NBS projects are small in terms of transaction size. A Finance Earth report into NBS projects worldwide in 2021 revealed that only 10% of projects achieved levels of finance greater than $100m (see Figure 1). The European Investment Bank report into investment in NBS in 2023 revealed that 72% of projects cover less than 1 km^2 and 81% have investment costs of less than €10 million.[16] Furthermore, the report states that the typical EU-based investment in NBS averages less than €2 million per project.[17]

Figure 1 - Analysis of NBS investment size – share of transaction identified within each investment size range. Source: A Market Review of Nature-Based Solutions, Finance Earth (2021).

In a UK context one of the biggest NBS projects to have completed is the Wyre Natural Flood Management project which attracted roughly £1.5 million. This is a huge achievement given the current scale of investment into NBS but remains a long way off the ticket size needed to attract institutional investors as part of their business-as-usual.

For each potential investment, investors need to incur significant costs to assess the financial viability of the investment. These costs can include commercial due diligence; legal due diligence and advice; specialist environmental advice; research and administrative costs regarding project structuring; ongoing monitoring, reporting and verification; and so on. Legal fees alone can often accrue to the hundreds of thousands of pounds (particularly for large, novel transactions). It only makes financial sense for investors to incur these costs if the actual size of investment is sufficient and if the potential financial returns from the project are large. As NBS neither offer sufficient returns nor at a sufficient scale, investors are not willing to pay the associated transaction costs.

[16] European Investment Bank. (2023). Investing in nature-based solutions, p.3.
[17] European Investment Bank. (2023). Investing in nature-based solutions, p.5.

Aggregation – such as stacking revenue streams for NBS using mechanisms like carbon credits and biodiversity credits – will be familiar to most readers. While this approach may be a helpful starting point for mainstreaming NBS, we argue that it is insufficient to address the core

challenges. Even when NBS interventions (each with their own aggregated revenue streams) are combined across a landscape, they are unlikely to: (1) generate financial returns substantial enough to attract institutional investors; and (2) achieve the scale required (e.g., >£100 million) to justify transaction costs and appeal to large-scale investors.

To provide comfort to investors on each of these points will entail a great deal of forethought, expert advice, and project structuring. While other project types (such as infrastructure and renewable energy) have tried-and-tested structures and processes in place to satisfy each of these concerns, the governance structures of NBS projects are comparatively unsophisticated.

How risky is the investment?

It is a given that any investor will require an investment to fit within its pre-defined risk-reward appetite and, for financially-focused investors, the higher the risk, the higher the necessary reward.

Every project or investment will have its associated risks. However, NBS are more risky than other more established interventions. This is perhaps partly because they have not yet received institutional investment and so the market has not yet developed methods to fully understand or mitigate the risks that are relevant to these types of projects.

The table below details only some of the risks relevant to NBS project The list is not exhaustive. However, it is clear even here that each NBS project carries with it a plethora of risks that must be considered at a very early stage.

Table 4 - The risks relevent to NbS projects

Risk type	Examples
Operational	- How can we ensure cooperation between stakeholders? For example, where an NBS project relies on the involvement of several farmers, how do we ensure all remain committed to the project if e.g. the ongoing involvement in the project becomes financially unviable for one farmer)? - How will cashflows of the project be managed? - If more than one intervention is involved, will they be managed individually or collectively?

Legal	- Are there any land-use considerations for the proposed NBS project? - If carbon credits are being produced by the project, who will own them upon production? - What happens from a legal perspective if the project fails and goes into bankruptcy? - How will risk be allocated between stakeholders? - If investors invest directly into an NBS project, they may expect security (i.e. collateral) over certain assets which they can enforce upon if the project fails – what would a security package look like for an NBS project?
Political/regulatory	- Is the political and regulatory landscape complementary to investment in NBS? And is there sufficient certainty that this landscape will remain constant throughout the life of the investment? Alternatively, could there be a political or regulatory shift which jeopardises the viability of the project?
Environmental	- How to protect NBS projects from natural disasters to which they are more susceptible (namely, flooding or forest fires)? - Are the environmental outcomes sufficiently clear and provable for investors who do not have an environmental background?
Market/economic	- If one of the key revenue streams of the project relies on ecosystem markets, how mature/stable is the market? If the price of a unit/credit drops, will this affect the financial viability of the entire project?

Who is receiving the investment?

When making significant investments, investors will want to be confident that their money will be used and managed effectively. For example, they will want reassuring answers to the following questions:

- Is the entity receiving investment credible and trustworthy? Does it have a credit rating? Is the project being backed or sponsored by a credible entity (e.g. government or a development bank)?
- Do the project managers have the relevant (environmental, financial, regulatory) expertise to ensure: (1) the successful implementation of environmental interventions; and (2) that the projects deliver the promised financial returns? How will these responsibilities be allocated within the project management structure?
- Does the entity receiving the investment have a robust and reliable governance structure in place?
- Is there an adequate framework for the ongoing monitoring, reporting and verification of financial and environmental outcomes?

For further detail on questions that investors will ask of a governance structure, see Section B of this Chapter.

To provide comfort to investors on each of these points will entail a great deal of forethought, expert advice, and project structuring. While other project types (such as infrastructure and renewable energy) have tried-and-tested structures and processes in place to satisfy each of these concerns, the governance structures of NBS projects are comparatively unsophisticated.

Will the project be executed successfully?

Even if all the above barriers are addressed, successfully executing large-scale NBS projects remains a significant challenge. Collaboration among diverse sectors – financial, environmental, governmental, legal, and others – at a scale not seen before will be essential. Moreover, the nascent nature of the NBS sector has led to gaps in knowledge and skills, owing to a relative shortage of completed projects.[18] While these gaps can be addressed through training, knowledge exchange, and cross-sector cooperation, doing so requires time, resources, and a willingness to engage in steep learning curves. Within the

MNbS project, we can navigate these complexities with the support of Ofwat funding, allowing us to build expertise in areas beyond our usual domains. However, we recognise that not all NBS projects have the same opportunity. Many project developers, landowners, and local authorities are already stretched thin, lacking the time or capacity to engage deeply with financial structuring, regulatory navigation, or multi-sector coordination.

[18] European Investment Bank. (2023). Investing in nature-based solutions, p.65.

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