Update Business Models and Roadmaps

A strategic approach to upscaling

Deliverable 5.9

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Abstract (for dissemination, 100 words)	This deliverable aims to bridge the gap between Nature-based Solutions (NbS) project owners and the private sector so to scale private sector investment in NbS. It introduces a refined version of the Investment Framework (IFW), a tool designed to build the capacities of NbS project owners to effectively understand and communicate the value of their projects to financial stakeholders within the private sector. By aligning key performance indicators with corporate reporting requirements and best practices, the IFW aids in developing investment-ready projects. This report aims to bridge the financing gap for NbS by pointing to opportunities to integrate NbS into business practices and supply chains.
Keywords	Upscaling, Business models, Roadmaps, Nature-based Solutions

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Executive Summary

This deliverable, part of RECONECT Work Package 5 (WP5), aims to bridge the gap between Nature-based Solutions (NbS) project owners and the private sector so to scale private sector investment in NbS. A key outcome is a refined version of the Investment Framework (IFW), a practical tool designed to enhance the capacity of NbS project owners to strategically communicate the value of their projects to the private sector.

Within RECONECT, two reports (*Deliverable 5.2* and *Deliverable 5.9*) focus on exploring the business case for NbS. Preliminary work to support the development of both these deliverables includes a literature review on business models for NbS and an assessment of their application to large-scale NbS by applying the *Large-scale NbS Business Model Framework* to RECONECT Demonstrator cases. This groundwork contributed to the development of report *Deliverable 5.2: Governance, Business Models, and Investment Strategies for Nature-based Solutions*, which delved deeper into the relationship between governance, business models, and investment strategies in upscaling NbS. Findings from this report indicate that NbS project owners often lack the capacity to engage the private sector and typically overlook investment sources outside the public sector, perceiving NbS as a public good with no inherent revenue model. To address this challenge, a conceptual version of the Investment Framework was introduced to build capacities among NbS project owners to effectively communicate their project's value to financial sector stakeholders.

Building on the outputs of *Deliverable 5.2* this report*, Deliverable 5.9: Business Models and Roadmaps for Nature-based Solutions*, examines how the private sector can integrate NbS into supply chains and business operations. By investing in NbS, private companies can mitigate risks, demonstrate a commitment to sustainable operations, reduce environmental impacts, and lower greenhouse gas emissions. This approach is facilitated by governance mechanisms that incentivize private sector investments in initiatives that advance environmental, social, and governance (ESG).

To strengthen the capacity of NbS project owners to engage with the private sector, this report introduces a detailed version of the IFW. The detailed version of the IFW integrates learnings from interviews with NbS project owners, financial sector stakeholders, and the literature review. The IFW can be used to help NBS project owners frame their project in relationship to drivers of private sector investment. The tool features key performance indicators (KPIs) that connect corporate reporting requirements under EU regulations with best practices for monitoring and reporting on NbS implementation as defined by RECONECT. This tool aims to help NbS project owners develop "investment-ready" projects, thereby addressing the financing gap for NbS.

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Acronyms

BM	Business Model
CBA	Cost-Benefit Analysis
CSRD	Corporate Sustainability Reporting Directive
DA	Demonstrator A
DB	Demonstrator B
DNSH	Do no significant harm
EC	European Commission
EI	Expected Impact
ESG	Environmental, Social, Governance
ESRS	European Sustainability Reporting Standards
EU	European Union
GHG	Greenhouse gasses
GRI	Global Reporting Initiative
IFW	Investment Framework
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
KPIs	Key Performance Indicators
MEL	Monitoring, Evaluation and Learning
NbS	Nature-Based Solution
NFRD	Non-financial Reporting Directive
NGO	Non-governmental Organization
NPV	Net present value
MEL	Monitoring, Evaluation, and Learning
SFDR	Sustainable Finance Disclosure Regulation

TCCF	The Coca-Cola Foundation
UNEP	United Nations Environment Programme
WP	Work Package
WWF	World Wildlife Fund

Glossary of Key Terms

Term	Explanation
Business model	A business model illustrates which values a project expect to deliver, to whom and through which activities. It also highlights key partners and beneficiaries.
Collaborator	Cases where large-scale NbS are to be developed and where proof-of-concepts and methodologies developed within RECONECT are tested.
Corporate Sustainability Reporting Directive (CSRD)	Reporting directive for large and listed companies on sustainability risks and impacts
Cost-benefit analysis (CBA)	Evaluation method that compares the costs and benefits of a project in monetary terms, and often used as documentation for a business model.
Cost-benefit model	A business model building on generating the revenue through capturing a portion of operational or capital cost savings to beneficiaries (e.g., reducing storm damage costs to coastal businesses by investing in natural systems that protect coastlines), typically assessed in a cost-benefit analysis (Finance Earth, 2021).
Demonstrator	Cases of large-scale NbS in Europe that provide proof-of-concept to the knowledge base of NbS developed through RECONECT.
EU Taxonomy for Sustainable Activities	The EU Taxonomy allows financial and non-financial companies to share a common definition of economic activities that can be considered environmentally sustainable (European Commission, n.d.).
European Sustainability Reporting Standards (ESRS)	The ESRS provides guidelines to standardize sustainability reporting for companies within the European Union
Financial Sector Stakeholders	A financial sector stakeholder is any individual, group, or organization that has an interest in the financial industry, its operations, and outcomes. These stakeholders can influence or be influenced by financial institutions and markets.
Hydro-meteorological risk	Natural phenomenon related to water and caused by atmospheric pressures and extreme weather conditions which result in floods, erosion, and/or droughts.
Large-scale NbS	NbS located either in rural areas or in combination with urban areas, as they adopt a larger regional system approach comprising of river basins and coastal landscapes. What makes an NbS large-scale is its system approach, holistically connecting multiple water features instead of being a standalone, separate solution.
Nature-Based Solution (NbS)	Collective term for innovative solutions to solve different types of societal and environmental challenges, based on natural processes and ecosystems.
NbS Project Owner	A Nature-Based Solutions (NBS) project owner refers to municipalities, government agencies, utilities,

	landowner associations, and non-governmental organizations, responsible for the initiation, planning, execution, and management of a project that utilizes NbS to address environmental, social, or economic challenges.
Operation and maintenance (O&M)	The main goal of maintenance is to preserve (maintain) or improve a defined target state of the asset in order to ensure desired functionality (here to mitigate hydrometeorological risks) over the complete operating life of the asset (Deliverable 1.4).
Private Sector Stakeholder	All entities and individuals, excluding public officials, that affects or can be affected by the implementation of a project.
Roadmap	A roadmap is strategic plan that outlines the key activities needed to obtain a set of objectives. In this deliverable, roadmaps will also include/map the responsible and involved stakeholders.
Sale model	A business model based on commodity and service sales, i.e., generating the revenue through the sale of commodities (such as timber, agricultural and water sectors), ecosystem services (e.g., carbon credits) and other services generated by NbS (including ecotourism offerings, monetization through access/entry fees, and rental income) (Finance Earth, 2021).
Supply chain	The supply chain is the interconnected journey that raw materials, components, and goods take before their assembly and sale to customers.
Sustainable Finance Disclosure Regulation (SFDR)	The SFDR introduces disclosure requirements for financial market participants and financial advisors selling sustainable financial products.
Value capture	Outlines how the value proposition will be captured through quantification and monetization (where possible) and is an important component of an attractive business model.
Value proposition	The values that the project aims to delivers and this the central component of any business model.

1 Introduction

1.1 Overview of RECONECT

This report was developed as part of the European Commission's (EC) Horizon 2020 program RECONECT – Regenerating Ecosystems with nature-based solutions (NbS) for hydro-meteorological risk reduction (September 2018 – August 2024).

RECONECT aims to rapidly enhance the European reference framework on Nature-based Solutions (NbS) for hydro-meteorological risk reduction by demonstrating, referencing, upscaling and exploiting large-scale NbS in rural and natural areas. NbS are interventions that use natural processes and ecosystems to address diverse societal and environmental challenges. It is considered an "umbrella concept" covering a range of ecosystem-base approaches to solve different issues simultaneously. The *Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (IPBES) and the *Intergovernmental Panel on Climate Change* (IPCC) both acknowledge the significance of Nature-based Solutions in tackling the interconnected challenges of biodiversity loss and climate change (European Environment Agency, 2021, 2023a; Jones et al., 2015). Rather than using large structural measures, i.e., traditional grey infrastructure such as dikes and pumps, NbS work with existing landscape features to provide flexible and cost-effective solutions to societal challenges. NbS also provides a wide range of co-benefits including health promotion, economic development opportunities, beautification, and enhanced public space (European Environment Agency, 2021).

In an era of Europe's natural capital being under increased pressure, RECONECT aims to create a new culture of co-creation of land-use planning through upscaling NbS that link the reduction of hydro-meteorological risk with local and regional development objectives in a sustainable and financially viable way. To do this, RECONECT draws upon a network of demonstration cases that cover a wide and diverse range of local conditions, geographic characteristics, institutional/governance structures, and socio-cultural settings to successfully upscale NbS throughout Europe and beyond (RECONECT, 2018).

1.2 Purpose of report

As part of RECONECT, two reports (*Deliverable 5.2* and *Deliverable D5.9*) are dedicated to exploring the business case for NbS. This deliverable, part of RECONECT Work Package 5 (WP5), seeks to bridge the gap between NbS project owners and the private sector by identifying opportunities to scale investment in NbS. This report, *D5.9 - Business Models and Roadmaps for Nature-based Solutions*, builds off *Deliverable 5.2 - Governance, Business Models, and Investment Strategies for Nature-based Solutions*. As a starting point, this report explores how the private sector can internalize NbS as part of supply chains and business operations. By investing in NbS, private companies can reduce risk while demonstrating commitment to sustainable business operations, lessoning environmental impacts, and reducing greenhouse gas emissions (Brill et al., 2023a). This approach is in part facilitated by governance mechanisms that incentivize investment in activities that advance environment, social, and governance (ESG) initiatives. To strengthen the potential for private sector partnerships with NbS project owners, this report presents a detailed version of the Investment Framework (IFW) that can be used to engage the private sector as an investment partner, particularly when private sector actors and NbS project owners are operating within a shared watershed.

The revised version of the IFW includes action-oriented guidance that project owners, including municipalities, landowner associations, non-governmental organizations, and research institutes, can use to frame their project in a way that aligns with the interest of the

private sector. This tool also includes a set of key performance indicators (KPIs) that bridge corporate reporting requirements under EU regulations and best practices for monitoring and reporting on the implementation of NbS as defined by RECONECT (Annex 3). The purpose of this is to support NbS project owners develop “investment ready” projects, thus contributing to closing the “financing / funding gap” for NbS.

1.3 Methodology

This report was developed through a review of work previously completed as part of RECONECT, a literature review, and analysis of legislative and policy documents. Findings from this process were then shared with an ESG Consultant with expertise in the EU taxonomy for sustainable activities (EU Taxonomy) for further validation and feedback.

Review of RECONECT activities and reports:

The report builds from work previously completed as part of RECONECT. This includes a preliminary assessment of how business model frameworks can be utilized by NbS project owners through the development and application of the *Large-scale NbS Business Model Framework (BMF)* (Annex 1). The BMF was tested with NbS project owners (RECONECT Demonstrator cases) to understand its ability to capture key information for business case development. This work formed the foundation for the development of the report *D5.2 - Governance, Business Models, and Investment Strategies for Nature-based Solutions*, which further explored the relationship between governance, business models, and investment strategies in upscaling NbS. The report *D5.2 - Governance, Business Models, and Investment Strategies for Nature-based Solutions* found that NbS project owners often lack the capacity to engage the private sector and, in some cases, did not consider investment sources outside of the public sector, often citing the belief that NbS is a public good and therefore lacks an inherent revenue model. Moreover, this report also found that monitoring and reporting on the performance of the NbS is key to support investment decision making. As part of *Deliverable 5.2*, a conceptual version of the *Investment Framework* (IFW) was introduced as a tool to build capacity among NbS project owners to better communicate the value of their project to financial sector stakeholders. As part of this report, the conceptual version of the IFW was reviewed and updated into the detailed version presented in section 3.3.

Literature Review:

In addition to the review of work completed as part of RECONECT, a literature review was conducted to compile evidence on what drives the private sector to invest in environment, social, and governance (ESG) initiatives. The purpose of this was to identify opportunities for the private sector to invest in NbS, including sectors best positioned to adopt NbS as part of their business model. The literature review also focused on understanding the landscape of non-financial reporting, including looking at how non-financial reporting requirements have nudged companies to invest in more sustainable business practises.

Policy and Legislative Analysis:

One of the primary goals of this report is to develop more detailed guidance on using the IFW. As part of this, new guidance, including a set of key performance indicators (KPIs) that bridge the gap between NbS project owners and the financial sector, is introduced. To develop the content for the IFW, documents, such as the Corporate Sustainability Reporting Directive (CSRD), European Sustainability Reporting Standards (ESRS), Sustainable Finance Disclosure Regulation (SFDR), and EU Taxonomy for Sustainable Activities (EU Taxonomy) were reviewed to understand both thematic areas and the specific details of what non-financial information companies are required to report on (Figure 1). This analysis

revealed how the regulations work together to advance the objectives of the European Green Deal.

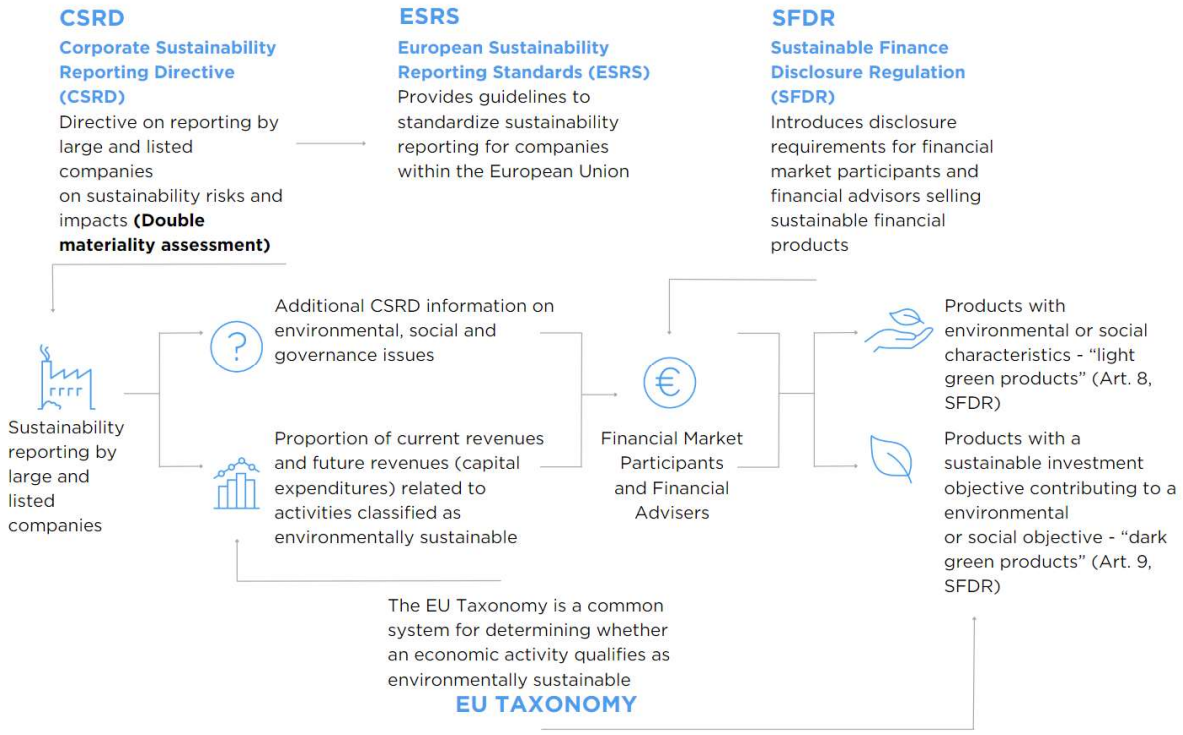


Figure 1 Overview of the relationship between the EU Taxonomy, CSRD, SFDR, and ESRS (adapted from NordESG by Ramboll (2024)).

The EU Taxonomy is a classification system established by the European Commission to identify which economic activities are environmentally sustainable. It aims to provide a clear and consistent framework to help investors, companies, and policymakers make informed decisions. The CSRD defines which companies are required to report and the ESRS provides guidance on what companies must report. Financial sector stakeholders who fall under the SFDR must disclose information when selling sustainable financial products. Information included under the SFDR comes from the non-financial reporting of companies who must report under the CSRD and is therefore guided by the ESRS (European Commission, 2024c).

Through this analysis, it was found that the business models and supply chains of companies that fall under the CSRD are more likely to both impact and be impacted by climate change and the environment than companies that fall under the SFDR. Therefore, we focused our detailed analysis on the CSRD and ESRS. Both documents were analyzed in detail to understand thematic alignment with the goals and benefits of NbS. Specifically, an analysis was conducted to understand how the implementation of NbS can help companies report positive outcomes against the CSRD and align with the EU Taxonomy. The results of this analysis were then compared with the KPIs presented in the Nature-Based Solution Key Performance Indicator Selection Tool (*NbS-KPI Selection Tool*)[1] developed by IHE as part of RECONECT. The purpose of this was to identify any gaps between the KPIs used by the financial sector and the ones presented in the *NbS-KPI Selection Tool*. As part of this

[1] *The NbS-KPI Selection Tool was developed by IHE to support NbS project owners select and define indicators relevant to their NbS case. The tool includes 91 indicators across three categories (water, nature, and people) and was developed as part of D2.3 – Scope of Works for Demonstrators A and B.*

analysis, a series of indicators that hold relevance to both financial sector stakeholders and NbS project owners are presented.

Finally, learnings from the literature review, review of RECONECT deliverables and activities, analysis of indicators, and interview with the ESG consultant were used to develop a detailed version of the IFW. The version of the IFW presented in this report focuses on usability and offers clear guidance for project owners.

1.4 Target Audience

This deliverable is intended for public distribution and use. It is designed to bridge the gap between project owners and financial sector stakeholders and is therefore targeted at NbS project owners (municipalities, government agencies, utilities, landowner associations, and non-governmental organizations), financial sector stakeholders, and policy makers. Specifically, from this deliverable project owners gain an understanding of what motivates financial sector stakeholders to invest in NbS and how they can better position their projects to attract investment. At the same time, financiers are sensitized to the needs and contexts of NbS project owners, thereby contributing to closing the knowledge gap between financial sector stakeholders and NbS project owners. Finally, the findings and recommendations of this deliverable point to the need for governance mechanisms to support the upscaling of NbS, therefore the content of this report is also relevant to policy makers and politicians working at the local, national, and regional level.

2 Investing in Nature: Private Sector Drivers

2.1 The NbS Funding Gap

NbS hold significant potential for adapting to and mitigating climate change impacts and other environmental and societal challenges (European Environment Agency, 2021, 2023a; IUCN, 2016, 2021). Investing in NbS offers a pathway to risk reduction, restoring degraded ecosystems, and improving and maintaining water quality and quantity all while offering additional benefits such as carbon sequestration, biodiversity enhancement, and increased recreational space (European Environment Agency, 2021, 2023a; IUCN, 2016, 2021). However, there is currently not enough investment in NbS to reach globally agreed targets on biodiversity protection, conservation, and climate change adaption (UNEP, 2023). This is referred to as the "NbS Funding Gap". The UNEP report *State of Finance for Nature* (2023) found that annual investment in NbS needs to almost triple from US$200 billion to US$542 billion by 2030 and then quadruple to US$737 billion by 2050 to meet global targets related to climate, biodiversity, and land degradation. Currently, the majority of NbS are funded through the public sector (European Environment Agency, 2023b; European Investment Bank, 2023). This is largely driven by the fact that NbS do not have an inherent revenue model and that the benefits derived from large-scale NbS are largely considered to be a public good and are therefore not easily monetized (European Investment Bank, 2023). Public institutions, however, often lack the resources and/or political will to fund NbS at the scale required to address the climate crisis and associated societal challenges (Droste et al., 2017; European Investment Bank, 2023; Green Purposes Company & Finance Earth, 2021; Papari et al., 2024; UNEP, 2021).

At the same time, public and private sector investment in sectors and activities that harm the environment, such as oil and gas, conventional agriculture, transport, and real estate, continue to outpace investment in nature-positive activities (UNEP, 2023). High levels of investment in "nature-negative" activities ultimately slows progress towards reaching climate and sustainability related targets. Redirecting investment from nature-negative activities towards more sustainable practices, could play a pivotal role in fostering a more balanced relationship between economic activities and nature-positive actions (UNEP, 2023).

Integrating NbS into the business models and supply chains of private sector stakeholder is a key opportunity for upscaling NbS. To date, the impact of global supply chains on the environment has largely been negative. However, supply chains are increasingly vulnerable to climate change impacts, including flooding, large storms, and extreme heat (European Environment Agency, 2023c, 2024). In Europe, approximately 72% of companies (corresponding to around three million individual companies) are highly dependent on at least one ecosystem service (European Environment Agency, 2023b). Climate change impacts are already causing disruptions to global supply chains. In recent years, drought, flooding, wildfires, and major storms have led to delays and shortages of goods, impacting consumer markets in Europe (European Environment Agency, 2023b). Biodiversity loss and the degradation of ecosystems is likely to amplify climate-related risks. To safeguard supply chains, companies are both increasingly motivated and required to assess, report on, and then invest in risk reduction measures, including integrated watershed management, climate mitigation, and adaptation measures (Brill et al., 2023a).

According to the *European Climate and Risk Assessment* (European Environment Agency, 2024) business-led adaptation, including through investment into Nature-based Solutions, is currently limited due to low climate risk awareness and lack of risk data. Despite this, there is significant potential for NbS to be integrated into the climate adaptation strategies of companies, particularly for companies that have land sector impacts within their value chain.

Since the benefits of NbS are scalable to the watershed or landscape level, there is an opportunity for different types of stakeholders to benefit (Brill et al., 2023a). Developing partnerships between governments, the private sector, community groups, or conservation organizations to implement and co-manage NbS is a key opportunity for attracting private sector finance to NbS.

2.2 Sustainability reporting as a driver for NbS investment

Non-Financial Reporting Requirements
Governance mechanisms, such as regulations, policies, plans, and incentive programs that mention and prioritize NbS are essential for upscaling investment in NbS. In other words, upscaling private sector investment in NbS necessitates a regulatory environment where companies are required to integrate nature-positive activities throughout their business activities and supply chains (Brill et al., 2023b; The Nature Conservatory, 2020; United Nations Environment Program, 2023). This can be achieved through policies and actions that de-risk and incentivize private sector investment in solutions that have a net benefit for the environment (Brill et al., 2023b; United Nations Environment Program, 2023). Mandatory non-financial disclosure reporting requirements have the potential to incentivize private sector investment in NbS as companies must report on supply chain and operational risks, environmental and social impacts, and outline actions taken to mitigate negative externalities. As a result, there is an opportunity to engage the private sector as an active stakeholder in the planning and implementation of NbS.

In the early 2000s, a set of non-financial indicators were introduced to measure a company's wider social and environmental impact (Nielsen, 2023). Environment, social, and governance (ESG) reporting standards began to gain traction as a key tool for understanding the non-financial impact of a company. The Global Reporting Initiative (GRI), launched in 2000, aimed to create a standardized global framework for sustainability reporting thereby giving businesses and other organization a common language to communicate impacts. This coincided with a wider awareness of the value of linking business practices and strategies to positive environmental and societal outcomes.

In 2014, the European Commission introduced Directive 2014/95/EU on the disclosure of nonfinancial and diversity information (the 'Non-financial Reporting Directive' – NFRD). This directive required all large companies operating in the EU to disclose non-financial statement in their annual reports, including information on environmental protection, social responsibility, human rights, diversity on boards, and anti-corruption and bribery. The Directive applied to companies with more than 500 employees in the EU; international standards such as the GRI were recommended to guide reporting.

The EU Taxonomy and Non-Financial Reporting Requirements

In recent years, the European Union (EU) has undertaken a series of policy initiatives aimed at facilitating the transition to a sustainable economy, with the European Green Deal (2019) as its cornerstone. The Green Deal is a comprehensive initiative that supports efforts to decarbonize Europe's economy and build resilience across sectors to climate change impacts (European Commission, 2024c).

Recognizing the key role of the financial system, the Green Deal underscores the potential of sustainable finance in addressing climate-related challenges by redirecting private finance towards sustainable investments. *The Action Plan: Financing Sustainable Growth* (2018) emphasizes environmental, social, and governance (ESG) factors in investment decisions, thus encouraging sustainable and long-term investments. These considerations encompass climate change mitigation and adaptation, as well as broader environmental issues like pollution, water management, and associated disaster risks.

In 2020, the European Commission introduced the EU Taxonomy Regulation (European Commission, 2024a). The Taxonomy is a cornerstone of the EU's efforts to create a more sustainable economy as it establishes a classification system for environmentally sustainable economic activities with the goal of providing clarity and transparency to financial market participants. A key objective of the EU Taxonomy is to protect consumers and financial market participants from misleading claims or false impressions on a company's environmental impact or benefit (European Commission, 2024b). The Taxonomy also creates a shared language across the EU of what constitutes a sustainable economic activity (European Commission, 2024b). To qualify as sustainable according to the Taxonomy, an economic activity is screened against six environmental objectives. Two of these objectives are related to climate, focusing on climate mitigation and adaptation. The remaining four objectives address the sustainable use and protection of water and marine resources, transitioning to a circular economy, pollution prevention and control, and the protection and restoration of biodiversity and ecosystems (European Commission, 2023d). To be Taxonomy aligned, companies must also:

1. Substantially contribute to one or more of the six environmental objectives
2. Demonstrate that the activity does not significantly harm any of the other objectives ("do no significant harm - DNSH"
3. Meet minimum social safeguards.

In 2021, the Corporate Sustainability Reporting Directive (CSRD) (2021) was introduced as a regulatory tool that requires companies to report on their sustainability performance against the taxonomy (replacing the NFRD). The CSRD expands the scope of the NFRD to include all listed companies and elevates non-financial information to the same stature of financial reporting. The CSRD is accompanied by the European Sustainability Reporting Standards (ESRS). The Standards specify the information an organization must disclose about material dependencies and impacts (Nielsen, 2023). According to the ESRS, the non-financial report must describe "*the key elements of the undertaking's general strategy that relate to or affect sustainability matters and the key elements of the undertaking's business model and value chain to provide an understanding of its exposure to impacts, risks and opportunities and where they originate*". In other words, the ESRD recognizes that climate change presents a significant business risk to companies working across complex global supply chains and at the same time, supply chain operations have an impact on the socio-ecological systems in which they are embedded. Under the EU Taxonomy, the concept of "double materiality" captures how companies are both impacted and impact the climate, environment, and society.

Large-scale Nature-based solutions as a sustainable economic activity under disaster risk management

Under the EU Taxonomy, investment in large-scale NbS is described as a sustainable economic activity under disaster risk management, specifically under section 3.1 *"Nature-based solutions for flood and drought risk prevention and protection*". Activities include planning, building, expanding, and maintaining large-scale nature-based projects to manage floods, droughts, and coastal, transitional, or inland aquatic ecosystems. These projects aim to prevent and protect against floods or droughts while improving natural water retention, biodiversity, and water quality.

Eligible large-scale NbS projects include "river or lake measures", "wetland measures", "coastal measures" and "river basin-wide management measures". To qualify as a sustainable economic activity under the Taxonomy, the project must demonstrate that it substantially contributes to the environmental objective of *"sustainable use and protection of water and marine resources"*. The following technical screening criteria provide clear

guidance on how a project can contribute to the *"sustainable use and protection of water and marine resources*".

Criterion 1 states that the project should address flood and drought risks at the river basin scale and importantly, must be quantified and measurable, allowing progress to be tracked and evaluated based on concrete metrics or indicators. This criterion is crucial as it requires NbS owners to measure the impact and effectiveness of their projects. The absence of standardized metrics for measuring the impact of NbS is frequently cited as a major barrier to scalability (European Environment Agency, 2023b; European Investment Bank, 2020, 2023; TNFD, 2023). It's essential for investors to be able to evaluate the impact and environmental, social, and governance values created by these projects.

For **criterion 2**, the focus is on identifying and addressing risks to the environment, such as water pollution and pressure on water sources, to ensure clean water, healthy ecosystems and preserved marine environment in accordance with relevant directives from the European Union. It emphasizes working together with stakeholders such as local communities and other affected parties.

Criterion 3 refers to a NbS project involving nature restoration or conservation, which demonstrates specific ecosystem co-benefits. These benefits contribute to improving water quality and meeting environmental targets outlined in relevant EU directives, as well as the nature restoration and conservation targets set in the EU's Biodiversity Strategy for 2030. The project should establish clear and binding goals for nature restoration or conservation over a specified time, along with measures detailing how these targets will be achieved. It's important to involve local communities early in the planning phase.

Additionally, the project should adhere to the global NbS standard which based on self-assessment, helps project owners at various stages of the project, such as designing new NbS, expanding pilot projects, and evaluating past and future proposals. It's an important criterion as it promotes an assessment of how well a project aligns with best practices.

Criterion 4 focuses on monitoring and evaluation to assess the performance of the NbS solution. This includes monitoring to determine if the solution is improving the condition of the water body, ensuring it meets conservation and restoration goals, and adapting to climate change impacts over time. The monitoring plan should be regularly reviewed and integrated into broader river basin management plans, which also address strategies for handling droughts and floods when they occur. This aspect is crucial for establishing clear benchmarks over time and for transparently communicating progress and results to investors, thereby building investor confidence.

Under the Taxonomy, NbS are considered a sustainable economic activity. Since companies are looking to de-risk supply chains and strengthen commitments to ESG, there is an opportunity to integrate NbS into business operations. For example, companies may incorporate NbS into their long-term strategic plan by identifying opportunities where solutions align with their core business activities. For instance, a company reliant on a particular watershed may invest in a project that ensures a stable and clean water supply for its operations. Therefore, there is an opportunity for NbS project owners (municipalities, non-governmental organizations, researchers, etc.) to partner with companies operating in their jurisdiction. The case studies below illustrate examples of corporations partnering with local stakeholders to implement NbS to enhance supply chain and watershed resilience.

Private investors financing NbS: A Case Study from the Chao Phraya River, Thailand

The Rangsit Community, located in the Nong Suea district of Pathum Thani Province in central Thailand, relies on the Rangsit irrigation canal, supplied by the lower Chao Phraya River Basin, for their water supply. Although the community avoided major damage during the 2011 flood thanks to its canal system and dike, future floods and heavy rainfall pose a risk if the 100-year-old canal system is not updated. The population in the area mainly consists of farmers who are already vulnerable to extreme climate events like the severe drought of 2019-2020.

To address these challenges, the area requires interventions for water conservation, recycling, and soil erosion prevention. Key NbS interventions implemented in the area are:

- Retention ponds
- Detention basins
- Restoration of nature infiltration to groundwater
- Floodplain excavation/ enlargement/restoration and deepening of water bodies.

The NbS interventions have proven beneficial in protecting agricultural lands from floods and droughts, enhancing soil quality, and improving crop yields and market opportunities for farmers. The economic benefits of the intervention attracted investment from the private sector. Coca-Cola, which owns a factory near one of the project sites and relies on water from the Chao Phraya River Basin, decided to invest in NbS to ensure the sustainability of its supply chain. Additionally, Coca-Cola can monitor and report on the NbS benefits to build a sustainable brand image and meet sustainability compliance requirements (The Nature Conservancy, Denkstatt, Pacific Institute, & WWF, 2024; *Deliverable 5.2: Governance,*

Business Models, and Investment Strategies for Large-Scale Nature-Based Solutions, Annex C).

Water Conservation Strategies in Agriculture: A Case Study from Konya Province, Turkey

Source: Adobe Stock

The Konya Province in Central Anatolia, Turkey, faces severe water stress, aridity, and desertification. Funded by The Coca-Cola Foundation (TCCF) and implemented by the Doğa Koruma Merkezi (Nature Conservation Centre), the project addresses these challenges by enhancing soil health and moisture holding capacity.

Key NbS activities include:

- Planting vegetation buffers,
- Restoring/improving soil health,
- Restoring/Stabilizing/improving substrates.

These interventions aim to reduce wind erosion, increase soil productivity, and mitigate soil salinization.

Over 10 years, the project has been valued to return 1.1 times the original investment (with variations of 1.0 and 1.4 under different valuation methods). The investments will contribute to improve water quantity, carbon reduction, improve biodiversity, spread awareness, and improve yields across farmers (The Nature Conservancy, denkstatt, Pacific Institute, & WWF, 2024).

Wetland Restoration and increase of water availability: A Case Study from Laos and China

Water resources are under extreme pressure from over-abstraction, pollution, climate change impacts and the rapid loss of freshwater ecosystems and biodiversity. Nearly two billion people face severe water scarcity, prompting Carlsberg Group and WWF to collaborate on projects to restore wetland ecosystems and enhance water availability in four critical locations in China and Laos.

The selected regions are strategically important to Carlsberg Group as the four breweries located in the areas are experiencing significant water risks, such as declining water quality and deteriorating ecosystem services. These project areas are equally important for WWF, as they are situated in the Yangtze River basin and the Mekong River basin. They are two priority ecoregions which support hundreds of millions of people and are rich in freshwater biodiversity. Key NbS activities include:

- Improving the wetland landscape,
- Enhancing biodiversity by improving the black-necked crane habitat,
- Purifying wastewater from aquaculture,
- Improving aquatic flora conditions.

These interventions, besides providing benefits to the area, will work to replenish 100% of the water consumption by the four Carlsberg Group breweries targeted in the partnership, contributing to Carlsberg's broader sustainability targets (Carlsberg Group, 2024).

3 Pathways for engaging the private sector: Opportunities for NbS Project Owners

3.1 The Business Case for NbS

There is growing interest in developing a strong business case for NbS. In recent years, the EU has invested in developing the business case for NbS through various initiatives and research projects (European Comission, 2020; European Comission, 2020; European Comission, 2021a; European Comission, 2021b). Table 1 provides an overview of some of the EU research projects on NbS.

Table 1: Overview of EU funded projects with a focus on developing business models for NbS

Project	Objective	Funding	Dates
Connecting Nature	To promote large-scale implementation of NbS in urban settings	Horizon 2020	2017-2022
Naturvation	To upscale the use of urban NbS and foster innovation in that field	Horizon 2020	2016-2021
NAIAD	To operationalize the insurance value of ecosystems for water-related risk mitigation, by developing and testing concepts, tools and applications on nine NbS demo sites across Europe. To demonstrate NbS as technically sound and financially viable option for investors at local level and higher and especially for the insurance sector.	Horizon 2020	2016-2020
ThinkNature	To develop a platform to support the understanding and the promotion of NbS	Horizon 2020	2016-2019
GREEN	To foster innovation in methods, tools, and solutions to appropriately promote the role of NbS for Disaster Risk Resilience and Climate Change Adaptation.	European Commission	2017-2018

These projects have focused on developing tools, knowledge, and resources to upscale NbS. While this work has contributed to the knowledge base on the application of business models for NbS, attracting investment in NbS remains a significant challenge. The project *Connecting Nature* identified several common barriers hindering investment in NbS. Firstly, sustained pressure on public sector funding can limit investment in climate mitigation and adaptation projects. Secondly, the unclear return on investments and the lack of widely accepted indicators often discourages financial institutions from investing in NbS. Additionally, there is a knowledge gaps around financial and business models within environmental planning departments. Finally, compared to traditional grey infrastructure, NbS are more complex to maintain and monitor, adding another layer of difficulty and risk.

To address these challenges various frameworks and tools have emerged from EU-funded projects. For instance, the *Naturvation* project developed a catalogue of business models to help stakeholders identify values created by NbS and select suitable models for upscaling (Toxopeus & Polzin, 2017). Similarly, the *NAIAD* project introduced the Five Cases approach for developing robust business models, encompassing strategic, economic, commercial, financial and management aspects (Altamirano, 2021).

Additionally, projects like *Connecting Nature* and *ThinkNature* have adapted business model canvases to include specific dimensions such as governance and key beneficiaries,

reflecting the unique aspects of NbS. These tools aim to facilitate stakeholder engagement and ensure the long-term sustainable financing of NbS.

Overall, these EU initiatives underscore the importance of business models in supporting NbS by engaging public, private and community stakeholders. These models and roadmaps play a critical role in closing the NbS funding gap by looking beyond public sector funding and leveraging private sector interest and investment in sustainable NbS projects (Mayor, 2021).

3.2 Contributions from RECONECT: The large-scale NbS business model framework and the Investment Framework

Within RECONECT, two tools have been developed to provide a platform for NbS project owners to position themselves in the landscape of NbS innovation and attract investments: *The large-scale NbS Business Model Framework* and the *Investment Framework.*

The *NbS Business Model Framework (Annex 1)* was developed as part of the preliminary work for this deliverable. It was developed through a literature review of EU funded projects related to the business case for NbS and was then tested with RECONECT demonstrator cases. *The Large-scale NbS Business Model Framework* focuses on two components: the EU Taxonomy and the quantification and monetisation of the value proposition to improve access to funding. It suggests a combined approach linking sales and cost-benefit models to captured values, thus attracting diverse investments. Key steps include setting ambitious objectives aligned with the EU Taxonomy, identifying key activities and partners using the business model canvas, and quantifying and monetizing objectives, and performing a cost-benefit analysis. The roadmap complements the business model canvas by providing a strategic plan that outlines the key activities needed to achieve the set objectives. It adds another layer of analysis, focusing on the lifecycle outcomes of the NbS project.

Deliverable 5.2: Governance, Business Models, and Investment Strategies for Large-Scale Nature-Based Solutions builds upon this work by adapting the business model canvas to develop a conceptual version of the Investment Framework (IFW) (Annex 2). The IFW is a tool to support NbS project owners to extract and communicate key information to the private sector. The IFW is designed for the planning phase to help project owners look beyond traditional government budgets and effectively communicate a project's value proposition to financial sector stakeholders.

The IFW, as presented in *Deliverable 5.2*, builds on the *Business Model Canvas* by adding the categories “governance” and “investment strategies”. In the IFW, governance refers to national, regional, and local legislation, plans, or strategies that enable the implementation of NbS. Investment Strategies refers to how capital is leveraged to implement a NbS and accounts for financial risks, and the investment tools utilized by different financial sector stakeholders. The purpose of these additions is to offer a comprehensive overview of the project's value proposition, stakeholders, and existing national policies that encourage investment in NbS. Although the IFW will not directly result in investment, it can assist project owners in identifying partners beyond the public sector and framing the project to align with the needs of various financial sector stakeholders.

This deliverable presents the detailed version of the IFW based on the results of a comprehensive literature review, interviews with NbS project owners and financial sector stakeholders, and a review of RECONECT deliverables. The detailed version of the IFW introduces an enhanced tool designed to make NbS more appealing to private investors and to assist NbS project owners in effectively communicating their project's value. The IFW helps project owners frame their projects in relation to private sector investment drivers and includes KPIs that align corporate reporting requirements under EU regulations with

RECONECT's best practices for monitoring and reporting on NbS implementation. Section 3.3 describes in more detail the updates to the IFW and its application, while Figure 2 illustrates the evolution of the IFW, from the initial business model canvas to the final version presented in this deliverable.

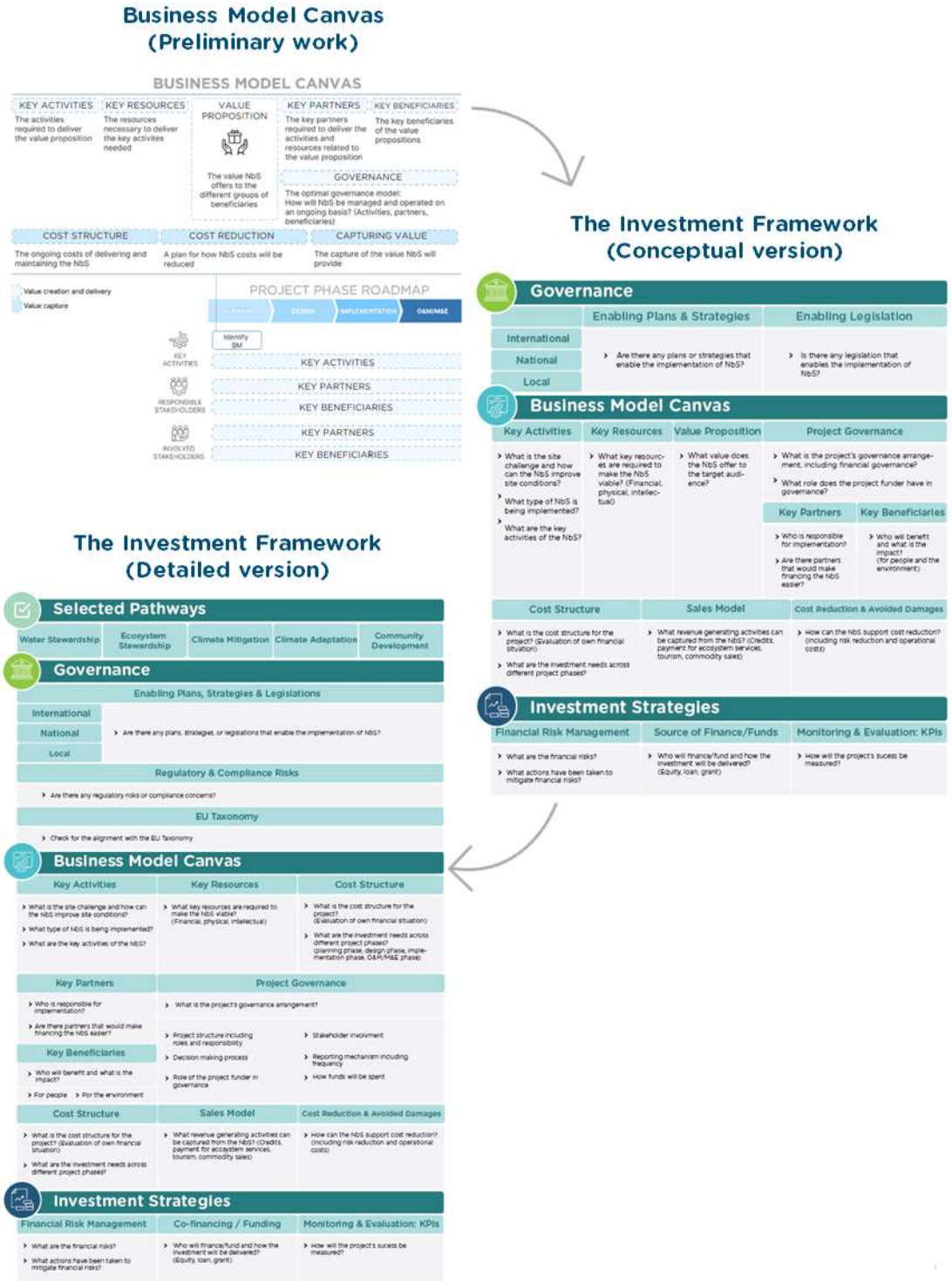


Figure 2 The evolution of the Investment Framework

3.3 How to use the Investment Framework

One of the key findings from the report *D5.2: Governance, Business Models, and Investment Strategies* is that many NbS project owners do not have the capacity to engage the private sector as a potential investor or co-investor. The *Investment Framework* emerged as a tool to support NbS project owners better communicate the value of their project to different financial sector stakeholders.

As part of this deliverable, we reviewed the contents of the conceptual IFW against literature on corporate social responsibility, supply chain resilience, and examples of good practices of utilizing NbS as part of corporate strategy. Through this work, we found that there is a significant opportunity for NbS to be integrated into the business practices and supply chains of companies exposed to climate-change related risks and who are reliant on ecosystem services for business operations. Despite this opportunity, there is still a significant gap between NbS project owners, typically local authorities, non-governmental organizations, utilities, or researchers, and the private sector. To address this gap, we have revised the IFW to better support NbS project owners in communicating the value of their project to private sector stakeholders, with a particular focus on companies that may be operating within a shared watershed. Through this work, we hope to contribute to the development of public-private partnerships for the implementation of NbS within corporate supply chains.

To aid NbS project owners in developing "investment ready" projects, we present a series of key performance indicators (KPIs) that can be used to monitor and measure the effectiveness of the NbS (Annex 3).

One of the findings from the report *Governance, Business Models, and Investment Strategies* (D5.2) is that monitoring and reporting on the impacts and benefits of NbS is a critical component of attracting investment from the private sector. This finding is further validated by the technical screening criteria for NbS in the EU Taxonomy which outlines the criticality of monitoring and evaluation in validating the benefits derived from the NbS. Monitoring and reporting is also identified as key to the successful implementation of NbS in the RECONECT deliverable *D5.4 - Standards for Planning, Design, Implementation, Monitoring, and Evaluation of Large-scale NbS.*

How to use the IFW:

The IFW is designed for NbS project owners seeking investment from the private sector (Figure 3). The Framework is designed to help project owners frame information and data gathered during planning stage activities in a way that connects with the motivations and goals of financial sector stakeholders. The planning phase sets the foundation for project development and encompasses a range of activities crucial for informed decision-making and setting strategic objectives, such as a thorough analysis of environmental and social factors and an assessment of stakeholder needs and motivations. The planning phase is also where NbS measures and KPIs are first identified and selected. To build the business case for NbS, the IFW can be used to "sell" the benefits of NbS to the private sector. The following section provides guidance for how to apply the IFW to a case.

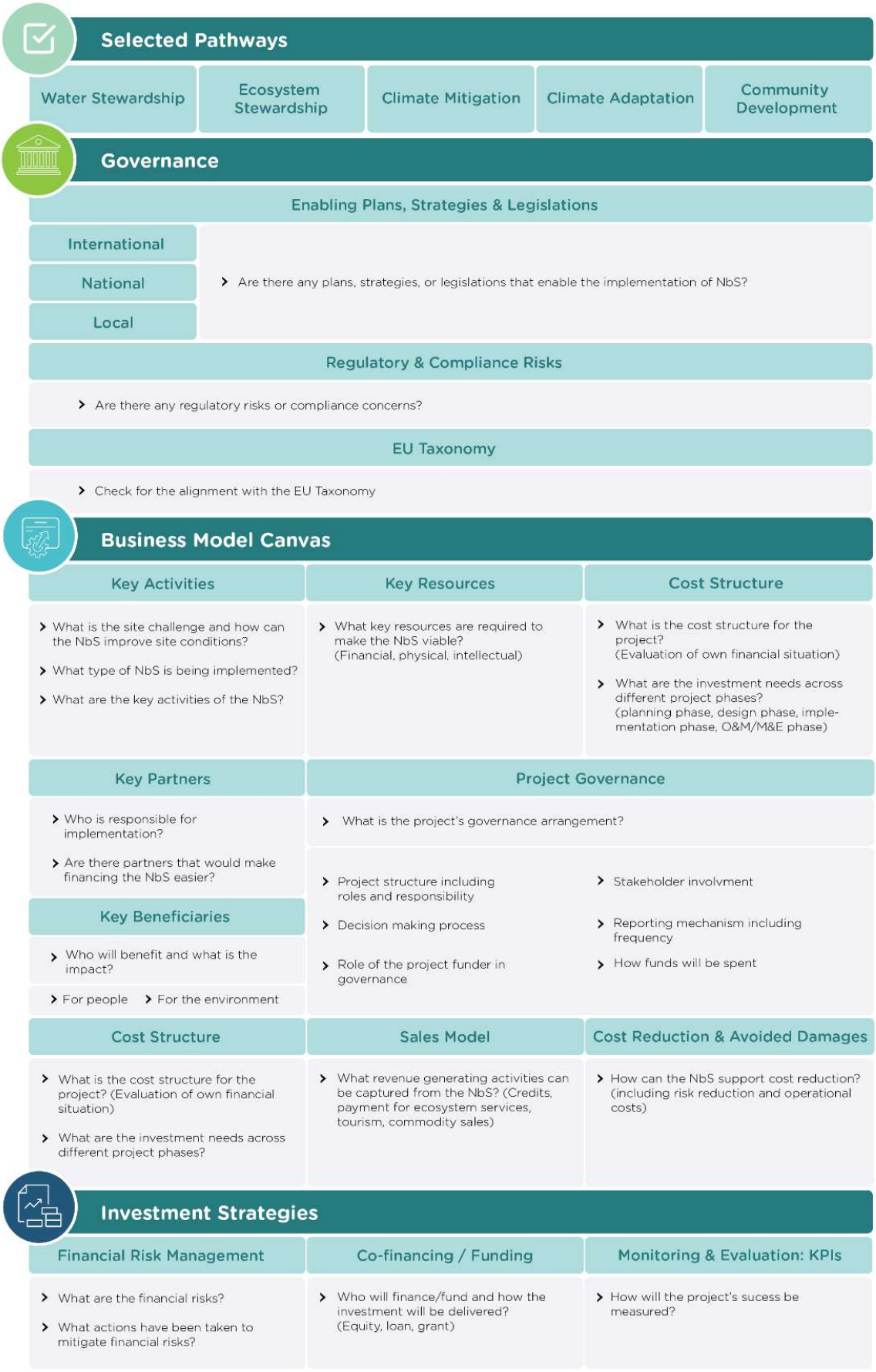


Figure 3 Detailed version of the IFW

Selected Pathways

Pathways for engaging the Private Sector:

The IFW is designed to help NbS project owners identify private sector motivations for investing in NbS so they can select relevant indicators and tailor their value proposition. To do so, project owners must understand which private sector companies are operating in their region and why they may invest in NbS. Defining who the private sector stakeholders are, their potential role, and how the NbS may benefit them should be completed as part of the stakeholder mapping exercise. Throughout the stakeholder mapping exercise, NbS project owners should begin to reflect on private sector drivers for NbS investment and begin to compile evidence for what might motivate the private sector to invest. Potential sources include a company's annual report or strategic plan, results from local research on business operations and potential risks, or by engaging directly with private sector stakeholders operating within the same watershed. Once this information is gathered, NbS project owners can define drivers of private sector investment with the pathways presented in the IFW. By aligning drivers of private sector investment, NbS project owners can better tailor their value proposition and select indicators that align with the motivations of the private sector.

To support project owners tailor their value proposition, the IFW presents five pathways that broadly align with corporate motivation to invest in NbS. These categories, originally presented in the report *Benefit Accounting of Nature-Based Solutions for Watersheds* (2023), have been adapted by Ramboll through a literature review to better define private sector drivers. Each pathway includes:

1. A definition of what the entry point means for the company.
2. A list of drivers, outlining the main motivations for a company to invest in an NbS addressing that specific entry point.
3. Concrete examples of possible NbS implementations.

By selecting a pathway, NbS project owners can define their value proposition and align KPIs with the interests of the private sector. The five entry points and the respective company drivers are presented in Table 2.

Table 2 Pathway, definition, drivers, NbS example for engaging private sector stakeholders (adapted from Brill et al., 2023a)

Pathway	Definition	Drivers	NbS Example
Climate adaption	Adaptation means anticipating the adverse effects of climate change and taking appropriate action to prevent or minimize the damage they can cause, or taking advantage of behavioral shifts, such as individuals reducing their food waste.	• Supply chain disruptions • Asset and infrastructure failures • Workforce displacement • Increased cost of critical inputs • Reduction of available utilities • Physical health implications (World Business Council for Sustainable Development, 2024)	• Protecting/restoring coastal habitats • Wetland restoration/conservation • Rainwater Harvesting • Forest conservation/reforestation • Reconnecting flood plains • Riparian buffers • River/floodplain restoration • Watershed management • Stormwater management

			• Maintaining good soil structure and vegetation cover • NbS in urban centers (green roofs, tree planting, permeable pavement etc.)
Climate mitigation	Mitigation means preventing or reducing the emission of greenhouse gases (GHG) into the atmosphere to make the impacts of climate change less severe.	• Pressure from stakeholders (Cadez et al., 2019) • Regulatory pressure • Regulatory uncertainty • Endogenous drivers such as carbon reliance, industry sector, geographic location, competitive advantage, cost reduction, technological benefits • Market pressure	• Cropland nutrient management • Coastal wetland restoration • Petland restoration • Protection and restoration of marine fauna
Community Development	Community development is a planned effort to build assets that increase the capacity of people to improve their quality of life. Assets may include physical, human, social, financial, environmental, political, and cultural capital.	• Goodwill among investors •Human capital (ex. future workforce development and development of employee morale) (Cohen et al., 2022)	• NbS in urban centers (green roofs, tree planting, permeable pavements etc.) • Natural forest management • Soil protection
Ecosystem stewardship	Ecosystem stewardship is an action-oriented framework intended to foster social-ecological sustainability. "Stewardship" expresses the balance between conservation and sustainable use of living organisms, habitats, landscapes, and seascapes.	• Stakeholder pressure (larger companies are more likely to engage in nature conservation activities due to higher stakeholder pressure, larger financial scope, departments focused on CRS) • Government pressure and international strategic agreements (Davis et al., 2021)	• Wetland restoration/conservation • Coastal ecosystem management • River/floodplain restoration • NbS in urban centers (green roofs, tree planting, permeable pavements, etc.)
Water stewardship	Water stewardship allows companies to clarify and manage water-related	• Operational efficiency and business continuity (ex. reduce volume	• Community forest management

	business risks. It involves improvements in efficiency of water use and a reduction in the water-related impacts of internal and value chain operations.	and improve the efficiency of water consumption) (Jones et al., 2015) • Growing interest on water stress (Jones et al., 2015) • Reduced operational costs (Carbon Disclosure Project, 2024) • Compliance with regulations (Carbon Disclosure Project, 2024)	• Farmer-managed soil regeneration/protection • Community gardens • Mangrove protected communities • Urban greening

Private sector stakeholders may be keen to implement NbS due to their ability to deliver multiple benefits which increase over time and because NbS are more cost-effective than conventional engineered solutions, leading to a greater return on investment (Brill et al., 2023a). Private sector stakeholders should be identified as part of the stakeholder analysis conducted in the planning phase and should be engaged in co-creation activities throughout the planning and design phase.

The entry points are intended to help NbS project owners tailor their value proposition to the interests of the private sector.

The Governance section of the IFW refers to plans, strategies, regulations, and legislation that intersects with the implementation of NbS. Governance can also refer to safeguards and due-diligence principles that protect people and the environment from adverse impacts and which are in place to promote positive development outcomes. To receive support for project implementation, project owners must address potential risks and demonstrate proper due diligence regarding compliance and social and environmental safeguards. NbS projects should be situated in an overlapping policy context that may include spatial planning measures, disaster risk reduction, biodiversity protection, and environmental impact assessments.

The Governance section of the IFW asks project owners to identify plans and policies that enable the implementation of NbS and describe potential governance or compliance risks. This section of the IFW covers different levels of governance and asks project owners to consider how international, national, and local governance factors may influence their project. Information presented in the IFW should respond to the following questions:

What plans, strategies, or legislation enable the implementation of NbS?

Project owners should consider plans, strategies, and legislation related to climate change, land use, disaster risk reduction, conservation, and sustainable finance.

Are there any regulatory risks or compliance concerns?

Project owners should consider if investment in NbS could lead to any regulatory or compliance risks, including conflict with conservation laws or watershed regulations. A risk

management strategy should be presented alongside the identification of possible regulatory or compliance risks.

In addition, NbS project owners should consider how their project aligns with the technical screening criteria as defined by the EU Taxonomy. The criteria set the standard for how NbS contribute to the *"sustainable use and protection of water and marine resources*" and should be reviewed as part of the Governance section of the IFW. Since companies will be looking to invest in activities that are Taxonomy aligned, NbS project owners should consider the following when completing the IFW.

1. *The activity is a quantifiable and time bound measure to achieve the objectives for flood risk reduction in accordance with a flood risk management plan coordinated at river basin scale and developed under Directive 2007/60/EC of the European Parliament and of the Council14. In relation to drought risk reduction, the activity is a quantifiable and time bound measure to achieve the objectives of Directive 2000/60/EC in accordance with a river basin management plan, or a drought management plan which is part of a river basin management plan.*

2. *Environmental degradation risks related to preserving water quality and avoiding water stress and preventing deterioration of the status of the affected water bodies are identified and addressed to achieve good water status and good ecological potential as defined in Article 2, points (22) and (23), of Regulation (EU) 2020/852, in accordance with Directive 2000/60/EC, and in line with a river basin management plan, developed thereunder for the potentially affected water body or bodies, in consultation with relevant stakeholders. Environmental degradation risks related to preserving marine environment are identified and addressed with the aim of achieving or maintaining good environmental status as defined in point 5 of Article 3 of Directive 2008/56/EC.*

3. *The activity includes nature restoration or conservation actions that demonstrate specific ecosystem co-benefits, which contribute to achieving good water status or potential in accordance with Directive 2000/60/EC, good environmental status in accordance with Directive 2008/56/EC, and the nature restoration and conservation targets specified in the Communication from the Commission of 20 May 2020 on 'EU Biodiversity Strategy for 2030'. The activity contains clear and binding targets on nature restoration or conservation over a clearly defined timeframe and describes measures to achieve those targets. Local stakeholders are involved from the outset in the planning and design phase. The activity is based on the principles outlined by the IUCN Global Standard for nature-based solutions.*

4. *A monitoring programme is in place to evaluate the effectiveness of a nature-based solution scheme in improving the status of the affected water body, achieving the conservation and restoration targets and in adapting to changing climate conditions. The programme is reviewed following the periodic approach of the river basin management plans (including drought management plans, where relevant) and the flood risk management plans* (European Commission, 2023b).

Companies with an interest in becoming Taxonomy aligned are more likely to invest in NbS if there is a clear connection between the NbS and the technical screening criteria as defined by the Taxonomy.

Business Model Canvas

The Business Model Canvas describes the core elements of the NbS project, including how the project operates, key partners, and how the project creates, delivers, and captures value.

There are 9 key elements of the business model canvas: key activities, key resources, value proposition, project governance, key partners, key beneficiaries, cost structure, sales model, and cost reduction and avoided damages. Each element of the Business Model Canvas should be tailored to align with the drivers identified by the pathways.

Key Activities: The **Key Activities** section should summarize the results of the baseline assessment and pre-feasibility study. It should explain site conditions and how the selected NbS measure(s) will address site challenges. This section should also explain the key activities required to implement the solution.

Key questions to consider are: *What is the site challenge and how can the NbS improve site conditions? What type of NBS is being implemented? What are the key activities required to implement the NbS?*

Tip: When approaching the private sector as a potential co-funder/ co-financier, NbS project owners should consider how the NbS might address specific risks faced by the financer.

Key Resources: The **Key Resources** section identifies resources available for project implementation, including financial, physical, intellectual, or other in-kind resources. This section outlines what resources are currently available to the NbS project owners and forms the foundation for identifying what resources the financier could contribute to the project.

Project owners should respond to the question: *What key resources are available to project owners and are required to implement the NbS?*

Value Proposition: The **Value Proposition** is at the core of the business model and should highlight the value created through the implementation of the NbS, including co-benefits. This section should be tailored to reflect the type of value most appealing to the stakeholder being approached for funding / financing. To help define the value proposition, NbS project owners should reflect on the different "pathways" that may drive private sector investment in NbS. This section should also present the results of an economic analysis of the project's benefits (either modelled or actual) to aid with investment decision making. When possible, NbS project owners should define NbS co-benefits in both monetary and non-monetary terms using financial metrics or economic evaluation tools (Table 3).

Table 3 Overview of Financial Metrics

Financial Metrics *NbS project owners can use financial metrics to quantify the value created from both the sales model and cost reduction and avoided damages approach. Some of the most common financial metrics include:* • **Net Present Value (NPV):** Measures the value of an asset that has cashflow by adding up the present value of all the future cash flows that the asset will generate. Cash flow could be generated from commodity sales or eco-tourism. • **Revenue Generation:** Assesses the revenue streams generated by nature-based solutions, including income from ecosystem services, carbon credits, eco-tourism, or sustainable agriculture. • **Cost-savings:** Measure the direct cost savings achieved through investments in nature-based solutions, such as reduced operational expenses, lower infrastructure maintenance costs, or avoided damages.

- **Cost-Benefit Analysis (CBA):** Compares the costs and benefits of nature-based investments, including both quantifiable and non-quantifiable factors, to inform decision-making and resource allocation.

The IFW also asks NbS project owners to think about value creation through either the sales model approach or cost reduction and avoided damages. Opportunities for value creation through the sales model approach include carbon credits, tourism, and commodity sales. Examples of cost-reduction and avoided damages include reduced risk and operational costs due to the implementation of the NbS.

Sales Model: Sales model refers to how the implementation of the NbS could lead to a direct monetary return from for instance, the sale of agricultural products or agro-forestry.

Cost Reduction and Avoided Damages: Cost Reduction and Avoided Damages can be used to present how investment in NbS is a cost-saving measure. Analytical tools, such as cost-benefit analysis (CBA) can be used to illustrate how the NbS reduces operating costs or potential damages from climate related hazards such as flooding. When NBS co-benefits can be monetised, cost-benefit analysis helps extend beyond cost-effectiveness by not only evaluating the cost of achieving specific benefit outcomes (cost-effectiveness) but by also determining what level of investment in NbS is warranted in the first place (benefits exceed the costs) (IUCN, 2020).

Project Governance: Clearly defining the Project Governance model is essential for successful outcomes of a NbS project and is a critical component of how financiers evaluate a project's investment potential. The Project Governance section of the IFW should include an overview of roles and responsibilities, highlight governance documents, describe how decisions are made, how power is shared, and reflect a recognition of the security of rights among all stakeholders, including how information is shared with stakeholders (IUCN, 2020). A clearly articulated governance model will ensure simultaneous benefit to people and the environment and is critical information for attracting investment from the private sector (IUCN, 2020). The Project Governance section should also include details on the proponent's technical expertise and track record.

Transparency is another key aspect of project governance. The project governance model should specify how resources (financial, human, and natural) are to be used fairly and efficiently utilized to create benefits for people and nature (IUCN, 2020). NbS project owners must also be transparent with local stakeholders and communities about approaching the private sector for financing / funding and disclose any conflict of interests.

Key Partners: As part of the planning phase, NbS project owners should complete a stakeholder analysis exercise. This exercise should identify different stakeholders, map stakeholders according to their role and influence, and detail level of involvement. This analysis should also consider how societal factors, such as beliefs, traditions, and community-based land management practices inform stakeholder involvement in NbS implementation. The results of the stakeholder mapping should be presented in the Key Partners section of the IFW. This section should outline different stakeholder groups, how they are involved in the project, and roles and responsibilities during project design, implementation, and monitoring. Detail should also be provided on how stakeholders complement each other, particularly when bringing in partners from different sectors.

Key Beneficiaries: This section highlights who will benefit from the value created by the project. When approaching financial sector stakeholders, NbS project owners should clearly outline how the project will benefit them, including how benefits to nature will lead to stronger ESG performance and increase potential for taxonomy alignment. This section should be informed by the pathways and should be completed in relation to the selected KPIs.

Beneficiaries can include people (individuals or groups of people), nature (pollinators, birds), or water (streams, marshes).

Cost Structure: This section considers the different activities and resources required to deliver the NbS and defines the cost of each of the activities, including both fixed and variable costs. This section should also identify investment needs at different phases of project implementation (planning, design, implementation, and monitoring, evaluation, and learning).

Investment Strategies refers to a set of rules, guidelines, and procedures designed to support the selection of an investment. This includes financiers, the project's financial risk management strategy, financial instruments, and implementation arrangement, including how the project will be monitored.

Risk Management: Risk management refers to the process of identifying, assessing, and mitigating risks that could negatively impact the outcome of an investment. When approaching investors, NbS project should be transparent about known risks. Risks may include damage to NbS infrastructure due to unprecedented weather events, price volatility of commodities, land tenure challenges, new regulations, or changes in land use. In this section of the IFW, NbS project owners should also identify any actions to mitigate financial risks.

Co-financing / funding: Co-financing / funding is a practise where several entities come together to co-finance or provide funds for a project. In many cases, financial sector stakeholders are more likely to invest in a NbS project if the project has already secured some financial support. The co-financing / funding section of the IFW prompts NbS project owners to provide an overview of existing sources of funding / financing.

Monitoring and Evaluation: Monitoring and evaluation provides essential information to both NbS project owners and private sector stakeholders. Both parties are interested in understanding the impacts of their investment and collecting data to enhance project outcomes and guide future decision making. The lack of a clear methodology for identifying, estimating, and monitoring the benefits of NbS is identified as a barrier to upscaling private sector investment in NbS. To address this challenge, the IFW presents a series of KPIs that bridge the gap between best practises for monitoring and evaluating NbS and the reporting requirements of the financial sector.

The KPIs presented as part of the IFW are adapted from the *NbS-KPI Selection Tool* and screened for their relevance to private companies required to disclosure non-financial information. The indicators are classified by the investment pathways, ESRS topic, and ESG goal and expand the scope of the *NbS-KPI Selection* Tool to include indicators related to climate mitigation and community development. As part of the indicator selection phase of project development, NbS project owners should review the list and select indicators that are relevant to their project and financial sector stakeholders.

As part of the IFW, NbS project owners should record baseline conditions and make an estimation on the expected impact of the NbS. Estimations should be evidence based, drawing on data produced from modelling or samples collected at similar sites. This evidence can also be integrated into the value proposition narrative to provide evidence for the stated benefits. Moreover, to align with the ESRS, methodological assumptions used to calculate the KPI must be disclosed, and it must be stated if the measurement of the metric is validated by an external quality assurance provider (European Commission, 2023a).

Next Steps:

Once information is consolidated in the IFW, NbS project owners must consider how they will engage with the private sector. This could be through inviting relevant stakeholders to planning meetings, reaching out and delivering presentation, or preparing a presentation on the proposed project and its benefits. Ultimately, the IFW should provide the foundation for NbS project owners to tailor the value proposition of their project to different financial sector stakeholders. By following this guidance, NbS project owners can select relevant KPIs, account for risks, and highlight key benefits to financial sector stakeholders (Table 4).

Table 4 IFW's sections, elements, driving questions and practical examples.

IFW sections	Elements	Driving Questions	Examples
Governance	Enabling Plans, Strategies & Legislation	• What plans, strategies, or legislation enable the implementation of NbS?	EU Biodiversity Strategy for 2030
	Regulatory compliance & Risk	• Are there any regulatory risks or compliance concerns?	
	EU Taxonomy	• Check for the alignment with the EU Taxonomy	NbS as a sustainable economic activity under disaster risk reduction
Business Model Canvas	Key Activities	• What is the site challenge and how can the NbS improve site conditions? • What type of NBS is being implemented? • What are the key activities required to implement the NbS?	Salt marsh restoration to protect against coastal flooding, sea level rise, and storm surge. Establishment of a protected biodiversity area, monitoring and evaluation program.
	Key Resources	• What key resources are available to project owners and are required to implement the NbS?	Risk analysis to identify challenges and opportunities, the wetland restoration/maintenance, including planting of native species, land access, technical ability to maintain the salt marsh and monitor the biodiversity benefits, legal and administrative expertise to set up the protected area.
	Value Proposition	• What value does the NbS offer to the target audience?	Coastal erosion and flood mitigation, recreational and educational services (eco-tourism), supporting fish

			populations, income to residents from eco-tourism, increased biodiversity.
	Sales Models	• What revenue generated activities can be captured from the NbS?	Sale of agricultural products, carbon credits, or tourism products.
	Cost Reduction & Avoided Damages	• How can the NbS support cost reduction? (including risk reduction and operational risks)	Costal erosion control, coastal flood mitigation, and reduced risks from flooding and storm surge damages.
	Project Governance	• What is the project governance arrangement, including financial governance? • What role does the project funder have in governance?	The project is managed by the resort developer supported by the conservation NGO.
	Key Partners	• Who is responsible for implementation? • Are there partners that would make financing the NbS easier?	Resort developer, local conservation NGO, regional tourism board, landowners, fisheries.
	Key Beneficiaries	• Who will benefit and what is the impact?	Residents, fish population, native flowering plants, pollinators.
	Cost Structure	• What is the cost structure for the project? • What are the investment needs across different project phases?	Pre-feasibility study costs $100,00 euro; land acquisition costs $300,000 euro. Maintenance costs are estimated at $10,000 / year over a 20-year time horizon.
Investment Strategies	Financial Risk Management	• What are the financial risks? • What actions have been taken to mitigate financial risks?	Changes in commodity prices, land prices, changes in regulation.
	Source of Finance	• Who will finance/fund and how the investment will be delivered?	An NbS is funded through a mix of public funding and a grant from

			the Green Environment Fund.
	Monitoring and Evaluation: Key Performance Indicators	• How will the project's success be measured?	Water quality improved by 50%; 25% of land restored.

4 Conclusions

Climate change related impacts are increasingly having a negative impact on the supply chains and business operations of the private sector. Sectors with supply chains closely linked to ecosystem services such as agriculture, forestry, real estate, and food and beverage manufacturing are particularly at risk and are at the frontline of these impacts. At the same time, companies are being asked to report on risks as well as their impact on the environment and actions taken to address negative externalities. Investing in NbS presents a clear opportunity for companies to bolster supply chain resilience, improve business operations, and in some cases, create a superior product all while contributing to local, regional, and global efforts to address climate change related challenges and enhance biodiversity and water quality. Given this context, there is an opportunity for the private sector to partner with NbS project owners to plan, design, and implement NbS, particularly when operating within a shared watershed. Increasing private sector investment for NbS would contribute significantly to closing the NbS funding gap. Furthermore, directing funds away from “nature-negative” investments and towards NbS has the potential to reduce GHG emissions and restore ecosystems while simultaneously mitigating climate risks and enhancing biodiversity and water quality.

To facilitate the uptake of private sector co-financing/funding for NbS, this deliverable presents a revised version of the IFW. The IFW is a tool to support NbS project owners in engaging the private sector to unlock investments. When using the IFW project owners should take the following into consideration:

- NbS project owners should identify private sector stakeholders during the planning phase. A stakeholder analysis should be conducted to identify how the private sector might benefit from the project, investment drivers, and key contacts within the organization. When possible, private sector stakeholders should be engaged early on and be involved in all co-assessment and co-creation activities.
- NbS project owners should be mindful of the drivers of private sector investment in NbS and tailor their value proposition to align with the selected driver. The IFW presents five pathways for approaching the private sector and suggests indicators that align with that pathway. The pathways include watershed stewardship, ecosystem stewardship, climate mitigation, climate adaptation, and community development.
- NbS project owners should consider how the value proposition aligns with the company’s strategy and demonstrate how the implementation of the NbS can contribute to reaching goals and targets. When possible, present data and information to showcase the benefits of the proposed solution.
- Highlight co-financing/ funding. Private sector stakeholders are more likely to invest in projects that have already demonstrated their ability to secure investment.

The IFW is a starting point for closing the gap between NbS project owners and private sector stakeholders. To fully understand its potential, however, it must be applied and tested by NbS project owners interested in attracting investment from the private sector. Applying the IFW in practise presents the opportunity for further validation and identification of gaps that require further work. Moreover, future work could include working directly with companies to help them identify opportunities for integrating NbS into their business strategies, operations, and supply chains. Ultimately, targeting the private sector in efforts to mainstream and upscale NbS will contribute to efforts to reduce hydrological risks, protecting business, people, and assets from the impacts of climate change, while improving land use and land management practises.

References

Brill, G., Carlin, D., Snyder, C., Baleta, H., Vigerstol, K., Ofosu-Amaah, N., Matosich, M., Larson, W., Jacobson, N., Dekker, T., & Ivan, P. (2023a). *Benefit Accounting of Nature-Based Solutions for Watersheds* . https://ceowatermandate.org/nbs/wp-content/uploads/sites/41/2023/08/NBS2_f.pdf

Brill, G., Carlin, D., Snyder, C., Baleta, H., Vigerstol, K., Ofosu-Amaah, N., Matosich, M., Larson, W., Jacobson, N., Dekker, T., & Ivan, P. (2023b). *Benefit Accounting of Nature-Based Solutions for Watersheds* . https://ceowatermandate.org/nbs/wp-content/uploads/sites/41/2023/08/NBS2_f.pdf

Cadez, S., Czerny, A., & Letmathe, P. (2019). Stakeholder pressures and corporate climate change mitigation strategies. *Business Strategy and the Environment*, *28*(1), 1–14. https://doi.org/10.1002/bse.2070

Carbon Disclosure Project. (2024, January 12). *Corporate water stewardship and science-based targets for freshwater*. https://www.cdp.net/en/articles/water/corporate-water-stewardship-and-science-based-targets-for-freshwater

Cohen, C. C., Qureshi, N., Tsai, R., & Liu, H. H. (2022). Motivations of potential anchor businesses to support community development and community health. *PLOS ONE*, *17*(7), e0269400. https://doi.org/10.1371/journal.pone.0269400

Davis, M. S., Droste, N., & Matzdorf, B. (2021). What makes businesses commit to nature conservation? *Business Strategy and the Environment*, *30*(2), 741–755. https://doi.org/10.1002/bse.2650

Droste, N., Schröter-Schlaack, C., Hansjürgens, B., & Zimmermann, H. (2017). *Implementing Nature-Based Solutions in Urban Areas: Financing and Governance Aspects* (pp. 307–321). https://doi.org/10.1007/978-3-319-56091-5_18

European Commission. (2023a). *Commission Delegated Regulation (EU) 2023/2772 of 31 July 2023 supplementing Directive 2013/34/EU of the European Parliament and of the Council as regards sustainability reporting standards*. https://eur-lex.europa.eu/eli/reg_del/2023/2772/oj.

European Commission. (2023b, November 21). *ANNEX I Technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to the sustainable use and protection of water and marine resources and for determining whether that economic activity causes no significant harm to any of the other environmental objectives*. Official Journal of the European Union. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202302486

European Commission. (2024a). *EU taxonomy for sustainable activities*. Https://Finance.Ec.Europa.Eu/Sustainable-Finance/Tools-and-Standards/Eu-Taxonomy-Sustainable-Activities_en.

European Commission. (2024b). *Green Claims*. Https://Environment.Ec.Europa.Eu/Topics/Circular-Economy/Green-Claims_en.

European Commission. (2024c). *The European Green Deal - European Commission*. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en

European Environment Agency. (2021). *Nature-based solutions in Europe: policy, knowledge and practice for climate change adaptation and disaster risk reduction.*

European Environment Agency. (2023a). *Scaling nature-based solutions for climate resilience and nature restoration*. https://www.eea.europa.eu/publications/scaling-nature-based-solutions

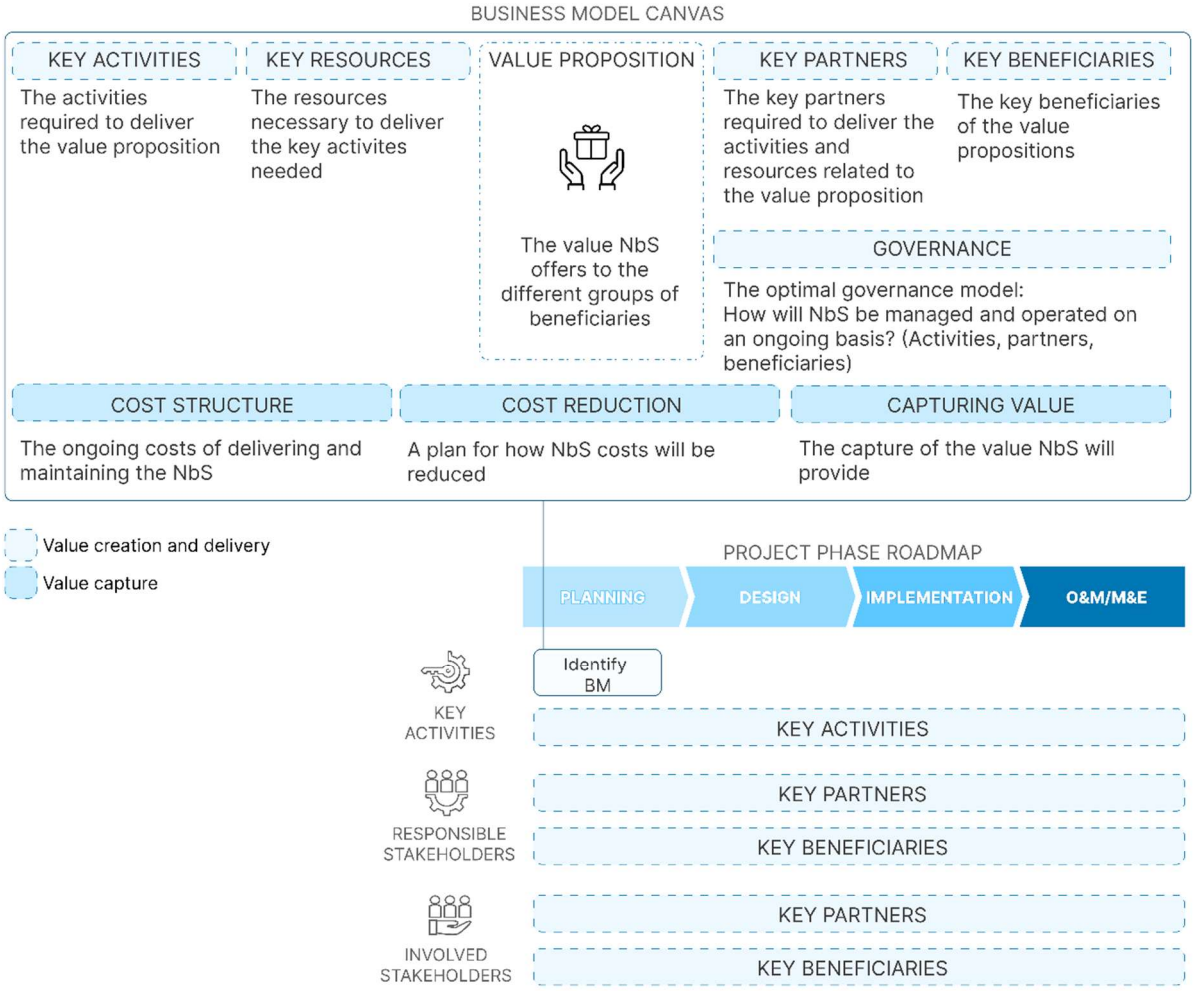
European Environment Agency. (2023b). *Unlocking finance and investments in nature*. Https://Www.Eea.Europa.Eu/En/Topics/in-Depth/Sustainable-Finance/Unlocking-Finance-and-Investments-in-Nature.

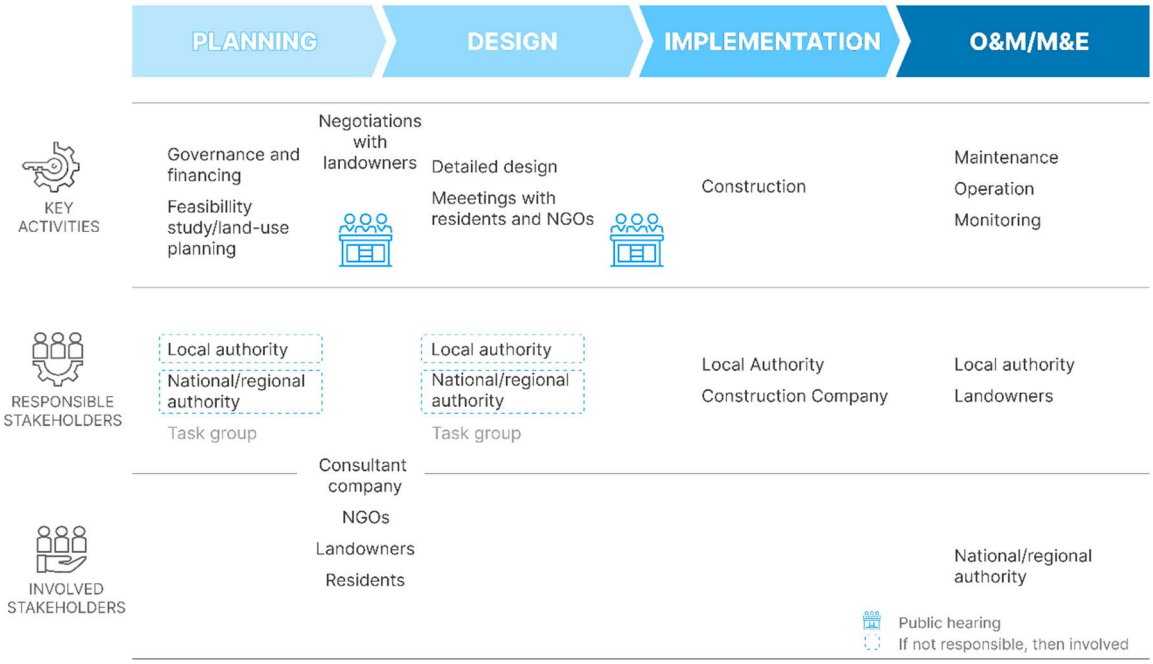
European Environment Agency. (2023c). *What is the difference between adaptation and mitigation?* https://www.eea.europa.eu/en/about/contact-us/faqs/what-is-the-difference-between-adaptation-and-mitigation
European Environment Agency. (2024). European Climate Risk Assessment. *The European Climate Risk Assessment (EUCRA)*. https://www.eea.europa.eu/en/about/who-we-are/projects-and-cooperation-agreements/european-climate-risk-assessment
European Investment Bank. (2020). *Investing in Nature: Financing Conservation and Nature-Based Solutions, a Practical Guide for Europe*.
European Investment Bank. (2023). *Investing in nature-based solutions State-of-play and way forward for public and private financial measures in Europe*.
Green Purposes Company, & Finance Earth. (2021). *A Market Review of Nature-Based Solutions: An Emerging Institutional Asset Class.*
IUCN. (2016). *Nature-based solutions to address global societal challenges* (E. Cohen-Shacham, G. Walters, C. Janzen, & S. Maginnis, Eds.). IUCN International Union for Conservation of Nature. https://doi.org/10.2305/IUCN.CH.2016.13.en
IUCN. (2020). *Guidance for using the IUCN Global Standard for Nature-based Solutions*. https://doi.org/10.2305/IUCN.CH.2020.08.en
IUCN. (2021). *Nature-based solutions for climate change mitigation*.
Jones, P., Hillier, D., & Comfort, D. (2015). Corporate water stewardship. *Journal of Environmental Studies and Science*, *5*, 272–276.
Nielsen, C. (2023). ESG Reporting and Metrics: From Double Materiality to Key Performance Indicators. *Sustainability*, *15*(24), 16844. https://doi.org/10.3390/su152416844
Papari, C.-A., Toxopeus, H., Polzin, F., Bulkeley, H., & Menguzzo, E. V. (2024). Can the EU taxonomy for sustainable activities help upscale investments into urban nature-based solutions? *Environmental Science & Policy*, *151*, 103598. https://doi.org/10.1016/j.envsci.2023.103598
The Nature Conservatory. (2020). *Financing Nature: closing the global biodiversity financing gap*. Lynn Scarlett (The Nature Conservancy.
TNFD. (2023). *Recommendations of the Taskforce on Nature-related Financial Disclosures*.
UNEP. (2021). *State of Finance for Nature: Tripling investments in nature-based solutions by 2030*. http://www.un.org/Depts/
UNEP. (2023). *State of Finance for Nature*. https://doi.org/10.59117/20.500.11822/44278
United Nations Environment Program. (2023). *State of Finance for Nature*. https://doi.org/10.59117/20.500.11822/44278
World Business Council for Sustainable Development. (2024). *Business Leaders Guide to Climate Adaptation and Resilience*.

Annex

Annex 1

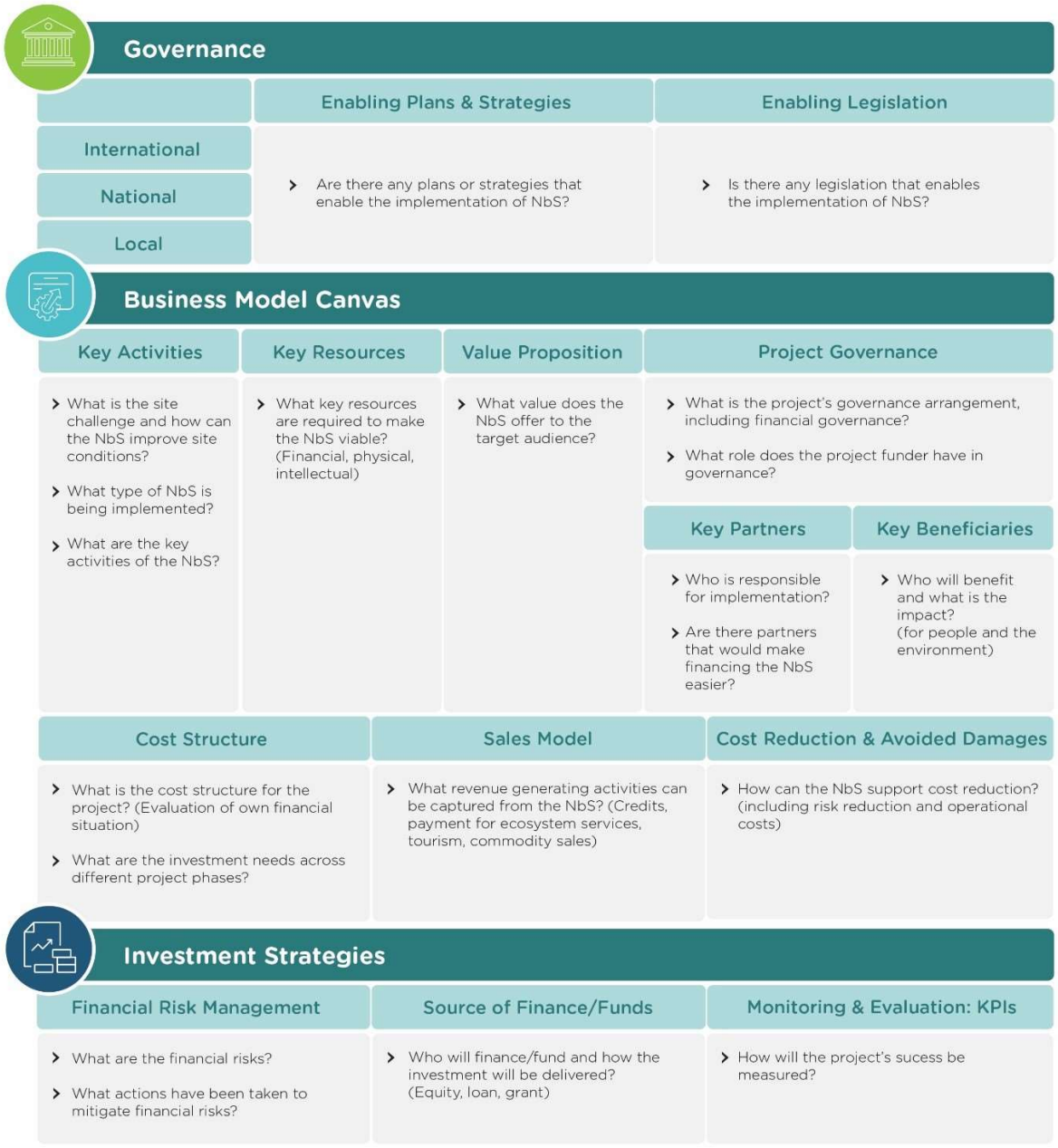
The Large-scale NbS Business Model Framework and roadmap. This work was done as part of the preliminary assessment of business models for NbS.




PLANNING
DESIGN
IMPLEMENTATION
O&M/M&E
KEY ACTIVITIES
Governance and financing
Feasibility study/land-use planning
Negotiations with landowners
Detailed design
Meeetings with residents and NGOs
Construction
Maintenance
Operation
Monitoring
RESPONSIBLE STAKEHOLDERS
Local authority
National/regional authority
Task group
Local authority
National/regional authority
Task group
Local Authority
Construction Company
Local authority
Landowners
INVOLVED STAKEHOLDERS
Consultant company
NGOs
Landowners
Residents
National/regional authority
Public hearing
If not responsible, then involved

Annex 2

Conceptual version of the Investment Framework as presented in *Deliverable 5.2: Governance, Business Models, and Investment Strategies.*



Annex 3

Results from KPI analysis. The indicators presented here are based on the NbS-KPI Selection Tool and reflect the findings from an analysis of the ESRS and ESG Goals. Indicators presented here represent alignment between MEL best practises and corporate reporting requirements.

Pathways	ESRS Topic	ESG Goal	NbS benefit	Recommended KPIs
Climate Mitigation	E1 - Climate Change	Reduce CO2 emissions	Carbon sequestration	Tons of CO2 removed
Climate Adaptation	E1 - Climate Change	Risk Reduction	Flood risk reduction in urban areas and around rivers, lakes, watercourses	Reduced surface run off
				Slow and store water on site
				Reduced vulnerability of infrastructure and assets
				Delay time to peak
				Flood peak reduction
			Coastal Flood Risk Reduction	Damage from storm surge reduced
				Coastal Hazard index
				Exposed value index (EVI)
				Coastal vulnerability index (CVI)
				Assets exposed to waves
			Enhanced groundwater supply	Soil infiltration capacities
				Groundwater recharge
				Change in groundwater level/water table
			Drought risk reduction	Standardized Precipitation Index
				Palmer Drought Severity Index
				Surface water supply Index
				Increased water storage capacity
				Available water supply
				Water Consumption
			Landslide risk reduction	Reduce likelihood of hazard
				Reduce vulnerability
			Reduced heat exposure	Improved thermal comfort
Water Stewardship	E3 - Water and marine resources	Water use efficiency	Improved water use efficiency	Crop water productivity
				Water use reduction
				Irrigation efficiency
				Reduce water withdrawals
		Water quality	Improved water quality in	Change in water pollution caused by wastewater (point sources)

			rivers/watercourses, lakes/ponds	Reduced pollutants coming from land to water (non-point sources)
				Prevent heavy metals and nutrients contamination in surface water
				Reduce sedimentation
		Coastal water quality	Improved Coastal Water Quality	Reduction of pollution in coastal waters
				Coastal water pollutants in shellfish
		Groundwater quality	Improved groundwater quality	Attenuation of pollution in groundwater
				Change in soil quality
				Seawater intrusion
Ecosystem Stewardship	E4 - Biodiversity and Habitats	Ecosystem restoration	Increased habitat area (quantity)	Changes in riparian habitat
				Changes in aquatic habitat
				Change in wetland habitat
				Changes in terrestrial habitat
				Increase green area
				Change in land cover
			Habitat provision and distribution (quality)	Connectivity/fragmentation of habitat structural
				Change in location of habitat boundaries
		Maintain and enhance biodiversity	Improved biodiversity	Species richness and composition in respect to indigenous vegetation and local/national biodiversity targets
			Improved biodiversity	Species richness and composition in respect to indigenous vegetation and local/national biodiversity targets
			Improved biodiversity	Number and type of protected species
			Improved biodiversity	Density of Species
			Improved biodiversity	Diversity of species
			Reduce disturbance to ecosystems	Type, density of native species
			Reduce disturbance to ecosystems	Number, area, location of non-native/mitigated animal and planted species

Community Development	E2 - Pollution	Air quality improvement	Reduce air pollutants	Air quality improvement
	S1&2 - Workers	Improve occupational health and safety	Protect workers from extreme heat	Thermal comfort
	S3 - Affected	Improve life quality of the area	Water quality	Improved water quality
			Air quality	Air quality improvement
			Improved food security	Enhanced food security
			Livelihood opportunities	Monetary value generated from NbS
			Recreation/tourism	Area dedicated to recreation and tourism activities