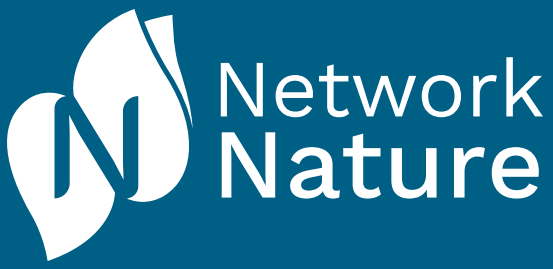
Network Nature

# Guidance Booklet

## Guiding Businesses in integrating Biodiversity and Nature-based Solutions in Decision-Making Processes

### Highlights from the Infrastructure and Built Environment Sector

Lukacova, Z; Wysowska, N; Halim, F (2025)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# Executive summary

*"The environment and the economy are really both two sides of the same coin. If we cannot sustain the environment, we cannot sustain ourselves,"* - Wangari Maathai.

Nature is the foundation of our economies, societies, and well-being, yet we are depleting it at an alarming rate through land and sea use change, resource exploitation, human-induced climate change, and pollution. The business sector in particular depends heavily on nature to supply essential goods and services. It is becoming increasingly clear that this natural capital is finite, and unless we protect it, ecosystems and the services they provide may become irreversibly compromised. Simply put, continuing business-as-usual pathways is no longer an option.

It is the objective of this booklet to provide businesses with easy-to-comprehend actionable strategies and available tools on how to integrate biodiversity in their decision-making, including inspirational success stories from practice. It was written based on a training session carried out as part of the NetworkNature project on 4 December 2024, targeting the built environment and infrastructure sector. For the purposes of this booklet, we define the infrastructure sector as encompassing the building and infrastructure stocks needed to support the functioning of a society (e.g., housing, mobility, energy, water, communication), produce and distribute goods and services (e.g., transport, commercial buildings), and promote the recirculation of natural resources (e.g., renewable energy infrastructure, green infrastructure) or human-made resources (e.g., recycling centres). It also includes the built environment which encompasses urban development and the construction industry.

This booklet:

- Stresses the significant risks of inaction including physical, financial, reputational as well as market and regulatory risks that companies may encounter.
- Highlights the opportunities that investment in nature offers in terms of markets, operations, reputation and job creation.
- Provides examples of the benefits of investing in nature from two companies in the built environment and infrastructure sector.

The stories included in this booklet are from the companies Holcim and Anglian Water. Holcim's nature conservation and restoration actions showcase how biodiversity was brought back to life at operation sites, together with the multitude of economic benefits that these investments brought. Anglian Water's story shows how a pilot investment in treatment wetlands has helped the company lower its wastewater treatment costs while delivering greater biodiversity and social benefits than traditional grey infrastructure.

Success stories are followed by an overview of challenges regarding the integration of Nature-based Solutions (NbS), structured around three key themes: knowledge, policy and partnership as well as finance. Based on the challenges and needs identified, a way forward is proposed for each theme. Lastly, the booklet provides actionable strategies and available tools for NbS integration into business decision-making processes based on the discussion with experts participating in the training session.

This booklet is primarily targeted at companies active in the built environment and infrastructure sector, but it is also a valuable resource to businesses of all sizes, NbS investors, as well as business organisations. It can also be useful for policymakers at every level, researchers and anyone interested in knowing more about the opportunities that NbS investment brings.

# Making the case for investing in nature

The natural world is the foundation of human life and all economic activity, yet it faces unprecedented threats. While nature is indispensable for functioning societies and economies through vital services like food production and climate regulation, the latest 2020 'State of Nature in the EU' report reveals a distressing 81% of habitats in decline with climate change and pollution exacerbating this (EEA, 2020). **With more than half the world's GDP relying on nature** (Evison, Ping Low & O'Brian, 2023), and 72% of businesses in the eurozone being highly dependent on at least one ecosystem service (ECB, 2023), the case for investing in nature protection and restoration has never been more urgent.

**The business sector is uniquely positioned to alleviate this unparalleled biodiversity crisis** and lead by example by moving away from being seen as driving the crisis to becoming part of the solution. The following sections make the case for businesses investing in nature, stressing the significant risks of inaction and highlighting the tremendous opportunities investments in nature offer. In this regard, **Nature-based Solutions (NbS) are increasingly recognised as an important way to address the multiple challenges** that society, businesses and governments face, while also providing a pathway for sustainable, resilient, and inclusive growth. Several definitions of NbS have been developed over the years and for the purposes of this booklet we reference the 2022 multilaterally agreed definition endorsed by 193 UN Member States by the United Nations Environment Assembly (UNEA). In the UNEA 5.2 Resolution 5, NbS are framed as:

**Nature-based solutions (NbS)**

*are "**actions** to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems that **address social, economic and environmental challenges** effectively and adaptively, while simultaneously **providing human well-being, ecosystem services, resilience and biodiversity benefits.**"* (UNEP, 2022a)

## No nature, no business

**Without nature there is simply no business**. In 2023, research from S&P Global Sustainable found that 85% of the world's largest companies have a significant dependency on nature across their direct operations (Whieldon et al., 2023). A study done by the Joint Research Centre of the European Commission uncovered that, in the EU alone, between 19% and 36% of the gross value added (GVA) is highly dependent on ecosystem services. The analysis further showed that the entire economy is susceptible to nature degradation, since all sectors are interconnected via supply and customer links (Hirschbuehl et al., 2025). Construction industries, together with the agriculture and food and beverage sectors, rely directly on natural capital[1] to generate their collective EUR 1.68 trillion of gross value

1 Natural capital is the value of everything that comes from nature - soil, air, water and all living creatures. See more info on the EIB page.

added per year in the EU (Ellen MacArthur Foundation (EMF), 2024). Another strikingly high number comes from looking at the UK economy, where it was found that damage to the natural environment is slowing the economy and could lead to an estimated 12% reduction of GDP in the years ahead – larger than the hit to GDP from the global financial crisis or COVID-19 (Green Finance Institute, 2024).

**Preserving nature is thus not only a moral concern but clearly a business imperative**. All businesses rely on biodiversity, whether for direct inputs (e.g., water, fibres), business-enabling ecosystem services (such as pollination, water regulation or soil fertility), or more indirectly through the dependencies of third and fourth parties in their value chains. Yet despite their clear reliance on these services, businesses are also driving their depletion and worsening status through direct or indirect exploitation, pollution and land use change (including the conversion, degradation and modification of ecosystems), as well as through upstream and downstream activities in their value chains. For example, the built environment is one of the sectors that are among the most resource intensive as it is responsible for 15% of global freshwater consumption as well as 50% of global raw material consumption (Ding, 2014).

Inevitably, the implications of nature loss are far-reaching and often unprecedented. It poses not only **financial risks** to businesses but also significant **physical risks**, including wildfires, floods, and soil degradation. These are likely to result in reduced productivity and operational disruptions. Water-related risks are already leading to stranded assets[2] across key industrial sectors, including mining, thereby exposing financial institutions to these risks. A 2022 report commissioned by the Swiss Federal Office for the Environment found that 69% of listed companies consider themselves exposed to water-related risks that could materially affect their business. The potential value at risk is estimated at up to US$225 billion (Planet Tracker & CDP, 2022). These water-stranding events, exacerbated by the depletion of freshwater resources, are unfortunately expected to increase.

Businesses also face additional **regulatory risks** owing to energy and broader economy-wide transitions, such as the need to adapt to new regulations, potentially putting the company at **risk of non-compliance**. Technological innovation, new business models and changes in consumer or investor sentiment could also lead to transition risks and transition costs as companies are forced to adapt. In addition, biodiversity impacts can result in **reputational risks** for companies, arising from the reputational damage caused by the negative environmental impacts of their activities on both the environment and society. Finally, **market risks** may arise from all these categories because of changing market dynamics, such as sourcing restrictions due to resource scarcity, for example. These risks may appear as input price increases or changes in the competitive landscape that influences brand value.

## From risks to opportunities – Nature-based Solutions as investment drivers

Restoring nature is not only crucial for continued business operations but also creates many opportunities. NbS present an excellent tool both for the preservation and restoration of natural resources on which our economy depends. The World Economic Forum (WEF) identified **business opportunities adding up to 10.1 trillion USD per year by 2030** from engaging in nature-positive business models (World Economic Forum, 2020). A 2025 World Resources Institute (WRI) study presented powerful evidence that bolstering funding for climate adaptation and

2 Investments that lose their economic value prematurely due to unforeseen or rapid changes.

resilience is not only urgent but also one of the smartest development investments available today – **for every $1 invested in adaptation and resilience, more than $10 in benefits over ten years is generated** (WRI, 2025). NbS, such as watershed, wetland and coastal protections, play a pivotal role here and frequently provide added ecological and recreational benefits.

There are therefore many reasons why a company should be interested in conserving, sustainably using, and restoring biodiversity. These range from cost savings and increased operational efficiency to revenue streams from new business models, markets, products, and services, as well as improved stakeholder relationships, brand value, and reputation.

Investing in nature also **pays off in the long-term**: natural capital plays a significant role in driving regional economic growth in the EU, both as a direct effect and via spillovers from one region to adjacent ones (The Joint Research Centre, 2025). There are also significant **market-based opportunities** that arise when companies develop biodiversity-positive or nature-friendly products and services, resulting in new revenue streams. The use of NbS can also stimulate and create incentives for **new entrepreneurial opportunities** by attracting new investment. The Nature Restoration Regulation adopted in July 2024, which sets binding ecosystem-wide restoration targets and requires the development of National Restoration Plans, is predicted to create demand for expertise in sustainable construction, water management technologies, and landscape architecture. Within this process, businesses can and should play a significant role in shaping the National Restoration Plans established by governments. This can be done by engaging in planning processes, for example by contributing their expertise in nature restoration to the design of measures that are compatible with socio-economic goals. In this regard, the construction sector has crucial knowledge to contribute, as most NbS require a hybrid infrastructure approach combining green and grey solutions (Altamirano, 2019).

**Operation-based opportunities** arise when companies use NbS to improve their internal practices and create co-benefits, such as reducing production costs by improving natural resource use. The European Water Resilience Strategy, published in June 2025, reminds us that five of the top ten long-term global risks for businesses identified by the World Economic Forum (2024) are water-related (World Economic Forum, 2024). Investing in water resilience is thus a significant business opportunity for EU industry[3]. In 2022 alone, the water sector generated EUR 111.7 billion in value added and supported 1.6 million jobs across 81,500 enterprises, most of which are SMEs (Eurostat, 2025). The Strategy recognises that private investment will need to be significantly stepped up. To accelerate this process, the Commission plans to establish, among other actions, a Water Resilience Investment Accelerator to implement 20 innovative pilot cases for natural water retention and water efficiency, bringing together local water investors, solution providers and problem owners to inspire similar actions across the EU. The success story from Anglian Water below demonstrates the innovative approach of switching from traditional grey infrastructure to water-treatment ponds and the multiple benefits this investment brings to nature, the wider public, and the company itself.

Deployment of NbS also leads to **job maintenance and creation**. In some European countries, for example, the green building sector is one of the more mature sectors in integrating NbS. In the Czech Republic, the area of green roofs increased by more than 25% in 2018 with a parallel increase in industry turnover (European Federation of Green Roofs and Walls, 2019). In Austria, significant market growth is also foreseen, with the current green roofs and walls industry consisting of 550 companies with 1.200 employees in the direct value chain, and a

3 Europe is a global leader in water technology, accounting for 40% of all related patents globally.

turnover of €90.5 million in 2018 (DG RTD, 2022). Particularly relevant for the built environment and infrastructure sector is the New European Bauhaus (NEB) Strategy, launched in 2021. The strategy promotes sustainability, inclusivity, and aesthetics in urban development and is aligned with key EU policies such as the Circular Economy Action Plan and the EU Biodiversity Strategy for 2030. Financial mechanisms, including the European Regional Development Fund and Horizon Europe, have so far contributed €106.3 million in dedicated funding for NEB projects, fostering climate resilience through sustainable construction, green infrastructure, and ecosystem restoration (Sectoral brief: Built environment, 2025). In addition, the upcoming revision of the 2018 Bioeconomy Strategy and the upcoming Circular Economy Act will support European companies in making a success of the green transition and help EU businesses become more competitive and increase green jobs.

The deployment of NbS also creates business opportunities to **build partnerships** with national and local stakeholders, including civil society organisations, which can **enhance a company's reputation** and public acceptance. This acceptance can further support the **wider dissemination of the achieved benefits**. For example, the Connecting Nature roadshow was designed to raise public awareness of urban NbS such as green walls and was delivered by nature-based enterprises visiting different cities as part of the Connecting Nature project. As part of the roadshow, the Mobile Green Living Room (MGLR) showcased how biodiverse greening solutions can address multiple urban challenges.

# Infrastructure and the Built Environment sector-challenges, opportunities and success stories

The infrastructure sector includes the building and infrastructure stocks needed to support the functioning of society (e.g. housing, mobility, energy, water, communication), produce and distribute goods and services (e.g. transport, commercial buildings), and promote the recirculation of natural resources (e.g. renewable energy infrastructure, green infrastructure) or human-made resources (e.g. recycling centres) (Cruz Rios et al., 2022). It also includes the built environment, which encompasses urban development and the construction industry.

In the following sections, we focus specifically on the infrastructure and built environment sector. We begin with an overview of the sector's impact on nature and highlight key benefits of transitioning from traditional grey to green infrastructure. This is followed by two success stories from a water services provider (Anglian Water) and a construction company (Holcim), which were presented and discussed during the business training session held on 4 December 2024 as part of NetworkNature capacity-building activities.

## Impact of the sector on nature and opportunities for Nature-based Solutions integration

About 80% of Europe's land surface has been shaped by human activities, including buildings, roads, industrial infrastructure, and agricultural use (EEA, 2020). Infrastructure is essential to a society's economy and long-term development. It enables and contributes to growth by providing, among others, housing, transport networks, power plants for energy production, construction materials and dams for water consumption. In the EU, the built environment sector alone employs 25 million people and accounts for 10% of the EU's GDP (EMF, 2024).

Despite these socio-economic benefits, poorly designed infrastructure and built environments can have significant negative impacts on the natural environment, leading to substantial environmental and economic costs. According to UNOPS, UNEP and the University of Oxford**, infrastructure accounts for most global greenhouse gas emissions**, estimated at 79% of the global share, with 70% linked to energy, transports and buildings (Figure 1) (UNOPS, 2021). **In the EU, the built environment sector alone is responsible for 36% of total emissions** (EMF, 2024). With demand for millions of new homes in Europe and over 30 million buildings in need of renovation, the time is ripe for sectoral transformation (European Commission, 2020).

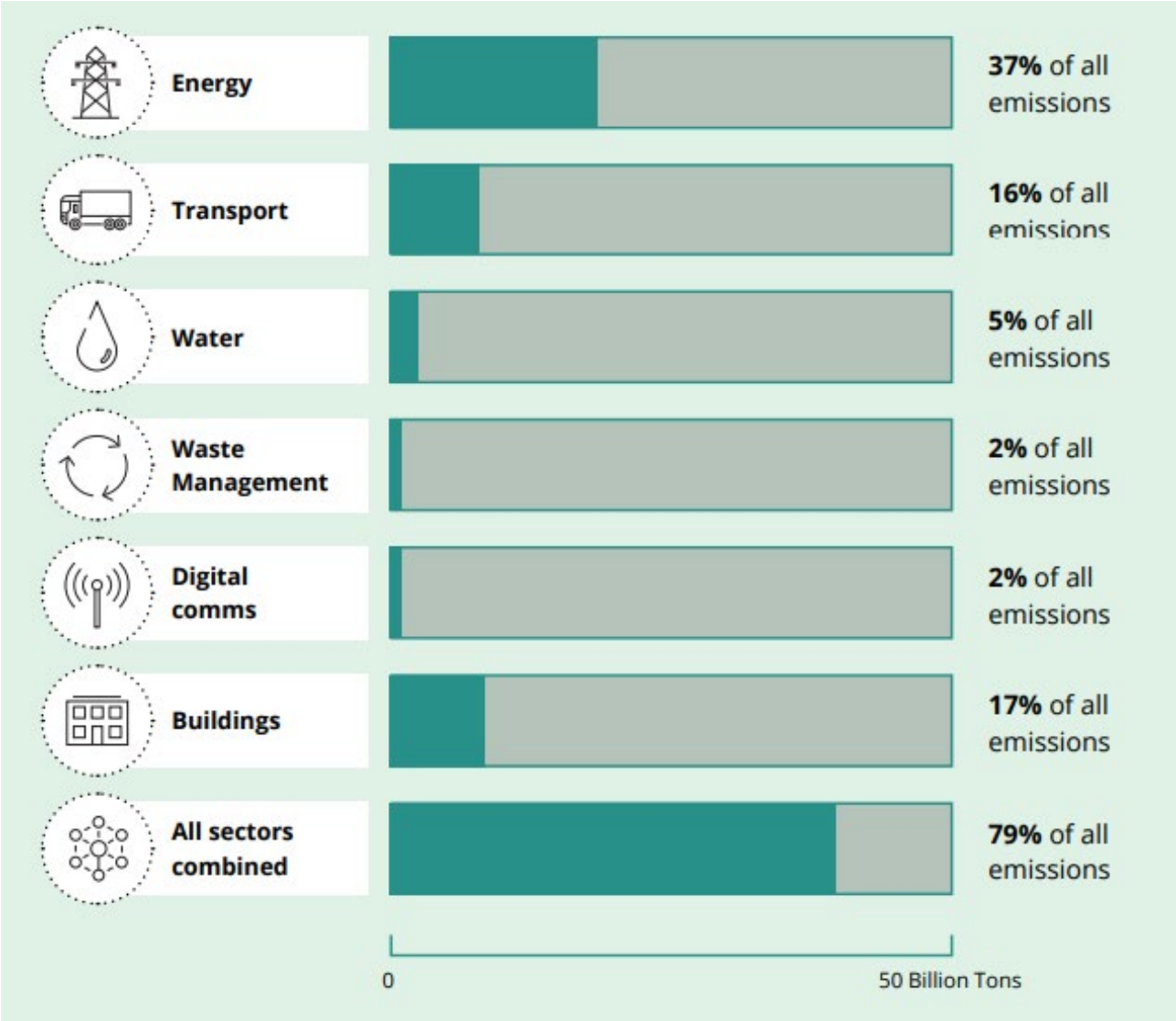


Figure 1: Infrastructure sector contribution to total greenhouse gas emissions (UNOPS, 2021).

One of the most significant impacts of the sector comes from land use change, with EU urban sprawl consuming approximately 1,000 km² of land annually, leading to habitat fragmentation, destruction and other threats to biodiversity (Eurostat, 2025). Urbanisation and infrastructure development are the primary drivers of deforestation in Europe, surpassing agricultural activities. Additionally, the **sector accounts for one third of EU material consumption and is responsible for over 35% of total EU waste generation** (EMF, 2024).

Despite these concerning figures, infrastructure development is not inherently nature-positive or nature-negative. Its impact largely depends on context, planning and design, as well as delivery and management (WWF, n.d.; UNOPS, 2021). Although the sector places significant pressure on resource use, it also holds the potential to enable more efficient resource use and, if done well, their sustainable management. Critical infrastructure, which is largely developed and maintained by this sector, is a key pillar of societal and economic resilience, which makes the need to transition towards nature-positive approaches ever more urgent. By carrying out thorough preliminary assessments and integrating sustainability criteria from the earliest planning stages, infrastructure projects can significantly reduce environmental risks and enhance positive outcomes for nature and

society. A growing range of **solutions is available for designing and implementing infrastructure** that balances social and economic benefits with ecological well-being (Ament, Clevenger & van der Ree, 2023). A good example of how infrastructure should be planned is the UK Vision for the Built environment, an industry-led platform aimed at creating a built environment that enables both people and nature to thrive in the long term.

A 2021 study by the International Institute for Sustainable Development (IISD) estimated that **USD 248 billion per year could be saved** by replacing or complementing newly built infrastructure with plants, trees, and other natural alternatives, while simultaneously **protecting the environment and benefitting local communities** (IISD, 2021). The study also found that NbS used as green infrastructure **could be up to 50% less costly than grey infrastructure** alternatives and **could deliver 28% additional value,** including carbon sequestration, cleaner air and water, improved health outcomes, recreational services, and job creation, as well as opportunities for growth in other sectors such as real estate and tourism. Given that 32% of European cities are highly vulnerable to climate risks (Ellen MacArthur Foundation, 2024) and that climate adaptation investments generate ten dollars in benefits for every dollar invested over ten years, the case for NbS deployment is further strengthened.

The following sections present two success stories from the built environment and infrastructure sector, highlighting the role of NbS and how integrating biodiversity considerations into business strategies has delivered a range of environmental, economic, and social benefits.

# Success story 1

## Anglian Water - Piloting an innovative Nature-based Solution: A treatment wetland

| NbS action: | Integrated constructed treatment wetland |
|---|---|
| **Location:** | Ingoldisthorpe, West Norfolk, England |
| **Type of landscape/ecosystem:** | Rural and Agricultural Landscape |
| **Start date:** | 2018 |

**Project description:**
This project was developed in collaboration between Anglian Water, the Norfolk Rivers Trust, and the Environment Agency, whose joint leadership made the initiative possible. Anglian Water serves approximately seven million customers by supplying drinking water and treating wastewater before safely returning it to the environment. The project focused on the River Ingol, a rare chalk stream. Chalk streams are characterised by their unique biodiversity linked to underlying chalk geology, which produces clear, alkaline waters that support specialised ecological communities. Despite their rarity and ecological importance, chalk streams currently have no dedicated regulatory protection.

## The Nature-based Solution – a constructed wetland

The Water Recycling Centre serves approximately 5,000 customers, treating wastewater using conventional methods to meet standards set by the Environment Agency before discharging it into the river. Following stricter regulations on ammonia discharge, Anglian Water faced the need for significant investment in traditional treatment solutions, which typically require extensive use of concrete, steel, energy, and chemicals.

Instead, inspired by Norfolk Rivers Trust's catchment plan, the project opted for **an innovative Nature-based Solution: a treatment wetland**. Wastewater now passes through a series of four ponds, where plants and bacteria naturally remove ammonia and other pollutants. This ecological treatment achieves the stringent water quality standards set by the Environment Agency. The project, the first of its kind in England, benefitted from a flexible permitting approach by the Environment Agency. This pilot initiative provided Anglian Water with valuable experience and demonstrated the feasibility and effectiveness of treatment wetlands, offering **an affordable, sustainable, and low-risk alternative** to traditional infrastructure investments.

### Benefits:

**Environmental benefits**

- The treated water helps meet stringent water quality standards set by the Environment Agency.
- The ponds create, restore and enhance local biodiversity, supporting nature recovery.
- They achieve a lower capital carbon footprint compared to traditional solutions.

- They provide broader water quality improvements, such as reducing microplastics and bacteria.

**Social benefits:**

- The wetland habitat created offers educational opportunities for local schoolchildren.
- The environment enhances physical and mental well-being through increased community engagement.

**Economic benefits**

- The project saved approximately US $1–2 million in implementation costs compared to traditional wastewater treatment solutions.
- It facilitated access to and expansion of green financing opportunities due to demonstrated environmental and social benefits.
- Wetlands require sediment removal approximately every 10 years rather than annually, potentially reducing long-term maintenance costs.

## Grey solution alternative: Conventional wastewater treatment

- Uses concrete and steel infrastructure.
- Relies heavily on mechanical processes and intensive energy use.
- Has higher initial capital and ongoing operational costs.
- Provides minimal ecological and social co-benefits.

### Challenges to mainstream and upscale NbS integration into business decision-making:

- NbS may have greater performance variability than traditional solutions, leading to increased regulatory risk.
- The current NbS supply chain lacks sufficient scale, expertise, and capacity, offering opportunities for business growth.
- NbS often require additional permissions compared to conventional infrastructure, resulting in increased risk and longer project timelines.
- Implementation frequently depends on acquiring third-party land, which can create complexity and additional negotiations compared to traditional solutions.

While the implementation of the integrated constructed treatment wetland represents a positive step, it should be considered within the broader context of the UK's significant challenges related to ageing sewage infrastructure. Historically, water companies have faced criticism for contributing to biodiversity loss in rivers due to long-term underinvestment in and inadequate maintenance of sewage systems. However, NbS approaches, such as this wetland project, demonstrate considerable potential not only to meet regulatory requirements but also to help address and mitigate some of the longstanding environmental impacts associated with outdated infrastructure.

Scaling up these solutions could therefore play an important role in reversing environmental degradation while improving overall sustainability and accountability within the sector. Measures to enable wider deployment include research and development to better understand how these solutions function and how they can be optimised, exploring opportunities for hybrid green–grey approaches, streamlining planning permission processes and adopting regulatory permitting frameworks that incentivise their uptake.

# Success story 2

## HOLCIM - Nature conservation and restoration actions

| NbS action: | Habitat rehabilitation, water conservation |
|---|---|
| **Location:** | Argentina, Poland, Colombia |
| **Type of landscape/ecosystem:** | Rural/forestry, urban and semi urban |
| **Start date:** | 2018 |

**Project description:**
Holcim, a global leader in innovative and sustainable building solutions, acknowledges the impacts and dependencies that the built environment has on nature.

One of Holcim's initiatives to address these dependencies focused on the Malagueño Plant in Argentina, where the company reduced its freshwater dependency by switching to rainwater harvesting and the use of industrial wastewater, demonstrating how **water reduction targets can be achieved without major investments**. The second highlighted project, which lasted more than five years, took place at the Boyacá quarry in Colombia and involved the **rehabilitation of more than 50 hectares of habitat**. This restoration brought back migratory species that had not previously been present at the site. The project addressed impacts on nature by applying a **transformative progressive rehabilitation** approach rather than the traditional re-greening method, which typically does not consider the origin of species used or the needs of the wider ecosystem. Holcim implemented this approach by relying on natural processes, endemic species, and broader landscape habitats. Both transformative progressive rehabilitation and rainwater harvesting are now widely implemented across Holcim's operations.

During the implementation of the third project at the Kujawy quarry in Poland, large volumes of water collected in the rock formations were **pumped back into the neighbouring forest** beyond the boundaries of the site's direct operations, where they created marshes and ponds, restoring habitats and bringing back several species. This restorative action proved particularly beneficial, as the forests in the area are highly susceptible to drought.

### Benefits:

**Environmental benefits:**

- Malagueño plant (Argentina): reducing pressures on water ecosystems.
- Boyacá quarry (Colombia): restoration of bird populations and biodiversity on site.
- Kujawy quarry (Poland): restoration of forest habitats beyond direct operation boundaries.

**Social benefits**

- All of Holcim's rehabilitation plans require stakeholder engagement to ensure that rehabilitation efforts are aligned with stakeholders' expectations and interests. In some cases, the rehabilitated areas can be opened to the public for educational or leisure activities (depending on the size of the site and whether public safety can be ensured). Such engagements are recurring and mandatory if any changes are made to the rehabilitation plans between their 5-year reviews.

**Economic benefits**

- Water reduction targets can be achieved without costly investments, for example by recognising that a quarry may already supply 60% of a site's annual water needs, while the remaining 40% can be met using industrial wastewater, as demonstrated at the Malagueño plant. This approach resulted in significant cost savings in freshwater extraction, transportation, and purchasing.

- Holcim also promotes mutually beneficial collaborations between industries, for example through wastewater management. These partnerships, often established with the food and beverage sector, create win–win solutions by reducing the need for wastewater discharge while also limiting the need for additional water withdrawals.

The following section describes further actions taken by Holcim to integrate biodiversity considerations into its business operations:

### Holcim's actions on measuring biodiversity impact

Holcim assesses biodiversity impacts across all active and inactive quarries using the **Biodiversity Indicator and Reporting System** (BIRS), developed in collaboration with IUCN. The BIRS value combines three dimensions: *Quantity* (the identity and extent of all habitat types), *Quality* (the ecological condition and suitability for biodiversity), and *Importance* (the uniqueness and ecological significance of habitats, for example in contexts such as island nations.

### Holcim's action on safeguarding water resources

To address water dependency challenges, Holcim established its three-tiered 2030 Water Commitments: reducing freshwater withdrawal, ensuring discharged water meets quality standards, and replenishing freshwater by returning water to nature and surrounding communities beyond its operational boundaries. Holcim is the first company in its industry, and one of only three worldwide, to implement Science Based Targets for Nature (SBTN) in place. The Science Based Targets Network is a civil-society and science-led initiative founded in 2019 by a group of global NGOs that joined forces to define what is required for companies and cities to do "enough" to remain within Earth's limits while meeting societal needs.

## IUCN and Holcim partnership

Throughout their 3-year long partnership with IUCN (2023-2026), Holcim is also delivering on several targets:

- **Biodiversity management:** ensuring the robustness and accuracy of the biodiversity measurement.

- **Water stewardship:** reviewing Holcim's replenishment efforts to identify implementation gaps and advise on the most effective way forward, considering both the wider ecosystem and surrounding communities. The ecosystem recovery taking place beyond the boundaries of the Kujawy operation provides a good example of how water stewardship can deliver ecosystem-wide benefits.

- **Green building standard:** developing a scorecard to assess and communicate the impacts of green roofs in cities, including metrics for biodiversity support, stormwater attenuation, climate moderation, and other related benefits.

## Challenges to mainstream and upscale NbS inclusion in business decision-making:

- Ensuring that each rehabilitation initiative is carefully designed with local expertise and a strong ecosystem-level ecological understanding can be demanding.
- Developing a better understanding of natural processes and ecological recovery timescales can also present challenges.

## Solutions and enablers for stronger NbS inclusion in business decision-making:

- Stronger collaboration between businesses and relevant stakeholders is needed.
- Clearer and more robust policy requirements are needed to encourage the business sector to better address its biodiversity impacts. While climate impacts are well established and widely understood, biodiversity impacts, though recognised, are less often acted upon, and policy in this area remains underdeveloped.

# Challenges and opportunities of integrating biodiversity in business decision-making processes

The following section outlines the challenges discussed during the training session breakout groups, organised around three key themes: knowledge, policy and partnerships, and finance. It also presents the key needs identified by participants to address these challenges and suggests the way forward, including practical tools to accelerate the uptake of NbS by businesses.

## Knowledge

Participants highlighted a wide range of **knowledge-related challenges** hindering the integration of biodiversity and NbS into business decision-making processes. These include limited awareness of businesses' dependencies and risks related to nature and biodiversity, insufficient understanding of NbS due to the concept's complexity, inconsistent definitions, widespread misinformation, as well as a general lack of expertise and capacity. Businesses also face **difficulties in assessing the costs and benefits of NbS**, limited access to practical tools and methodologies (particularly for monitoring ecosystem services), and weak knowledge transfer. Additional challenges include insufficient communication of NbS benefits, a lack of inspiring best practices and case studies, and resistance to change among business leaders and clients.

Key needs include awareness-raising and communication strategies, capacity-building programmes with a focus on leadership, access to up-to-date data and expert advice, and the development of standardised concepts and practical tools. Participants emphasised the importance of real-world case studies demonstrating both successes and failures, as well as tools aligned with business objectives that translate ecological benefits into quantifiable and financeable outcomes. There is a strong **need for user-friendly, integrated tools and methodologies** that combine business profitability with biodiversity enhancement. Existing environmental assessment data could be better synthesised and leveraged, for example in preparation for reporting under the Taskforce on Nature-related Financial Disclosures (TNFD), which is a useful framework for assessing business dependencies on nature. Finally, a key enabling skill for more synergistic infrastructure design incorporating NbS is systems thinking, as opposed to siloed decision-making. The UK has taken a step in this direction with the launch of a new community promoting systems thinking in the built environment, called Built Environment Connective.

**Way forward**

Bridging the gap between robust science and practical business tools is essential. NbS must be positioned not as abstract ideals but as viable business strategies-grounded in evidence, adapted to real-world constraints, and clearly aligned with market goals. To unlock this potential, NbS benefits need to be communicated in ways that resonate with business decision-makers: quantifiable, fundable, and embedded in core business logic. This starts with leveraging the data companies already collect and making existing tools more accessible and aligned. The mindset shift is underway, but it must accelerate—especially at the leadership level. Clarity, credibility, and compelling case studies will be key to driving commitment and overcoming inertia.

## Policy & partnerships

**Several systemic barriers hinder the effective integration of NbS** into policy and practice. These include a lack of clear policy support, limited harmonisation across policy frameworks, insufficient regulatory clarity, and the absence of binding targets. Stakeholder engagement also remains limited, while multi-stakeholder partnerships, particularly those involving local authorities, communities, and farmers, are often underdeveloped or entirely absent. Businesses face challenges in quantifying nature-related issues and aligning their actions with evolving policy landscapes. Overall, the pace of policy development lags the urgency of environmental challenges, and harmful subsidies or restrictive regulations can undermine implementation. In addition, short regulatory timeframes and insufficient long-term funding constrain the delivery and maintenance of NbS initiatives.

A strong call was made for **political commitment to mainstream NbS**, supported by clear regulations, aligned incentives, and standardised frameworks. **Specific guidance, certification systems, and binding biodiversity targets**, especially those aligned with commitments to multi-lateral environmental agreements such as the Kunming-Montreal Global Biodiversity Framework, are seen as essential. **Effective partnerships** must include investors, communities, local governments, practitioners, and farmers. **Stakeholder mapping tools, local networks, and Public-Private Partnerships (PPPs)** are needed to strengthen collaboration and collective leadership.

**Way forward**

A shift toward regulatory clarity, stakeholder inclusion, and long-term collaboration is critical. NbS must be embedded in frameworks that prioritise measurable biodiversity outcomes and incentivise their delivery through aligned financial structures. Bridging the gap between high-level targets and on-the-ground implementation requires not just clearer policies but also strategic partnerships across sectors. Where policy lags, progress can still be unlocked by connecting business needs with community-based action, funding pathways, and local leadership. Scaling NbS demands coordination, sustained investment, and regulations that work in practice, not just on paper.

## Finance

Participants highlighted a range of challenges related to the financing of NbS projects. These reflect the differing drivers required by various stakeholders to initiate NbS projects, as well as the implications these drivers have for developing sustainable financial models and mechanisms. Two key barriers to investment were identified. The first is **high transaction costs**, as substantial time and financial resources are required to set up projects, for example, for stakeholder engagement and feasibility studies, compared with conventional grey infrastructure projects. The second is **high transition risk**, as uncertainty around project success and the difficulty of quantifying benefits make businesses more cautious about investing.

In terms of solutions, participants highlighted the need for a **stronger role for government** in incentivising private investment into NbS. They also pointed to the significant divergence in financing scales, which can range from €100k for project developers to €100M for investors, raising the question of how these levels can be better aligned to ensure viability. Finally, the **pooling of partnerships among smaller businesses and cooperatives** was identified as an important strategy to collectively secure larger-scale financing. The role of government was also emphasised in providing institutional frameworks that enable community groups to establish nature-based enterprises, including women-led NbS initiatives.

### Way forward

The main challenge in financing the increased uptake of NbS is that most of nature's benefits currently have no financial market value, even though nature underpins collective survival and prosperity. A shift in how economic and financial returns are calculated is urgently needed, one that accounts for the long-term benefits of NbS, alongside stronger policy and regulatory support. Policymakers, together with financial institutions, have a key role to play in accelerating this process and assigning economic value to nature.

In the built environment sector, this transition can be accelerated through targeted regulatory measures and strategic public and private investment supporting the mainstreaming of nature-based and hybrid solutions in urban planning, the use of sustainable and recycled materials, and the construction of energy-efficient infrastructure, among other examples. The necessary sectoral shift in the EU is already underway, with NbS and green infrastructure offering new and more sustainable business opportunities.

# Actionable strategies and available tools for biodiversity integration into business

This section presents strategies and tools identified during the training session for businesses as having strong potential to address the challenges related to the three key topics and beyond. These are organised around the questions raised to speakers during the panel discussion.

## How do you suggest addressing knowledge-related challenges?

There has been a significant shift in business thinking: the question is no longer whether biodiversity should be considered, but how it can be integrated into decision-making processes. It is now widely recognised that companies need to adopt a location-specific approach and go beyond their direct operations to account for both upstream and downstream activities and their associated impacts.

The ENCORE tool, which allows businesses and financial institutions to assess their dependencies and impacts on nature, has undergone several improvements. The updated version also provides a dataset on key value chain linkages, allowing companies to explore upstream and downstream relationships associated with specific economic activities. In addition, it enables users to disaggregate how business impacts and dependencies relate to different natural capital assets across ecosystem types. Over time, quantitative data will further illustrate how these impacts and dependencies vary in significance depending on the ecosystem type and biome in which they occur. The IBAT tool was also specifically mentioned as a very useful assessment tool.

## ENCORE and IBAT tools

### ENCORE (Exploring Natural Capital Opportunities, Risks & Exposure)

A free online tool that helps businesses and financial institutions identify dependencies and impacts of their operations on natural capital and ecosystem services. By enabling risk screening and supporting strategic decision-making, users from the built and infrastructure sector are able to mitigate risks like increased flooding by designing appropriate NbS buffer zones or green infrastructure.

### IBAT (Integrated Biodiversity Assessment Tool)

A subscription-based platform which provides global biodiversity-related information i.e. species occurrences, protected areas, Key Biodiversity Areas and threat assessments. Thanks to IBAT, businesses in the infrastructure sector can conduct initial biodiversity risk screening in early project stages to overlay the project's footprint with global biodiversity layers and highlight, for example, potential presence of a protected wetland species.

With regard to the green building industry, there are also **industry-led platforms** established through EU projects that provide much-needed sector-specific knowledge, such as the Connecting Nature Enterprise Platform (CNEP), developed under the Connecting Nature EU project. Led by industry associations, it addresses knowledge and skills gaps in the deployment of NbS in green buildings. In addition, the **green buildings community** on the CNEP, led by the European Federation of Green Roofs and Walls, serves as a valuable knowledge resource.

## What is driving companies and businesses to utilise NbS and integrate biodiversity?

The experience of Anglian Water highlights **cost efficiency as a key factor** in integrating NbS and biodiversity into business practices. When NbS are not the most cost-effective alternative compared to traditional solutions, their adoption can become significantly less feasible for companies.

Water recycling services and water companies have a significant impact on the water environment due to the effluent discharged into water bodies. For Anglian Water, NbS provided an opportunity to encourage government reform of water sector regulation and support a shift towards a more catchment-based approach. In this way, challenges can be addressed collectively with other sectors, such as agriculture, to minimise environmental harm and strengthen stakeholder collaboration - a key characteristic of NbS.

Additionally, **increased public awareness** of the water environment and its industrial use, combined with a **stronger appreciation of local blue and green spaces** following the COVID-19

pandemic, has raised customer expectations of water companies. Anglian Water can address these expectations through NbS by meeting the core requirement of delivering high water quality while also providing broader societal benefits and environmental improvements.

Finally, when considering the purpose of business, participants agreed that although financial viability and profitability are key considerations, they are not the sole objective of a business. The **multifunctional nature of NbS** offers a strong advantage, as they enable companies to balance financial viability with purpose-driven goals. By delivering environmental, social, and economic benefits, NbS can support long-term sustainability objectives and help businesses **"do the right thing" without compromising commercial priorities**.

In Holcim's corporate experience, there is often a stronger focus on risks rather than on capturing opportunities. NbS offer a shift in the approach - from working against nature to working with it. In addition, it was noted that NbS provide significant **reputational value while supporting business growth**, reducing operational costs, and minimising societal and ecological impacts. Holcim is using practical tools to integrate NbS and assess nature-related risks, including:

- **IBAT (Integrated Biodiversity Assessment Tool):** Assesses proximity to protected areas, helping businesses understand local biodiversity risks.
- **Aqueduct:** A free water-risk assessment tool, especially useful for small businesses.
- **WWF Risk Filter:** Supports risk evaluation and aligns disclosures with frameworks such as TNFD and TCFD (Task Force on Nature & Climate Related Financial Disclosures).
- **ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure):** Helps to assess the risks that environmental degradation causes for financial institutions.

Additionally, the **crucial role of partnerships** as a leadership tool in NbS integration was highlighted. Partnerships are essential for embedding nature into business strategies, helping to bridge gaps in knowledge, expertise, and impact. By collaborating with organisations such as IUCN, businesses can enhance the effectiveness of their biodiversity efforts. **Cross-sector partnerships**, rather than being viewed as competitive, are key to enabling scalable, nature-positive change. True progress occurs when companies work together to ensure that nature becomes a core component of how business is conducted. This must become the new norm.

## Why is it essential for the built environment sector to take biodiversity into account? How can we ensure this happens in practice?

As highlighted in the recently published report *Building Prosperity: Unlocking the potential of a nature-positive, circular economy for Europe* by the Ellen MacArthur Foundation (2024), nature is not just a backdrop but a **critical asset which underpins half of the world's GDP**.

For the built environment sector, **integrating biodiversity is no longer optional** but essential for long-term competitiveness. Economic assessments from the report indicate, that across Europe, nature-positive strategies could **unlock up to 500 billion annually** over the next decade for value chain actors in the sector (Ellen MacArthur Foundation, 2024). Beyond direct business benefits, the **broader societal gains, estimated at €158 billion**, include increased job creation, more liveable urban spaces, higher productivity, and improved wellbeing. By recognising nature as a strategic asset, the sector can future-proof its operations while contributing to resilient and thriving communities.

## How are NbS relevant for reporting on nature benefits?

NbS are relevant across different aspects of the reporting process, from **managing negative impacts to generating positive outcomes for people and ecosystems**, thereby supporting companies in risk management and opportunity identification.

A 2025 study by UNEP-WCMC (United Nations Environment Programme World Conservation Monitoring Centre) and UNEP FI (United Nations Environment Programme Finance Initiative) provides an overview of key methodological trends in private sector reporting and assessment of nature-related benefits and risks.

There is growing recognition of the need to consider not only pressures on nature but also its state, where NbS can provide pathways to both biodiversity and socioeconomic benefits. A stakeholder mapping process enables businesses to assess how their interactions with nature affect other groups, such as Indigenous Peoples or local communities who also depend on ecosystem services. NbS therefore offer a stronger opportunity to capture the broader ecological impacts of business activities while highlighting their important social dimensions.

## How can a circular economy be key to mainstreaming biodiversity in economic sectors?

According to the Ellen MacArthur Foundation, a truly **circular economy is nature-positive by design**. By eliminating waste and pollution, circulating materials, and regenerating natural systems, circular economy strategies help reduce environmental degradation and alleviate pressure on biodiversity. To mainstream these benefits, the Foundation identifies **six key strategies across three core ambitions** for the built environment, as outlined in the report by the Ellen MacArthur Foundation (2024) :

1. **Revitalising land and assets**
   **Identified strategies:** redeveloping brown field sites and converting vacant commercial into multi use assets.

2. **Maximising nature in cities**
   **Identified strategies**: Increasing tree canopies and expanding blue and green infrastructure and spaces within urban environments.

3. **Optimising building design and material sourcing**
   **Identified strategies**: Employing material efficient and circular design at the building level and using low impact materials.

# Conclusions and way forward

The World Economic Forum estimates that **investment in NbS must at least triple in real terms by 2030** and increase fourfold by 2050 if global climate change, biodiversity, and land degradation targets are to be met. This acceleration would represent cumulative total investments of up to $8.1 trillion and a future annual investment rate of $536 billion (WEF, 2021). However, such large-scale investment is not only required to achieve policy targets but is also essential for the business sector to avoid a wide range of far-reaching risks discussed in this booklet.

Seventy percent of the infrastructure that will exist in 2050 has yet to be built, presenting a **significant opportunity for the sector to become nature-positive** and move away from past trends that have contributed to the triple planetary crisis. As highlighted by business representatives themselves, there is **growing momentum beyond the sole pursuit of profit**, with increasing interest among companies in taking responsible action that goes beyond financial returns and serves wider society as well as direct consumers. In this context, NbS play a pivotal role, and this booklet presents examples and tools demonstrating how to create win–win outcomes for businesses, the wider public, and nature. It is the hope of the authors that more businesses will recognise **NbS as essential in delivering environmental, social, and economic benefits**, and will help continue shifting mindsets—an essential step in achieving a successful transition to a nature-positive world.

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**Illustrator:** Silvia Robertelli

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**Networknature.eu**
**hello@networknature.eu**
**NetworkNatureEU**
**NetworkNature**
**NetworkNature**

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