

NetworkNature 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 relies 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. Put simply, continuing business as usual pathways, which drove us to where we are now, 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 the 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 the one including 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 which companies might encounter.
- Highlights the opportunities that investment in nature offers in terms of markets, operations, reputation and job creation.
- o 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 Holcim and Anglian Water. Holcim's nature conservation and restoration actions showcase how biodiversity was brought back to life in the operation sites together with the multitude of economic benefits that these investments brought. Anglian Water's story shows how pilot investment in treatment wetlands has helped the company to lower their waste-water treatment costs, while also having more biodiversity and social benefits than traditional grey infrastructure.

Success stories are followed by an overview of challenges regarding Nature-based Solutions (NbS) integration structured around three key themes: knowledge, policy and partnership as well as finance. Based on challenges and needs identified, a way forward is suggested 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 we are confident it will be a valuable resource to all smaller or larger businesses, NbS investors, as well as business organisations. It can also be useful for policy makers 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 being an important way to address the multiple challenges** that face society, businesses and governments while also providing a pathway for sustainable, resilient, and inclusive growth. There have been several definitions of NbS 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. 2023 research from <u>S&P Global Sustainable</u> found that 85% of the world's largest companies have a significant dependency on nature across their direct operations (<u>Whieldon et al., 2023</u>). In the EU alone, the 2025 JRC's study uncovered that between 19% and 36% of the EU's 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 (<u>Hirschbuehl et al., 2025</u>). Construction industries in particular, together with the agriculture and food and beverage sectors, rely directly on natural capital¹ to generate their collective EUR 1.68 trillion of gross value added per year in the EU (<u>Ellen MacArthur Foundation (EMF)</u>, 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 to GDP

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

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, the businesses are also driving their depletion and worsening status either through direct or indirect exploitation, pollution, land use change (including the conversion, degradation and modification of ecosystems) as well as by the upstream and downstream activities in their value chains. For example, the built environment in particular is one of the sectors which are the most resource intensive: responsible for 15% of global freshwater consumption as well as 50% of global raw materials 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 translate into reduced productivity and disruption of operations. Water-related risks in particular are already leading to stranded assets² across key industrial sectors including mining industries which expose financial institutions to these risks. In the 2022 report commissioned by the Swiss office for environment, 69% of listed companies stated that they are exposed to water risks that could generate a substantive change in their business. The potential value at risk tops out at US\$225 billion (<u>Planet Tracker & CDP, 2022</u>). These water-stranding events exacerbated by the depletion of freshwater resources are sadly predicted to rise.

Businesses also face additional **regulatory** risks owing to energy and broader economy-wide transitions, such as adapting to new regulations and 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, presented by the reputational damage caused by negative environmental impacts of their activities on both the

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

environment and society. Finally, **market risks** may arise from all these categories, as a result of changing dynamics in markets, 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 influence 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. Nature- based Solutions (NbS) present an excellent tool offering both preservation and restoration of natural resources on which our economy depends. The WEF (2020) 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). The 2025 World Resources Institute (WRI) study presented powerful evidence that bolstering funding for climate adaptation and 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). Nature-based Solutions – 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, starting with cost savings and increases in operational efficiency through revenue streams from new business models, markets, products and services to 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** which arise when companies develop biodiversity-positive or nature-friendly products and services that result in new revenue streams. 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 is predicted to create a demand for expertise in

sustainable construction, water management technologies, and landscape architecture. Businesses can and should play a significant role in shaping the National Restoration Plans set by governments. This can be done by engaging in the planning processes for example by bringing their expertise in nature restoration into the planning of restoration measures that are compatible with socio-economic goals. In this regard, the construction sector has very 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. Investing in water resilience is thus a significant business opportunity for EU industry³. 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 and in order to speed up this process, the Commission plans to establish, amongst other actions, a Water Resilience Investment Accelerator to implement 20 pilot innovative cases for natural water retention and water efficiency, bringing together local water investors, solution providers and problem holders to inspire similar actions across the EU. Please see our success story below from Anglian Water on switching to water-treatment ponds from traditional grey infrastructure and multiple benefits this investment is bringing to nature, wider public and the company itself.

Deployment of NbS also leads to **job maintenance and creation**. For example, the green building sector is one of the more mature NbS sectors in some European countries. 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 - the current green roofs and walls industry consists of 550 companies with 1.200 employees in the direct value chain with a turnover of €90,5 million in 2018 (DG RTD, 2022). The New European Bauhaus (NEB) Strategy launched in 2021 is particularly relevant for the built

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

environment and infrastructure sector as it promotes sustainability, inclusivity, and aesthetics in urban development, aligning 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 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 – without damaging nature.

Deployment of NbS also creates business opportunities to **build partnerships** with both national and local stakeholders, including civil society organisations, which in turn helps to **enhance a company's reputation and acceptance by the public.** This acceptance can also lead to **wider dissemination of the benefits achieved**. For example, <u>Connecting Nature roadshow</u> was designed to build public awareness of urban Nbs Solutions like green walls and was delivered by nature-based enterprises visiting different cities as part of the Connecting Nature project. As part of the roadshow, Mobile Green Living Room – the MGLR – showcased how biodiverse greening options can tackle multiple urban challenges.

Infrastructure and the Built Environment sectorchallenges, opportunities and success stories

The infrastructure sector includes 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) (Cruz Rios et al., 2022). It also includes the built environment which encompasses urban development and the construction industry.

In the following sections we are turning our focus to the infrastructure and built environment sector specifically, starting with an overview of the sector's impact on nature and highlighting some benefits of transitioning from traditional grey to green infrastructure. This is followed by two success stories from water services provider (Anglian Water) and the construction industry (Holcim) which were presented and discussed during the training session for businesses 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 - covered with buildings, roads, industrial infrastructure or used for agriculture (EEA, 2020). *Infrastructure* is essential to the economy of a society and its long-term development. It enables and contributes to development by providing buildings for housing and economic activity, roads for transportation, power plants for energy, material for constructions, dams for water consumption, etc. In the EU, the built environment sector alone employs 25 million people and accounts for 10% of the EU GDP (EMF, 2024).

Despite these socio-economic benefits, poorly designed infrastructure and built environments can have significant negative impact on the natural environment, leading to substantial environmental and economic costs. According to UNOPS, UNEP and the University of Oxford, infrastructure is responsible for most greenhouse gas emissions worldwide, estimated at 79% of the total greenhouse gas emissions globally, with 70% associated with energy, transports and buildings (Figure 1) (UNOPS, 2021). In the EU, the built environment sector alone is responsible for 36% of overall EU emissions (EMF, 2024). With a 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).

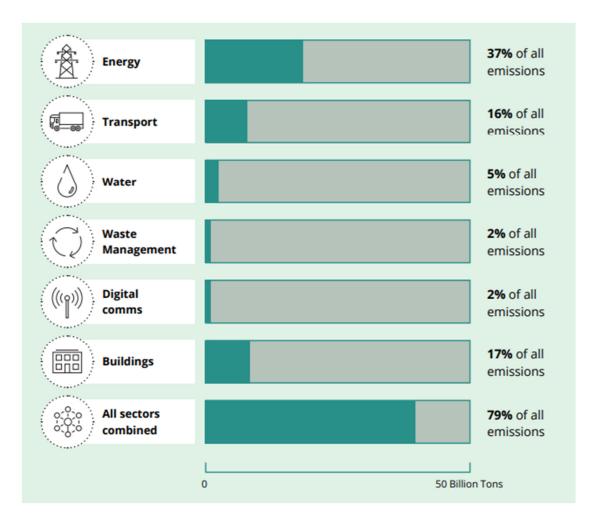


Figure 1: Infrastructure sector contribution to total greenhouse gas emissions (<u>UNOPS</u>, <u>2021</u>).

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 causes 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 the EU's total waste generation (EMF, 2024).

Despite these bleak figures, infrastructure development is not inherently perceived as nature-positive nor nature-negative, its impact depends largely on context, planning and design, and delivery and management (<u>WWF, n.d.</u>; <u>UNOPS, 2021</u>). Although the sector severely impacts on the use of resources, it also holds the potential of enabling a more efficient use of these resources and if done well, their sustainable management. Critical infrastructures,

which are largely implemented and maintained by this sector, are a crucial pillar for resilience of societies and economies and therefore the need to go nature-positive is ever more urgent. By conducting thorough preliminary assessments and integrating sustainability criteria from the earliest planning phases, infrastructure projects can significantly reduce environmental risks and enhance positive outcomes for nature and society. A growing number of solutions are 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 which is the industry-led platform aiming to create built environment enabling both people and nature to thrive in the long-term.

The 2021 study by the International Institute for Sustainable Development (IISD) estimated that **USD 248 billion a year could be saved by replacing or complementing newly built infrastructure with plants, trees, and other natural alternatives and at the same time protecting the environment and benefitting local communities (IISD, 2021)**. The study found that **NbS used as green infrastructure could cost 50% less than grey infrastructure** alternatives and **could deliver 28% in added value such** as carbon sequestration, cleaner air and water, better health, recreational services, jobs and opportunities for growth in other sectors (e.g. real estate and tourism). Given the fact that 32% of European cities are highly vulnerable to climate risks (Ellen MacArthur Foundation, 2024) and that climate adaptation investments bring 10 dollars for every dollar invested over the course of ten years, the case for NbS deployment is further strengthened.

The following sections showcase two success stories from the built environment and infrastructure sector highlighting the role of NbS and how incorporation of biodiversity considerations into their business strategies brought 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 through a collaboration between Anglian Water, Norfolk Rivers Trust and Environment Agency, whose joint leadership brought the initiative to life. Anglian Water serves approximately seven million customers by providing drinking water and managing wastewater before safely returning it to the environment. The project targeted the River Ingol, a rare chalk stream. Chalk streams are known for their unique biodiversity associated with the underlying chalk geology, resulting in clear, alkaline waters that support specialised ecological communities. Despite their rarity and ecological importance, chalk streams overall currently receive no special regulatory protection.

The Nature-based Solution – a constructed wetland

The Water Recycling Centre serves approximately 5,000 customers, treating wastewater in a traditional way to meet standards set by the Environment Agency before discharging it into the river. Following stricter regulations on ammonia discharge, Anglian Water faced significant investment in conventional treatment solutions, which typically involves 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, benefited from a flexible permitting approach by the Environment Agency. This pilot initiative provided Anglian Water 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.
- o 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

- o Uses concrete and steel infrastructure.
- o Relies heavily on mechanical processes and intensive energy use.
- Has higher initial capital and ongoing operational costs.
- o 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.
- o Implementation frequently depends on acquiring third-party land, creating complexity and additional negotiations compared to traditional solutions.

While the implementation of the integrated constructed treatment wetland is a positive step, it should be viewed within the broader context of the UK's substantial challenges with ageing sewage infrastructure. Historically, water companies have faced criticism for contributing to biodiversity loss in rivers due to prolonged underinvestment and neglect of sewerage systems. However, NbS approaches, such as this wetland project, demonstrate significant potential not only to meet regulatory standards but also to address and mitigate some of the longstanding environmental impacts caused by outdated infrastructure.

Scaling these solutions could thus play a vital role in reversing environmental degradation while improving overall sustainability and accountability within the sector. Ways to enable more of these solutions to be delivered include research and development to better understand how they work so they can be optimised; understanding the opportunities for hybrid green/grey solutions; removing the need for planning permission to build them, and a permitting approach from regulators that incentivises 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 tackle these dependencies focused on the Malagueno Plant in Argentina where the company tackled its freshwater dependency by switching to rainwater harvesting and using industrial wastewater, showcasing how water reduction targets can be reached without major investments. The second showcased project, which lasted over 5 years, is located in Boyacá quarry in Colombia and included over 50 Ha of habitat rehabilitation. This rehabilitation brought back migratory species that had not been present on the site before. This project tackled impacts on nature by applying transformative progressive rehabilitation instead of taking the traditional re-greening approach, which does not typically consider the origin of the species used nor the wider ecosystem needs. Holcim applied this transformative progressive rehabilitation approach by using natural processes, endemic species and wider landscape habitats. Both transformative progressive rehabilitation and rainwater harvesting are widespread efforts across different Holcim's operations.

During the implementation of the third project located in Kujawy quarry in Poland, immense water collection in rocks allowed water to be pumped back to the neighbouring forest beyond the boundaries of direct operations where it created marshes and ponds, recreating habitats and bringing back several species. This restorative action was particularly beneficial as the forests in the area are highly susceptible to droughts.

Benefits:

Environmental benefits:

- Malagueno plant (Argentina) reducing pressures on water ecosystems.
- o Boyacá quarry (Colombia): restoration of bird populations and biodiversity on site.

o Kujawy quarry (Poland): restoring forest habitats beyond direct operation boundaries.

Social benefits

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

Economic benefits

- Reaching water reduction targets without costly investment e.g. realising that a given quarry already accounts for 60% of annual water needs for the site, while another 40% could be provided through industrial wastewater, as was the case for Malagueno plant. Significant cost reduction for freshwater extraction, transportation and purchasing was achieved.
- Holcim also engages a mutually beneficial collaboration between industries through, for example, wastewater management – this collaboration is often entered into with food and beverage industries and provides win-win solutions for both (no need to deal with water discharge and no need to secure water withdrawal).

The following text describes some further Holcim's actions on including biodiversity considerations in their business operations:

Holcim's actions on measuring biodiversity impact

Holcim is providing a measurable biodiversity impact on all (active and non-active quarries) through the **Biodiversity Indicator and Reporting System** (BIRS) value (co-created with IUCN). This BIRS value combines *Quantity* (identity and extent of all habitat types) with *Quality* (assessing ecological

condition and suitability for biodiversity) and *Importance* (assessing uniqueness and ecological importance on e.g. an island nation).

Holcim's action on safeguarding water resources

To address the water dependency challenges, Holcim developed its 3-tiered 2030 Water Commitments: reducing freshwater withdrawal, ensuring the discharged water meets quality standards as well as providing freshwater replenishments by giving water back to nature and/or to communities (outside of their own boundaries). Holcim is the first company in the industry, and one of three companies worldwide, to have 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 who have joined forces to help collectively define what is necessary for companies and cities to do "enough" to stay within Earth's limits and meet society's needs.

IUCN and Holcim partnership

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

- o **Biodiversity management:** ensuring the robustness and accuracy of the biodiversity measurement.
- Water stewardship: reviewing Holcim's replenishment efforts in order to find implementation gaps and advise on the best way forward that considers the wider ecosystem as well as the surrounding communities. The ecosystem recovery that is occurring outside the boundaries of Kujawy operation is a good example of how water stewardship can have an ecosystem-wide impact.
- Green building standard: developing a scorecard to assess and communicate the impacts of green roofs in cities (metrics for: biodiversity support, stormwater attenuation, climate moderation, etc.).

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

- The need to ensure that each rehabilitation initiative has been carefully made with local expertise and strong ecological understanding at ecosystem level can be demanding.
- Better understanding of nature processes and recovery timescale can also be challenging.

Solutions and enablers for stronger NbS inclusion in business decisionmaking:

- Stronger collaboration between businesses and relevant stakeholders is needed.
- Need for strong policy requirements to pressure business sector to do more with their biodiversity impact – while impacts on climate are well established and better understood, impacts on biodiversity, though recognised, are rarely considered and the policy is lagging behind in this regard.

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

The following section details challenges discussed during the training session breakout groups and organised around three key themes- knowledge, policy and partnership and finance. It also describes key needs raised by the participants to address them and suggests the way forward including practical tools to speed up the Nature-based Solutions (NbS) uptake by businesses.

Knowledge

Participants highlighted a wide range of knowledge-related challenges hindering the integration of biodiversity and NbS into their business decision-making processes. These include a lack of awareness on the risks and dependencies of businesses on nature and biodiversity, insufficient understanding of NbS due to the complexity and inconsistent definitions of

the concept as well as a wide range of misinformation on the topic, and 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 poor knowledge transfer. Other 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 (especially for leadership), access to up-todate data and expert advice, and the development of standardised concepts and practical tools. Participants stressed the importance of real-world case studies that demonstrate both successes and failures, and tools that align with business objectives and translate ecological benefits into quantifiable, fundable outcomes. There is a strong need for user-friendly, interconnected tools, and methodologies that integrate business profitability with biodiversity enhancement. Existing data collected for environmental assessments could be better synthesised and leveraged, for example in preparation for The Taskforce on Nature-related Financial Disclosures (TNFD) reporting which is a great tool to assess the business dependencies. Lastly, a crucial skill that would enable a more synergetic design of infrastructure systems that include NbS is **systems thinking**, as opposed to siloed decisions. The UK has set up a great step in this direction with the launch of a new community that promotes the adoption of systems thinking in the built environment entitled Built Environment Connective.

Way forward

Bridging the gap between robust science and practical business tools is essential. Nature-based Solutions 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 collecting 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 prevent effective integration of NbS into policy and practice. These include a lack of clear policy support, harmonisation between policy frameworks, regulatory clarity, and binding targets. Stakeholder engagement remains limited, and multi-stakeholder partnerships—particularly those involving local authorities, communities, and farmers—are often underdeveloped or missing entirely. Businesses face difficulty in quantifying nature-related challenges and aligning actions with evolving policy landscapes. The overall pace of policy change lags behind the urgency of environmental issues, and harmful subsidies or restrictive regulations can undermine implementation. Furthermore, short regulatory timeframes and insufficient long-term funding hinder delivery and maintenance of NbS schemes.

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 multilateral 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. Nature-based Solutions 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 relating to the barriers in financing of NbS projects. These point to varying drivers that different stakeholders require to get NbS projects off the ground and what implications these drivers have in building sustainable financial models and mechanisms.

The two key barriers to investment identified included:

- o **High transaction costs:** large amounts of time and money to get the projects set up e.g. stakeholder engagement, conducting feasibility studies are higher compared with grey infrastructure projects.
- High transition risks: not knowing how successful the intervention will be and not being able to quantify benefits makes businesses more hesitant to invest.

In terms of solutions, the need for a **larger role of government** was highlighted to incentivise more private investment into NbS. The participants also pointed to the overwhelming divergence on the scale of finance which can vary from 100k for project developers vs 100M for investors which begs the question of how these quantities can be aligned to be viable. Lastly, the **aggregation of partnerships between smaller business and cooperatives** was highlighted to be a key strategy to secure larger finance collectively. Here also the role of government was outlined in providing institutional frameworks for community groups to establish nature-based enterprises e.g. women-led NbS enterprises.

Way Forward:

The main challenge of financing the increased uptake of Nature-based solutions is that currently the majority of nature's benefits have no financial market value, despite the fact that nature underpins our collective survival and prosperity. A shift in the way we calculate economic and financial return which needs to consider the long-term benefits of NbS is urgently needed alongside providing larger policy and regulatory support. It is the role of policymakers together with financial institutions to speed up this process and give nature a business value. In the built environment sector, the transition can be accelerated through targeted regulatory measures and strategic private and public investment supporting the mainstreaming and uptake of nature-based and hybrid solutions in urban planning, use of sustainable and recycled materials, and construction of energy-efficient infrastructure to name a few examples. The necessary sectoral shift in the EU is underway, with NbS and green infrastructure offering new, more sustainable business opportunities.

Actionable strategies and available tools for biodiversity integration into business

This section discusses strategies and tools which were specifically mentioned during the training session for businesses as having the best potential to address the challenges related to the three key topics and beyond. They are organised around the questions posed to the speakers during the panel discussion.

How do you suggest addressing knowledge-related challenges?

There has been a big shift in business thinking - the question is not whether to consider biodiversity but rather how to incorporate it in decision making. It is now recognised that one needs to be location specific and go beyond direct operations and consider both down and upstream operations and their impact.

The ENCORE tool which allows businesses and financial institutions to screen their business' dependencies and impacts on nature has gone through multiple improvements. The updated tool also offers a data set on the key value chain links which allows companies to explore the up and downstream value chain links associated with a specific economic activity. Additionally, the updated tool allows users to break down how business impact and dependencies on nature relate to different natural capital assets categorised by ecosystem type. Over time, quantitative data would show how the impacts and dependencies can vary in significance based on the ecosystem type and biome they are located in. 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 which helps businesses and financial institutions in identifying dependencies and impacts of their operations on natural capital and ecosystem services. By enabling rsk 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, also in the infrastructure sector, can conduct initial biodiversity risk screening in early project stages in order to overlay the project's footprint with global biodiversity layers and highlight e.g. potential presence of a protected wetland species.

With regards to green building industry in particular, there are also **industry-led platforms** set up by EU projects which provide much needed sector specific knowledge such as the <u>Connecting Nature Enterprise Platform</u> (<u>CNEP</u>) as a product of the Connecting Nature EU project which is led by industry associations and addresses knowledge and skills gaps in deployment of NbS in green buildings. Additionally, the **green buildings community** on the CNEP, led by the European Federation of Green Roofs and Walls serves as a very valuable knowledge resource.

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

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

Water recycling services and water companies have the biggest impact on the water environment due to the effluent that is discharged into water sources. For Anglian Waters, NbS was a way to open the door to encourage the government to reform the regulation of the water sector to switch to a more catchment-based approach. In this way, problems can be addressed collectively with other industries like the agricultural sector to ensure least environmental harm and maximise stakeholder collaboration – a key characteristic of NbS.

Additionally, **citizens' higher awareness** of the water environment and its industrial use coupled with a **stronger appreciation for local blue and green spaces** post the COVID-19 pandemic has heightened customers' expectations for water companies. Anglian Water could address these factors through NbS by meeting basic customer needs of delivering high water quality while bringing wider societal benefits and offering environmental improvements.

Finally, when contemplating the purpose of business, participants agreed that though financial viability and profitability is the key consideration, it is not the only goal of a business. The **multifunctional nature of NbS** offers a compelling advantage: they enable businesses to balance financial viability with purpose-driven objectives. By delivering environmental, social, and economic benefits, NbS can support long-term sustainability goals and help businesses "do the right thing" without compromising commercial priorities.

In the corporate experience of Holcim, there is often a stronger focus on risks rather than seizing opportunities. NbS offer a shift in approach – from working against nature to working alongside it. Additionally, it was noted that NbS hold significant **reputational value while driving business growth**, reducing operational cost and minimising societal and ecological harm. Holcim is leveraging practical tools to integrate NbS and assess nature - related risks and these include:

- o **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 new leadership tool in the NbS integration was highlighted. Partnerships are essential for embedding nature into business strategies—bridging gaps in knowledge, expertise, and impact. By working with organisations like IUCN, businesses can maximise the effectiveness of their biodiversity efforts. **Cross-sector partnerships**, rather than being seen as competitive, are key to driving scalable, nature-

positive change. True progress happens when companies join forces to ensure nature becomes a core part of how business is done. This must become a new norm.

Why is taking biodiversity into account essential in the built environment sector? 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 <u>Ellen MacArthur Foundation</u>, 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 recent Building Prosperity report reveal that nature-positive strategies could unlock up to €500 billion annually across Europe over the next decade for value chain players in the sector (Ellen MacArthur Foundation, 2024). Beyond direct business gains, the wider societal benefits - estimated at €158 billion - include enhanced job creation, more liveable urban spaces, increased productivity, and improved wellbeing. By recognising nature as a strategic asset, the sector can future-proof operations while contributing to resilient, thriving communities.

How are NbS relevant for reporting on nature benefits?

NbS are relevant for different aspects of the reporting process, from managing negative impacts to creating positive outcomes for people and ecosystems to help companies with risk management or opportunities.

The 2025 study by <u>UNEP-WCMC</u> (United Nations Environment Programme World Conservation Monitoring Centre) and <u>UNEP FI</u> (United Nations Environment Programme Finance Initiative) provides an overview of the key methodological trends among the private sector reporting and assessment on nature benefits and risks.

There is a recognition to not only look at the pressures but also the state of nature where NbS can provide pathways to biodiversity and socioeconomic benefits. A stakeholder mapping process allows businesses to assess how interactions of the business with nature affects other stakeholders i.e. indigenous people or local communities which also depend on the services of nature. NbS thus offer a greater opportunity to capture the wider

ecological impacts of a business and highlight the crucial social aspects of business activities.

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 ease pressure on biodiversity. To mainstream these benefits, the Foundation identifies **six key strategies across three core ambitions (dimensions)** for the built environment as part of <u>Ellen MacArthur's Foundation (2024)</u> Building Prosperity report:

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 Nature-based Solutions needs to at least triple** in real terms **by 2030** and **increase fourfold by 2050** if the world is to meet its climate change, biodiversity and land degradation targets. This acceleration would equate to cumulative total investment of up to \$8.1 trillion, and a future annual investment rate of \$536 billion (WEF, 2021). This large-scale investment is however not only needed to meet the policy targets, but also essential if the business sector is to avoid multitude of far-reaching risks discussed in this booklet.

70% of infrastructure that we will have in 2050 is yet to be built and there is thus an **ample opportunity for the sector to become nature-positive** and move away from the trends of the past which are exacerbating the triple planetary crisis. As highlighted by the business representatives themselves, there is a **growing momentum of moving beyond the notion of simply making profit** to growing interest of businesses to take the right action beyond financial gains and serving wider society as well as direct consumers. Here, NbS play a pivotal role, and this booklet describes examples and tools on how create win-win outcomes for businesses, the wider public as well as for nature. It is the hope of the authors of this booklet that more businesses will recognise **Nature-based Solutions as essential in providing environmental, social, and economic benefits** and will help to continue changing mindsets which is essential to make the transformation to a nature-positive world a success.



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Illustrator: Silvia Robertelli.



- hello@networknat ure.eu
- MetworkNature EUMetworkNature























NetworkNature is a resource for the Nature-based Solutions (NbS) community, creating opportunities for local, regional and international cooperation to maximise the impact and spread of Nature-based Solutions. It maintains and adds to a diverse and science-based repository of evidence on NbS, strengthen partnerships and foster new relationships around a clear, strategic framework for action.

