Financing the Nature-based Solutions Sector

Building a system that fosters prosperity while caring for a healthy Earth

Triodos Bank

Introduction

Human activity is rapidly pushing the biosphere towards tipping points that will accelerate both the climate and biodiversity crises[1]. This is deeply concerning on an existential level because nature is our life support system – providing water, food and shelter. This is also true for our economies: more than 50% of global GDP is estimated to be at least moderately dependent on services provided by nature[2].

The loss of nature goes beyond simply cutting off the branch we, as humans, are sitting on. The diversity of life on Earth is one of the most majestic things in the known universe. It has been shaped by evolutionary processes with countless species creatively adapting to their surroundings through the continuous struggle for survival. To our knowledge, we are the only species capable of fully appreciating the majesty of the natural world, yet we are also the ones contributing to its destruction in our pursuit of survival, growth and progress—perhaps not intentionally, but with disregard[3]. Addressing nature's decline is not only an obligation we owe to our fellow humans, but also a duty as stewards of the planet's biodiversity.

To prevent reaching ecological tipping points that will be catastrophic for humanity, we need to stop destroying nature and instead prioritise efforts to strengthen, restore and support ecosystems. At the 15th Conference of the Parties (COP 15) of the Convention of Biological Diversity in 2022, 23 targets were set for conserving and restoring nature as part of the Kunming-Montreal Global Biodiversity Framework. These targets aim to be achieved by 2030. It urges all nations to conserve 30% of the Earth's surface for biodiversity and restore 30% of degraded lands. The framework also specifically calls for more finance for nature conservation and restoration. The goal is to raise at least USD 200 billion per year by 2030 and repurposing another USD 500 billion in environmentally harmful subsidies. During the 16th Conference of the Parties (COP 16) it became clear that negotiating additional finance for biodiversity projects is not an easy task[4].

Still, tackling biodiversity loss must go beyond just raising more finance[5]. According to the Intergovernmental Panel on Biodiversity and Ecosystem Services, addressing the crisis of biodiversity loss requires transformative change: "a fundamental, system-wide reorganization across technological, economic, and social factors, including paradigms, goals and values"[6]. Importantly, financial institutions need to be mindful and strategic in how they deploy their capital to facilitate and accelerate change in nature conservation and restoration[7].

This white paper describes our vision on financing Nature-based Solutions (NbS) to contribute to meeting the global goals of the Global Biodiversity Framework. Triodos Bank aims to become a leading financier of NbS, as *sustaining and restoring nature* is one of our focus points in the Resource Transition[8], one of five key transitions Triodos Bank has identified[9].

Building on our experience to date in financing the Nature-based Sector, we showcase NbS companies and projects throughout this paper to inspire and to build confidence in a sector that can effectively balance risks, returns and impacts. Drawing on lessons from these examples, we outline the opportunities and the potential pitfalls to financing the NbS sector, as well as strategies to overcome them. Next, we advocate for broader reforms essential for achieving transformative change and meeting global biodiversity targets.

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1. Nature Loss and the need for Transformative Change

According to the Living Planet Report, deforestation and climate change are causing a rapid deterioration in bioclimatic conditions in the Amazon, threatening to transform the tropical rainforest into savannah or dryland. A tipping point may be reached if 20–25% of the Amazon is deforested; 17% is already lost[10]. There also other examples of environmental tipping points at risk of being reached. Due to human activities, 85 % of wetlands have been converted, 33% of fish stocks are overfished and an estimated 41% of insect species have declined in the past decade[11]. Consequently, we have breached the planetary boundary of biosphere integrity, described by both genetic and functional biodiversity[12]. To prevent reaching ecological tipping points, we need to stop destroying nature, and instead focus on strengthening, restoring and supporting ecosystems.

Humans rely on many critical contributions of ecosystems to our lives, like water, food, clean air and shelter[13]. This can be seen on a macroeconomic scale; the World Economic Forum estimated that more than 50% of global GDP is at least moderately dependent on services provided by nature[14]. These economic dependencies are also increasingly being recognised as a liability to financial portfolios. The European Central Bank estimated that 72% of European non-financial companies are critically dependent on ecosystem services, with 75% of loans in the euro area going to companies with a least one dependency on an ecosystem service[15].

This dependency should not be underestimated. Even seemingly minor events like the local loss of one insect species may trigger ripple effects with significant economic impacts[16]. Global South countries are even more vulnerable to economic damages from nature loss because of the relative importance of ecosystem services in economic production[17].

It is human activity that is pushing animal, plants and fungi species towards extinction. Human systems of consumption and production are causing biodiversity loss through drivers like climate change, land-use change, pollution, the spread of invasive species and direct exploitation[1819]. Beyond these direct drivers, there are deeper underlying causes: the relentless pursuit of economic growth based on extractive business models and overconsumption[20], fiscal and regulatory incentives for environmentally harmful industries[21], a global financial architecture that makes countries rely on the export of extractive commodities[22], and the psychological separation of nature and humans, rendering ecosystems as natural capital to only be exploited[23]. To achieve transformative change, we must tackle the underlying drivers in the design and the mindsets embedded in our economic systems[24], in addition to attracting finance for investing in NbS and deploying it strategically.

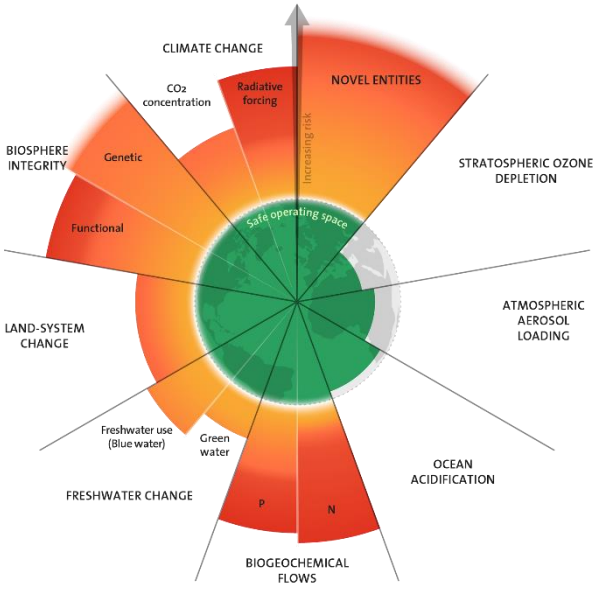

Figure 1. Planetary Boundaries [12]

2. Humans & Nature: A Reciprocal Approach

Triodos Bank believes in the deep interconnection between nature and humans, recognising that both are part of a broader ecological community. The world does not revolve solely around humans nor is it purely 'natural'. Instead, the relationship between humans and nature should be seen as one of mutual dependency and care. While finance and economic policy still focus on extraction and profit maximisation, such mindsets are not new. Indigenous communities and biodynamic farmers have been putting them into practice for a long time. Across the world there are similar biosocial ways of approaching nature, such as the principles of Ubuntu, Sumak kawsay, Kaitakitanga and many other approaches to nature by Indigenous Peoples[25]. Moreover, this view has been included in the Kunming-Montreal Global Biodiversity Framework:

"*Biodiversity is fundamental to human wellbeing, a healthy planet, and economic prosperity for all people, including for living well in balance and in harmony with Mother Earth".*[26]

This perspective resonates strongly with the Triodos Bank belief that people are a part of nature and that we depend on it for our wellbeing and survival[27] and that for Triodos Bank, it is important that we refer "to each person (...) as a participant in taking care of a healthy Earth"[28]. The principle of mutual care or *reciprocity*[29] can guide us in determining how to finance nature. Reciprocity is the belief that if we take good care of the planet, the planet will take care of us. This can be true on a local ecosystem level, up to a global level and everything in between.

The principle of reciprocity is not a vague, complex or ethereal concept. Instead, it can provide a pragmatic guiding framework for the ethics and risk management of financing NbS. We are convinced that nature projects that artificially separate nature and humans cannot be effective and long lasting[3031]. Reciprocity, in the end, leads to a position where humans can and should be responsible for current and future nature development.

Beyond Natural Capital and Ecosystem Services

A reciprocal approach to nature finance goes beyond viewing nature merely as 'natural capital' or 'ecosystem services'[32]. In the natural capital model, ecosystems are treated like capital goods, offering 'ecosystem services' similar to benefits from produced assets like solar parks, bridges and data centres. However, natural capital is different in that ecosystem degradation is often irreversible, ecosystems cannot be replicated, and ecosystems can collapse suddenly if they are pushed past tipping points[33].

In natural capital accounting systems, nature's assets are valued and priced on balance sheets, like in integrated environmental profit and loss accounts. Such systems can help businesses understand their reliance on nature and the need to operate within planetary limits. In other words, natural capital accounting can be important in systematically understanding how ecosystems benefit companies, countries and humans[34].

Due to the complexity of ecosystems, it is unlikely that natural capital accounting will be fully able to account for all the bundles of ecosystem services in a consistent way. Moreover, many parts of nature are mobile, silent or invisible[35]. There is a risk that important aspects of nature can be overlooked or neglected. Acting solely on what can be measured will likely cause many unintended consequences or perverse incentives, that may do more harm than good in the long term. Natural capital accounting efforts should be transparent about what cannot yet be measured or quantified. This means that nature finance efforts cannot be guided only by economic value but also requires moral concepts[36], such as the belief in reciprocity.

Natural capital accounting is a helpful tool but not sufficient. It should thus be combined with a deeper, reciprocal approach to nature. The key question is: How can a bank and asset manager put this perspective into practice through lending and investment in nature?

3. Financing Nature-based Solutions

Triodos Bank has financed nature development projects and organisations for a long time, including nature charities like Natuurpunt[37] and the Royal Society for the Protection of Birds[38]. Organisations like these are doing crucial work to promote nature conservation and protect important animal and plant species. In recent years, we have also become increasingly involved in financing **Nature-based Solutions.**

What are Nature-Based Solutions (NbS)?

NbS are place-based partnerships where people enhance and work with nature to harness diverse benefits and address societal challenges[39]**.** More comprehensively put: NbS are "actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human wellbeing, ecosystem services and resilience and biodiversity benefits"[40]. Such benefits or ecosystem services include carbon sequestration, flood protection, water filtration, animal pollination, as well as recreation and mental wellbeing.

NbS include but are not limited to natural solutions to climate change. The Intergovernmental Panel on Climate Change ranks certain NbS among the most promising ways to tackle the climate crisis[41]. It is estimated that conserving and restoring nature can provide one third of the total required climate mitigation between now and 2030[42]. However, the NbS concept is much broader than simply being a natural solution to climate change. Carbon sequestration is not the only important benefit nature restoration can bring for humans, which can also include benefits like water filtration, crop pollination or flood risk management. Moreover, even if an NbS projects has a main objective to mitigate climate change, a pure focus on carbon sequestration can lead to negative results for local communities or biodiversity. So, while NbS can be an important tool against climate change, we need to maintain a broad perspective on their functions and components.

Likewise, it is important to see NbS as reciprocal systems of mutual relationships and responsibilities between humans and nature, where humans take and give back[43]. This means that NbS should provide benefits to the local community, such as income, jobs, food security and increased resilience against climate change[44]. This can potentially not only help to alleviate poverty but also strengthen bonds between people and their natural environment. NbS can come in many shapes and sizes, but we can differentiate them by **biome** and **ecosystem services.**

Agricultural NbS

The food system is the one of largest drivers of biodiversity loss worldwide through land-use change, pollution and contributions to climate change[45]. Still, agricultural systems offer numerous opportunities for NbS. First, there are many examples of nature-agriculture gradients, such as agroforestry, silvopastures, and various rice cultivation methods. Second, NbS in agriculture can distinguish themselves through ecological intensification—enhancing biodiversity on farmland to harness nature's benefits, such as improved pollination, shade provision, water retention and soil health[46]. Such

examples show that agriculture can contribute to biodiversity, which in turn benefits agriculture, creating a reciprocal relationship. This balance produces healthy food and helps maintain nature, while also generating a sustainable livelihood income for farmers and farm workers. Third, farmers can contribute to landscape restoration or maintenance with green-blue services that build natural 'landscape' components like trees and ponds.

Triodos Bank Spain financed **Masia del Carmen**, a family-owned organic and regenerative agriculture company, to enhance their farms' productive capacity. The company cultivates citrus fruit, almonds and garden vegetables, and produces olive oil. It sells them directly to end consumers online and through a pioneering tree adoption programme. It periodically measures its carbon sequestration, soil health, biodiversity, water cycle, profitability and wellbeing in line with our holistic approach to NbS.

Forest NbS

Although unsustainable forestry practices are a deforestation driver[47], forestry-related NbS are relatively well-established and mature. Forests provide a range of ecosystem services, from carbon storage to soil stabilisation, water filtration, air purification and recreation opportunities. They can also provide essential goods and services like timber and food.

Forestry-related NbS include reforestation, afforestation and improved forest management (IFM). Reforestation focuses on restoring deforested areas, while afforestation involves planting trees in areas not previously forested. IFM aims to improve the biodiversity, carbon sequestration and climate resilience potential of existing forests by employing sustainable management techniques, like moving to more mixed forests.

A £20.55m loan from **Triodos Bank UK** has allowed **Oxygen Conservation** to acquire 23,000 acres in Scotland, marking a significant step forward in its commitment to scale conservation across the UK. Oxygen Conservation works to protect and restore woodlands and peatlands, generating a positive economic return by selling carbon credits as a result of its work, not as its purpose.

Urban NbS

Urban NbS involve green infrastructure, such as green roofs, parks, community gardens, nature-inclusive buildings, and surfaces that enhance water management, reduce heat island effects and improve air quality. These solutions also provide recreational spaces for urban residents, contributing to physical and mental wellbeing.

Triodos Bank Netherlands and **Triodos Groenfonds** financed the **Urban Woods** building in Delft. It is constructed with a tree-saving technique and the use of biobased materials – such as cross-laminated timber and flax – greatly contributes to a lower environmental footprint. The designs by The Urban Woods are based on the United Nations Sustainable Development Goals and ensure the best use of scarce resources and space. The building in Delft is wrapped in gardens, planted to bring back biodiversity to the city.

Freshwater NbS

Freshwater ecosystems, including rivers, lakes, wetlands, ponds and floodplains, are vital for biodiversity and human wellbeing. NbS projects in freshwater systems often focus on restoring or maintaining water quality, flood control and fish stocks. One prominent approach is the restoration of wetlands, which serve as natural filters, improving water quality by trapping pollutants and sediments. Additionally, wetlands act as natural sponges, absorbing excess water during floods and gradually releasing it, preventing downstream flooding.

Triodos Bank UK supported the **River Wyre Natural Flood Management project**. The money raised in the project will be used to deliver over 1,000 highly targeted Natural Flood Management (NFM) measures over nine years, including wetlands creation, grassland creation and woodland creation. The measures are designed to reduce the maximum water volume of a flood (peak flood level) and/or delay the arrival of the flood peak downstream by emulating or restoring the natural functions of a river catchment. Next to protecting homes and businesses downstream, NFM interventions can boost biodiversity, increase resilience to climate change and improve water quality.

Coastal and Marine NbS

Coastal ecosystems, such as mangroves, dunes, coral reefs and seagrass beds, provide essential services, including coastal protection and carbon sequestration. Mangrove forests, for instance, can act as natural barriers against storm surges and coastal erosion, while also serving as nurseries for fish and other marine species. Coral reefs can protect shorelines from wave damage, support tourism and fisheries, and are critical biodiversity hotspots. Coastal dunes can act as buffers against storms and can also provide natural wastewater filtration. Another example of marine NbS is the restoration of oyster reefs which can improve water quality by filtering pollutants and provide habitat for marine species.

Triodos Bank Spain provides financing to the NGO **Asociacion de Naturalistas del Sureste (ANSE)**. One of ANSE's many activities is restoring the Marchamalo salt flats in the Mar Menor, a key lagoon on Murcia's southeast coast, through the RESALAR project. This initiative aims to regenerate salt-flat habitats, boost resilience to climate change, and enhance biodiversity. The salt flats are vital for nesting, migration, and wintering of protected bird species, some endangered. Pollution and coastal developments have harmed water quality and natural habitats. Restoring these salt flats can support local economies through salt production and tourism while protecting crucial ecosystems.

What Kind of Benefits Can Nature-Based Solutions Offer Humans?

1. Regulating Services

Regulating services are the natural processes by which ecosystems moderate environmental conditions. NbS projects can be designed to harness and enhance these regulating services to manage climate adaptation, water scarcity and natural disasters. For example, wetlands can regulate water flow, by absorbing excess water and release it gradually, which reduces the risk of flooding.

2. Provisioning Services

Provisioning services refer to the more tangible products that ecosystems provide, such as food, water, timber and medicinal resources. NbS can support provisioning services by boosting the sustainability and resilience of ecosystems that supply these resources. In agricultural NbS, agroforestry can increase crop yields, provide shade for livestock and offer additional products like fruit, nuts or firewood. In marine ecosystems, the restoration of seagrass beds and coral reefs helps sustain fisheries by providing critical habitats for fish species.

3. Cultural Services

Cultural services encompass the non-material benefits that ecosystems provide, such as recreational opportunities, aesthetic value, spiritual significance, and the promotion of physical and mental wellbeing. NbS can focus on preserving or enhancing cultural services by creating spaces that promote human connection with nature, like in densely populated urban areas where access to nature is limited.

4. Supporting Services

Supporting services are the underlying ecological processes that sustain other ecosystem services. These include nutrient cycling, soil formation and habitat provision to retain biodiversity. NbS often aim to restore or maintain these supporting services to ensure the long-term sustainability of ecosystems. For instance, healthy soil and nutrient cycling are essential for provisioning services like food production.

How to Identify 'Good' Nature-Based Solutions?

In order to effectively face societal challenges like climate change, we need to design NbS to make real and lasting impact. Tools exist that can guide investors in how to identify and finance NbS projects, like the Global Standard of the International Union for the Conservation of Nature (IUCN)[48] and guidance from the European Investment Bank[49]. Such guidance documents emphasise a couple of important ingredients of a well-working NbS projects[50]:

1. NbS harness ecosystem services to address specific societal needs or challenges.
2. NbS are intentionally designed to enhance biodiversity and strengthen ecosystem integrity in measurable ways.
3. The economic model for NbS must be sustainable over the long term, especially benefiting local communities.
4. NbS are founded on inclusive and transparent governance with the involvement of key local stakeholders, including Indigenous Peoples.

An attentive reader will notice that these ingredients reflect the principle of reciprocity between humans and nature. Indeed, "**biodiversity** and **people** are the foundation of Nature-based Solutions"[51]. Successful NbS projects thus balance economic, ecological, and social impacts while harnessing the power of ecosystems for a societal solution. For a bank or investors, such frameworks can inform both risk management processes and impact frameworks, which helps to make NbS projects to become more investable.

Without applying such holistic principles in NbS design, developers may make the mistake of scaling NbS without also scaling positive impacts[5253]. For example, monoculture tree planting for carbon gains is not effective in protecting forests[54]. At Triodos Bank, our dedication to both biodiversity and local communities is safeguarded by setting and further developing Minimum Standards on topics like agriculture, fisheries, forestry, human rights and labour rights[55].

Biodiversity and Nature-Based Solutions

Biodiversity is an important aspect of well-functioning NbS. This is because biodiversity increases the resilience of ecosystems and influences both the quality and quantity of many ecosystem services[5657].

Biodiversity enhances the delivery of ecosystem services in the short term and strengthens ecosystem resilience over the long term, helping it to withstand disturbances such as diseases, invasive species and climate change[58]. A diverse ecosystem allows more species to occupy different niches, which helps to capturing pollutants more effectively[59]. For example, local biodiversity in soils and vegetation plays an important role in the efficiency of water filtration and hydrological cycles, impacting surface and groundwater[60]. Similarly, coral reef biodiversity supports increased fish biomass productivity[61]. In wildlife tourism, areas with greater species variety may attract more visitors like birdwatchers[62]. While monoculture forests may produce more wood biomass, more biodiverse forests are more resilient to threats like fires, pests, and disease[63]. Biodiversity serves as an important indicator of ecosystem health. It reflects not only nature's wellbeing but also its capacity to provide benefits to people[64] and is also a key indicator in ensuring reciprocity.

Still, it is likely that there is no single indicator that can measure biodiversity across different countries, biomes and scales[65]. Instead, there should be a varying set of indicators adapted to biome, ecosystem services and the larger socioeconomic context. Emerging technologies like eDNA, bioacoustics combined with emerging artificial intelligence technologies, are rapidly improving. They can help to perform deep listening to assess the health of species and ecosystems[66], but should be part of a larger toolbox to measure the ecosystem health of NbS projects. One of Triodos Bank's biodiversity targets is becoming better equipped for biodiversity monitoring of NbS projects by 2026.

People and Nature-Based Solutions

Effective, resilient, and equitable NbS must involve the meaningful engagement of all stakeholders, especially Indigenous Peoples and local communities (IP&LCs). For NbS to be impactful, IP&LCs should participate in the design, management, and monitoring of these initiatives. This should foster a sense of ownership, empowerment, and wellbeing among stakeholders integral to the larger landscapes of NbS projects.

This engagement is more than an ethical responsibility; it is important to the success of NbS[67]. IP&LCs are the stewards of their lands and possess a deep, adaptive understanding of local ecosystems, shaped by generations of knowledge about what works in their environmental and socioeconomic contexts. Ignoring or undermining this expertise could lead to ineffective or even harmful management decisions[68]. Moreover, a lack of alignment with local communities perspectives can hinder active participation and undermining support for NbS projects[69].

More generally, NbS should build on solid relationships between the local human community and the larger ecological community, recognising that their involvement is fundamental to achieving successful long-term projects. By tapping into the reciprocal relationship between communities and nature, NbS can inspire a sustained commitment to environmental stewardship, aiding in scaling these solutions across broader landscapes.

Despite IP&LCs' critical role in addressing biodiversity and climate challenges, they are too often excluded from decisions that impact their lands and livelihoods, with their rights overlooked. Thankfully, at COP16 in Cali, indigenous Peoples gained permanent representation in future negotiations of the Convention of Biological Diversity (CBD)[70].

4. Nature Finance: Public Actors, Financial Institutions and Markets

Public Finance

Biodiversity is typically conceptualised as a public good, subject to market failures or 'cost shifting' because its value for society is not captured in markets and is therefore not effectively internalised into the prices of goods and services[71]. Public goods have special characteristics—they are non-rivalrous and non-excludable. Non-rivalrous means that one person's use of a product or service does not diminish the availability of those services for others. Many ecosystems are particularly non-excludable. This means it is challenging to assign exclusive rights of use to ecosystems, partly due to nature's mobility—oceans flow, birds migrate, and seeds can be dispersed by wind[72]. Moreover, many ecosystems may provide bundles of multiple ecosystem services, with different benefits to different stakeholders[73]. A river might be a luxury for some but a necessity for others.

The public good status of ecosystems has the risk of leaving them unprotected and overused. For example, we freely fish in oceans and transport goods across them without direct payment. Despite a shared interest in conserving the oceans, no individual or company has sufficient incentive to bear the full cost of their preservation. This is the 'tragedy of the commons'[74].

Due to the scale, complexity and the lack of autonomy over ecosystems, they can often not be effectively managed only by local communities themselves. This leaves public actors like governments as the responsible actor to protect, restore and rewild natural areas on a local level. Governments have many tools for this, for instance directly financing NbS through investments and subsidies, levying taxes or installing cap-and-trade systems on activities harming nature. This is likely why biodiversity conservation remains for the large part publicly funded; about 82% of the roughly total USD 200 Billion of finance to NbS came from public sources in 2022[75].

However, the potential powerful role of governments in protecting and restoring nature is underused because there is a lack of legislation or the legislation that is there is weakly enforced, partly due to the strong influence of certain market players in sectors like agriculture. This is further complicated by the fact that nature policy can be sensitive to political change[76]. Consequently, governments are not adequately protecting nature through regulation and public investments[77].

The current role of governments is unfortunate, since direct public investments have been shown to be effective in supporting nature and biodiversity[78]. Direct public investments may provide important multiplier effects, such as shielding communities from macroeconomic supply-side shocks and generating jobs in sectors like agriculture and forestry[79]. What's more, in many cases, direct public investment can be a cost-efficient way to protect and restore nature because ecosystem services do not need to incur transaction costs to be artificially separated into tradeable and verifiable units on markets[8081].

Private Finance & Markets

We think that the current lack of government action on biodiversity conservation and restoration, leaves a gap that the private sector can fill[82]. The financial sector has an opportunity to protect and restore nature by investing in projects and companies in the NbS sector[83]. Moreover, public and private sectors can and should work together to tackle biodiversity loss.

Financial instruments and strategies for investing in NbS and conservation more broadly are growing rapidly[84]. Using private finance to ensure nature conservation and restoration on the scale necessary is not possible without designing projects that generate a return, for instance based on certain ecosystem services. To bring in private investment into nature conservation, the conservation activities financed must generate cashflows. For example, selling carbon credits from voluntary carbon markets can be a crucial

income stream for NbS projects that focus on carbon sequestration[85].

Generating tradeable 'units' from natural systems comes with risks and pitfalls. Some of these pitfalls are rooted in the inherent challenges to scalability of some NbS due to high transactions costs in an evolving market[86]. Such transaction costs come from the need to measure and quantify tradeable ecosystem service units from a 'public good', while putting in place robust governance systems. In other words, they contribute to ensuring that NbS are in tune with the local social and ecological context[87]. The public good aspects of ecosystem services mean that the benefits of NbS need to be managed to safeguard equitable outcomes. Without sufficient safeguards, ideally backed by regulation, market-based incentives can create downward cost pressures that can erode the integrity of NbS projects, either by disproportionally saving costs or increasing returns. We have seen evidence of this on the Voluntary Carbon Market[88].

Pioneering or more complex projects may need to be funded directly by public actors, through blended finance solutions or other public-private collaborations to be able to account for local communities, climate change mitigation and biodiversity. Governments, communities, philanthropy, and the private sector should thus work together to provide appropriate financing to make NbS thrive. Governments can leverage more private finance for sustainably growing the NbS sector different instruments, such as market creation, public procurement and co-investment.

Design high-integrity ecosystem service markets.
One important way that governments can support the implementation of NbS is by setting standards and creating regulated markets for ecosystem services that integrate safeguards for biodiversity and local communities. For example, ensuring floor prices for certain ecosystem services can help to make NbS viable for a long time, either directly or through ensuring continuous demand.

In Europe, both local and regional voluntary and biodiversity compliance markets are emerging (see **Appendix**). An example of such an ecosystem service market is UK's Biodiversity Net Gain (BNG) system. The BNG system mandates infrastructure and real estate companies to make 10% biodiversity 'gains'. If gains cannot be made on-site, gains can be bought from nature restoration projects, ideally close by. These are scored on a range of factors like distinctiveness, size and strategic location[89]. Although the BNG system is a pioneering and ambitious attempt to systematically assign value to biodiversity across landscapes, it will need to evolve and adapt over time[90]. Still, it is a good example of how credible compliance markets for ecosystem that are clear in scope and integrate safeguards can enable financial investments, like Triodos Bank's Loan to the charity **Avon Need Trees.**

Avon Needs Trees has purchased 422 acres of land that will be used to create a new forest. **Triodos Bank UK** provided a £3.85m loan and its Corporate Finance team advised the charity on sourcing repayable capital. The site at Wick Farm, Compton Dando, will be home to Lower Chew Forest, which together with adjoining woodland, will create the largest new woodland in the South West. The plans include establishing a new forest of 100,000 trees and shrubs and the creation of complementary habitats, including wetlands, miles of hedgerow and species-rich grassland.

Procuring ecosystem services.
Another way in which public or semi-public actors can attract more finance, is by ensuring continuous demand for ecosystem services. Governments at local or national level can procure certain ecosystem services directly,

becoming important structural off-takers of NbS projects. For instance, farmers can employ natural flood risk management techniques through nature restoration, like in the **River Wyre Natural Flood Risk Management project** (see page 8). The project 'sells' the flood risk management to the local municipality and the regional environmental agency, but also the local private water utility and real estate insurance companies.

Public-private financial mechanisms
Governments, public development banks and other public financial institutions can take a proactive role in creating and implementing nature finance mechanisms that are conducive to private sector participation. By structuring financial instruments that blend public and private capital, public entities can leverage their resources to attract private investment into NbS. This is achieved through a suite of financial tools, each with different advantages in addressing the risks and barriers associated with investing in nature-related projects. Charities or wealthy individuals can also play a significant role using some of the methods below.

1. **Sovereign Bonds**
   Sovereign bonds, specifically green or sustainability bonds, allow governments to raise funds dedicated to environmental projects like NbS. Following strict green criteria, bonds create an opportunity for investors seeking stable returns while aligning with environmental goals. Through government backing, sovereign bonds lower the perceived risk for investors, making them an appealing entry point for those new to the NbS space. Ringfencing could be important for ensuring that green bonds meet NbS goals.

2. **Blended Finance**
   Blended finance structures combine public funds with private capital to create a more attractive risk-return profile for private investors[91]. Public entities can provide concessional capital (e.g., below-market rate loans) or take on junior positions in investment tranches, thereby absorbing more of the risk and offering higher seniority to private investors. This approach encourages the private sector to participate in financing NbS that might otherwise be deemed too risky or yield insufficient returns. Importantly, blended finance structures can also create the 'investment track-record', which is a key prerequisite for (institutional) commercial investors to step-up investment amounts.

3. **Guarantees and Insurance Mechanisms:**
   Public entities can offer guarantees or insurance products to protect private investors from certain risks, such as political uncertainties. The biodiversity impact guarantee by the Swedish International Development Agency is an example of such a guarantee[92]. By partially covering potential losses, guarantees enhance the attractiveness of NbS investments, enabling more private capital to flow into areas that are traditionally seen as high-risk.

4. **Technical assistance facilities.**
   Technical assistance facilities are used to build the technical capacity of investees and key stakeholders like local communities that may be crucial to the successful implementation and ultimately the commercial viability of the project[93]. They can also be used to build capacity in other areas such as financial management, contracting, business model development, or impact monitoring and evaluation. These grants are often provided by donors through a dedicated fund that runs in parallel to the actual investment.

These public-private financing mechanisms not only mobilize capital but also play a critical role in de-risking investments into NbS, making them more accessible and attractive for private investors. By reducing financial risk and enhancing potential returns, governments and public development banks can drive increased private sector participation in NbS, promoting sustainable economic growth and resilience against climate change.

5. Towards a Thriving Nature-Based Solutions Sector

In 2022, world leaders set 23 targets for nature's conservation and restoration in the Kunming-Montreal Global Biodiversity Framework, to be reached by 2030. Headline targets include a target to restore at least 30% of the worlds' degraded lands and conserve 30% of the world's surface area for nature.

While all targets are at least partly relevant to the financial sector, targets 14, 15 and 19 mention the financial sector explicitly (see **Figure 2**). These targets call upon global business and financial institutions to contributing to the fight against biodiversity loss, by integrating biodiversity into risk and impact processes and allocating at least USD 200 billion per year to biodiversity action.

Although progress was made on numerous topics, COP 16 in Colombia showed that it is not easy to negotiate who is going to pay for measures against biodiversity loss. With our biodiversity targets, we aim to set the example that financial institutions can contribute to the fight against biodiversity loss in a comprehensive manner.

Our Commitment

Triodos Bank aims to contribute to the Global Biodiversity Framework through our biodiversity targets. Two of these targets relate directly to NbS. First, we have set the target to finance at least EUR 500 million in the NbS sector cumulatively by 2030. Second, we have set the target to be able to report on the biodiversity impacts of our own investments and loans in the NbS sector. We will reach our NbS financing target by directly financing NbS and financing companies that can help catalyse transformative change in the larger NbS sector.

Directly Financing NbS

Triodos Bank group consists of multiple entities that provide organisations with different types of finance, investments, loans, donations and other money related instruments.

Target 14 Ensure the full integration of biodiversity into processes across all levels of government and across all sectors, particularly those with significant impacts on biodiversity, progressively aligning all relevant public and private activities, fiscal and financial flows with the goals and targets of this framework.

Target 15 Take legal, administrative or policy measures to encourage and enable business, and in particular to ensure that large and transnational companies and financial institutions:

1. **Regularly monitor, assess, and transparently disclose their risks, dependencies and impacts on biodiversity**, including with requirements for all large as well as transnational companies and financial institutions along their operations, supply and value chains and portfolios.
2. **Provide information needed to consumers** to promote sustainable consumption patterns.
3. **Report on compliance** with access and benefit-sharing regulations and measures, as applicable; in order to progressively reduce negative impacts on biodiversity, increase positive impacts, reduce biodiversity-related risks to business and financial institutions, and promote actions to ensure sustainable patterns of production.

Target 19 Substantially and progressively increase the level of financial resources from all sources, in an effective, timely and easily accessible manner, including domestic, international, public and private resources, in accordance with Article 20 of the Convention, to implement national biodiversity strategies

Figure 2. Targets 15, 15 and 19 from the Kunming-Montreal Global Biodiversity

- **Triodos Bank** operates in five countries: Netherlands, Belgium, Germany, Spain and the United Kingdom, lending money to organisations working to bring about positive change.
- **Triodos Investment Management** manages 20 funds with a range of risk-return profiles. Impact private debt and equity funds invest in Europe and emerging markets through a range of financial instruments. Impact equities and bonds funds invest globally in listed equities and bonds.
- **Triodos Regenerative Money Centre** lends, invests and donates money with an innovative and impact-first approach.

Through these entities, we can finance NbS projects in numerous ways. First, we can finance NbS with instruments such as commercial bank loans[94], private equity and private debt. We can also contribute to NbS through raising crowdfunding or charity capital for NbS projects, like at Triodos Bank UK. Next, we work together with public institutions and charities to provide blended finance solutions for nature conservation and restoration, for instance through the Hivos-Triodos Fund. Triodos Investment Management can also invest in bonds with earmarked funds for NbS, like the Hessian Green Bond or NRW Bank's Green Bond[95]. Lastly, we can invest in NbS through concessional finance solutions provided by Triodos Regenerative Money Centre.

Financing NbS Enablers

We recognize that pioneering NbS projects face challenges in securing financing within the financial system and real economy, primarily due to a mismatch in risk-return profiles. Scaling NbS requires adapting solutions to local contexts rather than applying a one-size-fits-all approach. This customization brings transaction costs related to biodiversity measurement, stakeholder engagement, and governance. Consequently, projects can struggle with issues such as limited scalability, costs of monitoring, reporting, and verification, and, in some cases, a lack of an established market for their services[96]. Additionally, financial institutions can lack sufficient knowledge about NbS, which further hinders investment[97].

Lowering transaction costs through improved understanding, processes and measurement of ecosystem services could be instrumental in growing NbS. Like in other maturing sectors, transaction costs are expected to decrease as the sector establishes standards, technologies, and shared terminology. While some challenges are inherent to financing projects based on complex assets like nature, others can be alleviated by government support or the NbS sector itself.

To address these needs, we will continue to finance organizations that work to improve market conditions for resilient and holistic NbS, even if these entities are not directly tied to specific locations. In other words, Triodos Bank will finance companies that are tackling barriers to scale the NbS sector in an impactful and resilient way, given that they fulfil our Minimum Standards[98].

- **Project developers.** Companies that focus on NbS project development, such as **TreeVive**.
- **Standard setters.** Organisations that help to set trustable common standards for revenue models from NbS, like carbon credits.
- **Nature tech companies**. For example, companies developing technologies for better measurement of biodiversity impacts.
- **Ecosystem service platforms**. Companies that can help matching supply and demand for ecosystem services like carbon credits. Such platforms can also help to ensure that off-takers use products like carbon credits with high-integrity.
- **NbS consultancies**. Companies and other organisations that build knowledge and advice other companies on designing Nature-based Solutions such as the **Weathermakers**.
- **Agricultural cooperatives & supply chain companies**. Companies who grow and sell agricultural products and invest in biodiversity measures and monitoring on farm, such as **CrowdFarming** or **LIMBUA.**
- **Researchers.** Funding academic research through can enable a better understanding of different NbS. For example, Triodos Foundation funds a chair at Wageningen University and Research, filled by Professor Niek van Eekeren who explores regenerative grazing systems[99].

Examples of NbS Enablers

Triodos Regenerative Money Center has financed the **Weathermakers**. The Weather Makers develop ecosystems regeneration projects to balance water cycles and provide social economic benefits for those living in and around the project's areas. By bringing together knowledge, skills, and networks to conduct and facilitate projects using holistic engineering, NbS, regenerative management tools (software), they work on the restoration of the biosphere of our planet.

Triodos Regenerative Money Center has financed project developer **Treevive**. Treevive works to address a significant bottleneck in capital flow to tropical forests by ensuring investment readiness, a critical factor that often hinders necessary funding. Treevive is committed to high integrity and quality standards, ensuring strong climate, community, and biodiversity benefits.

The investment in **CrowdFarming** of the **Triodos Food Transition Europe Fund** helps to turn farmers into providers of NbS, promoting the uptake of practices that help to increase biodiversity. CrowdFarming helps farmers, by giving them direct sales channel to consumers, offering mentorship and advice on regenerative methods and pooling knowledge from a large set of participating farmers.

Hivos-Triodos Fonds has provided a value chain loan to **LIMBUA**. This company processes and exports organic macadamia nuts, sourced from more than 9,000 smallholder farmers in Kenya. LIMBUA provides farmers organic inputs, like compost made from organic waste from its own production process. They also provide farmers high-yield tree seedlings from its own nursery. Agro forestry systems (growing a variety of plants at different heights) improves the resilience of farms, contributing to healthy soils and reducing pests and diseases.

Advocating for Systems Change

Biodiversity loss is a monstruous problem that cannot be solely attributed to a lack of funding. As Triodos Bank, we take our role in financing NbS. However, we also need to be critical of narratives that make it seem like every euro spent on nature is equally good, especially if all other financing remains the same[100]. Apart from the regulatory and financing reforms proposed in the previous sections to attract more funding for NbS, Triodos Bank calls for larger reforms to also phase out harmful activities.

- **Repurpose subsidy incentives**
  Environmentally harmful subsidies are estimated between USD 1.8 trillion and USD 2.6 trillion per year[101][102]. We should stop subsidies flowing towards harmful industries, which are dwarfing all investments for nature, estimated at 200 billion[103]. These should be repurposed for subsidy incentives for NbS and transforming the food sector. Repurposing harmful agricultural subsidies alone could more than double the global funding for NbS[104].

Sector	Scale of Subsidy
Fossil Fuels	1050
Mining	40
Agriculture	610
Fisheries	55
Forestry	175
Transport	180
Water	390
Construction	150
Plastics	30
Total	**2680**

Figure 3. Estimates of yearly global environmentally harmful subsidies by economic sector in USD billion, scaled by 2023 USD[105]

- **Avoid harmful financing activities.**
  Financial institutions should bear the responsibility to avoid financing activities that destruct or degrade nature, for instance by setting Minimum Standards. Estimations of private investments that damage nature are about USD 5 trillion per year. Recent analysis by University College London found that harmful sources of financial flows in the Brazilian Amazon and Indonesian peatlands are mostly from North America, Europe and East Asia[106]. This effectively makes any 'funding gap' wider because there will be a need to restore even more damaged nature.

- **Increase taxation on harmful activities**
  We need to increase the taxation of harmful activities and integrate tax and debt justice principles in designing nature policies. It has been estimated that a tropical carbon tax could deliver USD 13 billion each year that could be used for NbS[107].

- **Mandate transparency and transition plans**
  Bringing transparency and standardisation to biodiversity commitments of corporates and agricultural supply chains is a good step to preserve ecosystems. After mapping their respective impacts and risks, companies and financial institutions should be required to make robust nature transition plans to severely limit the risk of financing biodiversity loss. Governments should develop stricter requirements relating to sector-specific harmful activities in financial portfolios including deforestation and deep-sea mining. For example, we advocate for the inclusion of the financial sector in the European Deforestation Regulation[108].

The financial sector has a responsibility that is larger than 'just' raising euros and dollars that can be earmarked as nature positive. Nature finance should be tackled in a reciprocal manner; we cannot effectively combat the biodiversity crisis if finance is still overwhelmingly working for encroachment and degradation. To borrow a well-known Dutch saying: we can't keep mopping while the tap is left running.

Appendix: 1) Overview of important EU regulations and private sector initiatives driving increased private investments into nature[109].

Scope	Policy/Initiative	Driver of Private Investment
Global – CBD National Signatories	Kunming-Montreal Framework	**Target 19** aims to increase domestic and private finance for biodiversity through national finance plans, blended finance, and private sector involvement. Other targets address aligning fiscal policies and incentives with biodiversity goals.
Global - Businesses	Taskforce for Nature-Related Financial Disclosure (TNFD)	Encourages companies to report on nature-positive investments and revenue from products benefiting nature. Metrics include spatial footprint, rehabilitated/restored areas, and indicators of nature health.
EU Member States	EU Biodiversity Strategy for 2030	Aims to mobilize €10 billion via InvestEU and support sustainability in finance. Calls for 'polluter pays' principles and encourages nature-based solutions in state procurement.
EU Members States	Nature Restoration Law	Requires countries to outline private financing in national restoration plans and report progress every three years.
EU – Businesses	Corporate Sustainability Reporting Directive (CSRD)	Requires companies to disclose biodiversity-related risks and resources. Encourages transition plans to align business models with biodiversity goals.
EU - Member States	Carbon Removals & Carbon Farming Certification (CRCF) Regulation	Establishes standards for carbon removal certification, supporting new business models and potential income from verified carbon farming, benefiting biodiversity.
England & Scotland – Government Strategies	Nature Markets Frameworks	Plans to scale private conservation investment and develop high-integrity market-based mechanisms.
England – Biodiversity Net Gain	Biodiversity Net Gain	Mandates construction and real estate projects to achieve a 10% biodiversity improvement, with a biodiversity metric and a national biodiversity market for compliance.
EU – Businesses	Green Claims Directive	Setting rules on what companies can claim based on investments into Nature-based Solutions, among other things.
Global - Businesses	Science-based Targets initiative (SBTi) & Science-based Targets for Nature (SBTN)	Standardising corporate target setting for climate (SBTi) and SBTN (biodiversity). SBTi serves as an important driver for the demand of the ecosystem service of carbon sequestration. SBTi and SBTN standards and perspective on the role of carbon credits (SBTi) in corporate climate claims are important in shaping private investment.

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