



Guide to Biodiversity & Nature-based Solutions for Financial Professionals

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“ Our ability to produce valuable goods and services for a growing population is bounded by the fact that we cannot live and operate outside nature. — **PARTHA DASGUPTA**

30%

Recent research suggests that NbS could provide around **30% of the cost-effective mitigation** that is needed by 2030 to stabilise warming to below 2°C.

\$170
BILLION

USD 170 billion in estimated global benefits in ecosystem services from Nature-based Solutions focused on climate.

70
PROJECTS

In FY20, the nature-based solutions portfolio of the World Bank included **70 projects**– with many focusing on water and disaster risk management.

66%

At least 66% of Paris Agreement signatories include NbS in some form to help achieve their climate change mitigation and/or adaptation goals.

2030

Greater action, investment and embracing natural solutions are **crucial to reversing biodiversity decline by 2030.**

A note from the author

We are in a phase of mounting concern about nature. A level of maturity in carbon accounting has meant that questions are being asked about its proxy, and its fundamental tenet, biodiversity.

If a major contributor to biodiversity loss were to offset its carbon emissions and claim carbon neutrality, which Environmental Social Governance (ESG) process would trigger concern about the investment? What about the loss in value of land assets due to biodiversity loss? RepRisk has found that 81% of oil and gas pipelines around the world are within 10km of at least one environmentally sensitive site. Does the return on investment, from such assets, cover the reputation risk associated with the extinction of a beloved species?

These are the blind spots in carbon accounting, which nature-related considerations aim to address.

Nature-related and biodiversity accounting can be thought of as an addition to existing approaches, rather than an entirely new topic for investment professionals. Many of the familiar ESG concepts are interchangeable: biodiversity is linked to carbon accounting through sequestration, it is linked to water conservation through its ability to regulate, it acts like a connecting link between all species, and the pillars of ESG.

New biodiversity-related standards and methodologies are emerging to help financial professionals account for, and report on, their nature-related risks and impacts. Their general alignment makes the methodologies complementary and offers hope for integration with existing standards, such as the Task Force on Climate-related Financial Disclosures (TCFD).

Beyond screening and divestment, there is a growing opportunity to support the transition, which will be driven by actors who stand to benefit from it. The capabilities of nature to solve our collective concern, climate change, is being recognised through widespread adoption of Nature-based Solutions (NbS). Investments in NbS enhance the effectiveness of ESG strategies by solving numerous challenges, relating to nature and society, simultaneously.

Key events, [COP27](#) and [COP15](#) reaffirm the finance and nature-related agenda. COP 27 builds on the pledge made at 2021's climate conference in Glasgow where, for the first time, [UNFCCC Parties](#) explicitly recognised the “interlinked global crises of climate change and biodiversity loss, and the critical role of protecting, conserving and restoring nature in climate adaptation and mitigation”. At the World Climate Summit – The Investment COP, considered the most important side event for investment professionals at COP27, the topics of biodiversity and NbS play a central role, in numerous sessions to watch:

- Resilient Futures for All: Advancing Nature-based Solutions Through PPP for Climate Resilience and Healthy Ecosystems
- Carbon Markets and Their Role for Biodiversity: Stepping Up Climate & Biodiversity Action by Trading CO2
- Finance for Nature: How to Increase Financial Flows for Nature-Positive Solutions

We put together this guide to help financial professionals understand the basics of biodiversity, nature-related reporting and Nature-based Solutions. Inside, we'll explain the key nature-related topics for financial professionals, review the current and future landscape of reporting, accounting, and legislation, and point you in the direction of useful resources.



ANNA CHILTON
ESG Director, Rio ESG

Foreword

Unsustainable economic growth has had devastating consequences for ecosystems that are under threat from climate change, species extinction and water insecurity. The pervading view that Nature-Based solutions are a high-risk investment is preventing the deployment of capital at the scale needed.

Investors are coming under increasing scrutiny over how far their activities support a pathway to Net Zero emissions and provide measurable benefits to the environment and society and, as such, are committing to long-term targets to decarbonize their assets and rethinking their portfolio allocation strategies to achieve this. With COP27 and COP15 shining the light on the financial market to meet the demand for green impact investing, the momentum behind nature-based solutions provides a window of opportunity to scale much-needed financial flows to these activities.

Corporate environmental, social and governance (ESG) goals need a more holistic approach to ensure that companies not only reduce their carbon footprint but also increase their social stewardship. Only those that truly understand sustainability will act impactfully and be financially successful.



DAN BOTTERILL
Founder and CEO, Rio ESG



1 Nature-smart economic decision making

The increasing interest in nature in the financial sector is the culmination of years of shifts in the ways we think about sustainability.

Economies are interconnected with nature and benefit from the diversity of goods and services it generates, such as food and raw materials, pollination, water filtration, and climate regulation. Nature underpins all 17 UN Sustainable Development Goals and provides cost-effective mitigation options for the climate crisis.

The Earth's biosphere provides us with natural resources, from pollination to water filtration which, in turn, drives economic growth. In order to maintain these resources, it's necessary to include nature in financial decision-making.

Markets are exposed to considerable risk as humanity's demands of the biosphere outweigh the supply of natural services, which results in considerable biodiversity degradation. According to the World Bank, a collapse in select services such as wild pollination, provision of food from marine fisheries, and timber from native forests, could result in a significant decline in global GDP: \$2.7 trillion USD in 2030.

The policy landscape promises change in nature-related financial disclosure, with the EU's Green Deal and World Bank's consultation for regulatory changes which reflect the increasing

urgency to conserve valuable ecological assets. As nations formulate a new set of global biodiversity targets at the landmark Conference of the Parties (COP-15) of the Convention on Biological Diversity (CBD), this report shows that nature-smart finance and business practices offer mutual opportunities for biodiversity and economic outcomes.

Protecting natural land, rather than letting market forces develop it where profitable, can result in blended market and ecosystem benefits, including avoided carbon dioxide emissions, increased biodiversity, and protection of species. [Reports](#) indicate that reducing conversion of natural land could result in a general increase in global real GDP in 2030 that is estimated to be in the order of \$50 billion to \$150 billion.

Nature and the UN-SDGs

Nature underpins all 17 Sustainable Development Goals and provides cost-effective mitigation options to the climate crisis.



Beyond carbon reporting

Nature-related reporting is an extension, or expansion, of carbon reporting.

As carbon reporting has matured, many organisations have moved into Scope 3 reporting. Many companies are setting ambitious Net Zero targets, either through their internal projects or through the purchasing of carbon offsets. The Task Force on Climate-Related Financial Disclosures (TCFD) has become widely used by companies to report on their strategic approach to incorporating environmental factors into business decision making.

Recently, the GHG protocol released a [draft update](#) to their guidelines that will enable entities reporting on Scope 3 to include a percentage of carbon removal from land use. The opportunity to formally account for carbon sequestration through the GHG Protocol is encouraging for companies looking to integrate data from carbon sinks in their reporting. Carbon sequestration projects, such as reforestation, are examples of Nature-based Solutions.

With a foundation of carbon accounting, the integration of nature more broadly (such as biodiversity and environmental risks) adds a layer of complexity and also plenty of opportunity for investors. The key wins are visibility of risk and, with a clearer picture, the potential to better manage and invest in transitional markets.

Scope 3 emissions

Indirect Greenhouse Gas Protocol (GHG) emissions that are a consequence of the organisation's activities, but which the organisation does not have direct control over (a.k.a. "value chain" emissions).

The approaches to accounting for carbon and nature are interrelated. Take stock of the lessons learned from climate change related activities: judge what has worked, what has not, and identify the ideas which could be replicated in imagining nature-related issues

Nature-related policies

In 2018, the UK introduced one of the world's first national legislations on biodiversity: The Biodiversity Metric (now on version 3.1). This policy lays out guidelines for land developers to support a net gain in biodiversity.

In September 2020, political leaders representing 93 countries and the European Union participated in the United Nations Summit on Biodiversity, where they committed to reversing biodiversity loss by 2030.

The EU's biodiversity strategy for 2030 is a comprehensive, ambitious, and long-term plan to protect nature and reverse the degradation of ecosystems. The strategy aims to put Europe's biodiversity on a path to recovery by 2030. It is now a core part of the EU Green Deal. While its targets, like the Paris Agreement, are not binding for businesses, they signal governmental ambition and the prioritisation of activities to fight the crisis of biodiversity loss.

Germany recently announced international biodiversity funding at €1.5 billion per year, representing the highest total yearly financial commitment of all industrialised countries to biodiversity conservation so far.

The World Bank released a report in 2021, *The Economic Case for Nature: A global Earth-economy model to assess development policy pathways*, that advocates for the global adoption of policies to address biodiversity loss and tackle climate change mitigation and adaptation.

The Carbon Disclosure Project (CDP), [released](#) an overview of policies and experiences of its Nature-based Solutions in Brazil on September 22, assessing environmental policies and how they can contribute to biodiversity, climate, and water security challenges. This follows their [2020 report](#) on forest-related Nature-based Solutions to address climate change and promote sustainable development.

The Convention on Biological Diversity (COP-15) in December 2022 will focus on the post-2020 global biodiversity framework, establishing targets for urgent and transformative action by governments and society.

Nature-related Standards

The trajectory of the global policy environment is reflected in nature-related standards. Recently, the following standards and accounting methodologies have emerged:

The **Taskforce for Nature-related Financial Disclosure (TNFD)** is perhaps the most frequently cited, in part, due to its successor, the TCFD, which is used by many financial and non-financial organisations to report on the ways in which environmental impacts are considered within their business strategy.

The **Partnership for Biodiversity Accounting Financials (PBAF)** is a comprehensive [approach](#), focused on biodiversity accounting for financial professionals. It offers practicable steps for introducing biodiversity into investment decisions. Their PDF with frequently asked questions offers helpful answers to the relevance of biodiversity for investors.

The **Greenhouse Gas Protocol** [reported](#) on the new Land Sector and Removals Guidance in September 2022, related to how companies account for, and report on, their greenhouse gas inventories from land use/change, carbon removals and storage, and biogenic products. The project will develop internationally accepted guidance on corporate GHG accounting on the above topics. The new guidance is expected to be used by companies to:

- Inform mitigation strategies by understanding the GHG emissions/removals impacts of land use, land use change, bioenergy, and carbon removal activities
- Set targets and track performance by including the above activities in GHG targets
- Report GHG inventories including GHG emissions and carbon removals and report progress toward GHG mitigation goals

The **Science-based Targets Network (SBTN)** [first release](#) of technical guidance for companies to set science-based targets for nature opened for public consultation in October 2022. The guidance will complement science-based targets for climate, which help companies mitigate their GHG emissions. The science-based targets for nature include freshwater, land, ocean, and biodiversity.

The **Global Reporting Initiative (GRI)** provides disclosure guidance on biodiversity under its 2016 GRI304 biodiversity report. It has four key principles associated with the location of company operations and assessment of impacts on protected areas and species. GRI is currently in the process of revising GRI304 to reflect best practice on biodiversity management and to align with the United Nations Convention on Biological Diversity (CBD).

GRI DISCLOSURE PRINCIPLES FOR BIODIVERSITY UNDER GRI304

DISCLOSURE PRINCIPLE	INFORMATION PROVIDED
<p>304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.</p>	<p>For each operational site in or adjacent to protected areas and areas of high biodiversity value: Geographic location, position in relation to the area, the type and size of operation, biodiversity value characterized by the attribute of the area and/or by protected status.</p>
<p>304-2 Significant impacts of activities, products, and services on biodiversity.</p>	<p>1) Nature of significant direct and indirect impacts on biodiversity including construction, manufacturing, pollution, invasive species, reduction of species, habitat conversion and changes in ecological processes.</p> <p>2) Significant direct and indirect positive and negative impacts including species, habitat, duration of impacts and reversibility of impacts.</p>
<p>304-3 Habitats protected or restored</p>	<p>1) Size and location of all habitat areas protected or restored, and whether the success of the restoration measure was or is approved by independent external professionals.</p> <p>2) Status and condition of the areas.</p> <p>3) Standards, methodologies and assumptions used.</p>
<p>304-4 IUCN Red List species and national conservation list species.</p>	<p>Total number of IUCN Red List species and national conservation list species with habitats in areas affected by the operations of the organization, by level of extinction risk.</p>

Source: Global Reporting Initiative



2 Including Nature - financial institutions

The primary responsibility for the degradation of nature lies with companies which have a direct impact on nature, yet many companies have little incentive to take their impacts into account. Financial institutions have two ways to take nature into account in their investment strategies:

ESG analysis and **active engagement**.

ESG analysis: Data quality

Underpinning ESG reporting, analysis, and progress is [data accuracy](#) and completeness. Data capture for biodiversity and nature-related matters is a challenging undertaking for the underlying companies, which is not to be underestimated.

It will take commitment and resources for underlying companies to provide accurate, comprehensive, and tailored data. Many financial professionals will rely on external data providers and rating agencies to complement data gaps.

As an example, RepRisk recently launched a biodiversity risk tool, which identifies the proximity of more than 60,000 mining and oil and gas projects to 270,000 protected areas and 16,000 key biodiversity areas around the world. The tool is an extension of the RepRisk ESG platform and is emerging alongside the TNFD's progress on a biodiversity risk management and reporting framework.

The perception that harnessing big data, be it ESG or otherwise, requires businesses to hire more data scientists, is not necessarily true, as platforms such as Rio emerge to help democratise analytics.

Reporting guidance, legislation, and nature-related standards will help to harmonise metrics and allow comparability and investment decisions.

There are two complementary paths for integrating these considerations into financial strategy:

1. Company: measure impacts, define individual ecological limits, and to make this information available for financial institutions
2. Financial institutions: measure impacts of their portfolios on biodiversity/nature (and define associated ecological limits)

Three factors will help financial institutions to screen their portfolios to ensure inclusion of biodiversity considerations:

1. Appropriate nature-impact disclosures
2. Scalable metrics to monitor risks
3. Reliable and consistent data fuelling risks management metrics

ESG analysis: Footprinting methodologies

An enterprise relies on access to environmental assets, and ecosystem services, which contribute to its ability to generate value. Organisations also have impacts on environmental assets and ecosystem services, which may be positive or negative.

In short, an organisation (through its value -chain) is **dependent** on nature and has an **impact** on nature. These impacts and dependencies are location-specific.

Dependencies

Aspects of ecosystem services that an organisation or other actor relies on to function. Dependencies include the ecosystems’ ability to regulate water flow, water quality, and hazards like fires and floods; provide a suitable habitat for pollinators (who in turn provide a service directly to economies); and sequester carbon (in terrestrial, freshwater and marine realms).

SBTN (2022) Working Definitions

Impacts

Changes in the state of nature, which may result in changes to the capacity of nature to provide social and economic functions. Impacts can be the result of an organisation’s, or another party’s, actions and can be direct, indirect, or cumulative.

Some sectors and industries have a high potential impact on biodiversity and high potential dependence on ecosystem services.

RANK	PRIORITY FROM DEPENDENCIES PERSPECTIVE	PRIORITY FROM IMPACTS PERSPECTIVE
1	Agricultural Products	Marine Ports & Services
2	Apparel, Accessories & Luxury Goods	Agricultural Products
3	Brewers	Airport Services
4	Distillers & Vintners	Oil & Gas Exploration & Production
5	Electric Utilities	Mining
6	Forest Products	Oil & Gas Storage & Transportation
7	Independent Power Producers & Energy Traders	Oil & Gas Drilling
8	Renewable Electricity	Distribution

Source: [BPAF and CDSB \(2021\) Framework application guidance for biodiversity-related disclosures.](#)

Accounting for Biodiversity

Six out of the top ten sectors with high potential impact on biodiversity and high potential dependence on ecosystem services are directly connected to agriculture. Contextually, agricultural land makes up 50% of total habitable land on Earth and accounts for 70% of the world's freshwater consumption, contributing to one third of global to GHG emissions (FAO). A transition to [regenerative agriculture](#), which takes into account biodiversity, soil health, climate adaptation and circularity, answers many key nature-related questions, and links to human health through improved nutrition. Regenerative agriculture offers investment opportunities to investors looking to solve key societal challenges.

The funding will help scale the development, data analysis, financing, and education around regenerative agricultural practices, which can improve global food systems and mitigate the global food crisis.

Biodiversity is central to the ecosystem, playing the role of connector (from seed, to bird, to soil), in its abundance it maintains balance (when a population of species suffers, another takes over) and builds resilience against climate change.

The reason that carbon accounting does not tell the whole story is that practices which are damaging to biodiversity, such as overuse of agrochemicals, are not accounted for through a carbon footprint alone. The carbon footprint of an input, such as an agrochemical, will not fully account for ecosystem degradation and biodiversity loss.

The risk to investors is considerable. The ability of an ecosystem to deliver the services we depend on decreases when the system is less biodiverse. This is affecting companies and can lead to [physical, transitional, and systemic risks](#) for investors. Access to nature-related information can inform risk management and investment decisions.

One of the key reasons for why biodiversity is still rarely reported is that measuring its performance relies on integrating the **complexity of biodiversity itself**, as well as the complexity of the **cause-and-effect relationships** between the activities of organisations and natural environments.

The availability of natural capital metrics and robust methodologies is a crucial issue. For some environmental aspects, such as greenhouse gas (GHG) emissions and water consumption, these metrics are relatively straightforward and already familiar to businesses.

On the other hand, standardised methodologies for calculating a biodiversity footprint are relatively recent and under development.

Here are some examples:

1. The Biodiversity Impact Metric (BIM)

BIM measures impact on biodiversity caused by the production of raw materials for supply chains of companies. The methodology provides a basis for comparing different raw material supply options and allows companies to compare different investment options.

This method characterises the impact of a company by assessment of land areas required for production of its raw materials based on:

- **Quantity:** proportion of biodiversity lost through the production process
- **Quality:** relative importance of the biodiversity lost

by



2. The Global Biodiversity Score (GBS)

The Global Biodiversity Score (GBS), developed by the Caisse des Dépôts (CDC) Biodiversité, represents a company's impacts on biodiversity as a whole across its value chain, through the use of a common unit: Mean Species Abundance (MSA). MSA is expressed in percentages of the integrity of ecosystems, from 0% to 100%, where 100% represents an ecosystem not modified by humans.

Example of GBS Methodology:

In July 2022, BNP Paribas Asset Management ('BNPP AM') published results of the biodiversity footprint of its investments, following the development of a tool to identify and quantify the potential negative biodiversity impacts of portfolio companies. The analysis was based on the Corporate Biodiversity Footprint ('CBF') methodology, which covers more than 1,800 companies included in its equity and bond funds, equating to 70% of its 'corporate' assets under management. Each environmental pressure (land use, air and water pollution, and climate change) was translated into a quantified biodiversity impact, then aggregated to calculate the biodiversity footprint of each company, expressed in MSA.km² (MSA: Mean Species Abundance). The [publication of this research](#) also forms part of the implementation of Article 29 of the French Law on Energy-and Climate on 30 June 2022, which extends the reporting requirements for climate risks to those related to biodiversity loss.

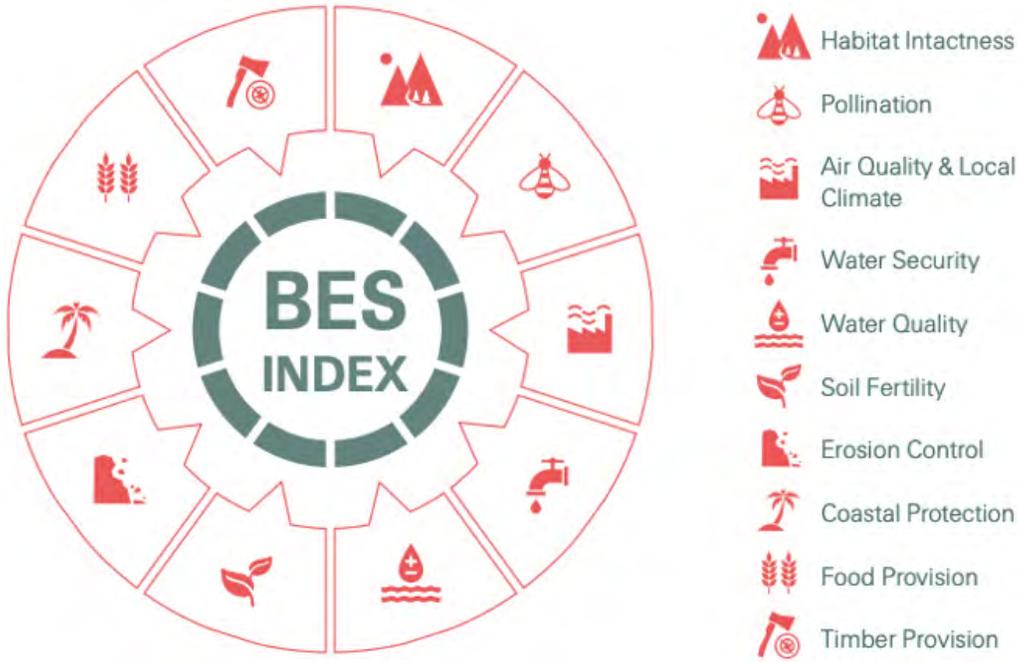
3. SwissRe Biodiversity and Ecosystem Services (BES) Index

The BES Index is an approach to integrating biodiversity impact measurement into existing frameworks on climate change and is used by ESG data providers who have access to larger datasets, proxies, and scoring methodologies.

BES considers business dependencies on ecosystem services and their impacts on nature to provide financial institutions with an insight into existing initiatives. Assessment of BES risk informs actions and policies required to support a robust economic position, and measure whether development is moving in the right direction.

For example, the desiccation of the Aral Sea since 1960 has been a notorious and well-documented example of anthropogenic ecological devastation. Equally ominous has been the devastating impact on the livelihoods and health conditions of the human populations inhabiting the Aral Sea region. As a socio-ecological crisis, the Aral Sea's recession has demonstrated interrelationships between humans and the biophysical environment.

Figure 1: Ecosystem services identified based on re/insurance business relevance and data availability.



Problems with current accounting methods

A key issue with current biodiversity footprinting methodologies is data quality and the lack of standardisation of biodiversity reporting at the company level.

The scientific data these methodologies rely on is often fragmented, due to a lack of representation of certain types of pressures (e.g., overexploitation of resources, invasive species) or a lack of representation of certain ecosystems (e.g., marine biodiversity).

Additionally, to gather data on the location where the impact takes place (like data on water scarcity) [the asset location must be known](#), which is not always the case.

To overcome these limitations, corporate disclosure of ecological pressures on the whole value chain is essential. Data providers and consultancies, with access to broader sets of data, and through the lens of a variety of standards, can support market adaptation towards absolute sustainability. As the market matures, methodologies and data tools will support more widespread reporting on biodiversity.

Integrating nature-related risks into investment decisions

The risks that arise for financial institutions range from operational risks to market risks. Operational risk shows a clear connection to nature-related dependencies, while reputational risk is closely tied to nature-related impacts.

A categorization of nature-related risks for financial institutions going beyond climate was established by the Natural Capital Coalition in 2018.

These risks are categorised as:

1. **Operational**
2. **Legal and regulatory** (for instance, a law that limits companies' use of a natural resource that is important for their production)
3. **Markets**
4. **Reputational**
5. **Societal**

One way to integrate nature-related issues into investment decisions is to quantify nature-related risks. This can be accomplished by:

1. Describing corporate activities and environmental impacts, formulated on the basis of financial and sustainability reports.
2. When enhancing this with data from life cycle databases and models extracted from a global environmental-energy-economic models.
3. Calculating natural capital costs, computed in monetary terms based on valuation factors, to determine the monetary costs per environmental impact.
4. Addressing societal costs, solution costs, and potentially avoided costs.
5. Complementing this information on costs with the likelihood of their occurrence provides a perspective in terms of risks.

Active engagement

The Dutch Association of Investors for Sustainable Development (VBDO) has issued a guide to addressing nature-related issues through engagement with companies. This is expressed through different angles, such as materiality or transparency.

Key steps of active engagement:

1. **Identify the nature-related issues of engagement with the company:**
Issues are likely to be the activities from which the company faces the highest materiality risk (frameworks such as TNFD and PBAF, offer approaches to materiality assessment)
2. **Ask for specific outcomes relating to a given sector or environmental issue**
(mining, deforestation, etc)



3 Financing the transition

Beyond the avoidance of nature-related risks, which could have procyclical effects, financial institutions have an important role to play in financing the transition towards nature-smart economies.

The Biodiversity Finance Initiative (BIOFIN) estimates that funds needed to protect nature run up to \$440 billion USD, whereas estimated current investments barely reach \$52 billion.

This gap means that new markets are developing, along with huge demands for capital. While enhanced public financing is essential, private financial institutions also have an important role to play. Indeed, many Nature-based Solutions are financed through public and private financing (“blended finance”).

The transition towards an economic and social model that takes better account of its natural limits will create new markets and investment opportunities through:

- **Differentiation and opportunities for branding**
 - Differentiation in the market for early movers
 - Demonstration of awareness or integration of nature in decision processes and investment policies, achieved through comprehensive reporting on nature-related risks, and a demonstration of awareness or integration of nature in decision processes and investment policies
- **Opportunities for new financial products**
- **New investment opportunities:**

Innovative financial products dedicated to environmental issues, such as:

- **Green Bonds** – All designated green projects should provide clear environmental benefits, which will be assessed and, where feasible, quantified by the issuer
- **Environment-dedicated funds** – Scaling-up capacities in nature-related investments
- **“Blended finance”** – Effective way of integrating private financial institutions into innovative products and projects with greater level of uncertainty and accompanying risk

Nature-based Solutions

Nature-based Solutions can increase the resilience of businesses and livelihoods. For example, [Unilever](#), as a part of its commitment to stop deforestation, is working to restore and expand forested areas to “prevent the worst impacts of climate change and safeguard the world’s biodiversity”, in five different landscape programmes across Indonesia and Malaysia. Since 2018, Kering has partnered with Savory to pioneer nature-based solutions for regenerative agriculture in fashion, an industry which, if nothing changes by 2050, will use up one-quarter of the world’s carbon budget and significant amounts of land and water.



Globally, ecosystems are able to store significant amounts of carbon and thereby can help slow global warming (IPCC 2019). Recent estimates suggest that these natural climate solutions can provide around one-third of the cost-effective climate mitigation needed between now and 2030 to stabilise warming to below 2°C (Griscom et al. 2017).

NbS can be broadly categorised into two approaches: **adaptation** and **mitigation**

Mitigation

Refers to adjusting to climate change and preparing ecosystems by improving land management practices.

Examples include:

- Restoring wetlands to increase carbon storage
- Limiting deforestation
- Reducing disturbance to the soil and seafloor to significantly decrease greenhouse gas emissions

Adaptation

Strengthening the resilience of ecosystems and communities to reduce impacts of climate change

Examples include:

- Planting crops between agricultural crops to improve soil health
- Rehabilitating coastal ecosystems to reduce the impacts of erosion and storm surges
- Restoring natural habitats on slopes and hillsides to capture more water and stabilise the ground, therefore reducing flooding and landslides
- Increasing green spaces in cities to improve air quality and reduce urban temperatures

NbS offer quantifiable benefits in economic returns and growth, though co-benefits to people and nature are complex to quantify. Frameworks, such as the International Union for Conservation of Nature (IUCN) [global standard](#) are emerging to encourage best practices and reduce risks for investors.

In financing NbS, it is important to consider the following:

CONSIDERATION #1

Context

NbS, like most nature-related processes, are dependent on local context, including the ecosystem, the landscape, the stakeholders, and the institutions that have authority over them.

With many stakeholders in multidimensional projects, involving ecological and community-focused considerations can present complex governance challenges.

The geographical and cultural context can also have a bearing on how projects are carried out. For instance, in a country like Sweden, strict local policies will provide both a roadmap and requirements to follow, and engagement and inclusion protocols.

CONSIDERATION #2

Project implementation and governance

NbS are best implemented alongside global climate commitments, including decarbonization, sustainable consumption, and resilient food systems.

The IUCN global standard provides a useful guide to best practices for implementation and for financing NbS. Criterion 5 in the IUCN's Global Standard for NbS (2020) provides comprehensive indicators that are fundamental for the effective and equitable design and implementation of NbS for climate change, including:

- Planting crops between agricultural crops to improve soil health
- Restoring natural habitats on slopes and hillsides to capture more water and stabilise the ground, therefore reducing flooding and landslides
- Rehabilitating coastal ecosystems to reduce the impacts of erosion and storm surges
- Increasing green spaces in cities to improve air quality and reduce urban temperatures

In financing NbS, it is important to consider the following:

CONSIDERATION #3

Justice and social equity

The majority of natural ecosystems that are prioritised for conservation under the category of NbS are located in lower-income and middle-income countries, many of which are home to indigenous peoples and local communities.



Various stakeholder groups have repeatedly expressed fears that their socio-economic rights are threatened by conservation measures, such as protected areas, being planned, implemented, and/or managed without their full consent and participation (World Rainforest Movement [WRM], 2022).

Previous conservation measures resulted in restricting communities' rights over lands and natural resources that underpinned much of their economic and sociocultural livelihoods (Jonas et al., 2014).

Indigenous peoples and local communities play a tremendous role in the protection of nature and are considered fundamental to achieving both climate and conservation goals (Dawson et al., 2021).

It is vital that the adoption and implementation of NbS is done with full consideration to the socio-economic wellbeing of developing countries and the indigenous peoples and local communities who are most connected (and dependent) on areas proposed for conservation.

Multidimensional benefits of NbS include:

- **Cost effectiveness** – for example, reducing input costs pegged with premium prices for sustainably produced products
- **Multiple** – for example, restoring wetlands to buffer local communities from flood waters, or conserving mangrove forests that provide nurseries for fish and protect nearby homes against storm damage
- **Social** – for example, improving health by replacing chemical inputs with organic ones
- **Environmental** – for example, enhancing biodiversity through forest restoration



Conclusion

Nature's services to humanity are so immense that we can barely account for them. We depend on Nature for food, water and shelter. It is the air we breathe and is the sink for our waste products. Nature is our only supplier of these goods and services, it is the bedrock of our economy, and it is at risk.

As we begin to account for the level of risk to markets, investors are exploring methods of integrating nature and its central component, biodiversity, into investment processes. Many new nature-related standards and reporting requirements offer a more nuanced approach to environmental reporting than carbon footprinting. Previously established environmental reporting processes stand to benefit from the added complexity, helping investors to get a clearer picture of the risks their investments pose to the environment and society.

There are considerable opportunities to be gained from improved visibility, in terms of assessment of existing positions and for identifying the future beneficiaries of a market shaped by nature-related policies and nature-smart businesses.

To mitigate the nature-related risk, investors may also direct capital towards nature-positive outcomes. Nature-based Solutions offer diverse benefits, drawing on ecosystem services, and at their best, on local knowledge of nature. These solutions are often cost effective and support resilience against climate change.

Collective action is at the heart of the processes discussed in this paper. We sited the importance of data availability and quality from the underlying company, the critical role of governments, non-government organisations, data providers and standard setters, alongside the role of the investor.

This next phase of integrating nature and the economy builds on the foundation of ESG work, which has required market participants to shift processes, and mindsets, in a short space of time. It is important to acknowledge how far market participants have come in embedding environmental considerations into financial practices. These changes have come from change leaders and smaller players, seasoned executives and newest recruits. Our increasing debt to Nature puts markets at risk, requiring fast-paced action which many are ready to address, despite the complexity. There's still time to secure a future in which people and nature can thrive, if we act now.

In Summary

As a financial professional, consider:

- Assessing the biodiversity risk and opportunities for investment targets
- Starting a formal process for biodiversity reporting and disclosure
- Consider alignment with standards, such as the TNFD
- Invest in NbS which offer both economic value creation and benefit nature and society

Recommended Reading

To learn more about biodiversity and Nature-based Solutions, we recommend the following resources:



Dasgupta: the economics of biodiversity (abridged)



Biodiversity and Ecosystem Services
A business case for re/insurance



Enhancing banks' and insurers' approaches to managing the financial risks from climate change



Nature is too big to fail
Biodiversity: the next frontier in financial risk management



Integrating nature into investment strategies.



Powering Nature: Creating The Conditions To Enable Nature-Based Solutions



When will Climate Disclosures start to impact decarbonization?



Guidance for using the IUCN Global Standard for Nature-based Solutions



New biodiversity commitments announced as world leaders declare nature summit COP15 a priority

Recommended Reading (Continued)



Biodiversity loss:
Impossible for investors
to ignore



It's time to set a higher
value on natural capital



Nature-based solutions
as catalysts for achieving
the SDGs



First draft of the post-
2020 global biodiversity
framework



An Investor Framework for
Nature-based Solutions |
Sustainability Accelerator



Nature-based Solutions
Conference 2022 Report:
Ensuring that NbS support
thriving human & ecological
communities.



Fast-tracking Action
in support of the Post-
2020 Global Biodiversity
Framework



The Economic Case
for Nature

About Rio

Rio is an intelligent, accessible sustainability software platform that helps businesses and individuals become more sustainable through data analysis, learning, and governance. Rio takes knowledge from the sustainability sector's leading minds and puts it into the hands of everyday people and organisations — so we can all do better together.

Rio offers tools that help at every step on your Net Zero journey.



Through accredited online education and learning management, Rio helps you learn about Net Zero and educate your team about sustainability.

Rio also supports materiality assessments and provides a repository for your policy and strategy documents.

As a central hub for all your sustainability data, Rio is able to automate carbon reporting activities and help organisations improve efficiency on their path toward Net Zero. Upload data from sources of your choice and Rio automatically calculates your organisation or portfolio's carbon footprint using industry-standard guidance and conversion rates.

Rio allows you to compare performance across years, locations, business units, or funds, set custom targets for reducing your footprint, and track performance against targets over time.

Moving toward Net Zero can feel like a big undertaking. Rio helps make it easier.

Get in touch.

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