Why nature-loss is material for central banks and financial supervisors

An introductory briefing on screening for nature-related impacts and opportunities

SUSTAIN | Strengthening Understanding and Strategies of Business to Assess and Integrate Nature

Contents

Executive summary

While some central banks and financial supervisors are setting requirements for the finance sector to consider nature, many others are not yet prioritizing nature as a potential material risk for financial stability. As a result, many financial institutions do not consider how nature loss could undermine financial performance and stability in their jurisdictions.

This briefing aims to strengthen the understanding of central banks and financial supervisors, including securities regulators on how they can screen for material nature-related issues using available tools such as **ENCORE** (Exploring Natural Capital Opportunities, Risks and Exposure). The briefing also highlights how the outcomes of this screening can be used in engagement and discussion with financial organizations and other stakeholders. These outcomes can feed into further assessments and prioritization and inform strategic action to halt and reverse nature loss thus contributing to financial stability.

The briefing distills recommendations from relevant guidance and requirements, and signposts where global tools, where global tools (including ENCORE) can help break down the complexity of nature to prioritize meaningful action.

The recommendations include

1. Screen for potential dependencies and impacts on nature.
2. Deepen your understanding of potential economic effects and material risks.
3. Engage with financial organizations and other stakeholders on potential risks and actions.
4. Use assessment and engagement results to inform your strategy and actions.

This briefing is for non-nature experts within financial regulators who:

- are not yet identifying nature as material
- understand that nature might be material, but don't know how to get started
- have experimented with some tools like ENCORE but need more guidance on how to use them

This document is intended as an introductory resource for understanding materiality screening practices related to nature issues in the regulatory context. It does not aim to deliver in-depth technical guidance or novel insights but to present a snapshot of current frameworks and considerations. For specific implementation guidance, regulators may refer to the primary sources cited herein.

Introduction

Why nature-loss is material for central banks and financial supervisors

Have you included nature loss in your risk assessment as part of your efforts to ensure financial stability? Do you know what effect nature degradation has on the performance of financial organizations and their investments? Carrying out a screening for potential nature-related risks, using the **ENCORE** tool, will help you see how nature-related risks and opportunities might affect financial stability.

Nature provides the building blocks for a functioning society and economy (see *Figure 1*). Whether through direct operations or in value chains, all economic activities depend and impact on nature and the benefits it provides (called ecosystem services).

Ecosystem services like clean air and water, pollination, climate regulation, food production and other essential but often taken-for-granted ecosystem services are critical for human wellbeing as well as the economy. All organizations—financial institutions, businesses, governments and communities—depend on these services and could not operate without them. Yet our planet is experiencing record levels of human-driven nature loss, characterized by ongoing damage to ecosystem services and natural resources, due to five main drivers that are identified by the International Panel on Biodiversity and Ecosystem Services (IPBES): changes in land and sea-use, over-exploitation of materials, climate change, pollution, and invasive alien species (IPBES, 2023; NGFS 2023, TNFD 2023).

"As central banks and supervisors, we have every reason to be concerned, because it's an illusion to think we can preserve financial stability if this degradation [of nature] continues. A degradation to which financial institutions under our supervision also contribute through the activities they finance. A degradation that in turn creates risks they need to manage. Therefore, it's squarely within our mandate to address these risks and to use our leverage to bend the curve. From nature degradation to nature restoration."
Klaas Knot, President, Netherlands' Central Bank, and Chair, Financial Stability Board[1]

[1] 'Lessons from Mount Everest: acting now to curb nature-related financial risks', Klaas Knot, 2023.

How does nature loss threaten financial stability?

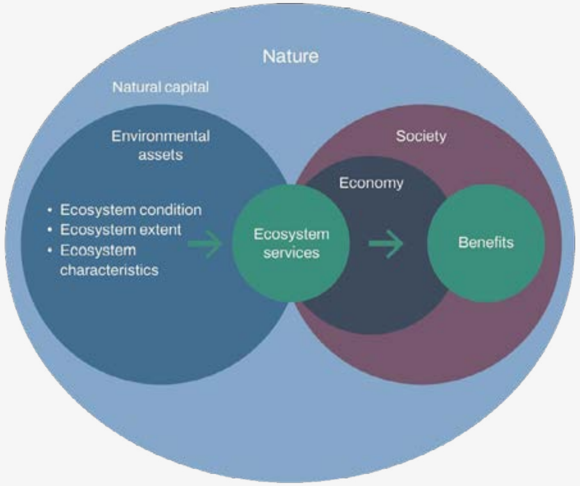
The interconnections between nature, society and economy (see *Figure 1*) means that nature's degradation, as well as the actions aimed at preserving and restoring it, are creating physical as well as transition risks, and failure to act on these is creating nature-related systemic risks. Risks that altogether could jeopardize financial stability (see *Figure 2*). It is in a supervisor's long-term interest to understand and begin to mitigate the nature-related impacts, dependencies and associated risks linked to your position as central bank or financial supervisor and to that of the financial sector.

Central banks and financial supervisors who fail to understand and address the economy and financial sector's vulnerability to nature loss in their jurisdiction may expose the economy to systemic nature-related financial risks. For example, soil degradation and pollinator decline resulting from human activities has destabilized food systems, creating risks for companies, financial institutions and society in general in the form of crop failures, food insecurity, chemical pollution, and pest outbreaks. This impact extends to all stakeholders, including financial institutions, businesses and society, including groups like employees, Indigenous Peoples, local communities, and civil society organizations.[2]

All organizations are exposed to these **systemic risks** which, according to the **Network for Greening the Financial Sector (NGFS)** and the **Financial Stability Board**, can be either economic or financial in nature. They can result from a combination of physical and transitional risks:[3]

- For financial organizations, this means that they are exposed to **physical risks**, either directly or indirectly, due to their reliance on the stock of natural capital and the ecosystem services that flow from it. These risks extend to all sectors and organizations.
- Probably every financial organization is exposed to **transition risks** as increasing numbers of governments and regulators are developing new nature-related regulations to help organizations (business as well as financial organizations) to better manage impacts and dependencies on nature. This also can take the form of legal risks. Similar to the rise of climate litigation, nature and biodiversity loss can be subject to increased nature-related litigation.[4]

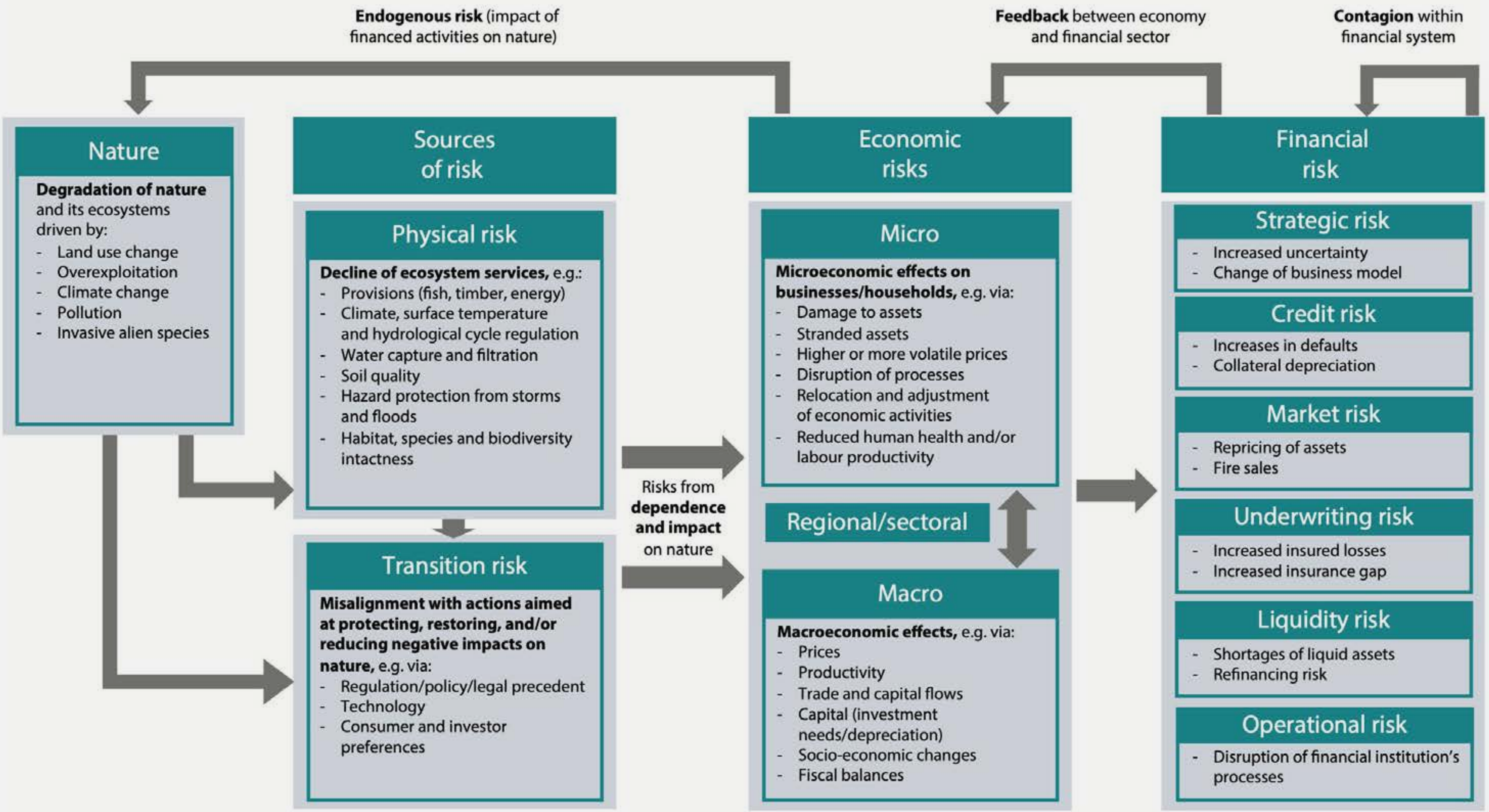
Figure 1: Nature, business and society



Source: TNFD 2024, 'Why nature matters'

[2] For a description of how business, finance and society impact and depend on natural capital, see Figure 1.2 in Connecting Finance and Natural Capital: A Supplement to the Natural Capital Protocol
[3] See Stocktake on Nature-Related Risks. Supervisory and regulatory approaches and perspectives on financial risk, Financial Stability Board, July 2024, and the Nature-related Financial Risks: a Conceptual Framework to Guide Action by Central Banks and Supervisors, Network for Greening the Financial System.
[4] 'Nature-related litigation: emerging trends and lessons learned from climate-related litigation', NGFS.

Figure 2: Transmission channels of risk



Source: Adapted from Swartzman, R. et al. (2021) A "Silent Spring" for the Financial System? Exploring Biodiversity-Related Financial Risks in France

Nature as part of a central bank's or financial supervisor's mandate

Given the potential risks from nature loss for the economy and for financial stability, it is crucial for central banks and financial supervisors, including securities regulators, to take action on nature-related financial risks. Damage to ecosystem services, which all institutions and societies rely on to operate, can jeopardize the stability of the financial and economic system.

Central banks and financial supervisors play a key role in creating the enabling environment needed to effectively implement the global goal to halt and reverse nature loss, that has been agreed in the **Kunming-Montreal Global Biodiversity Framework (GBF)**. By assessing nature-related risks in a coherent and systemic way, and by considering the consequences of these risks for financial stability, you will be able to take steps that will enable your organization and those that you regulate to maintain financial stability while also contributing to achieving the global goal to halt and reverse nature loss.[5]

[5] NGFS acknowledges that nature-related risks could have significant macroeconomic and financial implications

Recommendations for understanding and acting on nature-related issues

Recommendation 1: Screen for potential dependencies and impacts of the financial sector on nature[6]

Why

Understanding the exposure of the financial sector to dependencies and impacts on nature is at the heart of your nature journey. It enables you to identify priority nature-related risks and opportunities, inform your strategy and actions including setting relevant targets.

Evaluating risks and taking advantage of available opportunities will enable you to stay ahead of emerging issues that could enhance your engagement with financial organizations and other stakeholders (Recommendation 3). It will also help inform strategy and actions to manage risks and halt and reverse nature loss (Recommendation 4).

How

You can start by gaining a broad overview of the nature-related risks to your sector using the **ENCORE** tool. For more detailed steps on using the ENCORE tool, see the annex.

Exposure and materiality screening on nature-related risks and opportunities is recommended by all key frameworks, including the **Natural Capital Protocol**, **SBTN's guidance on Science-based Targets**, **NGFS's Framework on Nature-related Financial Risks**, and the **TNFD-Framework**. The ENCORE is designed for initial screening and has been used successfully by several central banks and financial supervisors, including from Brazil, European Union, France, Mexico, Malaysia, the Netherlands, and the United Kingdom.

The tool is jointly developed by Global Canopy, the UN Environment Programme Finance Initiative and the UN Environment Programme World Conservation Monitoring Centre. It has been recently updated based on new insights on assessing impacts and dependencies on nature, developed in the context of the **SUSTAIN** project.

[6] This recommendation aligns roughly with NGFS Phase 1, Identify sources of physical and transition risk.

After obtaining the results from ENCORE, you should conduct further analysis to deepen your understanding and prioritization of which dependencies and impacts are of highest relevance to your economy. There is a range of tools you can use, such as the **WWF Risk Filters**, **GLOBIO model**, the **Integrated Biodiversity Assessment Tool (IBAT)**, and **Key Biodiversity Areas database**.[8]

The Dutch Central Bank (De Nederlandsche Bank or 'DNB') was the first financial regulator to apply the ENCORE tool for nature-related risk assessment (See *Box 1*), identifying an exposure of €510 billion to companies with high or very high dependency on one or more ecosystem services – 36% of the portfolios examined. A year later the French Central Bank (Banque de France) identified a comparable risk level: 42% of equity and debt securities held by French financial institutions were to firms with high or very high dependencies on at least one ecosystem service. In 2023, the Work Bank found that, on average, 55% of bank loans in a sample of 20 emerging markets are exposed to activities that are highly or very highly dependent on one ecosystem service.[7]

ENCORE is designed to provide a long list of potential dependencies and impacts for a typical company engaged in a given economic activity anywhere in the world. It allows a first quantification of risks and identification of key material issues, based on global averages of environmental indicators and qualitative synthesis of latest scientific and grey literature (See here for an explanation of how ENCORE applies materiality ratings).

Box 1: How De Nederlandsche Bank applied the ENCORE tool

DNB was the first financial regulator to assess and disclose physical biodiversity risks. In a multistep process, DNB and the Netherlands Environmental Assessment Agency (PBL) first used ENCORE to identify the dependency scores[9] of 86 business processes on 21 ecosystem services. By manually linking economic sector classifications to business processes, the researchers were able to determine the exposure of Dutch financial institutions to those sectors through their loans, corporate bonds and shares – focusing on sectors with high or very high dependence on one or more ecosystem services. Focusing on Dutch financial institutions, DNB and PBL have identified an exposure of €510 billion to companies with high or very high dependency on one or more ecosystem services – 36% of the portfolios examined. The decline in pollination services alone exposes the financial sector to €28 billion in potential losses.

For further information, see **Integrating Nature Risks into Decision-Making: The Study of the Dutch Central Bank, SUSTAIN, 2024**

[7] Financial Stability Board, 2024. Stocktake on Nature-related risks. Supervisory and regulatory approaches and perspectives on financial risks. Available at: https://www.fsb.org/2024/07/stocktake-on-nature-related-risks-supervisory-and-regulatory-approaches-and-perspectives-on-financial-risk/

[8] See for a detailed description of the methods used by the Netherlands' central bank: Methods for Analyses in Indebted to Nature, DNB and PBL, 2020.

[9] The dependency score is based on two factors: 1) How significant is the loss of functionality in the production process if the ecosystem service is disrupted? and 2) How significant is the financial loss due to the loss of functionality in the production process? For more information, see https://encorenature.org/en/data-and-methodology/materiality

Recommendation 2: Deepen your understanding of potential economic effects and material risks that could jeopardize financial stability[10]

Why

Now that you have initial insights from a materiality screening, your institution should build on this by looking deeper into potential economic effects and material economic risks by looking at direct and indirect effects as well as at substitutability. Effects could vary and pose risks for the economy both at micro and macro levels. Some risks may also be sector or region specific.

How

It might be relevant to consider potential micro and macro level risks, both for regions and sectors. Examples of micro-level risks are capital destruction (e.g. damage to assets arising from hazards like flooding or landslides) or stranded assets (e.g. write-offs of assets due to changing consumer preferences or incoming new regulation). Macro-level examples include changes in prices of commodities, energy or water, which could create inflationary pressures (see NGFS, 2024).

To assess risks to, from and within the financial sector, you should consider financial risks that stem from exposure to sources of physical and transition risks.

- **Identify potential nature-related factors affecting prudential risks** that could undermine financial stability and potentially erode confidence in the overall financial system. Prudential risks include the availability of specific natural resources for pharmaceutical companies for drug development or production, decreased agricultural production due to a loss of soil fertility, or loss of value of a company experiencing freshwater shortages for its production process.[11]
- **Take into account feedback loops within the real economy**.[12] Impacts from nature loss on one company easily spread to others, creating knock-on effects. Through these feedback loops, risks may spread rapidly through the economy. Financial regulators must understand these feedback loops and develop appropriate policies to limit the spread of risk. Examples include:
  - Pollination services compromised by pesticide use and land use change might jeopardize yields for almond growers, that in turn pose risks to companies that use almonds as inputs for their products.
  - Flooding due to loss of coastal ecosystems such as mangroves may lead to operational damages to companies with physical assets in delta areas.

[10] This recommendation aligns roughly with Phase 2 of NGFS (Assess economic risks), as well as Phase 3 (Assess risks to, from and within the financial system).
[11] NGFS, 2024, p.19.
[12] For how to understand feedback loops between four capitals (natural, social, human, and produced capital), see Capitals Coalition, 2024. Capitals Protocol. Technical guidance on four capitals' assessments.

Recommendation 3: Engage with financial organizations and other stakeholders on potential risks and actions

Why

The third recommendation is to engage with both financial organizations and businesses, after you have at least implemented the Recommendation 1.[13] This is a crucial step as central banks and supervisors can catalyze multistakeholder collaboration (see *Box 2*) and influence and enable financial organizations and business to shift towards a nature-positive world.

How

Curating an active collaboration with key partners is a good way to enhance your understanding on nature-related financial risks. It could provide the direction you need to further refine your risk assessment with internal and external data as a basis for decisions and actions.

- Engage with both financial institutions and businesses, to fully understand how financial risks (and opportunities) play out across the economy (see also *Box 2*). In many cases, nature-related financial risks occur first at the individual business level. Therefore, it is important to understand these. See for example, the **12 sector overviews** of key typical impacts and dependences on nature and priority actions, as well as from **The Nature Strategy Handbook**, both developed by Business for Nature, World Business Council for Sustainable Development and World Economic Forum.
- Ask financial organizations to assess and disclose risks on nature, as well as nature-related investment opportunities that can boost financial stability, including on value chain and landscape levels.
- After engagement with financial organizations and stakeholders, further refine your risk assessment with internal and external data to determine which nature-related issues are relevant and critical for financial stability.

[13] An example of a collaborative engagement is the Sustainable Finance Platform, set up by the Dutch Central Bank in 2016 to help remove barriers to sustainable financing and improve collaboration on sustainability initiatives.

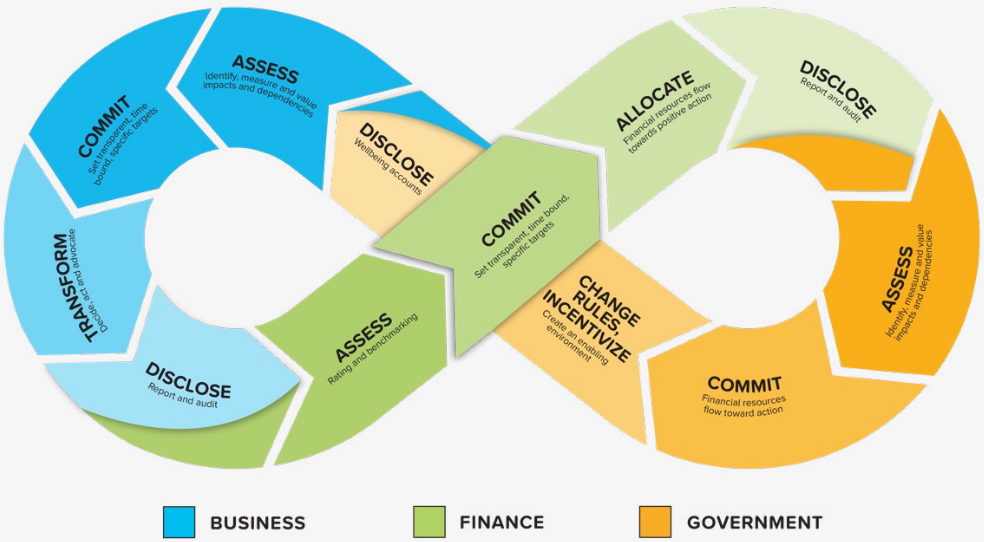
When engaging with financial organizations, businesses, and/or other parts of government, regulators could, for example, include the following questions:

- What is their readiness and capacity to contribute to achieving the Global Biodiversity Framework's **Target 15** to regularly monitor, assess, and transparently disclose their risks, dependencies and impacts on biodiversity?
- How much are they exposed to nature risks that are identified and prioritized in the regulator's risk assessment?
- Have they taken measures to integrate nature in their organization's materiality assessment, strategy and transition planning towards a carbon neutral and nature positive future (see *Box 3*)?
- What incentives or financial support can they provide to invest in actions that can avoid and reduce negative impacts?
- Are they taken steps to identify nature-related risks, e.g. through an exposure analysis for high-level screening of exposure to direct nature-related dependencies and impacts in portfolio companies? Or by mapping locations of the direct operations of portfolio companies they invest in? (See for example *Box 4*)
- What data can they provide to help the regulators' assessments at national or sectoral level?
- Will they join you in advocating for financial institutions, business and governments to put in place policies and regulations to avoid and reduce the main drivers of loss of nature, as well as policies to restore and regenerate nature, including through nature-based solutions.[14]

Box 2: How regulators can stimulate alignment on nature actions between business, finance and policy

The positive feedback loop on aligning value, developed by the Capitals Coalition, illustrates the importance of multistakeholder action on nature loss: stakeholders must work with each other to feed into, encourage, and inform action from all parties. Financial regulators can use insights from other actors' assessment process to strengthen their own understanding of impacts and dependencies on nature. Being an independent part of government, they can contribute to ensuring an unbroken flow of information that circulates throughout the system, as illustrated in *Figure 5*.

Figure 5: Infinity loop for business, finance and government stakeholders



Source: Capitals Coalition, 2024. Beta Framework for Integrated Decision-making

[14] Nature-based Solutions (NbS) are actions to address societal challenges through the protection, sustainable management and restoration of ecosystems, benefiting both biodiversity and human well-being. (IUCN, 2020. Ensuring effective nature-based solutions (Issues brief). Available at: https://iucn.org/sites/default/files/2022-02/iucn_issues_brief_-_nbs_standard_eng.pdf.)

Box 3: Embedding nature in an organization's strategy

Reversing nature loss will require transformational change by all actors, including business, finance and government. The Business for Nature **Nature Strategy Handbook**, developed for business but useful for other organizations as well, sets out four high-level actions on nature that can also be useful for supervisors in their engagement and discussions with economic actors. The Handbook guides organizations through the supportive tools and frameworks available to implement these steps, including the TNFD Framework, guidance from the Science Based Targets Network and sector-specific guidance. The Handbook is aligned with detailed **sector guidance** that summarizes key typical impacts and dependencies on nature and priority actions.

Several companies, across all sectors and geographies, are embedding nature into their business strategy, through assessing materiality, setting targets, and formulating concrete actions, all with C-Suite approval.[15] Examples include Arauco (paper and forest products, Chile), Ørsted (renewable energy, Denmark), Natura & Co Latam (household and personal care products, Brazil), Olam Food Ingredients (food & beverages, Singapore), and Holcim (built environment, Switzerland).

Some companies are using Natural Capital Accounting methodologies to record their transactions with nature, ensuring the sustainable use and renewal of these resources. For example, the Tasmanian/Australian forestry company **Forico** has **integrated Natural Capital Accounting into their financial reporting framework**, thus providing its management and stakeholders with a more comprehensive picture of the company's corporate sustainability performance.

Forico's Natural Capital Report monetized the value of the most material ecosystem assets. This value is then presented in the format of a traditional Corporate Annual Report with an Environmental Balance Sheet, Profit and Environmental Balance Sheet, Profit and Loss Statement, supporting notes and a Public Limited Assurance opinion from KPMG. The Report has been deliberately disclosed in this manner to best resonate with key decision makers who are allocating resources and quantifying value. Building on their natural capital work, **Forico has also published in 2023 a combined TCFD and TNFD report**, showing how how businesses can pave the way for the further anticipated development of biodiversity reporting.

[15] See the It's Now for Nature website

Box 4: Managing climate and nature risks: Storebrand Asset Management AS

Financial institutions are already taking actions to assess and incorporate nature into their strategies and risk management including combining nature and climate risks to form a comprehensive approach.

Storebrand Asset Management AS (SAM), a Nordic asset manager with 1212 NOK billion in assets under management, combines climate and nature risks to form a comprehensive strategy and disclosure format. SAM first set out its environmental sustainability ambitions in Deforestation Policy in 2019, Climate Policy in 2020 and Nature Policy in 2022. In 2024, SAM published an integrated TCFD and TNFD Climate and Nature Report because they believe that it is "becoming best practice for organizations to develop integrated climate and nature reporting frameworks and transition plans." [16]

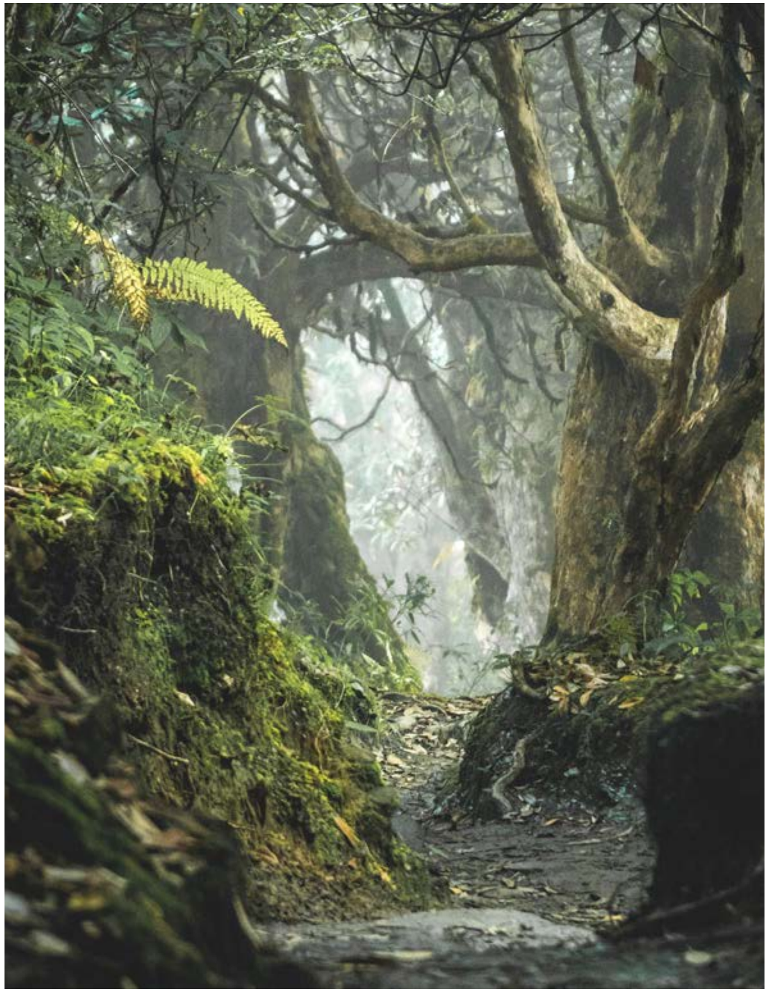
To coordinate and drive the implementation of its transition plan, SAM established an **Internal Taskforce on Climate and Nature**, led by the Chief Investment Officers, supported by the Risk and Ownership team and other relevant teams. The taskforce's two main tasks are to transition investment portfolios to net-zero GHG emissions consistent with a 1.5C pathway by 2050 and the second is the alignment of financial flows with targets of the Global Biodiversity Framework. Progress against these two tasks is reported to the executive board twice a year.[17]

Storebrand has taken a range of steps to identify nature-related risks: 1) **exposure analysis** (using ENCORE) for high-level screening of exposure to direct nature-related dependencies and impacts in portfolio companies; 2) **mapping of locations** of the direct operations of portfolio companies beginning with high biodiversity and ecologically sensitive areas; 3) use **scenarios** to determine how climate-risks could impact their financial and operational resilience and strategy including shaping management actions based on the results.

SAM **manages nature and climate risks** through three main strategies:

1) Exclusion of companies with significant contribution to environmental damage
2) Engagement to influence corporate behavior and policy makers
3) Allocation of capital to solution companies

The company uses a range of data sources to identify and inform its nature and climate analyses and strategies including scientific research and reports, industry-specific data, company disclosures, ESG rating agencies, third- party research and analytics services.



[16] Storebrand Asset Managment, 2024 "Climate and Nature Report"
[17] The following indicators are covered in the report: a) Progress on reduced emissions, based on the short-term targets that the company has set; b) Progress on investments in capital flows towards low-carbon, climate-resilient and solution companies and/or companies that contribute to nature-positive outcomes; c) Progress on nature-related commitments including deforestation; and d) Progress on engagement with sectors that contribute heavily to climate change and/or nature loss.

Recommendation 4: Use the assessment and engagement results to inform your strategy and actions

Why

To take credible actions on the issues you identified as material through your screening and engagement process, you could develop short-, medium- and longer-term policies that embed nature-related financial risks into your strategy. These could focus on individual (financial) organizations (micro-prudential, to ensure that financial institutions investigate and understand nature-related financial risks and act to manage their exposure to them), at sector or economy level (macro-prudential), or at the enabling environment for change.

To make your actions credible, Finding a way with nature (SFL 2023) sets out four guiding principles that central banks and supervisors can use to identify potential actions:

1. Take an integrated approach that considers climate change and nature degradation together.
2. Acknowledge the relevance of systemic endogenous risks created by the financial sector.
3. Adopt a precautionary approach.
4. Concentrate first on sectors causing the most harm.[18]

How

Rich and diverse lists of practical recommendations for actions are included in Finding a way with nature (SFL, 2023), Navigating Nature-Related Regulations for Banks (UNEP-FI and WWF, 2024), and in the 2024 SUSREG Annual report (WWF, 2024). *Table 1* on the next page contains an adapted summary of these that is also informed by the case studies and stakeholder briefings that are developed in the context of the SUSTAIN report.[19]

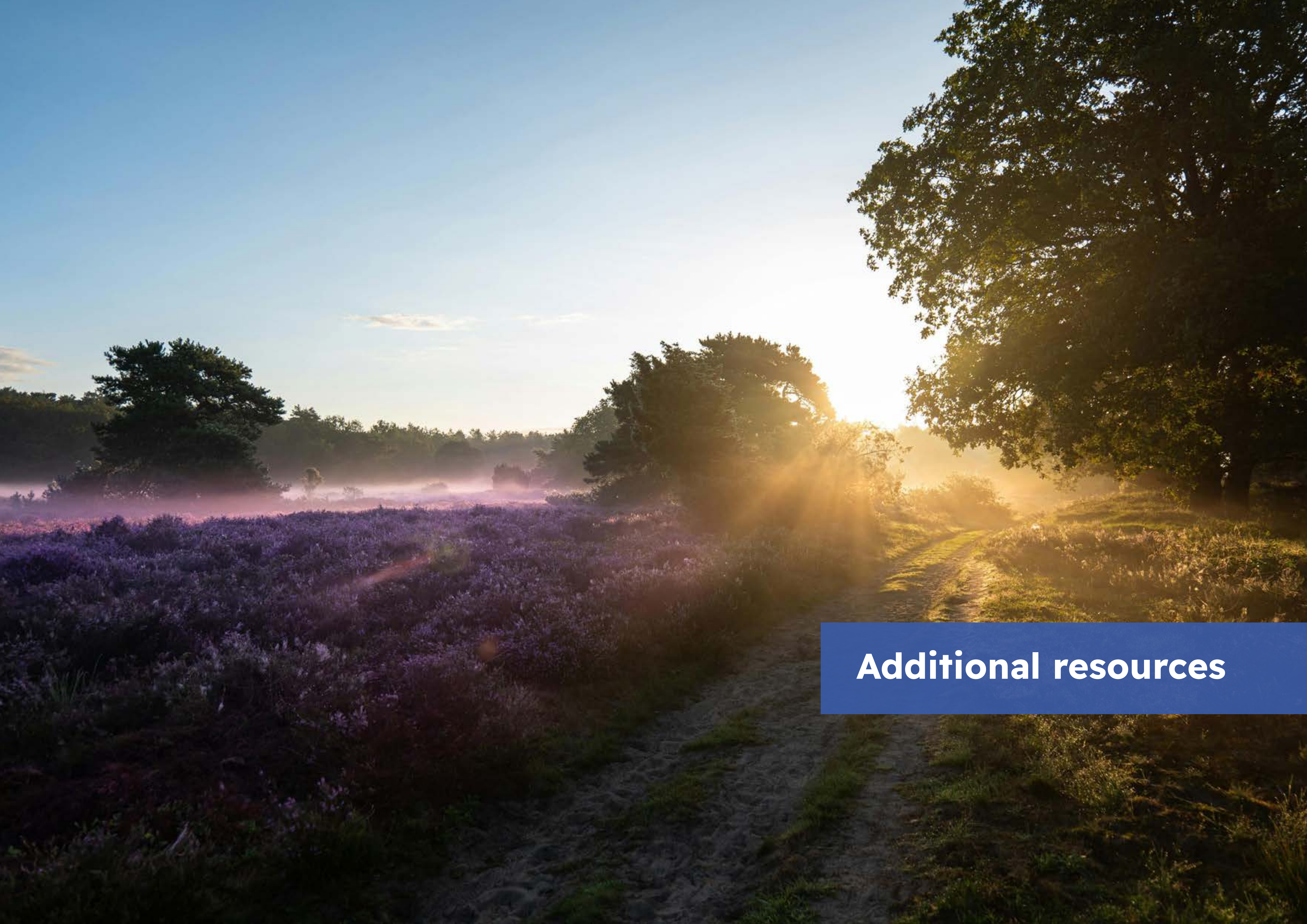
[18] See for example https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/oct/financial-interactions-ecosystem-tipping-points. From that some specific instruments can be derived, like setting limits on concentrations in biodiverse harming investments

[19] See https://capitalscoalition.org/project/sustain-project/

Table 1: Recommendations for actions

	Micro-prudential	Macro-prudential	Enabling environment
Short term **0-2 year**	**Disclosure:** Ask financial organizations to assess and disclose risks on nature, as well as nature-related investment opportunities that can boost financial stability, including on value chain and landscape levels. **Governance:** Update the 'fit and proper' assessment for employees and senior personnel and assess knowledge levels specifically on nature-related risks; monitor your organization's governance with respect to nature-related risks in regular supervisory practices. **Transition planning:** Require that financial institutions include nature in their climate transition plans	**Understanding risks:** Use your own research to embrace available (sub)sector overviews of harmful activities. **Knowledge:** Expand the economy-wide stress tests conducted by the European Central Bank and European Insurance and Occupational Pensions Authority	**Knowledge:** Promote sharing of good practices and insights across business, finance, and government, including on disclosure, risk management, sector risks, and transition planning. This could include establishing or support national sustainable finance platforms or organisations. **Governance:** Nature and climate is explicitly included in the mandates of central banks and financial supervisors
Medium term **2-3 year**	**Disclosure:** Apply mandatory disclosures of impacts, dependencies, and nature-related risks following the TNFD framework, including also endogenous risks. **Transition planning:** Require FIs to develop transition plans for nature that are aligned with or integrated in climate transition plans.	**Understanding risks:** Include nature-related risks indicators in financial stability assessments **Governance:** Expand the economy-wide stress tests (ECB, EIOPA) to include nature-related risks **Knowledge:** Apply lessons learned from adapting monetary policy instruments to climate- and nature-related risks **Aligning policy and finance streams:** Monitor the alignment of financial flows with 1.5 D and Nature Positive pathways	**Disclosure:** Promote synergies between standards for including nature and climate in disclosure **Transition planning:** Promote the development of sector transition plans **Target setting:** Lead by example by setting nature and climate targets as central bank or supervisor **Aligning policy and finance streams:** Promote reform of environmental harmful subsidies and alignment of financial streams, to support sector transition plans
Long term **4-5 year**	**Governance:** Introduce higher capital requirements for exposures harmful to nature **Governance:** Revisit the Pillar I framework to make it more forward looking	**Aligning policy and finance streams:** Design 'nature TLTROs' that could stimulate nature positive bank lending **Governance:** Include the introduction of green interest rate to support FIs to provide nature positive financing[20]	

[20] See SFL's report



Additional resources

Additional resources

When implementing recommendations 1–4, the following resources can be consulted:

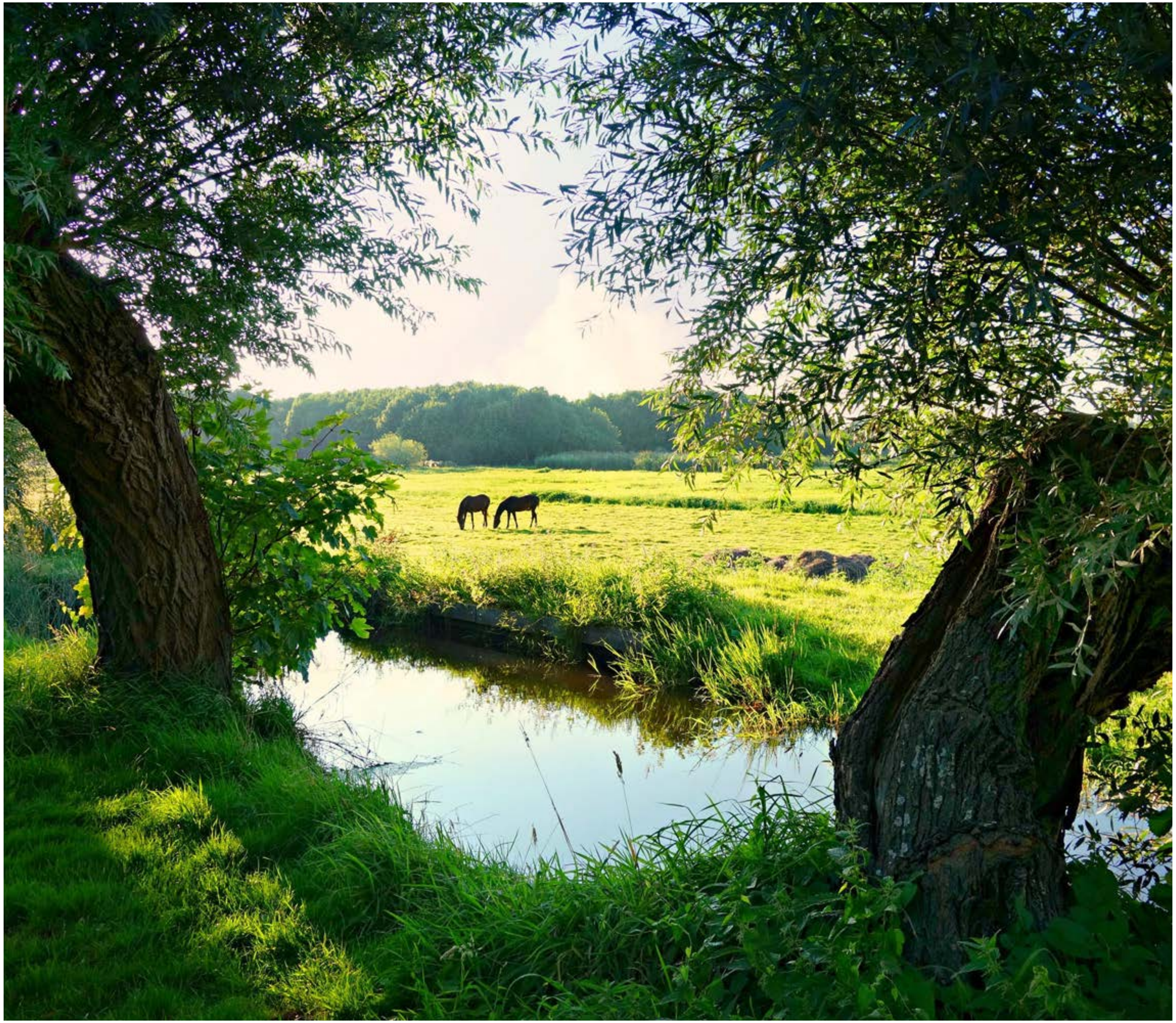
Guidance and tools

- To initiate your own screening for potential impacts and dependencies, see **ENCORE**.
- **TNFD LEAP guidance** and case studies on how to apply ENCORE tool
- **TNFD Tools Catalogue** providing an overview of nature-related data tools available today
- NGFS, March 2022, ***Central Banking and Supervision in the Biosphere: An Agenda for Action on Biodiversity Loss, Financial Risk and system Stability. Final Report of the NGFS-INSPIRE***
- NGFS, 2024, ***Nature-related Financial Risks: a Conceptual Framework to Guide Action by Central Banks and Supervisors***

Inspiring examples and case studies

- De Nederlandsche Bank, 2020, ***Indebted to Nature. Exploring biodiversity risks for the Dutch financial sector***
- Banque de France, 2021, ***A "Silent Spring" for the Financial System? Exploring Biodiversity-Related Financial Risks in France (Working Paper)***
- UNEP-FI, 2023, ***Banking on Nature: What the Kunming-Montreal Global Biodiversity Framework Means for Responsible Banks***
- UNEP-FI, PRI, Finance for biodiversity, 2023, ***Stepping Up on Biodiversity: What the KunmingMontreal Global Biodiversity Framework means for responsible investors***
- UNEP-FI, 2023. ***PRB Nature Target Setting Guidance***
- UNEP-FI and WWF, 2024. ***Navigating Nature-related regulations for banks. Mapping the policy landscape***.
- Boldrini S., et al., 2023, ***Living in a World of Disappearing Nature: Physical Risk and Implications for Financial Stability***, European Central Bank
- Martinez-Jaramillo, S., et al., 2023, ***Dependencies and Impacts of the Mexican Banking Sector on Ecosystem Services***, European Central Bank
- Bank of Lithuania, December 2023, ***Assessing Nature-Related Financial Risks: The Case of Lithuania***
- Storebrand, 2024, ***Climate and Nature Report: Integrated TCFD and TNFD Report***
- Sustainable Finance Lab, 2024. ***Finding a Way with Nature***
- SUSTAIN, 2024, ***Integrating Nature Risks into Decision-Making: The Study of the Dutch Central Bank***
- Finance for Biodiversity, July 2024 (2nd edition), ***'Nature Target Setting Framework for Asset Managers and Asset Owners'***
- Green Finance Institute, 2024. ***Assessing the Materiality of Nature-Related Financial Risks for the UK***
- Word Wildlife Fund for Nature, 2024. ***Deforestation and conversion: An introductory guide for central banks, financial regulators and supervisors***
- World Wildlife Fund for Nature, 2024b. ***2024 SUSREG Annual Report. An assessment of sustainable financial regulations and central banks activities***

What can you do next?



By this stage, you will appreciate that the loss of nature is a critical risk for society and business. You now have a basis for an approach on nature which can help your organisation play its part in halting and reversing nature loss.

- Don't work alone! Use the results of your assessments to have an initial discussion with potential allies in your networks, both nationally and internationally, including academics or NGOs.
- Share your experiences along your nature journey to help trigger collective action to halt and reverse nature loss.

A brief introduction to the ENCORE tool

The updated ENCORE tool covers the **271 International Standard Industrial Classification of All Economic Activities (ISIC) economic activities and can support you** to identify potential areas of focus so you can further prioritize and credibly manage nature-related risks most material to your assessment or institution.

The following practical steps will support applying the ENCORE tool:

1. On the **Explore page**, select the sector and economic activity in which you are interested, using:
   - The **list of potential dependencies on ecosystem services** *(e.g. biomass provisioning service; water supply; soil quality regulation; flood mitigation services; pollination services, etc.) linked to the economic activity.*
   - The list of **potential pressures** *(e.g. area of land use; area of freshwater use; emissions of GHGs; emissions of soil and water pollutants; also referred to as "impact drivers") linked to the economic activity.*

2. To unlock additional features of the tool, register and log in to use the **Natural Capital Module** to help you visualizing or summarizing potential dependencies and impacts:
   - When you select the sector and economic activity in which you are interested, you can view its potential dependencies or impacts in a flow diagram, showing the connections all the way to different ecosystem components.
   - You can also view summary statistics, highlighting the most material potential dependencies and impacts.

3. **Use the ENCORE knowledge base** that is available for download in a .csv format from the tools' **Methodology & Downloads** page, to integrate the ENCORE knowledge base directly within your own systems.

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