Sustainable Finance

Sustainable Finance Advisory Committee

for the 20th legislative term of the federal government

Position paper

Biodiversity and sustainable finance

Biodiversity as a key element of sustainable finance

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Working group: Biodiversity

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Executive summary

This paper is the final report by the Sustainable Finance Advisory Committee's biodiversity working group during the federal government's 20th legislative term. The report presents a set of recommendations that, in the view of the Sustainable Finance Advisory Committee, need to be taken into consideration.

Our economic and financial system depends on biodiversity and an intact natural environment.[1] At the same time, this system impacts the environment both directly and indirectly. Researchers believe that we are currently experiencing a sixth mass extinction event and that one quarter of the planet's species are threatened with extinction due to human activity. Economic activity plays a pivotal role here – both as a cause of biodiversity loss and as part of a solution driven by (a) the transformation to a sustainable economic and financial system and (b) this transformation's dependence on properly functioning natural systems. Companies operate within a complex matrix of dependencies and impacts. They procure raw materials and use ecosystem services, and their business practices affect the natural environment. By providing financing to and investing in companies, financial market participants can contribute to the preservation of biodiversity.

To date, financing for nature conservation and restoration is provided almost exclusively by the public sector. With the EU's adoption of the Nature Restoration Regulation, the need for financing – and thus the need for supplementary financing from the private sector – has increased. The recommendations set out in this paper are designed to (a) facilitate the establishment of an economic and financial system that protects biodiversity and (b) implement the Sustainable Finance Advisory Board's "future concept for a sustainable financial system"[2], which was formulated with the aim of contributing to the preservation of our natural resources and economic base.

1. Recommendations for growing the biodiversity finance market

- To mobilise more private capital for nature restoration and biodiversity protection, it is necessary to establish the appropriate **policy frameworks** and **financing**

[1] See, e.g., the World Economic Forum's New Nature Economy Report: https://www.weforum.org/publications/new-nature-economy-report-ii-the-future-of-nature-and-business/
[2] https://sustainable-finance-beirat.de/wp-content/uploads/2024/07/SFB_Zukunftsbild_EN.pdf

instruments. The German government should advocate these objectives at the EU level.

- A **biodiversity credit market**, based on a **reliable framework** and **specific standards**, is needed to supplement public sector financing for nature conservation. This market must be established at the European level and designed in a way that enables private financing for conservation-based and biodiversity-based solutions.

  In order for biodiversity credits to be worthwhile not only in economic terms but also in environmental terms, it must be ensured that these new models provide financing for additive measures whose positive contribution to biodiversity can be measured scientifically. Additional measures that are financed through a biodiversity credit market must be classified clearly and must not be counted twice in line with, for example, the intervention provisions under nature conservation law. Such intervention provisions would remain unaffected by the creation of a biodiversity credit market, and the market should be subject to independent monitoring. Moreover, a biodiversity credit market cannot replace intervention provisions.

  The “framework for high integrity biodiversity credit markets”, which was developed by the International Advisory Panel on Biodiversity Credits and presented at COP16 in Cali, Colombia, could serve as a guide. The scientific suitability and global applicability of any proposed market framework and biodiversity indicators must be verified before any decisions are taken in this regard.

  The lessons learned from privately organised markets (such as the Voluntary Carbon Market) and from regulated biodiversity credit markets must be analysed in advance, and their respective advantages and disadvantages must be taken into account as part of the planning process.

  Lessons learned from other market-based instruments, such as the Kyoto Protocol’s Clean Development Mechanism, must also be incorporated into the planning process. This includes, for example, ensuring clear additionality as part of the authorisation process, using robust methods, and taking local expertise into account for verification and validation purposes.

  Furthermore, the EU’s Carbon Removal Certification Framework – which aims to incentivise the generation of biodiversity co-benefits in certified carbon removal activities (Article 7 of the CRCF Regulation) – should also be taken into account.

  Non-market-based approaches might also play an important role in the future. Both the Kunming-Montreal Global Biodiversity Framework (GBF) and the agreement

drafted at COP16 in Cali (which is expected to be conclusively negotiated in Rome in late February 2025) refer multiple times to such approaches in connection with the mobilisation of financial resources. Here too, the development of a robust biodiversity framework is crucial.

- **Because the EU's Nature Restoration Law is being implemented in Germany at the level of the *Länder* (and not the federal government), it is imperative to ensure coordination of the various policy frameworks for promoting private investment in nature restoration and biodiversity protection.** Such coordination is essential in order to avoid added red tape and to ensure the development of a national market. Only a national market will have the requisite size to attract private investors.
- **The establishment of a "biodiversity bond" (a green bond focusing on biodiversity) at the federal and/or *Land* level should be considered.** This biodiversity bond could provide financing for measures targeting biodiversity protection, ecosystem protection and nature restoration. This would not only serve the interests of investors in this segment but would also reinforce Germany's position as a leading hub for sustainable finance. A biodiversity bond might also offer cost advantages.
- **The establishment of a GBF-aligned Benchmark at the EU level should be considered.** A GBF-aligned Benchmark could be designed along the lines of the Paris-aligned Benchmark. The EU's Benchmark Regulation[3] lays down minimum criteria that indexes must meet in order to be labelled as Paris-aligned Benchmarks (PAB) or Climate Transition Benchmarks (CTB). PAB indexes approximate a pathway for companies on the index to achieve the Paris Agreement's 1.5°C target. A similar approach could be taken to help meet the targets set out in the Kunming-Montreal Global Biodiversity Framework (GBF), although it would have to be ensured that the new instrument actually contributes to the achievement of GBF targets.
- **Development banks should develop blended finance instruments to integrate private capital into additive restoration measures**.
- **Banks should include the issue of biodiversity in their business financing considerations.** In this way, more financing for biodiversity measures could be made available via green bonds. Along the lines of the SBTi's climate targets, the SBTN's general environmental targets (which place a strong emphasis on biodiversity) could

[3] EU Benchmark Regulation: https://eur-lex.europa.eu/legal-content/en/TXT/HTML/?uri=CELEX:32020R1818&from=DE.

also be used as sustainability performance indicators. Transition finance strategies and guidelines (like those developed by the International Capital Market Association, the Glasgow Financial Alliance for Net Zero, and the OECD) could also be expanded to include a specific focus on biodiversity. As is the case with the SBTi's targets (which focus on the reduction of greenhouse gas emissions), the objective that would have to be measured here would be improvements to natural ecosystems.

2. Recommendations to improve the supply of biodiversity-related data

Various shortcomings need to be remedied in order to help ensure that businesspeople and financial market participants are able to make sound and sustainable financing and investment decisions:

- **Biodiversity-related reporting requirements** – and the data and information used for this purpose – need to be made **more standardised and specific**. Related frameworks, like the one developed by the Task Force on Nature-related Financial Disclosures, need to be established.
- **Certain types of data (e.g. satellite data) must remain publicly accessible** and should not be purchased by private companies for exclusively commercial purposes.
- **Capacity-building in companies and financial institutions**: It is important for companies and financial institutions to gain a better understanding of the risks, impacts and dependencies associated with biodiversity and to find out what data is available and how this data is to be used. This effort should also be supported by the public sector, as is done for example under the auspices of the *Unternehmen Biologische Vielfalt* project (a government-supported project focusing on business and biodiversity).

1 Challenges and context

Our economic and financial system depends on an intact natural environment with a high level of biodiversity. At the same time, this system impacts the environment both directly and indirectly. Economic activity plays a pivotal role both as a cause of biodiversity loss and as part of a solution driven by (a) the transformation to a sustainable economic and financial system and (b) this transformation's dependence on properly functioning natural systems. Companies operate within a complex matrix of dependencies and impacts. They procure raw materials and use ecosystem services, and their business practices affect the natural environment. By providing financing to and investing in companies, financial market participants are also impacted by, and have an impact on, biodiversity.

This paper is the final report by the Sustainable Finance Advisory Committee's biodiversity working group during the federal government's 20th legislative term. The report presents a set of recommendations that, in the view of the Sustainable Finance Advisory Committee, should be adopted by the next federal government.

1.1 The importance of biodiversity and ecosystem services

Biodiversity encompasses the full range of ecosystems, habitats, animal species, plant species and genetic variations within species. As the foundation for healthy ecosystems and for the provision of ecosystem services, biodiversity is our natural basis for life. However, biodiversity is highly endangered due to advancing biodiversity loss around the world. Researchers believe that we are currently experiencing a sixth mass extinction event and that one quarter of the planet's species are threatened with extinction due to human activity.[4] Our economies are directly affected by these developments, because many business models are based on ecosystem services. Biodiversity loss can have far-reaching systemic effects on nearly all sectors of the economy. Therefore, ensuring the long-term preservation of biodiversity is not only an environmental necessity but also an economic one.

Scientific analyses show that the drivers of biodiversity loss are closely linked to economic activity. According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), there are five direct drivers of biodiversity change:

1. **Changes in land and sea use:**

   The conversion of natural habitats, such as forests and wetlands, for purposes of agriculture, housing or infrastructure.

[4] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES): https://www.ipbes.net/.

2. **Direct exploitation of organisms:**

   The overexploitation of resources, e.g. through fishing and hunting.

3. **Climate change:**

   Anthropogenic global warming alters ecosystems and thereby exacerbates biodiversity loss.

4. **Pollution**:

   Chemical, plastic and other types of contaminants that damage the habitats of many species.

5. **Invasive alien species:**

   The displacement of native species by invasive alien species as a result of global trade and global mobility.

These direct drivers generate complex interactions that pose both environmental and economic risks. The Common International Classification of Ecosystem Services (CICES) distinguishes between three categories of ecosystem services:[5]

1. **Provisioning services:**

   The provision of essential resources such as food, water and raw materials.

2. **Regulating services:**

   Functions such as water purification, climate regulation and flood protection. These “invisible” processes play a central role in ensuring operational continuity. For example, agriculture is reliant upon intact soils and clean water.

3. **Cultural services:**

   Intangible benefits that are derived from experiencing and preserving the natural environment and cultural assets, for example in the tourism sector.

Failing to recognise or acknowledge the interdependencies between nature and the economy entails significant financial risks. For example, natural disasters that are exacerbated by the degradation of regulating ecosystem services can cause production losses and supply chain disruptions. For this reason, it is essential for companies to integrate the issue of biodiversity into their risk management systems in order to enhance their resilience and safeguard their long-term competitiveness.

At the same time, efforts to ensure that global warming does not exceed 1.5°C can succeed only if ecosystems remain intact. Plants, soils and oceans play a key role in the absorption of carbon dioxide. The impacts of climate change can be mitigated only through the buffering effect provided by intact ecosystems. Nature and biodiversity must therefore be treated as vital infrastructure, not only because of the protective functions they perform but also because of the ecosystem services they provide.

[5] “Supporting services” are an additional type of ecosystem service that do not comprise a separate category but rather underpin the three ecosystem service categories cited here.

1.2 Frameworks for biodiversity protection and their relevance for economic activity

The growing recognition of biodiversity loss has led to the development of numerous national, European and international frameworks, strategies and initiatives, many of which also target the real economy and the financial sector. They provide companies in both the real economy and the financial sector with guidance and incentives to make their business practices more eco-friendly. These include:

1.2.1 Global Biodiversity Framework

The centrepiece of international efforts to preserve biodiversity is the Kunming-Montreal Global Biodiversity Framework (GBF), which was adopted in December 2022 by the 15th Conference of Parties (COP15) to the UN Convention on Biological Diversity (CBD). The GBF sets out four long-term goals for 2050 and 23 medium-term targets for 2030. Four of these targets for 2030 are particularly important from the perspective of sustainable finance:

a) Target 14 calls for fiscal and financial flows to be aligned with the GBF targets.
b) Target 15 calls for the adoption of disclosure requirements for companies and financial institutions.
c) Target 18 calls for a drastic reduction in subsidies that are harmful to the environment.
d) Target 19 calls for global biodiversity-related financial resources to be increased to USD 200 billion per year.

To this end, the Parties to the Convention are called on to develop **national biodiversity strategies and action plans** for the implementation of specific measures. The 16th Conference of Parties, which was held in Cali, Colombia in October and November 2024, reaffirmed its support for ongoing international efforts to preserve biodiversity.

1.2.2 Biodiversity in EU legislation and strategy

The Biodiversity Strategy for 2030 is the European Union's main framework for protecting biodiversity. One of the strategy's centrepieces is the Nature Restoration Law, which was adopted in June 2024 with the aim of boosting efforts to restore damaged ecosystems. This legislation establishes a framework that aims to place 20% of the EU's land and sea areas

under restoration measures by 2030. Biodiversity also features prominently in other EU legislation[6]:

a) Transparency requirements and disclosure: Under the Corporate Sustainability Reporting Directive (CSRD)[7] and the related European Sustainability Reporting Standards (ESRS), businesses are expected to systematically identify and disclose their biodiversity-related risks, impacts and dependencies. In addition, the EU Taxonomy Regulation aims to establish a classification system for environmentally sustainable economic activities. To this end, it sets criteria and minimum requirements for the protection of ecosystems.

b) Due diligence procedures: The Corporate Sustainability Due Diligence Directive (CSDDD) requires companies to ensure that operations along their entire supply chain avoid adverse impacts on the environment, including on biodiversity. Member states must transpose this directive into national law by July 2026.

c) Restricted market access: The EU Deforestation Regulation (EUDR) restricts future market access for seven agricultural commodities that account for the main share of deforestation. A review commissioned by DG Environment is currently assessing whether to expand the regulation's scope to cover financial institutions.

1.2.3 National Biodiversity Strategy 2030

Germany adopted its National Biodiversity Strategy 2030 (NBS 2030) in December 2024. NBS 2030 is the German government's primary nature conservation strategy and is Germany's vehicle for implementing the GBF and the EU's Biodiversity Strategy for 2030. In addition to addressing conventional nature conservation issues, NBS 2030 is also geared towards the real economy and the financial sector and includes an initial action plan with measures specifically designed to achieve the strategy's targets.

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6 A useful overview of biodiversity-related legislation adopted by the EU is provided in the report "Biodiversity and finance: managing the double materiality", published jointly in 2022 by the Frankfurt School of Finance & Management, Climate & Company, and the Federal Agency for Nature Conservation. https://www.bfn.de/sites/default/files/2022-12/2022-biodiversity-and-finance-managing-the-double-materiality-bfn.pdf.

7 As of the beginning of 2025, the CSRD had not yet been enacted in German law.

1.2.4 Voluntary initiatives and guidelines

Voluntary frameworks such as those designed by the Taskforce on Nature-related Financial Disclosures (TNFD) and the Science Based Targets Network (SBTN) provide companies with practical instruments for assessing their nature- and biodiversity-related risks and opportunities and for integrating these factors into their business strategies. Sector-specific guidelines, like those formulated by the Business for Nature coalition, help specific industries develop nature- and biodiversity-friendly business practices.

TNFD consultation group in Germany

The TNFD has developed disclosure recommendations and guidelines that are designed to help companies and financial institutions (a) assess and report on their nature-related dependencies, impacts, risks and opportunities and (b) take appropriate decisions and actions in light of current challenges.

National TNFD consultation groups are networks comprised of representatives from the real economy and the financial sector. These groups discuss and apply TNFD recommendations and provide feedback. They forge networks between stakeholders and facilitate ongoing communication between them.

Germany's TNFD consultation group was launched in December 2024 and is organised by BAUM and Forum Nachhaltige Geldanlagen.

2 Solutions to facilitate an economic and financial system that protects biodiversity

The Kunming-Montreal Global Biodiversity Framework (GBF) aims to halt and reverse the loss of biodiversity, natural resources and ecosystem services. It creates an overarching framework for eco-friendly economic activities, financial flows and investment, including medium-term targets for 2030 as well as long-term goals for 2050. Achieving these targets will require action from all stakeholders in government, industry and finance.

Businesses in the real economy and the financial sector must adapt their strategies in order to meet the challenges of biodiversity loss. **Biodiversity must not be treated solely as a compliance measure. Rather, it must be understood as a core component of future-oriented business models.** Only in this way can businesses safeguard their licence to operate and make the transition to sustainable business models. In addition, companies should include insetting[8] in their risk management strategies in order to boost the resilience

[8] Steps that companies take inside their own value chains in order to reduce their environmental impacts and promote biodiversity.

of ecosystems and build a securer future. **It is only through the identification of (a) risks arising from degraded ecosystems and (b) corresponding risk provisions that such ecosystems can be accounted for in financial reporting.**

At the same time, decoupling value creation from the use of natural resources can benefit biodiversity. Circular economic approaches such as the reduced use of (primary) resources, the closed-loop use of materials and the implementation of a more resilient procurement system not only make environmental sense but can also bring significant competitive advantages.

By providing financing for economic activity, the financial sector can contribute significantly to biodiversity loss. At the same time, however, it can also play a key role in facilitating (a) the transition towards an economic system that protects biodiversity and (b) the reversal of biodiversity damage. In order to help place the real economy on a more eco-friendly track, financial institutions must gain a better understanding of the interactions between business on the one hand and nature and biodiversity on the other. Data from and about companies and their supply chains is indispensable for this purpose.

The role of companies, financial market participants and data is examined in further detail below.

2.1 The role of companies in the real economy

Companies are drivers of biodiversity loss, but at the same time they are also dependent on the natural environment and its associated ecosystem services. From both of these perspectives, companies face material risks that must be identified and managed, sometimes along the entire value chain.

A sector-specific approach is essential here, because some sectors are especially dependent on the existence of intact ecosystems. The loss of biodiversity can threaten the availability of resources and thereby jeopardise production. Some industries are particularly powerful drivers of biodiversity loss. According to the World Economic Forum, examples of such industries include: agri-food, chemicals, construction and construction materials (cement and concrete), energy, fashion and apparel, financial services, forest products, household and personal care products, travel and tourism, waste management, and water utilities/services.[9]

[9] World Economic Forum, “Every sector must play their part in contributing towards a nature-positive future. Here’s how.”, 12 September 2023.

The TNFD's "Additional guidance for financial institutions" includes an annex listing priority sectors and additional mappings of sector classifications.[10]

Linking biodiversity strategies with climate action strategies can also generate synergies that companies should take advantage of. This is true with respect not only to compliance with regulatory requirements but also to the development of innovative business models that combine environmental sustainability with economic success. Moreover, these synergies are often cost-efficient for the overall economy (climate adaptation, ecosystem restoration).

Because the issue of biodiversity is so complex and multi-layered, it is a challenge to integrate biodiversity risks into commercial decision-making processes. To assess dependencies and impacts on natural resources, it is necessary to conduct extensive analyses that go beyond mere compliance and that involve a nuanced examination of business locations and supply chains. However, it must be taken into account that most impacts along the value chain occur outside the EU. In addition, changes in the natural environment cannot be extrapolated using historical data; rather, ecosystem quality is deteriorating at an exponential rate in some cases.

Financial markets are key stakeholders in the real economy. For this reason, they have a significant impact on the role that companies play in protecting biodiversity. Financial market participants are integrating biodiversity into their risk management systems. And as investors, they provide financing for transformation processes and nature-based solutions (see section 2.2 below on the role of the financial sector).

2.1.1 Current business practices and challenges

Many companies are just beginning to grapple with the issue of biodiversity. This is changing rapidly in the EU, however. Under the CSRD, companies must conduct materiality assessments to determine, among other things, the extent to which their business models are interlinked with biodiversity and ecosystem services. However, CSRD reporting currently focuses mostly on the direct impacts made by the reporting company's own business locations, and much less on upstream supply chains.

Typical initial measures include:

Identifying dependencies and impacts: Companies identify high-level risks, for example the impact of land use on local biodiversity or on raw materials dependency.

[10] https://tnfd.global/wp-content/uploads/2023/08/Guidance_for_Financial_Institutions_v1.pdf.

Analysing environmental conditions in specific key locations: The degradation of nature and biodiversity is analysed in detail in selected locations for the purpose of identifying especially endangered areas.

These measures hold great potential but also pose challenges. The availability of data is a particularly crucial factor. It is important to make key data more accessible and comprehensive, and to prepare data with greater uniformity. Standardised metrics would improve the comparability of results and reinforce the effectiveness of risk management measures.

Furthermore, many companies lack the capacity, resources and specialised skills to integrate biodiversity systematically into their business strategies and operations. Likewise, it is urgently necessary to develop uniform metrics and standards like those set out in the Greenhouse Gas Protocol. Targeted public sector initiatives – led by such entities as the European Commission and/or the German government (for example, as part of Germany's *Unternehmen Biologische Vielfalt* project) – can play a decisive role in promoting private sector activity, suitable training programmes, and capacity-building.

2.1.2 Outlook and next steps

The effective management of biodiversity risks requires structured action at multiple levels:

a) **Identify and quantify impacts, dependencies, risks and opportunities:**
At their own discretion or, if applicable, in accordance with regulatory requirements, companies should systematically identify and assess their main biodiversity risks. In this process, they should examine various scenarios in order to pinpoint biodiversity-related and financial risks that can be depicted in financial statements.

b) **Link biodiversity strategies with climate strategies:**
Linking biodiversity measures with climate action measures can create synergies and thereby facilitate a holistic sustainability strategy.

c) **Embed biodiversity in business strategies:**
Biodiversity issues should be part of a company's overarching business strategy in order to maximise long-term resilience and competitiveness.

The following example – which focuses on an economic sector that is particularly entwined with the issue of biodiversity – serves to illustrate the importance of managing biodiversity risks systematically and effectively.

Case study: construction and real estate sector

The construction and real estate industry is an economic sector that is both directly and indirectly dependent on biodiversity. The direct dependence is most apparent in the upstream value chain, namely in building materials. But biodiversity loss can also have indirect effects, for example on the water retention capacity of soils. Furthermore, the construction industry is a sector that has major adverse impacts on biodiversity.

An effective biodiversity risk management system assesses a building's interaction with nature and maps the entire value chain throughout the building's lifecycle, including site selection, construction, active operation/use and demolition/removal. Based on this assessment, dependencies and impacts are identified before analysing natural conditions (including biodiversity) along the entire value chain. For buildings in operation, it is highly advisable to formulate a climate strategy at an early stage.

Planning: Buildings have a direct relationship with soil quality. When land use change occurs, soil functions (such as habitat provision for plants and animals, the conversion and storage of nutrients, and carbon storage) are lost.

Recommendation: Significantly reduce soil sealing and place a priority on reusing already sealed soil. Promote densification, infill development and compensation measures.

Construction materials are produced using primary raw materials (gravel, minerals, sand, etc.) and renewable raw materials that are reliant upon fertile, moist soils.

Recommendation: To reduce dependence on finite resources, use raw materials that are renewable, recyclable, repairable and/or separable. In addition, use environment-friendly cultivation methods.

Transporting construction products: Infrastructure measures lead to habitat loss while simultaneously increasing soil, water and air pollution. In addition, global supply chains facilitate the spread of invasive species.

Recommendation: Purchase construction materials that require only short-distance transport. Ensure that roadside vegetation promotes biodiversity.

Water is becoming a scarce resource as droughts and heat events increase. If water has to be rationed, this affects not only civilian populations but also industry and production (such as steel and concrete production).

Recommendation: Promote infiltration and transpiration by unsealing sealed surfaces, using rainwater and grey water and reducing consumption.

Holistic planning: Extreme weather events inflict greater structural damage in the absence of adequate ecosystem services. Furthermore, land use changes alter the water balance and microclimate. They also lead to the discharge of contaminants, bird strikes and light pollution.

Recommendation: Adopt biodiversity strategies that (a) comprehensively address location factors such as climate, flora and fauna and (b) include ideas for reducing pollution and protecting the natural environment. Specific solutions include: biodiversity-friendly surfaces adjacent to buildings, green building materials, eco-friendly lighting and bird-safe glass.

2.2 The role of the financial sector

Biodiversity loss also poses risks for the portfolios of financial market participants. These risks are receiving growing attention from supervisory authorities. In addition, financing and investment decisions have an impact on biodiversity. Financial market participants should facilitate the avoidance, reduction and reversal of adverse impacts on biodiversity.

2.2.1 Recommendations and rules for the financial sector

In terms of the systematic consideration of biodiversity-related factors, our recommendations for financial market participants are closely aligned with our recommendations for businesses in the real economy.

a) **Compile data showing impacts and dependencies on ecosystem services:**
In general, biodiversity strategies for financial market participants start out by collecting and analysing data on the companies and projects that have received financing and/or investment. This data makes it possible to identify and report on biodiversity-related risks, opportunities and impacts. One challenge facing financial market participants is the limited amount of available data that is needed in order to take effective risk management measures. Although the growing number of methods, tools and data products (some of which are open source) now make it possible to conduct well-grounded analyses, it can still be challenging to obtain data that is important for biodiversity-related issues; this includes location-specific data (e.g. for detailed analyses of company locations) as well as data on value chains (e.g. upstream value chains in Latin America and other regions with high levels of biodiversity). Thanks among other things to new regulatory requirements, it can be assumed that the data supply will gradually improve. Nevertheless, financial market participants should use the data that is available now, but at the same time work together proactively with their business partners to improve the data supply. (See the separate section on data below.)

b) **Set targets and adopt strategies:**
Financial market participants must use data to understand and assess "financed impacts" on natural ecosystems (similar to the notion of "financed greenhouse gas emissions"). Building on this, they must then set science-based targets for nature, adopt a biodiversity strategy as a key element of a general

sustainability strategy, and integrate this strategy into their overall business strategy.

c) **Integrate biodiversity into risk management practices:**

Today, biodiversity risks must be appropriately integrated into risk management systems on the basis of available data. This is part of the governance and risk management requirements that financial market participants must fulfil in order to address sustainability risks. Risk management systems focus on gaining a comprehensive understanding of risks in order to take them properly into account and, if necessary, to develop reduction and avoidance strategies. One approach here might be, in a first step, to focus on certain high-risk sectors and, if possible, to assess the entire value chain of companies in terms of materiality. This sectoral approach would have to be expanded to take the component of time into account – i.e., short-, medium- and long-term time frames as required, for example, by the Capital Requirements Regulation 3 (CRR3) and the Capital Requirements Directive 6 (CRD6).

d) **Engagement and dialogue**:

Capital market participants can likewise discuss biodiversity-related matters with their business partners in the real economy (i.e., companies they provide financing to, invest in and/or insure). Investors can address these questions when setting their terms of engagement, and banks can do so in bilateral talks with borrowers.

e) **Build expertise and capacity:**

It is imperative to build expertise and capacity in the area of biodiversity. One useful way to do this is to participate in international initiatives such as the Taskforce on Nature-related Financial Disclosures (TNFD) and the Science Based Targets Network (SBTN).

2.2.2 Integrating biodiversity into financial institutions: turning risk into opportunity

Financial market regulators currently follow a risk-based approach. Guidelines for financial institutions are set out, for example, in the ECB's "Guide on climate-related and environmental risks", the Solvency II framework, BaFin's "Minimum requirements for risk

management" and "Guidance notice on dealing with sustainability risks"[11], and the EBA's "Guidelines on the management of ESG risks"[12]. In the EU, financial market participants can obtain the information they need by looking at the CSRD reports filed by companies in the real economy. The EBA makes specific reference to this in its guidelines on the management of ESG risks.

Financial market participants use both "avoidance" and "reduction" approaches (i.e. avoid negative impacts and reduce existing risks) to comply with regulatory requirements. They also use these approaches to facilitate transformation, i.e. by making positive contributions to biodiversity protection and sustainable business practices. In this way, for example, value creation can be decoupled from resource use and thereby lead to cost savings. The EU's Nature Restoration Law, and the investments it necessitates, will be an additional driver of market development.

In the future, taking biodiversity risks into account in company financial statements will improve the ability of companies and their financers to transfer and mitigate risks.

2.2.3 Focus: financing for the restoration of damaged ecosystems

The EU's Biodiversity Strategy for 2030 sets out ambitious targets for, among other things, the restoration of damaged ecosystems. These targets are formulated with greater specificity in the EU's Nature Restoration Law, which aims to restore all damaged ecosystems by 2050. Financial markets will play a key role here, because restoration efforts will require major investments in biodiversity protection. Currently, restoration measures are financed almost exclusively by the public sector. According to the United Nations Environment Programme (UNEP), the public sector accounts for 82% of global investment in nature-based solutions, which are a key driver of restoration efforts.[13] Restoration measures are also financed in part by public-sector green bonds (e.g. when a share of the overall revenue from green bonds is allocated for this purpose).[14]

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[11] file:///home/xIMAH0bS/Downloads/dl_mb_Nachhaltigkeitsrisiken_en.pdf.

[12] https://www.eba.europa.eu/sites/default/files/2025-01/fb22982a-d69d-42cc-9d62-1023497ad58a/Final%20Guidelines%20on%20the%20management%20of%20ESG%20risks.pdf.

[13] State of Finance for Nature, 2023.

[14] For example, a green bond issued by NRW Bank provided financing for river restoration projects in the German *Land* of North Rhine-Westphalia. Similarly, a green bond issued by the *Land* of Hesse provided financing for the programme "100 wild streams for Hesse".

To implement the Nature Restoration Law, Germany must now develop a national restoration plan that contains specific measures to achieve the law's targets. Member states must submit their national restoration plans by 2026, i.e. within two years following the Nature Restoration Law's entry into force. A key challenge for Germany is that the responsibility for implementing the law lies primarily with the *Länder*, while the Federation is to play a coordinating role. The EU will provide some financial support, but most of the funding will have to come from the *Länder*. **Private capital can provide a valuable supplement to public sector funding. However, the federal structures for implementing nature conservation measures in Germany pose a challenge.**

It is important to grasp the opportunity to use private capital for restoration measures. One good example of a system for implementing additive restoration measures is the United Kingdom's mandatory "Biodiversity net gain" (BNG) programme.[15] At the same time, it is important to ensure that the costs of restoration measures remain affordable (e.g. the costs of construction measures must not rise disproportionately) while simultaneously making a positive contribution to biodiversity.

2.2.4 Recommendations for growing the biodiversity finance market

Currently, restoration measures in Germany are financed directly by private sources only in rare cases. In these cases, carbon credits are usually used to provide financing. However, this steers the focus towards providing compensation for carbon emissions as a way to help restore the natural environment and enhance biodiversity.

To mobilise more private capital for nature restoration and biodiversity protection, it is necessary to establish the appropriate policy frameworks and financing instruments. The German government should advocate for these objectives at the EU level. We recommend the following steps and measures to this end:

a) A **biodiversity credit market**, based on a **reliable framework** and **specific standards**, is needed to supplement public sector financing for nature conservation. This market must be established at the European level and designed in a way that enables private financing for conservation-based and biodiversity-based solutions.

[15] The BNG system is described in detail at https://www.gov.uk/guidance/understanding-biodiversity-net-gain.

aa) In order for biodiversity credits to be worthwhile not only in economic terms but also in environmental terms, it must be ensured that these new models provide financing for additive measures whose positive contribution to biodiversity can be measured scientifically. Additional measures that are financed through a biodiversity credit market must be classified clearly and must not be counted twice in line with, for example, the intervention provisions under nature conservation law. Such intervention provisions would remain unaffected by the creation of a biodiversity credit market.

bb) The market should be subject to independent monitoring. Moreover, a biodiversity credit market cannot replace intervention provisions. The "framework for high integrity biodiversity credit markets", which was developed by the International Advisory Panel on Biodiversity Credits and presented at COP16 in Cali, Colombia, could serve as a guide. The scientific suitability and global applicability of any proposed market framework and biodiversity indicators must be verified before any decisions are taken in this regard.

cc) The lessons learned from privately organised markets (such as the Voluntary Carbon Market) and from regulated biodiversity credit markets must be analysed in advance, and their respective advantages and disadvantages must be taken into account as part of the planning process. Lessons learned from other market-based instruments, such as the Kyoto Protocol's Clean Development Mechanism, must also be incorporated into the planning process. This includes, for example, ensuring clear additionality as part of the authorisation process, using robust methods, and taking local expertise into account for verification and validation purposes.

dd) Furthermore, the EU's Carbon Removal Certification Framework – which aims to incentivise the generation of biodiversity co-benefits in certified carbon removal activities (Article 7 of the CRCF Regulation) – should also be taken into account.

ee) Non-market-based approaches might also play an important role in the future. Both the Kunming-Montreal Global Biodiversity Framework (GBF) and the agreement drafted at COP16 in Cali (which is expected to be conclusively negotiated in Rome in late February 2025) refer multiple times to such approaches in connection with the mobilisation of financial resources. Here too, the development of a robust biodiversity framework is crucial.

b) Because the EU's Nature Restoration Law is being implemented in Germany at the level of the *Länder* (and not the federal government), it is imperative to ensure **coordination of the various policy frameworks for promoting private investment in nature restoration and biodiversity protection**. Such coordination is essential in order to avoid added red tape and to ensure the development of a national market. Only a national market will have the requisite size to attract private investors.

c) The establishment of a "**biodiversity bond**" (a green bond focusing on biodiversity) at the federal and/or *Land* level should be considered. This biodiversity bond could provide financing for measures targeting biodiversity protection, ecosystem protection and nature restoration. This would not only serve the interests of investors in this segment but would also reinforce Germany's position as a leading hub for sustainable finance. A biodiversity bond might also offer cost advantages.

d) The establishment of a **GBF-aligned Benchmark at the EU level** should be considered. A GBF-aligned Benchmark could be designed along the lines of the Paris-aligned Benchmark. A similar approach could be taken to help meet the targets set out in the Kunming-Montreal GBF, although it would have to be ensured that the new instrument actually contributes to the achievement of GBF targets.

e) **Development banks should develop blended finance instruments** to integrate private capital into measures targeting biodiversity protection, ecosystem protection and nature restoration.

f) **The issue of biodiversity should be included in business financing considerations.** In this way, more financing for biodiversity measures could be made available via green bonds. Along the lines of the SBTi's climate targets, the SBTN's general environmental targets (which place a strong emphasis on biodiversity) could also be used as sustainability performance indicators. Transition finance strategies and guidelines (like those developed by the International Capital Market Association, the Glasgow Financial Alliance for Net Zero, and the OECD) could also be expanded to include a specific focus on biodiversity. As is the case with the SBTi's targets (which focus on the reduction of greenhouse gas emissions), the objective that would have to be measured here would be improvements to natural ecosystems.

2.3 The importance of data, metrics and analytical tools

As the focus on biodiversity intensifies, the demand for relevant and reliable information is growing among all stakeholders in the field of sustainable finance.

For purposes of managing risks, making investment decisions and reporting, **financial institutions and investors** need to have access to comprehensive information on the biodiversity-related impacts and dependencies of the companies and activities they finance. Ecosystem services and their degradation are regarded as a type of physical risk that can materialise and then have an impact on profitability.

Companies in the real economy need data for their transition and investment plans; at the same time, it is their responsibility to make this data available to investors, banks and other stakeholders. Reporting standards and obligations increasingly require companies to disclose their impacts on biodiversity and their dependencies on ecosystem services. The importance of a company's reputation is an additional factor that motivates companies to increase their transparency by disclosing data on their environmental impacts and on their efforts to protect biodiversity.

2.3.1 Current state of play

In recent years, the number of available indicators, metrics, tools and strategies for measuring a company's impacts and dependencies on biodiversity (as well as for measuring other related factors) has increased significantly. In addition, clear European and international

standards for compiling, assessing and reporting biodiversity-related data now exist. Despite this progress, harmonisation and standardisation remain major challenges.

There are many different types of biodiversity-related data that financial institutions and investors can use. These types of data can be categorised as follows:

Data from and about companies

1. Company impacts on biodiversity
    - Environmental impact data
    - Land use data
2. Company dependence on biodiversity
    - Resources and materials
    - Healthy local ecosystems and intact ecosystem services
3. Company locations
4. Supply chain information
5. Company biodiversity footprint
6. Company policies and governance in the area of biodiversity

General biodiversity-related data

1. Condition of local ecosytems and specific species
2. Geospatial data
3. Biodiversity-related regulation and enforcement

Some of this data is compiled by companies themselves and, where appropriate, made publicly available (for example, in sustainability reports). Other data is compiled by public or private institutions such as environmental and nature conservation authorities, research centres and NGOs. Further data is derived from estimation methods or from a combination of underlying calculations (for example, to determine company impacts). Some data is freely available to the public and some data is accessible through fee-based services, depending among other things on the level of granularity and the level of usefulness for stakeholders.

In general, many methods and practical guidelines already exist that can provide companies and financial institutions with assistance in complying with regulatory requirements. These range from general guidelines on ESRS E4 (biodiversity and ecosystems) to specific

examples and case studies provided by financial institutions.[16] Many additional sources offer company-specific data and targeted implementation tools.[17]

Furthermore, companies have access to a wide variety of international and European standards, frameworks and recommendations that can be used to compile, assess and report biodiversity-related information and integrate biodiversity into their business strategies. Useful examples are listed in the following table:

Standards and recommendations	Document	Focus	Target audience	Publication date
ESRS	ESRS E2-E4	Metrics for disclosing data on pollution, water resources and biodiversity. Reporting is mandatory for companies that fall within the scope of the CSRD.	Companies, financial market participants	July 2023
GRI 101	GRI 101: Biodiversity	Disclosure requirements for companies regarding biodiversity impacts and management practices	Businesses	January 2024
TNFD	Discussion paper on nature transition plans	Guidance on nature transition planning for companies and financial market participants	Financial market participants, businesses, investors	Consultations since October 2024
TNFD	Disclosure recommendations and guidelines	https://tnfd.global/	Financial market participants, businesses, investors	September 2023
WWF	Catalysing Change: The Urgent Need for Nature Transition Plans	Recommendations on nature transition planning for companies (taking the CSRD and CSDDD into account)	Financial market participants, businesses, regulators, policymakers	November 2024
TPT	The Future for Nature in Transition Planning	Recommendations for integrating nature into transition plans	Businesses	April 2024
NGFS	Nature-related Financial Risks: a Conceptual Framework	Framework for identifying nature-related risks as well as economic and financial risks that can have an impact (in microprudential,	Central banks and supervisory authorities	July 2024 (updated version)

[16] Example 1: *Naturbezogene Abhängigkeiten und Chancen verstehen* ("Understanding nature-related dependencies and opportunities"): a practical guide for implementing ESRS E4 (Michael Otto Environmental Foundation, 2024, in German only).
Example 2: Tackling biodiversity risks (WWF and Climate & Company, 2023): a guide to help companies and financial institutions assess biodiversity risks using the WWF Biodiversity Risk Filter, including a case study focusing on the MSCI All Country World Index.
Example 3: Making Deforestation Due Diligence Work in Practice (published by Climate & Company, AP2 and Global Canopy): a practical methodology to help financial institutions address the issue of deforestation. Includes a description of how the methodology was implemented in practice by the Swedish pension fund AP2.

[17] For example, the Finance for Biodiversity Foundation provides a detailed overview in "Biodiversity measurement approaches: a practitioner's guide for financial institutions", published in 2024. (https://www.financeforbiodiversity.org/wp-content/uploads/Biodiversity-measurement-approaches_A-practitioners-guide-for-financial-institutions_4th-edition.pdf).
The TNFD also publishes a detailed and regularly updated list of data tools at tnfd.global/guidance/tools-catalogue.

	to Guide Action by Central Banks and Supervisors	macroprudential and macroeconomic terms) on financial and price stability.		
GFANZ	Nature in Net-zero Transition Plans	Guidance for voluntary disclosures in net-zero transition plans	Financial market participants	October 2024
UNEP FI	Guidance on Biodiversity Target-setting	Biodiversity target-setting guidance for Principles of Responsible Banking (PRB) signatories	Financial market participants	June 2021
WEF	Financing the Nature-Positive Transition	Guidance to help financial institutions assess their interactions with businesses (including case studies)	Financial market participants	Available in April 2025
SBTN	Science-based Targets Network	Initial Guidance for Business	Businesses	September 2020
Business for Nature	Nature Strategy Handbook	Practical guide to help businesses formulate nature strategies	Financial market participants, businesses	November 2023

2.3.2 Recommendations and rules for data providers and companies

For the most part, the initiatives cited above do not cover biodiversity in its entirety. Furthermore, they often use sectoral or regional averages rather than precise local data on individual businesses and their supply chains. They sometimes also lack granularity in terms of specific raw materials that are crucial for a particular company.

Despite these varied and constructive initiatives, the insufficient availability and quality of biodiversity-related data is often cited as a key problem. For financial market participants, the lack of adequate data pertaining to the locations of companies and their supply chains poses a particular challenge.

Nevertheless, using various metrics and/or tools in combination can yield important information that helps to reduce complexity, thereby facilitating the fact-based estimation of biodiversity risks.

Additional challenges include: the lack of requisite expertise, the fragmentation and insufficient comparability of much of the available data, and the difficulty of quantifying biodiversity risks in financial terms. The core objective of the analysis – namely, the financial valuation of abstract data – begins once (a) geolocation data and (b) data on the corresponding business activity are available for a particular stage in a company's value chain. The analysis must determine not only the extent to which a dependence on a particular ecosystem service might affect a company's profitability, but also whether the company threatens biodiversity. This poses significant difficulties for the systematic analysis of available information and for integrating this information into a company's business strategy and operations.

In light of these challenges, company assessments of biodiversity-related matters should be communicated cautiously to stakeholders, but the issues of data availability and data quality are no longer sufficient reasons for avoiding the topic altogether.

Finally, it must be ensured that the data (as well as its processing and assessment) is transparent, insusceptible to manipulation, and storable over time for purposes of verification.

2.3.3 Recommendations to improve the supply of biodiversity-related data

Various shortcomings need to be remedied in order to help ensure that businesspeople and financial market participants are able to make sound and sustainable financing and investment decisions:

- **Biodiversity-related reporting requirements** – and the data and information used for this purpose – need to be made **more standardised and specific**. Related frameworks, like the one developed by the TNFD, need to be established.
- **Certain types of data (e.g. satellite data) must remain publicly accessible** and should not be purchased by private companies for exclusively commercial purposes. In this connection, the German government should provide active support for the European Single Access Point (ESAP), which offers great potential for ensuring that data from CSRD reporting is made publicly available.
- **Capacity-building:** Companies and financial institutions need to (a) improve their knowledge of biodiversity-related risks, impacts and dependencies and (b) gain a better understanding of the available data and how it is to be used.

3 Conclusions and outlook

The economic significance of biodiversity and ecosystem services is becoming increasingly evident, because they are indispensable for a smoothly functioning economy. In different ways and to varying degrees, all businesses are dependent on natural resources and ecosystem services. At the same time, economic activities frequently have adverse impacts on biodiversity, and these impacts must be understood and reduced.

To some extent, Germany has some catching up to do in terms of integrating biodiversity into the decision-making processes of businesses and financial institutions. German companies in the real economy and financial sector still lag behind their counterparts in other countries such as the United Kingdom and the Netherlands, where stronger regulatory frameworks

exist and where many companies and financial institutions have already integrated biodiversity into their strategies and operations.

If Germany is to be a global leader in finance, all economic actors, businesses and financial institutions must make up for this delay. Some progress was made in 2024, but it is imperative to establish frameworks in the coming months and years to support and expedite this process. This position paper by the Sustainable Finance Advisory Committee's biodiversity working group has laid out a set of recommendations that, in the view of the Sustainable Finance Advisory Committee, should be adopted by the next federal government.