

BIODIVERSITY MEASURES FOR BUSINESS

Corporate biodiversity measurement,
reporting and disclosure within the current
and future global policy context

*A review paper with recommendations for policy makers produced
as part of the Aligning Biodiversity Measures for Business
collaboration*

07/12/2020

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Suggested citation: UN Environment Programme World Conservation Monitoring Centre 2020. Biodiversity Measures for Business: Corporate biodiversity measurement and disclosure within the current and future global policy context. Cambridge, UK, 60 pp.

This publication is adapted from a discussion paper produced as part of the Aligning Biodiversity Measures for Business collaboration. The work was funded by the Boticário Foundation.

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1 Executive summary

The Conference of the Parties to the Convention on Biological Diversity (CBD), at its twelfth meeting, invited Parties and businesses to take steps to increase the degree of reporting on biodiversity performance by businesses (Decision XII/10 on business engagement). Since then, new regulatory drivers, financing incentives and voluntary initiatives have developed that are driving increased measurement, transparency and management of business impacts and dependencies on biodiversity¹.

Putting in place effective measurement, accounting, valuation and disclosure frameworks for biodiversity is essential to drive government and business action on biodiversity. This will not only make the value of nature visible to business decision makers, but also make it matter, demonstrating in unequivocal terms the materiality of both biodiversity loss and positive biodiversity impacts to business.

Significant progress has been made on developing approaches to measure the biodiversity performance of business. However, a lack of perceived materiality of biodiversity and resulting financial risks and the lack of strong business drivers to measure and disclose biodiversity performance remain key barriers to broader uptake.

Countries mostly encourage rather than mandate businesses to disclose biodiversity information. Broader uptake by business of biodiversity measurement approaches and action to halt biodiversity loss will not occur unless a concerted effort by policy makers is made to address these barriers to mainstreaming the issue – rewarding companies that proactively understand, manage and disclose impacts and dependencies on biodiversity and penalising those that do not.

This paper reviews the drivers and current practice around business measurement, reporting and disclosure on biodiversity, investigates the role of these approaches in future business disclosure for informing global policy targets and recommends several key actions required to scale up these efforts. It is intended to brief policy makers on the current status of business biodiversity measurement and reporting and is based on a limited literature review and discussions with government representatives in Brazil, China, France, the Netherlands, South Africa and the United Kingdom.

Summarised findings and recommendations for policy makers are described below.

¹ See: Convention on Biological Diversity. 1992. [Online] Available at: <https://www.cbd.int/doc/legal/cbd-en.pdf>

Drivers for biodiversity measurement, reporting and disclosure by business are strengthening

- There are increasing drivers for businesses to measure and report on impacts and dependencies on biodiversity with rising awareness of the material risks that biodiversity loss presents to business performance. These include regulations, market forces (consumer pressure), physical risk, reputational risk, transition risk, securing operational efficiencies and ability to access finance.
- International agreements, policies and related goals, particularly in the context of the CBD's developing post-2020 global biodiversity framework, can provide a framework to report against. However, business responsiveness to the Aichi targets has been limited.
- The number of national or regional regulations for business measurement and biodiversity reporting is expected to increase and measurement and reporting obligations will likely become stricter. In France, for example corporate biodiversity footprints will soon become mandatory.
- Voluntary measurement and disclosure mechanisms exist that address biodiversity and have achieved widespread uptake by businesses (for example the Global Reporting Initiative or CDP). To scale these up, supportive regulations and policies are required, especially to stimulate non-listed companies to increase their public reporting efforts.

Current and future practice of business biodiversity reporting and disclosure needs improvement

- The quality of biodiversity information disclosed by business is poor and gives little insight into business risk or performance, focusing on management narratives with little quantitative, and non-monetary information. Changes in biodiversity status (extent and condition) due to business activities and those of others must be measured and disclosed for effective reporting.
- Business environmental disclosure is typically limited to environmental flows, and pressures on biodiversity (for example emissions, solid waste, material inputs), rather than the state of biodiversity.

Many biodiversity measurement and disclosure approaches for business are emerging

- Biodiversity measurement approaches have been developed that address a range of business needs and are already being used by leading businesses. At least twelve different biodiversity measurement approaches have been developed to answer different business needs or applications (e.g. to assess current or past performance, or compare products), which are analysed in this paper. They have the potential to support improved disclosure of biodiversity impacts and risks in different ways and may also help companies communicate their contributions to the Sustainable Development Goals (SDGs) and the post-2020 global biodiversity framework.
- A broadly agreed accounting framework that builds on the goals and targets in the post-2020 global biodiversity framework could support business disclosure by providing an assessment of net biodiversity impacts over time. The soon to be released Biological Diversity Protocol⁴ could help to address this.

Recommendations

The engagement of the private sector will be essential to the successful implementation of the post-2020 global biodiversity framework. Determining the scope, scale and success of such engagement will require a step change in business action to measure their biodiversity impacts and dependencies and performance. To enable this, government policy makers are collectively encouraged to undertake the following:

1. *Build business awareness of the value of biodiversity and how to measure impacts and dependencies*

- Investigate emerging biodiversity measurement and disclosure approaches and support their uptake by business through guidance and outreach via business associations and business and biodiversity/natural capital platforms.
- Highlight the importance of good reporting practices, for instance through sector guidance on common issues and risks that should be reported on. Even reporting on climate impacts – a more advanced area of environmental reporting – shows that the depth and strategic level of reporting is not well developed, although broadly accepted standards are available.
- Build business and financial institution awareness of their impacts, dependencies, risks and opportunities associated with biodiversity to drive action, measurement and disclosure on biodiversity. In addition, building an understanding of how this relates to other aspects of business environmental strategies, for example climate change mitigation and adaptation, can also drive business measurement, action and disclosure on biodiversity.

2. *Ensure a business-relevant post-2020 global biodiversity framework*

- Consider how the proposed goals, targets and indicators for the post-2020 global biodiversity framework apply to the private sector as policy responses are formulated. This could start by determining those sectors with the most significant impacts and dependencies on biodiversity and availability of indicators and data to ensure uptake.
- Formally acknowledge in the development of the post-2020 global biodiversity framework that businesses and financial institutions are key actors to mainstream biodiversity into policies and actions of financial, economic, planning, sectoral units within business, financial institutes and governments organizations. This could be done in coordination with the CBD's Long-Term Approach to Mainstreaming (LTAM) biodiversity.
- Facilitate the engagement of business in the development and implementation of the post-2020 global biodiversity framework and ensure the development of credible, business supported biodiversity measurement approaches and science-based targets.
- Commission an independent review of business-focused targets, measures and datasets as part of the process to develop and implement the post-2020 global biodiversity framework.

3. *Require mandatory corporate biodiversity performance disclosure*

- Engage in existing initiatives to develop an internationally agreed natural capital accounting framework. Engagement will promote harmonisation of business and government natural capital accounting and integration of this into financial accounting. This must ensure adequate inclusion of biodiversity in natural capital accounting through requiring that businesses measure impacts and dependencies on natural capital (and as a part of that biodiversity) and associated values. This would also address key data gaps in national natural capital accounting.
- Provide explicit guidance on biodiversity measurement and valuation in addition to reporting within existing mandatory and voluntary reporting requirements.
- Address both listed and non-listed companies through mandatory requirements – for instance based on the EU Directive on non-financial reporting. They work under different accountability structures, and mandatory reporting can be used to publicly inform both shareholders and societal stakeholders.
- Support voluntary biodiversity measurement and reporting for businesses that meet certain criteria as a precursor to a mandatory requirement to disclose company biodiversity performance. This should require disclosure of biodiversity-related impacts and dependencies of direct operations and supply chains, risks and opportunities associated with these, as well

as biodiversity footprints, overall net impact on biodiversity and response to calls for a Task Force on Nature-related Financial Disclosure (TNFD). Small and medium sized businesses could be subject to less onerous requirements.

- Establish mechanisms for inter-governmental working and business-finance-government collaboration on business measurement and reporting of biodiversity performance.

Making progress on these recommendations is vital to enable society to move into a new phase of global biodiversity policy that measures and tracks business impacts and dependencies on biodiversity. This is essential to incentivise and scale up good biodiversity management practices in the private sector and discourage poor practices that continue to drive biodiversity loss.

These recommendations will be adapted specifically for Parties to the CBD and submitted as an INF Doc for consideration in advance of the 3rd meeting of the Subsidiary Body on Implementation.

2 Introduction

Business activities, through their use of water, land and other resources and their emissions, are contributing to the loss of biodiversity and the ecosystem services provided to business and society as a whole². These impacts and dependencies create risks for companies such as loss of the social and legal licences to operate, disrupted production, inability to access finance (or more-costly finance), timely project delivery and more. Since 2011, biodiversity loss has been ranked in the top 5 for likelihood in the World Economic Forum Global Risk Perception survey³.

Businesses and governments are facing increasingly complex decisions involving trade-offs and uncertainties. The ability to value natural capital⁴ alongside social, human and financial capital allows a more comprehensive understanding of – and response to – current and emerging business and societal risks and opportunities related to biodiversity loss. Integrating a full range of interrelated environmental impacts and dependencies into business decisions alongside financial and social considerations, rather than considering such issues in isolation, will be essential to enable societal goals to be met and to deliver sustainable business models into the future. Alongside this, there is increasing recognition in the private sector of the need to both quantify and disclose information on biodiversity impacts and dependencies as a fundamental component of natural capital that influences and impacts on other key environmental issues such as water quality and climate change adaptation. Yet, business disclosure on biodiversity remains minimal.

Repeated calls have been made by governments, the conservation community^{5,6} and increasingly by companies^{7,8} and financial institutions^{9,10} themselves to enhance business accountability and transparency on biodiversity measurement. In 2021, it is expected that the Conference of the Parties to the Convention on Biological Diversity (CBD) will adopt a post-2020 global biodiversity framework and with it an updated set of goals, targets and indicators to measure progress in implementing the framework.

This paper is aimed at policy makers to demonstrate the progress that has been made to date and the action that can be taken right now to measure, report and disclose corporate biodiversity performance. It is based on a desk-based review of the literature, input from policy experts within six countries – Brazil, China, France, the Netherlands, South Africa and the United Kingdom (see [Annex 1](#)) – a webinar with policy representatives and discussions in a workshop held in Brazil in October 2019 with over 50 participants, representing developers of business biodiversity measurement approaches (see [Annex 2](#) for the Glossary), government and academic representatives and businesses.

² See: [IPBES \(2019\) Global Assessment Reporting on Biodiversity and Ecosystem Services](#)

³ See: [World Economic Forum \(2020\) The Global Risks Report 2020](#)

⁴ Defined as: The stocks of renewable and non-renewable natural resources and the associated flows of ecosystem services which benefit business and society ([Natural Capital Coalition 2016](#))

⁵ See: [Into the wild: integrating nature into investment strategies. WWF, 2019](#)

⁶ See: [The development and use of biodiversity indicators in business: an overview](#)

⁷ See: [Biodiversity: Brazilian Business Cases, CEBDS, 2014](#)

⁸ See: [New Nature Economy Report II: The Future of Natures and Business](#)

⁹ See: [AXA IM, BNP Paribas AM, Mirova and Sycomore AM launch joint initiative to develop pioneering tool for measuring investment impact on biodiversity, 2020, Mirova](#)

¹⁰ See: [Biodiversity at risk, Preserving the natural world for our future. AXA Research Fund, 2019](#)

While not a comprehensive analysis, the scope of this report cuts across a range of experiences and countries to:

1. **Examine the current frameworks for business reporting of impacts and dependencies on biodiversity.** This includes the role of international frameworks, regulatory and voluntary mechanisms;
2. **Review current practice on business biodiversity measurement, reporting and disclosure** and where the gaps are for driving improved performance and contributions to global biodiversity and societal goals, namely the SDGs, as well as the Aichi Targets and post-2020 global biodiversity framework;
3. **Identify future business disclosure requirements related to biodiversity and the possible contributions of emerging biodiversity measurement approaches and frameworks** to assessing business progress on policy commitments, and the actions required by businesses, finance and governments to promote their uptake.

This report is developed by the Aligning Biodiversity Measures for Business collaboration¹¹, which seeks to form a common view among key stakeholders on the measurement, valuation, accounting and disclosure of business biodiversity impacts and dependencies. Through this, we hope to encourage the measurement and disclosure of credible biodiversity information that in turn will drive improved business biodiversity performance in the context of the SDGs and the post-2020 global biodiversity framework.

¹¹ See: [UNEP-WCMC Aligning Biodiversity Measures for Business webpage](#)

3 Business and policy case for biodiversity measurement, reporting and disclosure

The drivers for businesses to enhance their measurement, reporting and disclosure on biodiversity issues are increasing. These drivers are regulatory, operational, financial, reputational and market focused.

Regulatory and policy drivers

Nationally mandated business disclosure on biodiversity impacts is now occurring. For example, France is moving towards mandatory reporting of corporate biodiversity footprints. Increased legislation committing industry to implement the biodiversity mitigation hierarchy¹² is also driving an increase in quantifying biodiversity footprints and associated compensation mechanisms, including biodiversity offsets. The European Union Directive on non-financial reporting will require financial institutions and businesses to disclose on the impacts their products have on biodiversity, which will further the need to understand impacts and dependencies on biodiversity across the value chain. The Directive also has the potential to lead to more obligatory reporting on climate change impacts, lessons from which could help develop biodiversity disclosure practices.

The process to establish a Task Force for Nature-Related Financial Disclosure (TNFD)¹³ is a partnership comprised of Global Canopy, United Nations Development Programme (UNDP), the United Nations Environment Programme Finance Initiative (UNEP FI), and the Worldwide Fund for Nature (WWF). In July 2020, the launched Phase 1 TNFD of the Informal Working Group, which is aimed at creating 'resilience in the global economy by redirecting flows of finance to allow nature and people to flourish'¹³. The proposed TNFD will work to develop an understanding of the reporting, metrics and data needs of businesses and financial institutions, and aims to increase awareness and capacity on the negative impacts of the financial sector on nature.

Operational efficiencies and risks

The need to measure and monitor operational risks is a significant reason for businesses to want to understand their impacts and dependencies on biodiversity. For example, the loss of wild pollinators or the depletion of freshwater sources can interrupt business operations.

Business are seeking a means to track the implementation and performance against internal environmental management standards or corporate policy commitments. This is particularly true of those businesses making commitments to having a net positive impact or achieving a net gain of biodiversity. For some businesses being able to demonstrate operational excellence on biodiversity through quantified measures may mean that they can be the preferred development partner for new operations¹⁴.

For example, applying the Natural Capital Protocol¹⁵ to measure and value impacts and dependencies on biodiversity and natural capital has been proven to deliver useful insights to better manage

¹² See definition on [Mitigation Hierarchy, Biodiversity A-Z](#)

¹³ See: [Task Force for Nature-related Financial Disclosures \(TNFD\)](#)

¹⁴ See: [UNEP-WCMC \(2017\) Biodiversity Indicators for Extractive Companies: An assessment of needs, current practices and potential indicator models. UNEP-WCMC, Cambridge, UK, 39pp.](#)

¹⁵ See: <https://naturalcapitalcoalition.org/natural-capital-protocol/>

operations, select natural resources that are less detrimental to the environment and demonstrate a businesses' contribution to society. Businesses and financial institutions are starting to explore how to embed these insights into regular financial accounting, in order to mainstream biodiversity¹⁶.

Access to finance

The finance sector is increasingly asking for more complete disclosure of environmental and social issues to enable risk assessments to be made of project based or company level performance. For example:

- The Principles for Sustainable Insurance are encouraging insurers to understand where their investments might be posing a risk to biodiversity and the Principles for Responsible Banking that includes over 175 banks (with over one-third of the global banking assets ~US\$47 trillion) are developing a framework for sustainable banking systems that aligns to regional and national targets¹⁷;
- The Natural Capital Finance Alliance in partnership with UNEP-WCMC¹⁸ has created a tool to demonstrate the potential significance of economic sectors' dependencies and impacts on natural capital, including biodiversity;
- The Dutch Central Bank has recommended that financial institutions understand environmental and social risks (including biodiversity loss) and provide necessary mitigation by improving risk management instruments. This includes sustainable policies in operations management¹⁹. Promoting biodiversity reporting by companies in their portfolios is essential to complete further risk analysis;
- WWF have been running a high-profile campaign targeting extractive companies and those financing them to avoid operations in Natural World Heritage Sites²⁰ and they have worked with insurer and investor, Axa, to call for greater integration of biodiversity into sustainable investment criteria²¹;
- There is increasing interest in funds that generate a positive outcome for biodiversity for example through sustainable land use finance facilities such as Agri3²² focused on forest protection and sustainable agriculture or impact investing funds such as Mirova's Althelia Sustainable Ocean Fund²³;
- In 2020 the World Economic Forum is publishing the New Nature Economy Report series, dedicated to showcase new ideas and ongoing efforts in the lead up to the CBD COP15 to make the case for why nature loss is a material risk to the private sector and the economy; provide an outline for how the most important drivers of nature loss (including biodiversity loss) can be overcome; and detail investment opportunities for nature-based solutions, including biodiversity²⁴;

¹⁶ See: <https://naturalcapitalcoalition.org/projects/improving-natures-visibility-in-financial-accounting/>

¹⁷ See: [UN Environment Programme, UNEP Finance Initiative and Global Canopy 2020. Beyond 'Business as Usual': Biodiversity targets and finance. Managing biodiversity risks across business sectors.](#)

¹⁸ See: [ENCORE website – Natural Capital](#)

¹⁹ See: [Values at risk? Sustainability risks and goals in the Dutch financial sector](#)

²⁰ See: [Aviva investors, Investec, WWF \(2015\) Safeguarding outstanding natural value. The role of institutional investors in protecting natural World Heritage sites from extractive activity.](#)

²¹ See: [WWF & Axa \(2019\) Into the Wild. Integrating Nature into Investment](#)

²² See: [Agri 3 Fund – Forest Protection and Sustainable Agriculture.](#)

²³ See: [Sustainable Ocean Fund](#)

²⁴ See: [Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy, World Economic Forum, 2020](#)

- Growing inclusion of biodiversity in rating agency questionnaires is similarly driving a need for companies to be able to measure and disclose their biodiversity performance (e.g. oekom research and Dow Jones Sustainability Index indices)²⁵.

Reputation and stakeholder relations

Section 4 in this paper addresses some of the voluntary measurement, reporting and disclosure requirements that are emerging in more detail, with some driven by stakeholder concern, for example the TNFD. Proactive measurement, reporting and disclosure of biodiversity impacts and management practices can avoid high profile campaigns that may pose a reputational risk to the business.

Market drivers

The annual Biodiversity Barometer repeatedly demonstrates a growing awareness among consumers on the issue of biodiversity. Research covering 68,000 people over 16 countries showed that consumers expect companies to respect biodiversity but do not trust that they do so. It also showed that consumers want more transparency – preferably validated by a third party – on how products respect biodiversity²⁶.

Consumer research into Marine Stewardship Council certified fish suggested that 84% of seafood consumers agree to the need to protect the oceans. USD 10 billion per year is spent on MSC labelled seafood²⁷, which accounts for ~15% of the wild marine catch²⁸.

Figure 1 below summarises the drivers for biodiversity measurement, reporting and disclosure by businesses and financial institutions.

²⁵ See: [EMAS & Biodiversity: How to address biodiversity protection through environmental management systems](#)

²⁶ See: [UEBT Biodiversity Barometer](#)

²⁷ See: [Continued growth in Sustainable Seafood Demand, Fish Focus.](#)

²⁸ See: [Celebrating and supporting sustainable fisheries, The Marine Stewardship Council, Annual Report 2019-2020](#) See: [Celebrating and supporting sustainable fisheries, The Marine Stewardship Council, Annual Report 2019-2020](#)

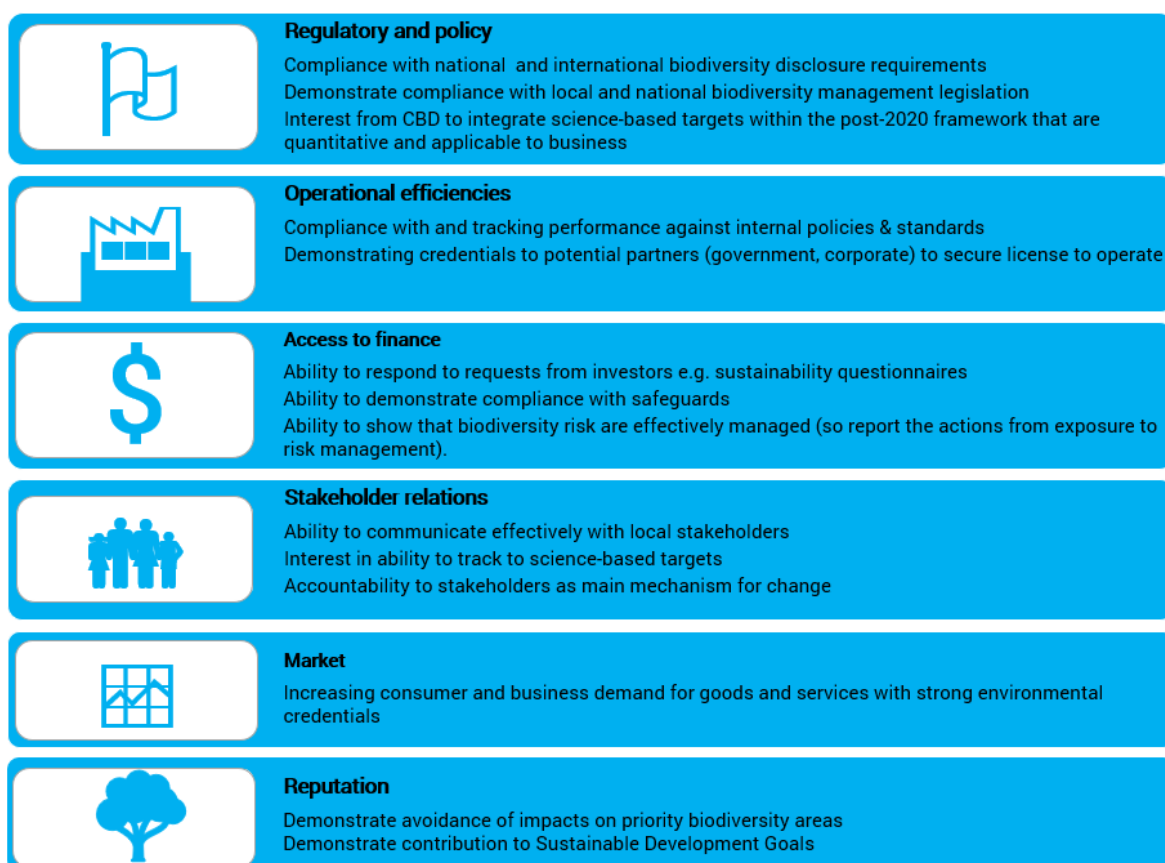


Figure 1. Drivers for businesses to enhance measurement, reporting and disclosure on biodiversity.

4 Regulatory and voluntary drivers of business reporting and disclosure on biodiversity

This section of the report considers existing international frameworks, regulatory-driven reporting mechanisms and voluntary reporting standards, and their role in enhancing private sector transparency on biodiversity performance.

International frameworks

Multilateral environmental agreements and global policy goals could play an important role in driving private sector reporting and disclosure of environmental performance, by setting the targets for what should be considered within those disclosures.

2030 Agenda for Sustainable Development and its Sustainable Development Goals

Companies are increasingly structuring their sustainability strategies and business sustainability disclosures around the SDGs. In fact, the SDGs themselves include the need for private sector reporting as a means to drive uptake of more sustainable practices. Target 12.6: “Encourage(s) companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle”. In 2019, 95% of business sustainability reports reviewed in a study by the World Business Council for Sustainable Development (WBCSD) acknowledged the SDGs in some way, and 86% prioritised specific SDGs and presented some evidence of alignment and contribution²⁹. However, those SDGs specifically relating to biodiversity (SDG 15 Life on Land and SDG 14 Life below Water) have been shown by accounting firm KPMG to be the least prioritised for business reporting³⁰. It has also been recognised that some SDGs (such as SDG 7 Affordable and Clean Energy, SDG 11 Sustainable Cities and Communities) may have detrimental effects on biodiversity if they are achieved, and it is therefore important to ensure that the movement towards reaching the SDGs avoids negative impacts on biodiversity³¹.

In part this is due to a lack of broadly agreed measurement, reporting and disclosure methodologies for biodiversity, but the lack of perceived materiality/significance of biodiversity as a private sector issue also plays a role. Companies are beginning to understand how they depend on biodiversity and ecosystem services, and how these dependencies can impact the success of the SDGs. Furthermore, a lack of translation of these impacts into monetary values makes it difficult for businesses to understand their financial risk exposure (and opportunities).

Strategic Plan for Biodiversity 2011-2020

There has been little to no business reporting against the current Strategic Plan and its Aichi Targets³². Discussions held with UK businesses in 2018 highlighted the challenges around business

²⁹ See: [Reporting Matters \(2019\) World Business Council on Sustainable Development](#)

³⁰ See: [KPMG \(2018\) How to report on the SDGs: What looks good and why it matters](#)

³¹ See: [Global Biodiversity Outlook 5](#)

³² See: [Smith, T., Addison, P., Smith, M. & Beagley, L. \(2018\) Mainstreaming international biodiversity goals for the private sector: Main Report & Case Studies. JNCC Report No. 613. JNCC, Peterborough. ISSN 0963-8091.](#)

awareness of the Aichi Targets and their relevance for business reporting³³. Many companies are unaware of the Aichi strategic goals:

- **Strategic Goal A:** Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society;
- **Strategic Goal B:** Reduce the direct pressures on biodiversity and promote sustainable use;
- **Strategic Goal C:** To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity;
- **Strategic Goal D:** Enhance the benefits to all from biodiversity and ecosystem services;
- **Strategic Goal E:** Enhance implementation through participatory planning, knowledge management and capacity building.

To some extent this reflects that these goals were aimed at national governments rather than the private sector. However, the CBD has emphasised the need to encourage improved business reporting on biodiversity in recent years. The Conference of the Parties at its twelfth meeting invited Parties and businesses to take steps to increase the degree of reporting by businesses and requested the Executive Secretary to establish a typology of actions (Table 1). The recommendations at the time were that governments should encourage companies to report against three themes: 1) Commitments (e.g. existence of a policy statement), 2) Engagement (e.g. actions to address biodiversity), and 3) Measuring. Although reporting of Commitments and Engagement is well developed, Measuring is not yet well established. However, more recently a draft monitoring framework has been developed in preparation for SBSTTA24 with indicators for the post-2020 global biodiversity framework. This describes some monitoring elements related to the private sector (e.g. trends in the mobilization of financial resources from private sector)³⁴.

Table 1. Typology of actions taken from a report prepared by the Executive Secretary of the CBD³⁵ with guidance for reporting by businesses on their actions related to biodiversity.

Theme	Main Topics
Commitment	• Biodiversity appears a material issue • Existence of a biodiversity policy statement • Management approach to biodiversity reported on • Reports include a Chief Executive Officer letter which specifically refers to biodiversity
Engagement	• Action taken to address biodiversity impacts, risks and opportunities • Specific examples of engaging with stakeholders, for example suppliers • Partnerships with NGOs and other organisations on biodiversity related projects • Funding specific biodiversity related projects
Measuring	• Identifying risks and opportunities • Using tools and other means to measure both positive and negative impacts • Reporting on biodiversity specific indicators, such as the Global Reporting Initiative • All operations with significant impacts considered in measurements

³³ See: [CBD \(2018\) Engaging business in the development of a post-2020 global biodiversity framework. Note by the Executive Secretary. CBD/COP/14/INF/5.](#)

³⁴ See: [Indicators for the post-2020 global biodiversity framework, UNEP-WCMC in collaboration with the Biodiversity Indicators Partnership, 2020.](#)

³⁵ See: [Guidance for reporting by Businesses on their actions related to biodiversity, CBD Secretariat, 2017](#)

The report by the CBD Secretariat highlighted the following:

- A growing number of reporting frameworks leading to inconsistent and incomplete reporting;
- A lack of information on business action within the national reports to the CBD; and
- Challenges around accessing this information due to the fragmentation of business reporting efforts.

The report by the CBD Secretariat proposed to both improve and harmonise reporting on biodiversity impact and recognised the need for a cooperative approach among the Parties, various international and national stakeholders, the existing global reporting schemes, and the business community in order to achieve this³⁶. The typology of actions was largely based on the voluntary reporting standards by the Global Reporting Initiative.

Despite such efforts, there seems to have been little uptake of these decisions at the national level, and awareness on the need for business reporting remains limited in national environmental ministries. In part, this is likely to be due to policies and legislation related to business activities falling under a separate institution (for example the Department for Business, Energy, and Industrial Strategy in the UK) to the environmental ministries³⁷. Implementation of CBD decisions in other national institutions beyond the environmental ministries is a key challenge in most countries. Some countries have mechanisms in place to overcome this division between national institutions. For example, the Biodiversity Industry Network in Brazil is a group of nearly 50 companies and institutions whose purpose is to implement the decisions under the CBD and propose policies. Now disbanded, the network formerly liaised with the Brazilian government when committees were in place under the former administration. Such groups can be important mechanisms for mainstreaming CBD decisions, including those related to business reporting, but their effectiveness relies on a strong connection between the relevant government departments. Similarly, industry associations/federations can also act as useful mechanisms to engage business on reporting and help with the full implementation of the CBD decisions.

The Business for Nature coalition aims to be an overarching initiative to unite the business voice in 2020 and beyond. Business reporting related to the implementation of commitments is a growing space, but there is considerable variation among initiatives in the type of reporting and disclosure required. Business for Nature have formulated five high level policy recommendations and call for policies that place nature at the heart of the global economy³⁸. One of these recommendations focuses on the need to value and embed nature in decision making and disclosure, with the aim to go beyond short-term profit and GDP. The need for standardized frameworks and metrics to integrate the value of nature in decision-making is stressed, as well as the need to reform subsidies and incentive mechanisms.

Part of the agenda of the Informal Advisory Group on mainstreaming, under the CBD, is to investigate ways to integrate private sector considerations into the development of the post-2020 global biodiversity framework³⁹. Such groups are important for communicating the role of existing biodiversity measurement approaches in setting the future framework. More recently, an updated report describing the Long-Term Approach to Mainstreaming (LTAM) provides recommendations to integrate mainstreaming within the post-2020 global biodiversity framework. It identifies business

³⁶ See: [Business Reporting on Biodiversity. Note by the Executive Secretary to the Convention on Biological Diversity \(2016\).](#)

³⁷ See: [Whitehorn, P., Navarro, L.M., Schröter, M., Fernandex, M., Rotllan-Puig, X. and Marques, A. \(2019\) Mainstreaming biodiversity: A review of national strategies. Biodiversity Conservation.](#)

³⁸ See: [Businesses need leaders to act on nature](#)

³⁹ See: <https://www.cbd.int/doc/c/27bd/6af1/b99a479da81fd99cd1de45f4/wg2020-01-inf-02-en.pdf>

and financial institutions as two key actors in mainstreaming of biodiversity, together with civil society organisations and the whole of government. The report highlights the work carried out under the Aligning Biodiversity Measures for Business collaboration, by taking note of the interim report on building a common view on the measurement, monitoring and disclosure of corporate biodiversity impacts and dependencies and inviting international standard organisations and corporate reporting bodies to take this work into account moving forwards.

In discussions with country representatives in Brazil, South Africa, the United Kingdom, China, the Netherlands and France, it was felt there is an opportunity for greater uptake of business reporting in the post-2020 global biodiversity framework. However, this would be dependent on national government-led guidelines and a different structure of the National Biodiversity Strategy and Action Plans (NBSAPs) might be needed to help achieve this. To date input from businesses to individual governments in the development of the post-2020 global biodiversity framework has been low. Input varies to a large extent by country, with little to no involvement of businesses in Brazil and China in its development to date, for example.

Several voluntary initiatives involving cooperation between government and business or financial institutions can assist in the uptake of outcomes of government. Precedent has been set for this within the climate change agenda – in the Netherlands, for example, there has been strong cooperation between the government and Partnership for Carbon Accounting Financials (PCAF)⁴⁰. The PCAF aims to enable financial institutions to assess the greenhouse gas impacts of loans and investments, leading to a growing number of financial institutions joining and in turn a better chance of the uptake of outcomes by governments. It is intended to replicate this success with a Platform Biodiversity Accounting Financials (PBAF)⁴¹. This aims to develop methodologies for the financial sector to measure both positive and negative biodiversity impacts associated with their investments.

Regulatory reporting mechanisms

Both traditional financial reporting and emerging sustainability reporting requirements are relevant for business disclosure on biodiversity⁴², as they provide vital incentives for businesses to report and disclose their impacts and dependencies on biodiversity⁴³.

Financial reporting

Financial accounting is the process of recording, summarising and reporting the myriad of transactions resulting from business operations over a period of time and across different geographies. Heavily regulated, for example, by the International Financial Reporting Standards, financial accounting is based on double-entry bookkeeping (DEBK), whereby every financial transaction entered into an account has an equal and opposite effect in at least one other account⁴⁴. These transactions are summarised in the preparation of financial statements, including the Statement of Financial Position (or Balance Sheet) and Statement of Financial Performance (or Profit & Loss Statement). DEBK thus allows companies to account and disclose both annual performances,

⁴⁰ See: [Partnership for Carbon Accounting Financials](#)

⁴¹ See: [Biodiversity Opportunities and Risks for the Financial Sector. The Sustainable Finance Platform. June 2020.](#)

⁴² See: Business for Biodiversity – Mobilising Business towards net positive impact. PBL Policy Brief [Online: https://www.pbl.nl/sites/default/files/downloads/pbl-2020-business-for-biodiversity-4143_0.pdf]

⁴³ See: Van Oorschot, M.M.P., Kok, M.T.J. and Van Tulder, R. (2020) Business for biodiversity. [Mobilising business towards net positive impact. PBL Netherlands Environmental Assessment Agency. The Hague.](#)

⁴⁴ See: Trotman, K. and Gibbins, M. (2003). Financial Accounting: An Integrated Approach. Thomson.

through the Statement of Financial Performance, and the net (or accumulated) result of past annual performances via the Statement of Financial Position.

Biodiversity-related transactions are recorded in financial accounting. These may include assets (e.g. stocks of biological materials to be sold), sales (e.g. biodiversity-related consulting services, sale of wild fish), expenses (e.g. biodiversity-related impact mitigation activities) and liabilities (e.g. future biodiversity offset expenditures). However, due to financial materiality thresholds (i.e. separate disclosure of information only above certain amounts), biodiversity-related financial information is rarely disclosed separately by companies in financial statements. Exceptions include detailed biodiversity-related expenditures related to major incidents, such as oil spills⁴⁵.

A recent report published by the Capitals Coalition⁴⁶ describes various methodologies for integrating the value of nature in financial accounting. It is noted that non-financial accounting values are not fully integrated into performance reporting, meaning that there are often separate financial and non-financial reporting results (see below for further detail).

Non-financial reporting

The EU Non-Financial Reporting Directive covers reporting on the five areas of environment, social & employee, human rights, and bribery & corruption at the EU level. Approximately 6,000 large public-interest companies across the EU must report under the Directive⁴⁷. These companies and financial institutions include banks and insurers with greater than 500 employees, as well as large listed companies. The Directive gives companies significant flexibility to disclose relevant information in the way they consider most useful, and companies may use international, European or national guidelines to produce their statements. The Commission's non-binding guidelines further assist companies with disclosing relevant non-financial information⁴⁸. Since the definition of a material issue within this includes both financial materiality and impacts on the environment, biodiversity is included within this reporting requirement. However, most guidance is non-binding and materiality is not well defined. Comparison of national implementation in different EU member states and the UK shows that only a few countries have strict policies in place⁴⁹.

While limited, there are a few examples of legislated requirements for biodiversity disclosure as above. There are, however, some national level requirements related to sustainability or annual reporting (see Table 2).

Table 2. Regulatory requirements for business sustainability disclosure.

Country	Overview of regulation
China	Annual Corporate Social Responsibility Report is 'required' by the State Administration of State-Owned Enterprises', a state institution to oversee and supervise the Chinese state-owned enterprises. Companies can report on biodiversity and ecosystem services impact in this report as per international standards, but it is not compulsory.
France	One of the first countries to establish an obligatory, non-financial reporting system for certain companies. In 2012, France was the first country to explicitly refer to biodiversity

⁴⁵ See: [ACCA, Fauna & Flora International and KPMG \(2012\) Is natural capital a material issue?](#)

⁴⁶ See: [Improving nature's visibility in financial accounting, Capitals Coalition, 2020](#)

⁴⁷ See: [Non-financial reporting](#) webpage on the European Commission website

⁴⁸ See: [Commission guidelines on non-financial reporting](#), 2019, EU Commission

⁴⁹ See: [Reflections on Transparency: expectations about transparency as an instrument to stimulate corporate social responsibility](#)

	among the subjects to be covered in non-financial reporting documents ⁵⁰ . The National Plan for Biodiversity from 2018 mentions that activities will be undertaken to push companies to assess their biodiversity footprints, and there is an agenda to push the Plan at the EU level after 2020 ⁵¹ .
Netherlands	Passed legislation on the mandatory disclosure of non-financial information in 1997 and produced a Guide to Sustainable Reporting in 2003 that states sustainability reporting should also disclose information on the effects of business operations on biodiversity and the measures taken to limit these. It does not provide guidance on how this is to be done.
South Africa	Has a well-developed policy and legislative framework for biodiversity, but mandatory disclosure requirements for public and private South African companies listed on the stock exchange, such as KING IV ⁵² corporate governance requirements, do not include specific requirements around biodiversity.
United Kingdom	The UK passed legislation on the disclosure of non-financial information in 2006 and in 2008 environmental reporting guidance includes biodiversity and explains how companies can set targets or “key performance indicators”.

Although there have been legislative advances in non-financial disclosure related to sustainability, the comprehensive inclusion of biodiversity remains limited. For the most part, countries encourage rather than mandate businesses to disclose biodiversity information. This leads to highly variable disclosure of biodiversity impacts and mitigation. Furthermore, disclosure around biodiversity tends to be more risk-oriented than opportunity-focused and thus not amenable to all business applications.

At an EU level, the EU Sustainable Finance Action Plan offers a further regulatory driver that will be translated into national requirements in the short to medium term. As part of this, enhanced requirements for business disclosures will be encouraged. A key aspect of this is the EU Taxonomy which was recently developed by the European Commission. The Taxonomy is a list of economic activities that are considered environmentally sustainable for investment purposes. Companies following the Taxonomy will have to comply with the following three conditions: a) substantially contribute to at least one of six environmental objectives, ranging from climate change mitigation to protection of healthy ecosystems; b) do no significant harm to any of the other six environmental objectives; and c) meet minimum social safeguards. The two mandatory users of this information are: 1) financial market participants offering “green” financial products; and 2) EU Member States, when adopting measures or setting requirements on market actors with respect to such financial products. The Taxonomy is likely to drive a demand for greater transparency on investment opportunities that contribute to solving the issues relating to the environmental objectives referred to above – including biodiversity.

Environmental Impact Assessment reporting

One mandatory system for monitoring in countries relates to Environmental Impact Assessment (EIA) regulations. Where biodiversity impacts have been included in EIAs, this very often requires assessment of potential impacts and monitoring to ensure compliance with the Environmental Management Plan and/or Biodiversity Action Plans. This process, however, is at the project level

⁵⁰ See: [IUCN French Committee \(2014\) Corporate Biodiversity Reporting and Indicators: Situation Analysis & Recommendations. Paris.](#)

⁵¹ See : [Plan Biodiversité – Comité interministériel biodiversité, 2018 Avenir](#)

⁵² See: [Institute of Directors Southern Africa \(2016\) King IV Report on Corporate Governance for South Africa 2016 sets out the philosophy, principles, practices and outcomes which serve as the benchmark for corporate governance in South Africa.](#)

rather than at the business level, and the outputs of these monitoring programmes are not necessarily included in corporate level reporting. Nor are they applicable to all sectors – for example the agricultural sector is not required to undertake impact assessments.

The incorporation of No Net Loss (NNL) and Net Gain (NG) principles into impact assessment legislation is gaining traction. There are now over 100 countries with policies and legislation related to NNL or NG⁵³. Such policies require quantification of biodiversity impacts and mitigation efforts to establish residual impacts for the design of compensation measures. These need to be monitored and reported as part of impact assessment and mitigation legislation. However, this information is not necessarily systematically collected and/or made available at corporate level. In the EU, NNL legislation calls for the development of a methodology to assess the impact of EU funds on biodiversity to ensure NNL of biodiversity and ecosystem services⁵⁴. Evolving measurement approaches for business disclosure may therefore have broader uptake if they are aligned with these existing national legislative requirements.

The future of mandatory reporting and disclosure for biodiversity

Some countries interviewed for this paper felt that there may be resistance to enacting further national legislation on reporting and disclosure of impacts, and suggested a clearer rationale was needed for how this would encourage better performance by the private sector. In such places, the role for government was felt by some to lie in building awareness among industries of the risks associated with biodiversity loss and the key role that businesses can play in mitigating impacts, addressing dependencies and driving transparency. However, others highlighted that once voluntary practices and disclosure are established, making reporting mandatory will increase the reach to those companies less engaged. Regulation of company reporting and disclosure is increasingly considered a key lever for change to incentivise business action on biodiversity as described in the ongoing work through the UK Research and Innovation TRADE Hub project⁵⁵. The example being set by the French government demonstrates that, where legislation is put in place, business and financial institution action will follow.

Voluntary reporting mechanisms

Decisions⁵⁶ by Parties to the CBD highlight the important role of voluntary business reporting and disclosure of biodiversity impacts. Governments can play an important role in encouraging uptake of voluntary requirements, for example through some of the key voluntary initiatives outlined below.

⁵³ See : [World View – A snapshot of National Biodiversity Offset Policies](https://portals.iucn.org/offsetpolicy/), IUCN.
<https://portals.iucn.org/offsetpolicy/>

⁵⁴ See : [No Net Loss](#), European Commission, 2019

⁵⁵ See: [Trade, development and the environment hub \(2019\) Agricultural commodities, impacts and opportunities for change](#), 4th-8th November 2019, London, UK

⁵⁶ See relevant decisions here: Decision XII/10 <https://www.cbd.int/decision/cop/?id=13373> ; Decision XIII/3 <https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-03-en.pdf> ; Decision 14/3 <https://www.cbd.int/doc/decisions/cop-14/cop-14-dec-03-en.pdf>

Global Reporting Initiative

The Global Reporting Initiative (GRI) Sustainability Reporting Standards are the main voluntary reporting standards used by companies around the world. These include standards and indicators related to biodiversity. Of the world's largest 250 corporations, 92% report on their sustainability performance and 74% of these use GRI's Standards to do so. In addition, 35 countries use GRI as their sustainability reporting standard in their sustainability policies⁵⁷. The four performance indicators that relate to biodiversity aspects in the G4 guidelines⁵⁸ are:

- Disclosure 304–1: Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas;
- Disclosure 304–2: Significant impacts of activities, products, and services on biodiversity;
- Disclosure 304–3: Habitats protected or restored; and
- Disclosure 304–4: IUCN Red List species and national conservation list species with habitats in areas affected by operations.

The inclusion of biodiversity aspects is based on an assessment of whether it is a material issue to the business, and it is therefore not always included. The biodiversity indicators have been unchanged for over 10 years, although the GRI is anticipating revising the indicators in the next two years. This presents an opportunity to significantly influence business biodiversity disclosures. The experiences derived from the development of biodiversity measurement and accounting approaches outlined in section 5 could inform the revision of this key sustainability reporting guidance.

In addition to the four biodiversity indicators, companies can report on pressure indicators through the GRI and use the data to estimate biodiversity impacts using the same method (cause-effect relationship models) as per several biodiversity measurement approaches. These include data on water withdrawal (GRI 303: Water and Effluents Standard), air pollutants (GRI 305-7), and greenhouse gas emissions (GRI 305-1, GRI 305-2, GRI 305-3).

CDP

CDP, formerly the Carbon Disclosure Project, is an organisation that works with shareholders and corporations to disclose information on environmental impacts, focusing on climate, water and forests. CDP asks companies for data on their environmental performance and then uses the data to analyse environmental risks, opportunities and impacts. Investors, business and policy makers use these results in decision-making, managing risk and capitalising on opportunities. In 2019, CDP released a new questionnaire, aimed at the mining sector, which specifically asked about biodiversity among questions covering climate change, water, forests and supply chains. CDP also houses the forest footprint disclosure tool, which covers carbon, water, forests, and biodiversity⁵⁹.

International Integrated Reporting Council

The International Integrated Reporting Council (IIRC) is a global coalition of regulators, investors, companies, standard setters, the accounting profession, academia and NGOs. It aims to establish integrated environmental, social and financial reporting and thinking within mainstream business practices. It has produced a reporting framework⁶⁰ that is currently under revision and includes explicit reference to natural capital.

⁵⁷ See : [GRI sustainability reporting standards](#)

⁵⁸ See : [GRI 304 Biodiversity 2016](#)

⁵⁹ See: [Our forests work, CBD](#)

⁶⁰ See: [International <IR> Framework, International Integrated Reporting Framework](#)

Task Force on Climate-related Financial Disclosures (TCFD)

The Task Force on Climate-related Financial Disclosures (TCFD) have developed voluntary, consistent climate-related financial risk disclosures for use by companies to provide information to investors, lenders, insurers, and other stakeholders. It considers the physical, liability and transition risks associated with climate change and effective financial disclosures across industries. The TCFD helps companies understand what financial markets want from disclosure for measuring and responding to climate change risks and has been instrumental in creating awareness on climate change disclosure. It does not currently consistently consider the role that the loss of nature has in enhancing climate risk, or how the protection and/or restoration of nature can help mitigate or manage climate risk.

Task Force on Nature-related Financial Disclosures (TNFD)

One of the key recommendations from WWF France and AXA for the members of the G7 Environment meeting in 2019⁶¹ was to launch a Task Force on Nature-related Financial Disclosures as a means of supporting the transition towards protection, restoration and promotion of biodiversity. This would build upon the model of the TCFD and should identify and analyse business activities that have a material impact on biodiversity as well as activities with “transition” potential to support biodiversity protection and restoration. Phase 1 of the TNFD Informal working group was launched in July 2020, with a virtual meeting on finance and nature hosted by UNDP and IUCN. Phase 2, announcing the Task Force scope, plan and team, is scheduled for January 2021. The TNFD aims to create resilience across the global economy and steer finance towards nature-positive outcomes that align with global initiatives such as the UNFCCC Paris Agreement, the targets under the post-2020 global biodiversity and the 2030 Agenda and its SDGs.

Climate Disclosure Standards Board

The Climate Disclosure Standards Board (CDSB) is an international consortium of business and environmental NGOs that aim to align the global mainstream business reporting model to equate natural capital with financial capital. They provide a framework for reporting environmental information. With support from the European Union’s LIFE fund, they are aiming to improve companies’ ability to report on natural capital, including biodiversity through outreach, communication and education. CDSB is exploring the potential to integrate nature-related issues into the TCFD, with the aim of advancing the disclosure of nature-related financial information by organisations globally and to explore the role of the CDSB Framework in this process.

World Benchmarking Alliance

The World Benchmarking Alliance has been developed to support business reporting against the SDGs. There are seven benchmarks⁶², including one on food and agriculture where biodiversity is included as one of the key environment topics. In the Agriculture and Food System benchmark, it is recognised that significant system transformation, such as restricting the expansion of agricultural land, safeguarding biodiversity, and reducing nitrogen, phosphorous and carbon emissions, along with other measures, is needed in the food and agriculture system to meet the SDGs. This benchmark aims to translate globally recognised targets into meaningful and actionable targets for the private sector.

National level or global voluntary practices and initiatives

There are also voluntary practices being developed at the national level. For example, in Brazil, companies voluntarily report against the LIFE initiative, which grants LIFE certification to businesses that implement the LIFE Methodology. While the LIFE initiative originated in Brazil, it now operates in a number of countries in South America and is looking to expand application in Europe. The

⁶¹ See : [Axa, WWF France \(2019\). Into the wild. Integrating nature into investment strategies.](#)

⁶² See: [Measuring what Matters most. World Benchmarking Alliance, 2019](#)

methodology helps business identify their impacts and dependencies on biodiversity and ecosystem services and design a strategic plan to reduce, mitigate and compensate them⁶³.

In addition, there are a growing number of initiatives that seek to provide a business voice in setting and implementing the global agendas related to biodiversity:

- Through the [Business for Nature](#) Coalition, more than 560 companies with revenues of US\$ 4 trillion are calling on governments to adopt policies now to reverse nature loss in this decade, and 400 businesses have already made commitments to reverse nature loss, that are based on 3 SDGs: SDG6 (Clean water and sanitation), SDG 14 (Life below Water) and SDG 15 (Life on Land). The commitments involve acting and advocating for more ambitious nature policies and work on protecting and restoring nature. Before making commitments, companies are encouraged to understand their dependencies and impacts on biodiversity, through their operations or supply chain.
- The [act4nature](#) aims to mobilise companies to protect, promote and restore biodiversity driven by commitment from CEOs. Signatories agree to placing biodiversity in their global development strategy and a set of commitments were made in 2018, which included the need to assess direct and indirect impacts on biodiversity and publicly report on implementation.
- The [One Planet Business for Biodiversity](#) (OP2B) coalition was launched at the UN Climate Action Summit aiming to protect and restore biodiversity within supply chains and product portfolios, and includes disclosing ambitious, time bound and measurable commitments during the next CBD Conference of the Parties.
- The CEBDS [Brazilian Business Commitment for Biodiversity](#) also encourages transparency on progress, measurement of impact and achieving a net positive impact on biodiversity for all businesses in Brazil.

Other initiatives are emerging to better engage business in the development and implementation of the post-2020 global biodiversity framework. For example, We Mean Business, the Consumer Goods Forum, the World Economic Forum, the Capitals Coalition and WWF all aim to drive business momentum for the CBD Action Agenda⁶⁴.

Science Based Targets for Nature

The Science Based Targets Network (SBTN), comprised of 25 organisations, has recently developed initial guidance for companies looking to set biodiversity targets. Referred to as Science Based Targets for Nature, the guidance provides steps for the private sector to set targets that are based on the best available science, related to global goals and aim to advance social equity. Formulated to cover the entire value chain, companies are encouraged to set targets that will ensure their activities operate within the limits of all earth systems including; biodiversity, land, ocean and freshwater systems.

Five steps are introduced to facilitate target design and implementation (see Figure 2). These are described as⁶⁵:

1. **Assess** – identifying your most material impacts and dependencies on nature and where they are geographically and throughout your value chain
2. **Interpret & Prioritise** – refine the material impacts and dependencies to be prioritised

⁶³ See: [LIFE Institute methodology for calculating biodiversity impact](#)

⁶⁴ See: [Nature Action Agenda \(2020\) WEF, 2020](#)

⁶⁵ See: [Science Based Targets Network \(2020\). Science Based Targets for Nature. Initial Guidance for Business.](#)

3. **Measure & Set** – set your baseline and identify indicators
4. **Act** – use the hierarchy of actions to set targets on Avoid, Reduce, Restore & Regenerate and Transform
5. **Track** – use tools for monitoring, reporting and verification to understand and track progress

The targets will encourage broader uptake of measurement approaches by driving business accountability for biodiversity impacts and dependencies. Companies will need to quantify their impacts on biodiversity in order to measure, act and track their progress. In turn, this will move businesses away from vague disclosure on how they are contributing to global targets' and instead work towards delivery of a broadly accepted biodiversity targets collectively.

The initial guidance was released in September 2020, with the aim to launch the final document in 2022.

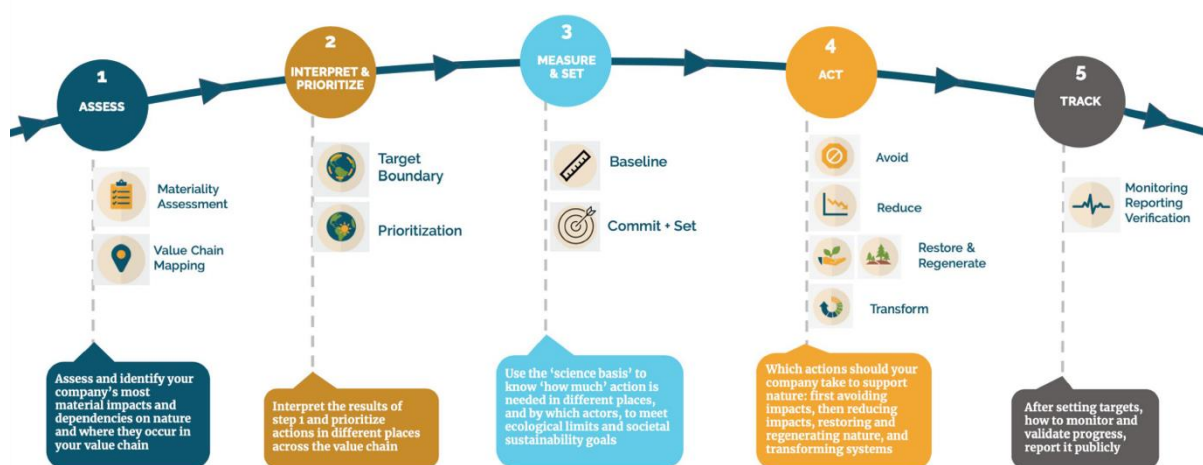


Figure 2. Five steps to set and achieve Science Based Targets for Nature (figure from the initial guidance)⁶⁶.

Recent calls by academia⁶⁷ and business⁶⁸ have tried to shift the attention or focus “away from conservation targets that focus on avoiding losses towards processes that consider net outcomes for biodiversity.” Within the context of the post-2020 global biodiversity framework, this means adopting the mitigation hierarchy at the business level⁶⁹, building on site-based net impact approaches (for example, no net loss and net gain targets for a project). Enabling policy frameworks are needed to encourage corporate uptake and accountability for national level targets, goals and indicators. The SBTN has adopted this approach within their guidance by using the AR3T framework. Rather than focusing solely on avoided losses, emphasis is placed on private sector targets that also enable restoration and transformation of already impacted sites.

The future of voluntary reporting and disclosure for biodiversity

⁶⁶ See: [Science Based Targets Network \(2020\). Science Based Targets for Nature. Initial Guidance for Business.](#)

⁶⁷ See: [Bull, J.W., Milner-Gulland, E.J., Addison, P.F.E. et al. Net positive outcomes for nature. *Nat Ecol Evol* \(2019\) doi:10.1038/s41559-019-1022-z](#)

⁶⁸ See: [Silva G.C., Regan, E.C., Pollard E.H.B., Addison P.F.E \(2019\) The evolution of corporate no net loss and net positive impact biodiversity commitments: Understanding appetite and addressing challenges. *Business Strategy and the Environment*](#)

⁶⁹ See: [Sinclair S., Stuart S., Watson J., Bull J., Bryan C., Sweidan J., Burgass M., Arlidge W., Sinclair C., and Milner-Gulland E.J. \(n.d.\) The Conservation Hierarchy Underpinning the Post-2020 Biodiversity Framework.](#)

Some government representatives interviewed for this report felt that voluntary initiatives were helpful to motivate businesses to report and disclose their impact on biodiversity and change company behaviour. Lessons learned from securing common ground on methods, tools and data use through voluntary coalitions of private actors can lead to implementation of standards by system players such as governments⁷⁰. A clearer business case for reporting and disclosure could promote broader uptake if it emphasises the opportunities for competitive advantage/differentiation associated with voluntary reporting, encompasses both impacts and dependencies on biodiversity and demonstrates the link between biodiversity loss and financial systemic risk.

Voluntary reporting mechanisms are seen by many as a way to initiate business disclosure of biodiversity impacts and dependencies by those companies that are already aware of the benefits of doing so. This can then provide a basis for experimentation and a stepwise move to mandatory requirements that will be needed to drive widespread uptake. Others are more sceptical, feeling that regulatory-driven reporting and targets are required to drive broad scale behavioural change. The uptake and application of biodiversity reporting and disclosure depends on the different intrinsic attitudes of companies and their responsiveness to external societal challenges, defining their corporate social responsibility position⁷¹. To promote further uptake, these differences should be considered when designing appropriate policies that depend on the stage in this transition process towards voluntary reporting standards. It should be noted that each of the initiatives mentioned here have very different requirements and purpose. Efforts to scale these initiatives up through regulation will require a detailed understanding of what type of reporting and disclosure will drive action.

⁷⁰ See: [Hesp, S. and van Leenders, C. \(2015\) Natural Capital and Financial Institutions. Transitioning to a green economy.](#)

⁷¹ See: [Business for Biodiversity, Mobilising business towards net positive impact. PBL, 2020](#)

5 Current and future practice of biodiversity disclosure

This section of the report examines existing levels and types of disclosure being made by business on biodiversity and identifies key gaps.

Types of disclosure

There are four complementary ways for companies to report on environmental impacts and dependencies, including those related to biodiversity:

- **Narratives** about the company's management approach are used to explain how reporting organisations deal with a specific issue, which may include disclosing adherence to specific standards, frameworks, targets or charters;
- **Quantitative non-monetary information** is disclosed to express how the reporting organisation depends on and/or impacts the environment (e.g. using GRI indicators);
- **Financial information** may be disclosed to explain the financial implications or consequences of a material event (e.g. biodiversity offset liability, oil spill fines);
- **Externality information** involves the disclosure of monetary values for the reporting organisation's externalities.

Externality disclosures have been made by a very limited number of companies to date (e.g. Novo Nordisk - Danish Environmental Protection Agency 2014; Kering from 2014). These present the uncompensated economic impacts on society generated by the reporting organisation (e.g. economic costs of company air and water emissions).

Mainstream business sustainability reporting related to environmental impacts and dependencies is currently limited to the first (management narratives) and second (quantitative non-monetary information) types of disclosures. Furthermore, quantitative non-monetary information is currently mostly focused on:

- Non-product outputs or emissions such as greenhouse gases (e.g. Greenhouse Gas Protocol Scopes 1, 2 and 3 – WRI & WBCSD 2004⁷², GRI 305 indicators - GRI 2016), hazardous waste and spills (e.g. GRI 306 indicators – GRI 2016);
- Amounts of material inputs such as material used (weight or volume) (e.g. GRI G4 - EN1 indicator) and water withdrawal by source (e.g. GRI G4 - EN8 indicator).

Such disclosures can be helpful to calculate biodiversity impacts and performance based on pressures, but they may not be as accurate as direct measurement of the state of biodiversity at a business's operating locations.

⁷² See: [The Greenhouse Gas Protocol. A Corporate Accounting and Reporting Standard.](#)

Gaps in current disclosure

Over 90% of the world's 250 largest companies now report on their sustainability practices and impacts, with most of them using the GRI Standards (KPMG, 2017⁷³). Despite the environmental focus of sustainability reporting, it often does not include biodiversity. In China it was reported that in 2017, there were over 2,000 corporate social responsibility reports, but they are of variable quality and content⁷⁴. A national country expert (from China) commented that of these 2,000 reports, only about

17% of these reports mentioned biodiversity.



Figure 3. Assessment of reporting on biodiversity among the Fortune 500 (Addison et al. 2018)

Current practices fall far short of providing the detailed sustainability information needed by the institutional investment community for investment decision-making⁷⁵. A recent assessment of the top 100 of the 2016 Fortune 500 Global companies' sustainability reports⁷⁶, shows that only 49 mentioned biodiversity in their reports, and 31 made clear biodiversity commitments, of which only five were specific, measurable, and time bound – see Figure 3.

A variety of biodiversity-related activities were mentioned in this assessment by Addison *et al.* (2018), for example managing impacts, restoring biodiversity, and investing in biodiversity (i.e. narratives about the company's management approach), but only nine companies provided quantitative indicators to verify the magnitude of their activities (e.g. area of habitat restored). These quantitative estimates of beneficial

activities for biodiversity, however, are rarely compared to the quantified magnitude of negative impacts on biodiversity that these companies generate. A review of voluntary non-financial reporting of 377 European organisations publishing integrated reports in 2016 also found that biodiversity was

⁷³ See: [The Road Ahead, The KPMG Survey of Corporate Responsibility Reporting 2017](#)

⁷⁴ See: [Golden Bee Research on CSR Reporting in China 2017 released](#)

⁷⁵ See: [Mattison et al \(2011\) Universal Ownership. Why externalities matter to institutional investors. TRUCOST. PRI in association with UNEP Finance Initiative; Solomon et al \(2011\) Private climate change reporting: a discourse of risk and opportunity.](#)

⁷⁶ See: [Addison, P.F.E., Bull, J.W. and Milner-Gulland, E.J. \(2018\). Using conservation science to advance corporate biodiversity accountability. Conservation Biology.](#)

poorly reported⁷⁷. The limited extent and poor quality of biodiversity disclosures are corroborated by other studies targeting different samples. This was documented in a 2016 note “business reporting on biodiversity” by the Executive Secretary of the CBD for the Subsidiary Body on Implementation (SBI)⁷⁸ and an assessment of the biodiversity disclosure of Johannesburg Stock Exchange listed companies in 2018⁷⁹.

In 2020, Addison et al. published a follow-up report, providing a framework for guiding the development of biodiversity indicators to assess business performance⁸⁰. The report highlighted that companies are still seeking ways to assess their performance at all spatial scales, across the value chain. They note that reporting and the use of ‘conservation dashboards’ is helpful when making internal decisions. External reporting for non-scientific audiences needs to be better tailored for the intended audience. Here, they suggest the use of a ‘report card format’ (similar to what is used in the Environmental Profit and Loss measurement approach developed by Kering). Again, the authors highlight the importance of the business sector engaging and proactively working with the CBD as the new post-2020 global biodiversity framework is developed.

Although business disclosures of biodiversity impacts and dependencies remain limited, there have been increasing efforts by the business sector to quantify their impacts and achieve targets of No Net Loss (NNL) or Net Gain (NG) of biodiversity. This has been driven by standards set by the finance sector, including the International Finance Corporation’s Performance Standard 6, as well as national legislations and policies (e.g. EU No Net Loss policy, Uganda’s new National Environment Bill and the US Clean Water Act for wetlands). These require quantitative assessments and monitoring of business on some aspects of biodiversity as part of site level environmental permitting processes. This information, however, remains hidden in monitoring reports that are rarely disclosed or fed into corporate level reporting.

A number of companies have adopted voluntary biodiversity commitments, including those to achieve NNL or NG on biodiversity at the business level⁸¹. Between 2001 and 2016, 66 companies had made NNL/NG environmental commitments, with 33 making specific biodiversity commitments. However, there were only 18 companies with active NNL/NG biodiversity commitments in 2016, as some commitments were retracted, or their status became unclear. While there has been substantial progress in the development of quantitative metrics to assess the achievement of these targets at the site or project level, corporate level reporting on these elements remains a challenge⁸², in part due to a lack of agreed and standardised measurement approaches and accounting framework to consolidate this information at corporate level.

Disclosures in the context of natural capital

Of relevance to biodiversity disclosure is the growing emphasis on natural capital measurement, valuation, accounting and reporting. Natural capital refers to the stocks of renewable and non-renewable natural resources (e.g. plants, animals, air, water, soils, minerals) and the associated flows

⁷⁷ See: [Gibassier, D., Adams, C., and Jérôme, T. \(2018\) European study of intellectual capital, human capital, social capital and natural capital reporting in integrated reporting.](#)

⁷⁸ See: <https://www.cbd.int/business/sbi-01-inf-12-en.doc>

⁷⁹ See: [A Study of Biodiversity Performance of South African Companies, BDP, 2019](#)

⁸⁰ See: [Addison et al., 2020. Bringing sustainability to life: A framework to guide biodiversity indicator development for business performance management.](#)

⁸¹ See: [de Silva et al., 2019. The evolution of corporate no net loss and net positive impact biodiversity commitments: Understanding appetite and addressing challenges.](#)

⁸² See: [Addison, Carbone & McCormick, The development and use of biodiversity indicators in business, 2018.](#)

of ecosystem services which benefit business and society⁸³. A natural capital approach is a holistic approach that drives companies towards a more integrated consideration and management of environmental/sustainability risks. Biodiversity is an integral part of natural capital stocks and underpins the goods and services that they generate. Sustainably managing and conserving natural capital stocks involves complementary factors, including the ability of stocks to sustain (renew) themselves (e.g. having sufficient space and time to do so) and the implementation of cost-effective management systems so that biodiversity conservation remains financially viable.

There is a growing consensus of the need to develop natural capital measurement, valuation, accounting and disclosure systems that fully embrace all these dimensions of natural capital, most notably to assess the true net impact of companies. Yet, the disclosure of environmental performance indicators is currently largely limited to flows of resources (including gains and losses). The biodiversity component of natural capital is often overlooked when reporting on the inputs and outputs of the business. This effectively means that the underlying changes in natural capital stocks (e.g. stocks of species, habitats or soil quality) are not disclosed to external stakeholders. In addition, these disclosures do not explicitly refer to a baseline year and are valid only for the reporting period (e.g. amount of materials used over the reporting period). This leads to a series of annual disclosures with no information on net impacts or changes since a relevant baseline year (e.g. starting date of resource exploitation or emission generated). To understand if a business is managing natural capital stocks sustainably (e.g. a wetland or a forest), we must expect effective reporting on biodiversity. Effective reporting should include the status (amount, condition, location, location of raw material sourcing) and to track any changes due to the company's activities and/or, potentially, the activities of others. The challenges in considering biodiversity within a natural capital assessment are recognised and the Capitals Coalition has worked with the Cambridge Conservation Initiative to provide Biodiversity Guidance to accompany the Natural Capital Protocol⁸⁴. This guidance focuses on measurement for internal decision making (rather than disclosure) purposes and provides information on 'how' to measure and value biodiversity (in the Measure and Value stage) and the 'what next' steps to applying your assessment to decision-making (in the Apply Stage). The Application guidance was designed to help businesses understand how they can use biodiversity information to improve their performance and resilience, and the steps needed to track progress.

⁸³ See: [Natural Capital Coalition \(2016\) Natural Capital Protocol](#).

⁸⁴ See: [Biodiversity Guidance to accompany the Natural Capital Protocol](#).

6 Emerging biodiversity measurement approaches for business

This section of the report sets out the range of biodiversity measurement approaches and frameworks that have developed in recent years.

Emerging biodiversity measurement approaches

At least twelve approaches for biodiversity measurement have been developed to address different potential business applications and to operate at different organisational areas of focus. These approaches can and are being used by companies to understand how they can better meet their commitments on biodiversity and make their progress on managing biodiversity more transparent. Many of the approaches are currently being piloted and refined with significant further progress anticipated by 2021.

Table 3. Coverage of different business applications by biodiversity measurement approaches⁸⁵.

BUSINESS APPLICATION SUPPORTED	ORGANISATIONAL FOCUS					
	Product/service	Project/site	Supply chain	Business	Portfolio/sector	Country
Current performance	ABD, PBF	ABD, LIFE, BISI, STAR, BD, BMS, BPT	ABD, LIFE, BD, PBF, BIM, BMS, EPL	BD, GBS, BISI, LIFE, BIM, BMS, EPL	BFFI, LIFE, GBS	ABD, LIFE
Future performance	PBF	LIFE, STAR, BPT	LIFE, PBF	GBS, LIFE	BFFI, LIFE, GBS	LIFE
Tracking targets	ABD, PBF	ABD, BIE, BD, LIFE, STAR	ABD, STAR, BD, LIFE	ABD, BISI, BD, LIFE, GBS, STAR	ABD, LIFE, BFFI, STAR, GBS	ABD, STAR
Comparing options	ABD, PBF	ABD, STAR, BISI	ABD, LIFE, BIM, EPL	ABD, BIM, BISI, GBA, EPL	ABD, GBS, BFFI, LIFE	ABD, LIFE
3 rd party assessments/ratings		LIFE		GBS, LIFE	GBS, LIFE, BFFI	LIFE
3 rd party certification		BD, LIFE, BMS	BD, LIFE, BMS	BD, LIFE, BMS	LIFE	LIFE
Risk and opportunity assessment	ABD	ABD, BISI, BPT	ABD, EPL	ABD, BISI, EPL	ABD	ABD
Biodiversity accounting		BD	BD	BD		

⁸⁵ See: [EU Business @ Biodiversity Platform & UNEP-WCMC \(2019\) Assessment of biodiversity measurement approaches for businesses and financial institutions. Update Report 2.](#)

ABD – Agrobiodiversity Index	GBS – Global Biodiversity Score
BFFI – Biodiversity Footprint Financial Institutions	EPL – Environment Profit & Loss
BIM – Biodiversity Impact Metric	LIFE – LIFE Impact Index
BMS – Biodiversity Monitoring System for the Food Sector	PBF – Product Biodiversity Footprint
BISI – Biodiversity Indicators for Site-based Indicators	STAR – Species Threat Abatement & Recovery
BD – Biological Diversity Protocol	BPT – Biodiversity Performance Tool

Table 3 sets out the range of business applications (uses) for measurement⁸⁶. It shows that, for most business applications, methodologies now exist and are being refined. A longer list of methodologies is provided in [Annex 3](#). Some examples for different business sectors are outlined in more detail below – this is not intended as a comprehensive review and does not, for example, include certification-related indicators.

Finance sector

Despite challenges in securing data for a large number of business entities, several methodologies have been developed for the finance sector, including:

- [Biodiversity Footprint for Financial Institutions](#) was developed by consultants CREM and PRé on behalf of Dutch financial institution, ASN Bank, it was designed to give insight into potential areas of impact on biodiversity within an investment portfolio to enable the bank to achieve a long-term goal of 'net positive effect on biodiversity'. The approach is now being expanded to attempt to capture positive contributions to biodiversity.
- CDC Biodiversité's [Global Biodiversity Score](#) (GBS) was developed following an organisational commitment by Caisse De Depots to understand and reduce its impact on biodiversity. The approach calculates the biodiversity footprint of a company's economic activities measured by 'mean species abundance' – the ratio between observed biodiversity and biodiversity in its pristine state. The development of GBS for finance and businesses has progressed rapidly, and in 2019, full-scale biodiversity audit pilots were conducted, and feedback provided by experts in academia, NGOs and auditing. In 2020, GBS is fully operational, and in June, 11 technical reports were delivered on the pressures on biodiversity, raw materials and overall methodology. Additionally, the final report was delivered from the committee⁸⁷. 7 case studies are being developed that will be published imminently, across all focuses, from corporate & portfolio, supply option, product service and project site. A key driver for the methodology development has been the French government's intended requirement for mandatory disclosure of business biodiversity footprints (see section 4).
- The De Nederlandsche Bank cooperated with PBL Netherlands Environmental Assessment Agency on a general approach for risk exposure to biodiversity loss for the financial sector (assets from banks, insurers and pension funds)⁸⁸. They developed general approaches for analysing different types of risk channels, as the loss of biodiversity may materialise through very different mechanisms. The bank advises financial institutions to analyse their own portfolios on these types of risks, and to develop more refined methods for risk assessment. Also, a group of Dutch financial institutions⁸⁹ that are part of the DNB's platform for Sustainable Finance have explored how biodiversity loss touches their own business and

⁸⁶ More information: [Approaches identified by the Natural Capital Coalition and IUCN/Oxford University and refined by Aligning Biodiversity Measures for Business and the EU Business @ Biodiversity Platform](#)

⁸⁷ See: [Introduction to the GBS – a tool to assess the biodiversity footprint of businesses and financial assets, CDC Biodiversité, 2020.](#)

⁸⁸ See: [Indebted to Nature; Exploring biodiversity risks for the Dutch financial sector, De Nederlandsche Bank and PBL Netherlands Environmental Assessment Agency, 2020](#)

⁸⁹ See: [Biodiversity Opportunities and Risks for the Financial Sector, The Sustainable Finance Platform, 2020.](#)

investment portfolios, and what options they have to manage the risks and contribute to positive change.

In addition to quantifying the negative impacts of financial decisions, work is underway to understand how positive contributions can be assessed. A recent study financed by the Ministry of Agriculture, Nature and Food Quality and the Enterprise Agency of the Netherlands in cooperation with ASN Bank, defined the scope of a positive impact and considered how they could be measured and compared to negative impacts to enable a no net loss/net positive impact to be quantified⁹⁰. In January 2020, AXA IM, Sycomore AM and Mirova, also launched a joint initiative to develop a tool for measuring investment impact on biodiversity⁹¹. The initiative was set up to address the growing interest in quantitative indicators among financial regulators, investors and clients, particularly regarding biodiversity.

Agriculture and agricultural supply chains

The agricultural sector, particularly companies that are sourcing agriculture/agriculturally based products with multiple sourcing locations and multiple products, have a significant challenge in demonstrating the impacts and dependencies of their operations on biodiversity. Some methodologies have been developed for this sector at farm level, supply chain level and product level:

- The [Biodiversity Impact Metric](#) (BIM) was developed by the University of Cambridge Institute of Sustainability Leadership and was designed to assess the impacts of a company's activities from raw material sourcing. It provides information on how and where the company can reduce their impact by providing comparisons between potential impacts across different source locations and between commodities. The method has been piloted with a number of companies including supermarkets, forestry and fashion, and a case study published focusing on cotton. While it is currently applied to global supply chains, the metric can be adapted for different sectors, for example a case study of application to the UK water sector has been published. Businesses can integrate the metric into their decision-making framework and apply the benefits and trade-offs between sourcing options to their decisions.
- The [Agrobiodiversity Index](#) assesses risks in food and agriculture related to low agrobiodiversity. The index is comprised from 33 indicators based on recommendations from the UN Food and Agriculture Organisation and using open-source data from globally available datasets, national policy documents and user responses⁹². It allows biodiversity trends in food systems to be understood and monitored. Based on the Index results, food systems' actors can understand how much they can build resilience for six risk areas by leveraging agrobiodiversity: malnutrition, poverty trap, climate change and variability, land degradation, pests and diseases, and biodiversity loss. The Agrobiodiversity Index has been designed to assess the commitment of a country, company or project to safeguarding and using agrobiodiversity. It is currently only available at country level, with company and project level analysis planned.
- At a farm level, a number of measurement approaches are evolving. Solagro, the Global Nature Fund (GNF), Lake Constance Foundation (LCF), Fundación Global Nature and IST University of Lisbon have produced the [Biodiversity Performance Tool \(BPT\)](#), which aims to identify and assess the state of potential for biodiversity on a farm in order to propose an action plan to preserve or promote biodiversity. Aimed at food sector actors (product quality or sourcing managers) and certifiers/auditors, it has been tested on 70 farms. The tool is now operational

⁹⁰ See: [CREM, PRè and Ministry of Agriculture, Nature and Food Quality \(2019\) Positive impacts in the biodiversity footprint financial institutions.](#)

⁹¹ See: [Call for Expression of interest, Press Release, 2020](#)

⁹² See: [Agrobiodiversity Index, How does it work?](#)

– focussing on agricultural production in Europe. GNF and LCF realized pilot projects with GIZ, UEBT, Rainforest Alliance and Fairtrade to adapt the BPT to specific crops and regions such as spices in India, cocoa in Ghana, coffee in Colombia or banana in Costa Rica and the Dominican Republic.

- To monitor biodiversity at supply chain level, the Global Nature Fund and Lake Constance Foundation developed the Biodiversity Monitoring System (BMS) for the food sector. 25 key data and indicators are collected to monitor the potential created for biodiversity, as well as agricultural practices with negative impacts. The database aggregates the individual datasets and results can be filtered by a certain region, country, crop or production type. The monitoring results are presented in nine clusters (semi-natural habitats, management and training, livestock, animal feed and deforestation, water, alien invasive species, genetic diversity, soil and pesticide management). The BMS is directed to food companies, food standards and agricultural cooperatives⁹³.

Energy and mining

Attempts have been made over time to develop biodiversity measurement approaches within the mining and energy sectors, but these have focused on processes and process-based measures. UNEP-WCMC, Conservation International and Fauna & Flora International are working in collaboration with IPIECA, the international oil and gas association, and the [Proteus Partnership](#) to develop the Biodiversity Indicators for Site-Based Impacts methodology⁹⁴. The methodology has been piloted by energy and mining companies (IPIECA members and Proteus Partners) but is broadly applicable to all sectors with site-based impacts. A 3-stage process has been developed: 1) biodiversity sensitivity screening using global datasets, 2) tailoring of site-level biodiversity indicators using the state-pressure-response (SPR) framework and 3) aggregation of scores for SPR. An independent advisory group drawn from government, academia, civil society, business and the finance sector supported the development of the methodology.

Cross sector approaches

Some approaches can be used across a range of sectors. [LIFE Key](#), for example, has been tested by more than 20 companies in Brazil and Paraguay. It helps organisations in identifying their impacts and designing a strategic plan to reduce, mitigate and compensate for them, including a specific approach to reduce impacts in the supply chain. By using the LIFE Biodiversity Estimated Impact Value (BEIV) an organisation calculates and evaluates an organisation's impact based on five environmental aspects, considering quantity and severity criteria. The Global Biodiversity Score outlined above can also operate across different sectors as can the [Product Biodiversity Footprint](#) which operates at a product level using lifecycle analysis approaches to calculate potential biodiversity footprint of a product.

The extent to which these approaches can be used for external disclosure or to track policy targets is provided in Annex 3. The strengths and weaknesses of each approach are documented in a recent review by the EU Business@Biodiversity Platform and the Aligning Biodiversity Measures for Business collaboration⁹⁵ and WWF France⁹⁶. In addition, an independent review of the different measurement approaches is also being conducted by the French Foundation for Research on Biodiversity which could inform further uptake of these approaches.

⁹³ See: [Biodiversity Monitoring System](#)

⁹⁴ See: [Biodiversity Indicators for Site-based impacts](#)

⁹⁵ See: [EU Business @ Biodiversity Platform & UNEP-WCMC \(2019\) Assessment of Biodiversity measurement approaches for businesses and financial institutions. Update Report 2](#)

⁹⁶ See: [WWF France \(2019\) Natural Capital and Organisation's strategies. An overview of available tools.](#)

The [Species Threat Abatement and Recovery \(STAR\) metric](#) measures the contribution that investments can make to reducing species extinction risk. Originally conceived to enable the targeting of impact focused investing for conservation, it is now developing for broader applications and aims to inform target-setting across spatial scales. It allows countries and other entities (such as NGOs and businesses) to measure their potential contribution towards species conservation. STAR considers two complementary site-based actions for species conservation; (i) the abatement of threats in order to prevent further deterioration in species survival probability, and (ii) the restoration of habitat in order to contribute to improving species survival probability. Recent work has focused on how STAR can help track progress towards targets in the post-2020 global biodiversity framework and SDGs. STAR has also been tested on a number of country and company case studies.

Although many of the measurement approaches were designed primarily to provide management information for internal decisions rather than for public disclosure purposes, they can nonetheless have a role in business disclosure and tracking progress against societal goals. Indeed some, such as the Biodiversity Footprint for Financial Institutions are used already for external reporting⁹⁷. The approaches provide ways of measuring the state or condition of biodiversity, addressing a key challenge and gap to date⁹⁸. They will enable better assessment of the scale of companies' impacts and will allow businesses to better understand their impacts, priority areas on which to focus to address these impacts and to define appropriate policies, strategies and targets.

Approaches may differ in the data or key performance indicators used – some focus on extinction risk, while others consider impacts on ecological integrity. Some use modelled data; others use measured data. Gathering primary data may be costly or impossible for some companies wishing to understand their footprint (e.g. financial institutions). In these situations, the use of secondary data (e.g. global datasets, proxies and extrapolations/estimates) may be the only cost effective means of measuring biodiversity impacts, with approaches emerging that extrapolate biodiversity impacts from indirect environmental pressure data or data on economic activities, such as greenhouse gas emissions or water use. Other approaches use biodiversity state data or combine state and pressure data. As a result of these data issues, each measurement approach is likely to have a varying role in disclosure⁹⁹.

There are however a few gaps in terms of sectors and issues covered. Most of the approaches in this report, for example, focus on impacts on biodiversity rather than dependencies and few of them attempt to assign monetary or non-monetary values to biodiversity. Different tools, methods and data are required for companies measuring impact compared to those considering their dependencies on nature¹⁰⁰. In recognition of this some countries (e.g. the Netherlands) are updating the Economics of Ecosystems and Biodiversity database of economic values¹⁰¹. With the emergence of natural capital approaches which consider the impacts, dependencies and value of biodiversity by the private sector, the lack of approaches that can quantify private sector dependencies on biodiversity is a significant gap for biodiversity measurement and disclosure.

⁹⁷ See: [Net positive effect on biodiversity in 2030, ASN bank](#).

⁹⁸ See: [Addison, P.F.E., Bull, J.W. and Milner-Gulland, E.J. \(2018a\). 'Using conservation science to advance corporate biodiversity accountability'. Conservation Biology](#).

⁹⁹ See: [EU Business @ Biodiversity Platform & UNEP-WCMC \(2019\) Assessment of Biodiversity measurement approaches for businesses and financial institutions. Update Report 2](#).

¹⁰⁰ See: [Bor, A. and Van Leenders, C \(2015\) Business and Biodiversity. Insights from the Community of Practice](#).

¹⁰¹ See: [McVittie A., Hussain S. S. \(2013\) The Economics of Ecosystems and Biodiversity – Valuation Database Manual](#).

Frameworks and guidance

Those groups engaged in the development of these approaches recognise the need for a diversity of measurement approaches that reflect the different decision needs of different sectors and that are appropriate to operate at different levels of data availability – a company wishing to track performance on a single site which is subject to the requirements of environmental impact assessment law, for example, will have very different access to data compared to a financial institution attempting to assess biodiversity performance across a portfolio of different investments. In addition to the measurement approaches developing above, guidance is being developed for businesses to identify appropriate biodiversity metrics and indicators and place these within a robust framework for disclosure.

A key step in the evolution of corporate greenhouse gas reporting and disclosure was the development of the Greenhouse Gas Protocol¹⁰², which aimed to increase the consistency and comparability and reduce the costs of greenhouse gas reporting. The [Biological Diversity Protocol](#) has been developed, by the Endangered Wildlife Trust (EWT) to achieve the same for biodiversity. It is aligned with the Natural Capital Protocol and provides biodiversity-specific guidance on measuring change in the state of natural capital by exploring how to measure change(s) in biodiversity components affected by business. It offers an accounting framework rather than a measurement approach and sets out a series of principles that should be followed when accounting for biodiversity impacts (see Box 1).

Box 1: Case study - the Biological Diversity Protocol

The Biological Diversity Protocol is an accounting framework based on the mitigation hierarchy and core accounting and reporting principles. It is compatible with legislative requirements related to protected species and habitats, and the CBD based on COP decision 14/3..It aims to provide biodiversity information users with the reasonable confidence that a company's biodiversity disclosure can be/has been verified on the ground, in line with many other environmental disclosure mechanisms (e.g. GRI and CDP). It is currently in draft and will be reworked following stakeholder feedback.

The Biological Diversity Protocol is based on the assumption that, for any impact accounting framework to present a complete and accurate representation of the net consequences of an organisation, it must be able to account for both periodic (e.g. annual) and historical (e.g. since the start of a business) performance. The Biological Diversity Protocol recommends a set of principles that should govern biodiversity disclosure to ensure a similar level of quality to financial disclosures.

By contrast, the [Biodiversity Guidance to accompany the Natural Capital Protocol](#) focuses on providing biodiversity-specific guidance for all steps of the Natural Capital Protocol. The Capitals Coalition and Cambridge Conservation Initiative have developed guidance to help businesses and financial institutions Frame, Scope, Measures & Value and Apply a biodiversity-inclusive natural capital assessment. This guidance was piloted in early 2020 and was also shared for public consultation. It was released in September 2020. Similarly, IUCN and Oxford University have produced guidance on biodiversity indicators¹⁰³ that sets out a process for companies to follow in identifying their decision needs with regards to biodiversity information and indicators and sets out a spectrum of business applications that different measurement approaches could address. It addresses both measures for internal decision making and external disclosure. The approach poses a series of questions to aid businesses in determining the appropriate application, they can be used in

¹⁰² See: [World Business Council for Sustainable Development and World Resources Institute \(2004\) The Greenhouse Gas Protocol. Revised.](#)

¹⁰³ See: [Addison, P. F. E., Carbone, G., McCormick, N. \(2018\) The development and use of biodiversity indicators in business: an overview. Gland, Switzerland: IUCN.](#)

conjunction with the spectrum of business applications to define the potential use of each measurement approach:

- **Why?** What is the context and objective for biodiversity indicator use?
- **What?** What aspect of biodiversity is measured by indicator(s) to address what objectives?
- **When?** Are biodiversity performance assessments for current or future operations?
- **For who?** What is the primary audience of the indicator assessment and reporting?
- **How often?** What is the temporal frequency of the assessment and reporting?
- **How detailed?** What is the spatial scale of the assessment and reporting?

Although there is a need for a varied landscape of measurement approaches to meet different needs, there is an increasing recognition among the developers and users of these approaches of the need for common ground between the different measurement approaches.

A drive towards standardisation of key elements of the measurement approaches has started, firstly with attempts to secure common ground between biodiversity footprinting¹⁰⁴ approaches (Global Biodiversity Score and Biodiversity Footprint for Financial Institutions) with work undertaken by CDC Biodiversité, PRé, CREM, Actiam, Finance in Motion and ASN Bank¹⁰⁵. This work was then consolidated through the Aligning Biodiversity Measures for Business collaboration to secure agreement on common datasets, definitions and metrics used across the different approaches (see Box 2). In addition, the United Nations Statistics Division (UNSD), the United Nations Environment Programme, the Secretariat of the CBD, and the European Union are exploring the similarities and differences of the public and private sectors in terms of natural capital accounting approaches and data requirements. This workshop is one of the activities of the Natural Capital Accounting and Valuation of Ecosystem Services Project¹⁰⁶, a multi-year project funded by the European Union, to advance natural capital accounting in Brazil, Mexico, South Africa, India and China as a pilot for a more global initiative.

¹⁰⁴ See ASN Bank: [Common ground in biodiversity footprint methodologies for the financial sector](#)

¹⁰⁵ See: [Berger, J. et al 2018 Common ground in biodiversity footprint methodologies for the financial sector. Paris 3 October, 2018.](#)

¹⁰⁶ See: [Natural Capital Accounting and Valuation of Ecosystem Services Project](#)

Box 2: The Aligning Biodiversity Measures for Business collaboration

The Aligning Biodiversity Measures for Business Collaboration convened 20 institutions across relevant business, policy and biodiversity conservation groups with expertise in emerging biodiversity measurement approaches for business. Through a series of workshops, the project aimed to form a common view among key stakeholders on the measurement, monitoring and disclosure of corporate impact and then communicate this into key corporate reporting and disclosure mechanisms and global policy discussions and global policy frameworks. Four working groups were developed to drive the work forward and creating common thinking between the different measurement approaches:

1. Business applications and targets. Sub-group 1 agreed a typology of business applications and targets to help businesses select a relevant biodiversity measurement approach.
2. Boundaries and baselines. Sub-group 2 worked to develop alignment among approaches on how biodiversity impact from business can be measured focusing on creating alignment in the boundaries of assessments and baselines/reference points.
3. Data and metrics. Sub-group 3 explored alignment on and clearer links between the datasets used in measuring biodiversity impact from business across the different approaches.
4. Disclosure. Sub-group 4 explored how the measurement approaches can better link with disclosure initiatives such as the GRI and policy discussions on the post-2020 global biodiversity framework.

Each sub-group identified and explored methodological challenges/discrepancies between measurement approaches and identify common ground in which alignment can be reached. Developers and users of biodiversity measurement approaches and their stakeholders were brought together in two workshops and a series of webinars to explore the topics above. This work confirmed the need for alignment between measurement approaches, a demand for clarity and standardisation from industry and set out a series of recommendations developed in conjunction with the EU B@B Platform for further action.

Work will continue into 2021 and beyond, to further identify and agree on common ground between measurement approaches on data, and communication of progress to date.

How well do measurement approaches meet the needs for external disclosure?

Although the measurement approaches outlined above could play a role in external disclosure, many were not designed with that purpose in mind. Increasing the transparency of the methodologies and following emerging principles for robust biodiversity accounting would help build a set of measurement approaches that could be used in this context. Assuming interest in business disclosures on biodiversity continues to grow, future biodiversity disclosures are likely to progressively adapt. Based on the principles of sustainability disclosure developed by organisations such as GRI and CDP, consideration of the following issues will be important in ensuring that emerging biodiversity disclosure approaches are credible and robust:

- Governance and accountability
- Disclosure boundaries and exclusions, with clear impact inventories;
- Net impacts on biodiversity, (i.e. changes in the state of biodiversity);
- Dependencies on biodiversity, (e.g. reliance on the use of genetic materials in medicines);
- Risks/exposure and opportunities, including financial implications for the reporting organisation and externalities, (e.g. monetary valuation of biodiversity impacts / the loss of ecosystem services);
- Business policy, strategy and science-based targets;

- Access to data;
- Implementation, including management actions, procedures and expenditures;
- Verification/independent third-party audits.

Placing the measurement approaches within the context of an accounting framework such as the Biological Diversity Protocol will allow users to be comfortable that a comprehensive picture of performance is produced. To improve the quality of biodiversity disclosures, accounting and reporting principles would need to be adopted by reporting organisations, as is done for the disclosure of GHG emissions using the GHG Protocol. A set of principles have been compiled below (see

Table 4), based on the Biological Diversity Protocol and discussions with developers and users of biodiversity measurement approaches.

The ability to demonstrate many or all of these principles are met in the design and delivery of a measurement approach and will be required to ensure it is robust from an external disclosure perspective. Robust external disclosure will, in turn, be an important component of society's ability to track the implementation of the post-2020 global biodiversity framework and biodiversity-focused SDGs.

Table 4. Potential principles to encourage robust biodiversity-related business reporting.

	Description
Principle 1: Relevant	• Ensure the biodiversity impact inventory appropriately reflects the biodiversity impacts of the company and its value chain. It shall serve the decision-making needs of users, both internal and external to the company.
Principle 2: Transparent	• Address all relevant issues in a factual and coherent manner, based on a clear audit trail. • Disclose any relevant assumptions and make appropriate references to the data collection and estimation methodologies used.
Principle 3: Consistent	• Use consistent methodologies to allow for meaningful comparisons of biodiversity impacts over time. • Clear rationale and documentation for any changes to the data, inventory boundary, methods or any other relevant factors in the time series.
Principle 4: Complete	• Account for and report on all biodiversity impacts within the chosen organisational and value chain boundaries. • Disclose and justify any exclusion.
Principle 5: Equivalent	• Ensure that the notion of equity in the type of biodiversity (i.e. ecological equivalency or like-for-like principle) is integral to biodiversity impact inventory development and accounting. • Undertake net impact accounting only for equivalent biodiversity losses (negative impacts) and gains (positive impacts).
Principle 6: Accurate	• Ensure that the measurement of biodiversity impacts is systematically accurate, as far as can be judged, notably by reducing uncertainties as far as is practicable. • Achieve suitable accuracy to enable users to make decisions with reasonable assurance as to the integrity of the reported information. When no direct observation is possible, estimate impacts on the basis that they are reasonably likely to occur, recording all methodological limitations.
Principle 7: Time period assumption	• Account for biodiversity impacts consistently across business reporting periods.

What role can these approaches play in tracking progress to societal targets?

Under the United Nations Framework Convention on Climate Change (UNFCCC) 2016 Paris Agreement, nations have committed to keeping the increase in global average temperature to below 2°C above pre-industrial levels; and to try to limit the increase to 1.5°C, to reduce the risks and impacts of climate change. The post-2020 global biodiversity framework offers the potential to create a similar coalescing call for policy makers through setting global goals and targets for biodiversity. Increasing recognition of the role that business needs to play in reducing the drivers of biodiversity loss, combined with an appetite among leading businesses to act on biodiversity provides an opportunity for business engagement in the delivery of any goals and targets set by the CBD.

As outlined in section 4, there are cross-sector initiatives that attempt to make the link between business and CBD targets, these include:

- The Cancun Business and Biodiversity Pledge¹⁰⁷ (Mexico, December 2016), which constitutes a high-level, aspirational declaration. It has over 140 signatories;
- 8 national pledges from Canada, France, Germany, India Japan, Korea, Spain and Sri Lanka that come from the Global Partnership on Business and Biodiversity;
- The act4nature¹⁰⁸ initiative (2018, France) which lists voluntary biodiversity commitments of about 40 companies, with a wide-ranging set of targets (i.e. from commitments to developing a biodiversity policy or indicator to more comprehensive SMART¹⁰⁹, targets which could be linked to some Aichi Targets); though only two companies mention Aichi targets within their own commitments.
- Business for Nature is a global coalition that is working with hundreds of companies worldwide to develop policy recommendations on nature, that include adopting targets, integrate policies, value nature in decision making, reforming subsidies and incentives, and empower businesses to act. These policies aim to accelerate business action and transform economic and financial systems.

To support the Sharm El-Sheikh to Kunming Action Agenda for Nature and People¹¹⁰, the Global Partnership on Business and Biodiversity¹¹¹ has called for businesses to:

- Re-affirm previous commitments, and, when appropriate, make new ones which are credible and support best practice (i.e. avoid being branded as “green washing”), which means promoting the adoption of SMART targets;
- Frame commitments according to the CBD targets;
- Frame contributions according to the SDGs, especially by segregating commitments for SDG 14 (Life below Water) and SDG 15 (Life on Land).

¹⁰⁷ See: [Cancun Business and Biodiversity Pledge, Action Agenda Overview, CBD, 2020](#)

¹⁰⁸ See: [Act 4 Nature International](#)

¹⁰⁹ Defined as: Specific, measurable, achievable, realistic and time bound.

¹¹⁰ See: [An agenda for Action, CBD, 2020](#)

¹¹¹ See: [Houdet, J. \(2019\) Voluntary Business Contributions to the CBD for 2020 and beyond - Support document from the Global Partnership on Business and Biodiversity](#)

Measurement approaches can demonstrate progress towards societal goals

Developing targets that are appropriate, applicable and implementable could enhance their uptake by business. Such targets should be SMART related directly to business and linked to other targets (e.g. the SDGs), few in number and, ideally, co-developed with business¹¹². Although some of the Aichi targets and indicators are of obvious relevance to the private sector, current indicators focus heavily on fishing (i.e. Target 6, trends in certified sustainable fisheries, indicator: MSC certified catch) and agriculture (i.e. Target 7, by 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity, measured by the following indicators; area of land under organic production, area of land under conservation agriculture, proportion of land under productive and sustainable agriculture). This leaves many sectors with potentially high impacts and dependencies on biodiversity unaddressed¹¹³.

Adding those sectors considered under the mainstreaming agenda of COP-14 – namely energy and mining, infrastructure, tourism, and manufacturing and processing, would be an appropriate starting point as they have already been agreed by Parties as important to engage in the implementation of the CBD. Supply chain industries that are driving the high impact production sectors should also be a focus.

These emerging biodiversity measurement approaches can all play a role in demonstrating company progress towards the attainment of societal goals such as the SDGs and Aichi targets on a case study basis. Although undoubtedly able to demonstrate contribution to positive outcomes for biodiversity and a significant step forward in delivering against the call made at the CBD-COP13 in Cancun to integrate business impacts into biodiversity policies and disclosures, in isolation they do not provide the overall picture of business impact and dependencies required to enable private sector progress in meeting societal goals to be tracked and incentivised on a national or global level. Their use by companies can demonstrate a willingness to better understand and manage impacts on biodiversity but cannot yet quantify the overall contribution of a company to societal goals, positive or negative.

How relevant the measurement approaches are to tracking goals and targets in the post-2020 global biodiversity framework will depend on the nature of those targets, which are still undergoing drafting and negotiation by Parties.

Getting the companies to act encompasses all of the above, and under the Science Based Targets Network, the guidance being developed helps businesses identify targets that will demonstrate progress towards societal goals.

Potential business-focused goals and targets in the post-2020 global biodiversity framework

The draft monitoring framework for the post-2020 global biodiversity released in mid-2020 (and updated as of November 2020) has various references to the private sector in the goals and targets, namely:

- Goal B - Nature is valued through green investments, ecosystem service valuation in national accounts, and public and private sector financial disclosure
- Target 17 - By 2030, redirect, repurpose, reform or eliminate incentives harmful for biodiversity, including [X] reduction in the most harmful subsidies, ensuring that incentives, including public and private economic and regulatory incentives, are either positive or neutral for biodiversity

¹¹² See: [Convention on Biological Diversity \(2018\) Engaging business in the development of a post-2020 global biodiversity framework. Note by the Executive Secretary. CBD/COP/14/INF/5.](#)

¹¹³ See: [UN Environment Programme, UNEP Finance Initiative and Global Canopy 2020. Beyond 'Business as Usual': Biodiversity targets and finance. Managing biodiversity risks across business sectors. UNEP-WCMC, Cambridge, UK, 42 pp.](#)

Further references are present in T17.1, as well as in the monitoring elements – ‘Trends in the mobilization of financial resources from private sector’.

The private sector would also be relevant to other targets, due to their involvement in the processes described in the target, namely Target 8, 13, and 14¹¹⁴:

- Target 8: Conserve and enhance the sustainable use of biodiversity in agricultural and other managed ecosystems to support the productivity, sustainability and resilience of such systems, reducing by 2030 related productivity gaps by at least [50%].
- Target 13: Integrate biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts, ensuring by 2030 that biodiversity values are mainstreamed across all sectors and that biodiversity-inclusive strategic environmental assessments and environmental impact assessments are comprehensively applied.
- Target 14: Reform economic sectors towards sustainable practices, including along their national and transnational supply chains, achieving by 2030 a reduction of at least [50%] in negative impacts on biodiversity.

Existing measurement approaches can be used to demonstrate progress against these goals and targets, however, ensuring consistent and credible monitoring of business contributions to the post-2020 global biodiversity framework will require explicit consideration of the private sector within the indicator development process and is likely to require better datasets, potentially through developing company performance benchmarks. In collaboration with the CBD Secretariat, and through the Biodiversity Indicators Partnership, UNEP-WCMC is currently reviewing proposed indicators in the lead up to Twenty-fourth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA24), and part of this review will include exploring the relevance of indicators for the private sector.

Further to this, below we present a high-level set of suggestions on how the goals set out in the zero draft of the post-2020 global biodiversity framework and associated monitoring framework might be translated into a business context (see Table 5). This is not an exhaustive review, but a high-level set of suggestions for further discussion.

An independent review of these suggestions and the measurement approaches outlined above against the needs of policy makers, a series of quality criteria, data availability and utility are required. Criteria for robust indicators have been identified as: sensitive to change at an appropriate scale, policy relevant, scientifically sound, produced over an appropriate time frame, applicable at an appropriate scale, with appropriate coverage and complementary to existing indicators.

¹¹⁴ See: [Zero draft of the post-2020 global biodiversity framework](#).

Table 5. Potential business-focused measures for goals set out in the draft monitoring framework of the zero draft post-2020 global biodiversity framework.
Note: indicators in bold are UNEP-WCMC's recommendation and are not currently in the monitoring framework draft.

Goal	Components	Provided within the draft monitoring framework	Potential private sector-relevant indicators*	Potential application by businesses**
Goal A – Biodiversity - The area, connectivity and integrity of natural ecosystems increased by at least [X%] supporting healthy and resilient populations of all species while reducing the number of species that are threatened by [X%] and maintaining genetic diversity 2030 Milestones i) integrity of natural ecosystems increased by at least [5%] ii) The number of species that are threatened is reduced by [X%] and the abundance of species has increased on average by [X%]	A1. Increased extent of natural ecosystems (terrestrial, freshwater and marine ecosystems)	Yes	Forest area as a percentage of total land area	Businesses able to apply the principle behind indicator to their operations but would need their own data. For example, area of forest as a proportion of their total sites owned.
		Yes	Tree cover loss	Businesses able to apply the principle behind indicator, as well as the underlying data, to their operations. For example, calculate forest loss within sites owned.
		Yes	Biodiversity Habitat Index ¹¹⁵	Spatial dataset that can be applied within areas of a business' operations.
		No	Red List Index of Ecosystems	Understanding of ecosystem risk status can be applied in the risk screening process, but indicator is not able to track change in business impacts or biodiversity performance.
		No	Cumulative human impacts on marine ecosystems	Business may be able to apply the indicator in risk screening to identify where operations may be contributing cumulative impacts, but not able to track change in

¹¹⁵ For more information on the Biodiversity Habitat Index see: <https://www.bipindicators.net/indicators/biodiversity-habitat-index>.

				business impacts or biodiversity performance.
	A2. Ecosystem integrity and connectivity (terrestrial, freshwater and marine ecosystems)	No	MSA (mean species abundance) metric	MSA is the basis for a number of corporate measurement approaches – see Annex 3.
		No	Biodiversity Intactness Index	Business are able to apply the underlying method behind the indicator to their own operations, for example measuring the intactness of land occupied by their supply chain.
	A3. Prevent extinction and improve the conservation status of species	No	STAR	Businesses can track changes in species extinction risk due to different threats.
	A4. Increase the population and health of species	No	Limited approaches available	Not applicable
	A5. Maintain Genetic diversity	No	Agrobiodiversity Index	Not applicable
	A6: Protection of critical ecosystems	Yes	Protected Areas Key Biodiversity Areas	Businesses can use risk screening tools to identify whether they are

				located in protected areas or Key Biodiversity Areas.
Goal B – Sustainable use - Nature's contributions to people have been valued, maintained or enhanced through conservation and sustainable use, supporting the global development agenda for the benefit of all people 2030 Milestones i) Nature contributes to the sustainable nutrition and food security, access to safe drinking water and resilience to natural disasters for at least [X] million people ii) Nature is valued through green investments, ecosystem service valuation in national accounts, and public and private sector financial disclosure	B1. Nature's regulating contributions including climate regulation, disaster prevention and other	No	None relevant to the business sector	None specified
	B2. Nature's material contributions including food, water and others	No	None relevant to the business sector	None specified
	B3. Nature's non-material contributions including cultural	No	None relevant to the business sector	None specified
Goal C – Benefit sharing (genetic) - The benefits, from utilisation of genetic resources are shared fairly and equitably 2030 Milestones i) Access and benefit sharing mechanisms are established in all countries ii) Benefits shared increased by [x%]	C1. Access to Genetic resources	No	None relevant to the business sector	None specified
	C2. Sharing of the benefits	No	Indicator: number of companies in relevant sectors that have robust access and benefit sharing policies and practices	None specified
Goal D – Means of implementation Means of implementation is available to achieve all goals and targets the Framework	D1. Availability of sufficient financial resources	No	Indicator: Proportion of private financial products addressing biodiversity.	None specified

2030 Milestones i) By 2022, means to implement the Framework for the period 2020 to 2030 are identified or committed ii) By 2030, means to implement the Framework for the period 2030 to 2040 are identified or committed	D2. Sufficient capacity building, technology transfer and scientific cooperation	No	None relevant to the business sector yet	None specified
	D3. Access to technology	No	None relevant to the business sector	None specified

* This is a non-exhaustive list. Refer to the Table 1 of the Annex (pg. 15) presented in the Indicators for the post-2020 global biodiversity framework Information Document prepared for SBSTTA24 ([seen here](#)).

** Although other indicators may be available, they are not scalable to business applications and not included in this list.

As policy makers consider the applicability of the goals, targets and indicators for their national context, it is also important to consider how they relate to private sector impacts and dependencies on biodiversity, how private sector contributions to their delivery can be tracked and how to identify potential data sources to enable their calculation.

It is likely that a short, medium and long-term strategy for including business-focused indicators in the post-2020 global biodiversity framework will be required given the relatively immaturity of existing biodiversity indicators for business. Over time, a more sophisticated approach to measurement could be adopted with a commitment for companies to understand their biodiversity footprint by a certain date.

Business uptake of any targets and measurement/indicators will be greater if businesses and financial institutions are involved early on in their development to ensure they are pragmatic and reflective of good practice. It will be essential to engage closely with the private sector to secure their views, expertise, support and commitment into the process and the resulting targets – as has occurred for the climate agenda. Business-focused networks could assist in this (e.g. the EU Business@Biodiversity Platform, the Aligning Biodiversity Measures for Business collaboration, the Capitals Coalition, Business for Nature, the Global Platform on Business and Biodiversity and its members and groups such as the World Economic Forum and the World Business Council for Sustainable Development).

7 Recommendations and conclusions

This section considers how existing business biodiversity measurement approaches can be scaled up to ensure broader uptake by businesses and policy makers, delivering greater business transparency on impacts and dependencies on biodiversity, and better performance in managing them and tracking progress against societal goals and targets.

Recommendations

In order to ensure broader business action on biodiversity, the use of biodiversity measurement approaches by business needs to be scaled up and requirements on the use and application of biodiversity measurement approaches by the private sector needs to be fully integrated into the post-2020 global biodiversity framework. Recommendations for policy makers to enable this fall into three broad areas: 1) building business awareness of the value of nature and how to measure it, 2) ensuring a business relevant post-2020 global biodiversity framework, and 3) creating drivers for business action on biodiversity through mandating biodiversity impact and performance disclosure.

1. *Build business awareness of the value of biodiversity and how to measure impacts and dependencies*

- **Investigate emerging biodiversity measurement and disclosure approaches and support their uptake by business:** support the adoption of biodiversity measurement approaches that enable businesses and financial institutions to determine their impacts and dependencies on biodiversity in a structured and standardised way. For example, by supporting business and biodiversity/natural capital platforms and business associations working to align the language used among these measurement approaches and providing guidance and outreach to ensure they are understandable by business. In addition, third-party assessments by these platforms could review the functionality and performance of the approaches to ensure they are robust and appropriate for their stated use. Initiatives such as the EU Business@Biodiversity platform, Aligning Biodiversity Measures for Business collaboration and the Biological Diversity Protocol could help governments in these efforts.
- **Highlight the importance of good reporting practices:** for instance, through supporting the development of sector guidance on common issues and risks that should be reported on. Even reporting on climate impacts – a more advanced area of environmental reporting – shows that the depth and strategic level of reporting is not well developed, even though broadly accepted standards are now available.
- **Build business and financial institution awareness of their impacts, dependencies, risks and opportunities associated biodiversity to drive action, measurement and disclosure on biodiversity:** continue to build awareness among key industrial sectors and financial institutions on the risks associated with biodiversity loss and the key role that business can play in mitigating impacts and managing dependencies. Significant progress has been made in this area, particularly in the potential materiality information on sector impacts and dependencies on nature collated within the ENCORE tool, developed by UNEP-WCMC and the Natural Capital Finance Alliance. Increased awareness on the inter-dependencies between biodiversity loss and climate change within the finance sector is needed, as well as highlighting the importance of avoiding biodiversity loss to achieve the SDGs. Building an understanding of how biodiversity relates to other aspects of business environmental strategies, for example climate change mitigation and adaptation, can also drive business measurement, action and disclosure on biodiversity.

2. Ensure a business-relevant post-2020 global biodiversity framework

- **Consider how the proposed goals, targets and indicators for the post-2020 global biodiversity framework apply to the private sector as policy responses are formulated:** Parties should review the potential goals and targets bearing in mind the need to engage business in the implementation of the post-2020 global biodiversity framework. As part of this they should assess whether the goals and targets address sectors with the most significant impacts (e.g. agricultural products, distribution, mining, oil & gas¹¹⁶) and dependencies on biodiversity (e.g. agriculture, infrastructure, energy and extraction¹¹⁷). Business should be encouraged to report on biodiversity that encompasses both direct and indirect impacts and dependencies. For example, food industries and retailers have a large indirect influence on biodiversity through their supply chains, and these indirect impacts and dependencies are often not reported on. In addition, more work is needed to understand what indicators and data are available nationally and internationally to help track progress towards the goals and targets and promote uptake by the private sector. To facilitate this, policy makers should consult with businesses on the practical application of the indicators to support implementation of the post-2020 global biodiversity framework.
- **Formally acknowledge in the development of the post-2020 global biodiversity framework that business and financial institutions are key actors to mainstream biodiversity:** for instance, in coordination with the CBD's Long-Term Approach to Mainstreaming (LTAM) biodiversity, Parties should acknowledge that businesses and financial institutions are key actors to mainstream biodiversity into policies and actions of financial, economic, planning, sectoral units within business, financial institutes and governments organizations.
- **Facilitate the engagement of business in the development and implementation of the post-2020 global biodiversity framework and the development of credible, business supported biodiversity measurement approaches and science-based targets:** there is an opportunity to ensure greater uptake of business reporting of the post-2020 global biodiversity framework. Currently, this integration is hampered by a lack of input from businesses on a national level. To overcome this barrier, business actions and performance should be incorporated into National Biodiversity Strategy and Action Plans (NBSAPs), and businesses, as well as many other stakeholders, should be involved in their design, development and implementation. For example, the French NBSAP (2011-2020) includes a public voluntary programme to endorse planned or existing business actions that contribute to the achievement of biodiversity objectives. To adopt a more strategic approach in mobilising business input at a national level through NBSAPs, policy makers could translate national targets into explicit sectoral objectives in order to set expectations regarding business contributions.
- **Commission an independent review of business-focused targets, measures and datasets as part of the process to develop and implement the post 2020 global biodiversity framework:** ideally Parties should commission an independent review of potential indicators and data for use by business prior to finalisation of the post-2020 global biodiversity framework, which could then inform the monitoring framework. This could include examining existing business commitments, data constraints, data availability and the applicability of existing indicators to the private sector against quality criteria (e.g. scientifically sound and produced over an appropriate timeframe) to ensure appropriate indicators and data are included. If this is not possible prior to the finalisation of the goals and targets, a similar review should be conducted

¹¹⁶ See: [Beyond 'Business as Usual': Biodiversity Targets and Finance: Managing biodiversity risks across business sectors.](#)

¹¹⁷ See: [Maxwell, Sean & Fuller, Richard & Brooks, Thomas & Watson, James. \(2016\). Biodiversity: The ravages of guns, nets and bulldozers. Nature. 536. 143-145. 10.1038/536143a.](#)

afterwards, to determine how best to track business contributions to the implementation of the framework.

3. Require mandatory corporate biodiversity performance disclosure

- **Engage in existing initiatives to develop an internationally agreed natural capital accounting framework:** for example, the System of Environmental-Economic Accounting Experimental Ecosystem Accounting (SEEA EEA), and Environmental Generally Accepted Accounting Principles (E-GAAP). This must ensure that approaches measuring and accounting for the wealth of nations and the value generated by business include natural capital and, as a part of that, biodiversity. Nations must enable this by generating the contextual data on natural capital on which their economies impact and depend. Engagement will promote harmonisation between business and government natural capital accounting and aid in the integration of this within financial accounting. Ensuring adequate inclusion of biodiversity in natural capital accounting, for example requiring businesses to measure impacts and dependencies on biodiversity and associated values, will be key for success, and help to address key data gaps in national natural capital accounting.
- **Provide explicit guidance on biodiversity measurement and valuation in addition to reporting within existing mandatory and voluntary reporting requirements:** existing corporate biodiversity measurement and valuation approaches are increasing; however, businesses are often confused by the complex landscape of approaches available to them. Several initiatives (for example the Science Based Targets Network, the European Business@Biodiversity Platform, and the Aligning Biodiversity Measures for Business collaboration) are developing explicit guidance to improve understanding of these corporate biodiversity measurement and valuation approaches, and how they can be used in reporting. This guidance could be built upon by Parties in the context of the post-2020 global biodiversity framework and adapted to support implementation of existing national-level mandatory and voluntary reporting requirements.
- **Address both listed and non-listed companies through mandatory requirements:** for instance, based on the EU Directive on non-financial reporting. Mandatory reporting can be used by listed and non-listed companies, which work under different accountability structures, to publicly inform shareholders and societal stakeholders in a universal format. Adopting generally accepted accounting standards and principles would enable increased comparability, minimised errors and improved quality of collected data. For example, in 2005 the International Financial Reporting Standards were adopted by European listed companies and have reduced issues of information asymmetry¹¹⁸.
- **Support voluntary biodiversity measurement and reporting for businesses that meet certain criteria as a precursor to a mandatory requirement to disclose company biodiversity performance:** following the example of the French government, policy makers should require mandatory biodiversity reporting and enhanced inclusion of biodiversity within non-financial reporting regulations. If successful, the outcomes of the TNFD would require businesses and financial institutions to review and disclose impacts and dependencies of their direct operations and supply chains on biodiversity, as well as risks and opportunities – in the same way that the TCFD is beginning to encourage more complete disclosure of climate-related risks. The need for mandatory reporting requirements could be increased over time, with a short-term focus on establishing a strong business case for action and encouraging voluntary

¹¹⁸ See: [Abad, D., Fuensanta Cutillas-Gomariz, M., Pedro Sánchez-Ballesta, J., & Yagüe, J. 2017. Does IFRS Mandatory Adoption Affect Information Asymmetry in the Stock Market?](#)

reporting, and then strengthening these requirements over time to include disclosure of key dependencies and impacts on biodiversity. The ultimate goal would be for policy makers to require full biodiversity footprinting by businesses and disclosure on net impacts on biodiversity.

- **Establish mechanisms for inter-governmental working and business-finance-government collaboration on business measurement and reporting of biodiversity performance:** ensure strong connections between business-focused and environmental-focused government departments, so that policies and legislations relating to business disclosure and biodiversity management are well coordinated and requirements for greater business transparency are communicated and acted on. This should take the form of a cross-ministry task force or community of practice, financed by national governments, or where appropriate, development finance. The aim would be to build capacity, implement a coordinated approach to understanding the implications of biodiversity loss for business and take national level steps to engage business, catalyse action and monitor and disclose performance.

Moving on these recommendations is vital to build on the significant progress made to date in measuring and disclosing business biodiversity performance. It is important that this progress is consolidated and enhanced through scaling up the use of these biodiversity measurement approaches to allow businesses and financial institutions investing, loaning to or insuring them to demonstrate a net positive impact on or no net loss of biodiversity. Without this, society will be moving into a new phase of global biodiversity policy that fails to measure, track or hold companies and financial institutions to account for their impacts and dependencies on biodiversity, thereby undermining the revised global biodiversity goals.

Conclusions

It is broadly accepted that it is not possible to manage an issue that cannot be measured. Putting in place effective measurement, accounting, valuation and disclosure frameworks for natural capital, and biodiversity as a part of this, will be essential to drive government and business action on biodiversity – just as with climate change. This will not only make the value of biodiversity visible to business decision makers, but also make it matter by demonstrating in unequivocal terms the materiality of biodiversity to business.

Significant progress has been made on developing approaches to measure the biodiversity performance of companies since the CBD identified a need for greater transparency on business commitments, engagement and measurement of biodiversity in 2016. More than 12 different measurement approaches have been developed or are being piloted for different sectors and different decision contexts. Furthermore, work is underway to provide frameworks and guidance around these measurement approaches that allow them to be better applied and to increase business transparency on biodiversity.

The two fundamental barriers increased uptake of measurement approaches are 1) a lack of perceived materiality of biodiversity as an issue for business and; 2) the lack of strong business drivers to measure and disclose biodiversity performance.

Despite these barriers, a small number of leading businesses are already using these approaches to understand risk and opportunity, define and deliver strategies and to demonstrate performance in reducing biodiversity loss. This demonstrates that it is now entirely possible to measure biodiversity impacts and performance. However, broad scale uptake of biodiversity measurement approaches and action to halt biodiversity loss will not occur unless a concerted effort by policy makers is made to address these barriers to mainstreaming the issue and facilitate a level playing field.

Annex 1: Experts interviewed

The following experts were interviewed in 2019, to inform the views represented in the report:

Name	Country
Zhao Yang	China
Elisa Romano-Dezolt	Brazil
Didier Babin	France
Caroline van Leenders, Martin Lok	The Netherlands
Kiruben Naicker	South Africa
Vin Fleming	United Kingdom

Annex 2: Glossary

The following definitions are used throughout the document:

Term	Definition
Business application for biodiversity measurement	The intended use of the results of a company's biodiversity measurement, to help inform decision making ¹¹⁹ .
Biodiversity measurement approach	A tool to assess biodiversity performance for different business applications ¹²⁰ .
Biodiversity target	The objectives relating to what the business wants to achieve in relation to the management of biodiversity; these objectives could be voluntary or regulatory, and qualitative or quantitative ¹⁰⁹ .
Business biodiversity disclosure	Business reporting on biodiversity impact according to international frameworks, or according voluntary or mandatory reporting requirements ¹⁰⁹ .
Cumulative impact	Includes direct and indirect impacts, past, present and future, resulting from the actions of all actors, not just the target organisation or project assessed ¹²¹ .
Direct impact	Impacts directly attributable to a defined action or project ¹²² .
Indicator	A quantitative or qualitative factor or variable that provides a simple and reliable means to measure achievement, to reflect changes connected to an intervention, or to help assess the performance of a development actor ¹²³ .
Impact indicators	Sometimes known as 'performance' or 'outcome' indicators. These provide information on actual impacts of actions taken to address biodiversity or drivers of change (UNEP-WCMC 2014).
Implementation indicators	Sometimes known as 'process' or 'output' indicators, these are used to monitor the completion of actions that enable conservation to be achieved (UNEP-WCMC 2014) ¹²⁴ .
Indicator	A quantitative or qualitative factor or variable that provides a simple and reliable means to measure achievement, to reflect changes connected to an intervention, or to help assess the performance of a development actor ¹²⁵ .

¹¹⁹ See: [Natural Capital Coalition \(2016\) Natural Capital Protocol](#).

¹²⁰ See: [UNEP-WCMC \(on behalf of the Aligning Biodiversity Measures for Business collaboration\). 2019b. Discussion Paper 1 for the Technical Workshop on Aligning Biodiversity Measures for Business: Identifying common ground between business biodiversity measurement approaches](#)

¹²¹ See: [Endangered Wildlife Trust & South African National Biodiversity & Business Network \(In Press\) The Biological Diversity Protocol \(BD Protocol\)](#).

¹²² See: [IAIA \(2018\) Biodiversity and Ecosystem Services in Impact Assessment](#).

¹²³ See: [OECD/DAC 2002 Development Results: An overview of results measurements and management](#).

¹²⁴ See: [UNEP-WCMC \(2014\). Incorporating Indicators into NBSAPs- Guidance for Practitioners](#).

¹²⁵ See: [OECD/DAC 2002 Development Results: An overview of results measurements and management](#).

Term	Definition
Indirect impact	Impacts resulting from the project that may occur beyond or downstream of the boundaries of the project site and/or sometime after the project activity has ceased ¹¹³ .
Measure	An assessment of the amount, extent or condition, usually expressed in physical terms. Can be either qualitative or quantitative ¹²⁶ .
Metric	A system or standard of measurement. A combination of measures or modelled element ¹¹⁵ .
Natural capital accounting	The process of compiling consistent, comparable and regularly produced data using an accounting approach on natural capital and the flow of services generated in physical and monetary terms ¹²⁷ .
Natural capital assessment	The process of identifying, measuring and valuing relevant ("material") natural capital impacts and/ or dependencies, using appropriate methods ¹¹⁶ .
Net gain	A target for a development project in which the impacts on biodiversity caused by the project are outweighed by measures taken to otherwise mitigate the project's impacts ¹²⁸ .
No net loss	A target for a development project in which the impacts on biodiversity caused by the project are balanced by measures taken to otherwise mitigate the project's impacts ¹¹⁷ .
Pressure	Driving forces lead to human activities such as transportation or food production (i.e. result in meeting a need). These human activities exert 'pressures' on the environment, as a result of production or consumption processes ¹²⁹ .
Primary data¹³⁰	Primary data is data that is collected first-hand by the researcher, through direct approaches such as fieldwork or surveys. Examples of primary data sources are: • Internal business data • Site level data collected through field surveys • Previous ecological studies carried out in the area/region within an ecologically relevant timeframe. For example, the IUCN Red List data updates at least every 10 years for the data to be deemed relevant and appropriate for use in assessments. • Data collected from suppliers or customers
Secondary data	Secondary data is data that has already been collected and made available by researchers, Examples of secondary data sources include:

¹²⁶ See: [UNEP-WCMC \(on behalf of the Aligning Biodiversity Measures for Business collaboration\). 2019. Discussion Paper 1 for the Technical Workshop on Aligning Biodiversity Measures for Business: Identifying common ground between business biodiversity measurement approaches](#)

¹²⁷ See: [Natural Capital Coalition \(2016\) Natural Capital Protocol](#).

¹²⁸ See: [Business and Biodiversity Offset Programme \(2018\) Updated Glossary](#).

¹²⁹ See: [Kristensen, P. \(2004\) The DPSIR Framework. Paper Presented at the 27 – 29 September 2004 Workshop on a Comprehensive/Detailed Assessment of the Vulnerability of Water Resources to Environmental Changes in Africa Using River Basin Approach](#).

¹³⁰ For definition see: [Integrating Biodiversity into Natural Capital Assessments: A series of Biodiversity Guidance to accompany the Natural Capital Protocol](#)

Term	Definition
	• Published, peer-reviewed, and grey literature (for example, life-cycle impact assessment (LCIA) databases; industry, government, or internal reports) • Estimates derived using modeling techniques, including: • Environmentally extended input-output (EEIO) models. Many EEIO initiatives exist, with commonly used ones including EXIOBASE, EORA and GTAP. • Productivity models • Mass balance • Geospatial modelling of extent and condition of biodiversity

Annex 3: Summary of biodiversity measurement approaches

The table below provides an overview of biodiversity measurement approaches. This was based on research undertaken by Arcadis on behalf of the EU Business@Biodiversity Platform and the UK Trade Development and the Environment Hub¹³¹.

The table below outlines the different biodiversity measurement approaches and their status, as well as highlighting whether they can be used for external disclosure and policy targets.

Name	Description	Status	Private Sector Engagement	Used in external disclosure	Used in policy targets
Agrobiodiversity Index (ABD) Biodiversity International	Assesses risks in food and agriculture related to low agrobiodiversity. Index based on 33 indicators. Assesses: dietary diversity, crop diversity, seed genetic diversity, level of safeguarding for the future, and benefit to local livelihoods.	Ongoing development	Clarmondial AG	No	No
Biodiversity Footprint Calculator Plansup	Tool calculates the biodiversity impact of a company's supply chain, production process and transport that can be related to one or more products both for a current and alternative or future situation.	Operational	Piloting conducted with Desso, Alpro	No	No
Biological Diversity Protocol Endangered Wildlife Trust	Focuses on internal and external disclosure/ reporting, non-financial accounting and net biodiversity impacts	Ongoing development	Not specified	Yes	No
Biodiversity Footprints for Financial Institutions ASN Bank, CREM, PRé	Designed to provide an overall biodiversity footprint of the economic activities a financial institution invests in. The methodology allows calculation of the environmental impact and the environmental footprint of investments within an investment portfolio.	Operational and ongoing refinement	ASN Bank	Yes	No
Biodiversity Impact Metric (BIM)	Designed to assess the impacts of a company's activities from raw material sourcing. It	Operational	Members include Kering, ASDA, Mondi,	Yes	No

¹³¹ More information: [Environment and Trade Hub](#)

Name	Description	Status	Private Sector Engagement	Used in external disclosure	Used in policy targets
Cambridge Institute for Sustainability Leadership Further information 1 Further information 2 Further information 3	provides information of how and where the company can reduce their impact. BIM has been developed to assess impact in soil and water that, combined with biodiversity, will be called 'Healthy Ecosystems Metrics' but will be released late 2019 and are designed to assess a company's contribution to maintenance of an ecologically functional landscape.		Volac; Mars; The Crown Estate; Anglian Water; Yorkshire Water; Primark.		
Biodiversity Indicators for Site-based Impacts UNEP-WCMC, Conservation International, Fauna & Flora International	Joint initiative with Conservation International and Fauna & Flora International, with support from IPIECA and the Proteus Partnership. The project has developed and it is testing a methodology that meets the needs of extractive companies in understanding their performance in mitigating their impacts on biodiversity. The methodology is being piloted by extractives companies throughout 2019 and will be refined following feedback from the pilots then published for broader uptake.	Operational	Proteus Partners, IPIECA and ICMM members	Yes	No
Biodiversity Monitoring System for the Food Sector Global Nature Fund and Lake Constance Foundation	Focuses on site-level and supply chain biodiversity impacts by processing aggregated data sets. 25 indicators covering drivers of loss of biodiversity. Possibility to filter data for a region, country, crop, production typ.	Ready for application	Piloting in Preparation	No	No
Biodiversity Performance Tool (BPT) Solagro	Aims to identify and assess the state of potential for biodiversity on a farm in order to propose an action plan to preserve or promote biodiversity. Aimed at food sector actors (product quality or sourcing managers) and certifiers/ auditors. 78 indicators covering characterisation of semi-natural	Operational	Kaufland, HIPP, Rainforest Alliance etc.	No	No

Name	Description	Status	Private Sector Engagement	Used in external disclosure	Used in policy targets
	habitats, characterisation of farming practices and of socio-economics of the farm are assessed in a score card.				
Environmental Profit & Loss Account (EP&L) Kering	The EP&L measures carbon emissions, water consumption, air and water pollution, land use, and waste production along the entire supply chain, thereby making the various environmental impacts of the company's activities visible, quantifiable, and comparable. These impacts are then converted into monetary values to quantify the use of natural resources.	Operational	Kering	Yes	No
Global Biodiversity Score (GBS) CDC Biodiversité	It provides an overall and synthetic vision of the biodiversity footprint of economic activities. It is measured by the mean species abundance. Mean Species Abundance (ratio between the observed biodiversity and the biodiversity in its pristine state) based on PBL Netherlands Environmental Assessment Agency's model of five terrestrial pressures (land use, nitrogen deposition, climate change, fragmentation, infrastructure/ encroachment) and 5 aquatic pressures, and their impacts on biodiversity.	Operational	B4B+ Club of about 35 large businesses in most industries	Yes	Yes
LIFE Key (LIFE) LIFE Institute	LIFE Methodology helps organisations in identifying their impacts and designing a strategic plan to reduce, mitigate and compensate for them, including a specific approach to reduce impacts in the supply chain. By using the LIFE Biodiversity Estimated Impact Value (BEIV) an organisation calculates and evaluates an organisation's impact based on five environmental aspects	Operational some South American countries. Expanding Latin America and Europe	28 companies/ organisations; 5 companies in Brazil and one company in Paraguay are already LIFE certified.	Yes	No

Name	Description	Status	Private Sector Engagement	Used in external disclosure	Used in policy targets
	considering quantity and severity criteria.				
<u>Product Biodiversity Footprint (PBF)</u> I Care & Consult,	Combines biodiversity studies and companies' data to quantify the impacts of a product on biodiversity all along the product's life cycle stages in order to provide recommendations for changes	Operational and undergoing refinement	Kering, Avril and L'Oréal	No	No
<u>Species Threat Abatement and Recovery (STAR) Metric</u> International Union for Conservation of Nature (IUCN)	The STAR method measures the contribution that investments can make to reducing species extinction risk. It can help the finance industry and investors target their investments to achieve conservation outcomes and can measure the contributions these investments make to global targets such as the SDGs.	Finalising pilots	Smallholder agriculture	Yes	Yes

Acknowledgements

This report was part of the Aligning Biodiversity Measures for Business collaboration led and conceived by the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) with support from the Boticário Foundation and the UKRI Global Challenges Research Fund (UKRI GCRF) Trade, Development and the Environment Hub.

About the UN Environment Programme World Conservation Monitoring Centre

The UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) is a global Centre of excellence on biodiversity. The Centre operates as a collaboration between the UN Environment Programme and the UK-registered charity WCMC. Together we are confronting the global crisis facing nature. For more information, visit: unep-wcmc.org

About the Aligning Biodiversity Measures for Business

The Aligning Biodiversity Measures for Business collaboration aims to form a common view among key stakeholders on the measurement, monitoring and disclosure of corporate biodiversity impacts and dependencies. It will encourage the development of more credible indicators of corporate contribution to global biodiversity goals into corporate reporting and global policy frameworks. Organisations engaging in the initiative include: IUCN, Cambridge University (Cambridge Institute for Sustainability Leadership), The Nature Conservancy, the EU Business @ Biodiversity Platform, CDC Biodiversité, PRé, CREM, Fauna & Flora International, Conservation International, Biodiversity International, The Biodiversity Consultancy, Arcadis, Endangered Wildlife Trust, PBL Netherlands Environment Assessment Agency, the Natural Capital Coalition, Ecoacs, Global Nature Fund and Arizona State University.

Authors

The authors of this report are Annelisa Grigg, Audrey Burns, Julie Dimitrijevic, Katie Leach, Kim Dunn and Sharon Brooks of UNEP-WCMC and Joël Houdet of the Endangered Wildlife Trust.

Additional contributions

We would like to express our gratitude to those who reviewed and provided feedback to the document, Neil Burgess, Katherine Despot-Belmonte, Hillary Allison, Jerry Harrison, Daniela Guaras, Matt Jones, Johan Lammerant, Bianca Brasil, Vin Fleming, Caroline Van Leenders, Martin Lok, Leah Gerber, Joshua Berger, Stefan Hörmann, Mark van Oorschot, Wijnand Broer, Cath Tayleur, Martin Hollands, Phillip Bubb, Lars Müller, Danielle Shaw, Anke Salzmann Jessica Smith and Hannah Brooke. The report was produced following discussions at an initial workshop co-hosted with the EU Business@Biodiversity Platform in Brussels in March 2019, subsequent sub-group discussions and a follow-on workshop in Rio de Janeiro, Brazil in October 2019. We would like to express our gratitude to the country representatives interviewed, who included Elisa Romano-Dezolt, Zhao Yang, Didier Babin, Vin Fleming, Caroline van Leenders, Martin Lok, and Kiruben Naicker. We would also like to thank the participants of the webinar and the two workshops who contributed to lively discussions and provided comments to inform this paper. Finally, thanks to the European Investment Bank and Firjan for kindly hosting and supporting the Brussels and Rio workshops respectively.

UNEP-WCMC
219 Huntingdon Road
Cambridge
CB3 0DL
United Kingdom

+44 (0)1223 277314
info@unep-wcmc.org
www.unep-wcmc.org

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