Guide: How to design and implement corporate biodiversity action

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Introduction

We are currently experiencing a global climate and biodiversity crisis. The 2022 WWF Living Planet Report highlighted that the global wildlife population decreased by 69% between 1970 to 2018, and according to the International Union for the Conservation of Nature (IUCN), more than 44,000 species are now threatened with extinction. However, the actual number of threatened or extinct species is uncertain, as up to 90 percent of Earth's species remains unknown to science, according to University of Copenhagen, Department of Food and Resource Economics (IFRO). Furthermore, in the 2019 Global Assessment report on Biodiversity and Ecosystem Services, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) estimate up to one million species are at risk of extinction, more than any time in human history.

Major drivers of biodiversity loss include land-use change, aquatic habitat loss, deforestation, pollution, pesticides and nutrient runoff, invasive species, direct human impact (e.g., poaching), and climate change. Business activities drive these pressures on biodiversity through their direct operations and value chains. At the same time, there is a growing understanding that businesses rely on the ecosystem services provided by nature, such as food provision, soil formation, and carbon storage.

With the recognition of the compounding biodiversity and climate crisis, there is a move towards international and national government action:

- The Paris Agreement was adopted in December 2015 by the UN Framework Convention on Climate Change (UNFCCC), which led to the development of the Taskforce for Climate-Related Financial Disclosures (TCFD) and the Science Based Targets Initiative (SBTI), to help companies and Financial Institutions act in line with the Paris Agreement.
- The Kunming-Montreal Global Biodiversity Framework (GBF) was adopted in December 2022 by the UN Biodiversity Convention. The agreement is a significant milestone aiming to halt and reverse biodiversity loss, with Target 15 and 19 identifying businesses as critical actors in the process.

Within the European Union (EU), there has been a significant push for new policies, regulations, and initiatives aimed at holding companies and financial institutions accountable for their impacts on climate and biodiversity, especially through the EU Green Deal and the EU Biodiversity Strategy. These

efforts are in alignment with the objectives outlined in the GBF and complemented by directives and regulations such as the EU Corporate Sustainability Reporting Directive (CSRD) and associated European Sustainability Reporting Standards (ESRS), EU Corporate Sustainability Due Diligence Directive (CSDDD, proposal currently being negotiated), and the EU Deforestation Regulation (EUDR).

Alongside the policy agenda, there has been a recent emergence of voluntary biodiversity initiatives such as the Science Based Targets Network (SBTN) and Taskforce for Nature-related Financial Disclosures (TNFD) that go beyond the legal requirements. These platforms are developing processes and tools for companies and institutions to account for and disclose their impacts to biodiversity and set targets to avoid and reduce adverse impacts.

Increasingly, companies and financial institutions are looking for ways to mitigate their adverse impacts to biodiversity within their direct operations, as well as across their value chains. However, there is a need for clear guidance to help businesses navigate the complex field of biodiversity initiatives and standards to decide on the most suitable tools to enable effective action.

Purpose and structure of the report

The Danish Biodiversity Partnership was initiated in August 2023 as a collaboration of 22 representatives from industry associations, Non-Government Organisations (NGOs), trade unions, and research institutions. It is facilitated by the Danish Ministry of Environment, the Danish Ministry of Foreign Affairs, and the Danish Business Authority. An important goal for the Partnership's is to actively engage the private sector in Denmark to formulate recommendations and to identify how businesses can act to reduce their adverse impact on biodiversity.

The purpose of this report is to offer guidance to Danish and European companies and financial institutions on the most effective methods for implementing ambitious, relevant, and immediate corporate biodiversity action based on current knowledge and available tools and processes. It draws upon complementary global and EU-level biodiversity initiatives and legal frameworks, such as SBTN's 'Science Based Targets for Nature', TNFD, the Aligning Account Approaches for Nature (Align) Project, and ESRS.

The report is structured around seven core steps, as recommended for companies and financial institutions to follow when taking biodiversity action. These steps have been adapted from the Science Based Targets for Nature approach, and are outlined below:

1. Assessment
Identify key biodiversity pressure areas within your operational boundaries and supply chains.

2. Prioritisation
Identify the most relevant areas for biodiversity action for your organization.

3. Goals & targets
Set goals and targets for your business, which align with globally agreed biodiversity targets.

4. Measurement
Identify the most suitable types of data to collect to measure the baseline state of nature and your impact drivers.

5. Action
Define and implement concrete actions and pathways to meet your biodiversity goals

6. Monitoring
Track progress from the baseline towards achieving your biodiversity targets.

7. Reporting
Report on your biodiversity impacts and dependencies, as well as progress towards biodiversity goals.

Step 1: Assessment

Purpose and Outcome

The first step in the development of a corporate biodiversity strategy is to identify and assess biodiversity-related impacts, dependencies, risks, and opportunities that are material, or relevant, to your business. This involves identifying where and how your business activities interact with nature, and understanding where potential impacts and dependencies exist, whether they be linked to your own operations or your value chains.

Identifying biodiversity risks and opportunities in your direct operations and value chains will help you prioritise areas for your business to reduce its contribution to biodiversity loss. It will also enable you to set corporate expectations regarding the level of effort and resources needed to achieve your biodiversity goals.

The main outcomes of the **assessment** are:

- Your direct operations and high-risk value chains have been mapped,
- You have identified the most relevant biodiversity impacts and dependencies in your direct operations and across your value chains through a double materiality assessment (as described below), and
- You have identified the biodiversity-related risks and opportunities that are most significant to your business.

Key processes for assessment

Numerous processes and tools exist to help companies and financial institutions assess their material impacts and dependencies on biodiversity. The following process is recommended for organisations to help identify the most critical aspects to focus on in your corporate biodiversity strategy, based on the business context.

Mapping your direct operations

For companies that own or manage farms, mines, manufacturing facilities, or other production sites located near to nature, it is important to understand the direct biodiversity impacts associated with these business activities. This involves mapping the locations and boundaries of your operations to determine their proximity to, and potential interactions with, natural ecosystems such as forests and waterbodies, and with threatened species.

Using GIS mapping tools to plot your sites, features, and boundaries and then overlaying these with biodiversity datasets, such as the Integrated Biodiversity Assessment Tool (IBAT), will enable you to visualise risks and opportunities relevant to your business. See SBTN Assessment Guidance for further information.

Mapping your value chains

It is important to understand your contributing impacts to, and dependencies on, biodiversity through your choice of products, suppliers, or portfolio. Mapping your value chains allows you to pinpoint where your suppliers or clients operate and where your products originate. With GIS, you can overlay this data with biodiversity data layers, such as key biodiversity areas or threatened species layers, helping to reveal whether your products originate from sensitive ecosystems or areas of high biodiversity value. It will also enable you to identify opportunities for ecological mitigation or restoration. As it may not be feasible for financial institutions or companies with complex value chains to map all their value chains, prioritisation is key – see Step 2.

Double Materiality Assessment

Double materiality is an important concept embedded into regulations and initiatives, such as ESRS, SBTN, and TNFD. It represents a standard approach for businesses to identify relevant environmental and financial impacts and dependencies related to their activities and relationships. Impacts of businesses on biodiversity are commonly described using IPBES' pressure categories, while the impacts to businesses from biodiversity loss occur through the reduction in ecosystem services of which businesses depend. For example, this includes financial losses resulting from supply shortages or disruptions, exposure to lawsuits or media scrutiny, or loss of social licenses to operate. The following sections offer guidance on the recommended double materiality assessment approach, as adopted by SBTN and TNFD.

REGULATORY ASPECTS

Step 1: Assessment will help companies meet parts of the following EU legal requirements *(Note: Not applicable to all businesses)*:

- ESRS E4 SBM 3 – Material impacts, risks and opportunities and their interaction with strategy and business model.

- ESRS 2 IRO-1 Description of processes to identify and assess material biodiversity and ecosystem-related impacts, risks, dependencies, and opportunities.

1) Screening for impacts and dependencies

Screening for biodiversity pressures and impacts in your direct operations and value chains involves identifying the potential negative effects that your business activities and relations may have on biodiversity and ecosystem services. This can be done on different scales, from direct observation of your own operations, to identifying high risk commodities in your value chains, to assessing trends in your portfolio by assessing average impacts by sector. By conducting such screening, you aim to estimate your contribution to biodiversity decline and thus identify priority areas for intervention.

Screening for dependencies involves identifying and analysing the extent to which your operations, products, or services depend on biodiversity and the benefits provided by functioning ecosystems. This includes identifying specific ecosystem services that are most relevant to the organisation's activities and assessing the potential business and financial effects of biodiversity loss on those services.

Recommended tools for all types of businesses to support impact and dependency screening include the ALIGN Project recommendations and supplemental guidance, SBTN assessment guidance, and WWF Biodiversity Risk Filter. Financial institutions should also consider ENCORE and the Corporate Biodiversity Footprint tool to screen impacts and dependencies across a larger portfolio.

2) Risk and Opportunity Assessment

The next step is to identify your risks and opportunities where impact and dependencies were found. Biodiversity risks are potential adverse impacts and liabilities your business faces due to your activities, relations, or sourcing practices, such as damaged reputation for inaction, or productivity losses due to overexploitation of natural resources. Opportunities are potential positive effects where your business can avoid or reduce impact to biodiversity or regenerate ecosystem services. Tools and databases to help you identify and assess risks and opportunities in your operations and value chains include the TNFD LEAP Approach, WWF Risk Filter Suite, Key Biodiversity Areas, SBTN Natural Lands Map, AFi Deforestation Risk Toolset, Global Biodiversity Information Facility (GBIF), and Map of Biodiversity Intactness.

CASE EXAMPLES: Here are concrete examples of how to conduct **Assessment** of biodiversity for different types of organisations

Primary Producer	Downstream Manufacturer or Retailer	Financial Institutions	Small and Medium-sized Enterprises
Use GIS tools (e.g., ArcGIS) to map owned farm/forest boundaries. Overlay with IBAT's data layers and WWF Risk Filters: e.g., key biodiversity areas, protected area boundaries, threatened species (e.g., freshwater fish, shorebirds) occurrences and habitat distribution. Identify areas or activities with impact drivers (e.g., pesticide application on downslopes leading to waterbody), and dependencies (e.g., freshwater irrigation source).	Screen for high-impact commodities in your product list using the SBTN Screening Tool. Identify products with the highest potential biodiversity impacts (e.g., beef, tropical timber), and focus on those with large volumes sourced. Select a feasible number of these products to map the value chains back to the farm level, and conduct risk assessments. Where risks exist, flag these areas as potential opportunities for risk mitigation (i.e., intervention) for Step 5 Action.	Screen for biodiversity-related risks in your portfolio using ENCORE and assess your contribution to biodiversity impacts using the Corporate Biodiversity Footprint tool. Identify high-risk companies in your portfolio, including producers of large volumes of high impact commodities. Conduct risk assessments using secondary data collected from GBIF or data vendors. Identify opportunities for divesting from businesses with significant adverse biodiversity impacts and investing in businesses committed to net-gains in biodiversity.	Map your direct operations and identify where they have the closest interactions with nature. Understand where impacts may occur by identifying the origin countries of your high-impact commodities, and their associated volumes. Conduct a high-level risk assessment using the WWF Biodiversity Risk Filter to understand the most significant biodiversity and financial risks that affect your business.

Step 2: Prioritisation

Purpose and Outcome

Based on the findings in Step 1, the purpose of prioritising is to determine the locations, economic activities, and/or value chains that will be the focus for your biodiversity action (Step 5). This involves interpreting and ranking locations and activities according to their relevance to your business, enabling you to set specific targets and deliver positive impact.

The main outcomes of **prioritisation** are:

- You have identified and ranked your priority locations, business activities, and value chains, and
- You have set priorities considering financial, business, societal, and ecological factors, including where co-benefits exist.

Key processes for prioritisation

Both the SBTN and TNFD advocate a systematic approach to prioritising locations, business operations and value chains. This prioritisation process is crucial for your organisation to target efforts on specific geographies, regions, sectors, activities, or products where biodiversity impacts, risks, opportunities, and dependencies are most pronounced. This recognises that impacts are location-specific and based on the specific business activities. Prioritisation is an adaptive process, and your priorities will likely change when new information is received, such as state of nature data collected in Step 4. The following is a recommended approach to prioritisation for all companies and institutions.

Identifying locations, activities, and value chains for prioritising

The first step in the process is to use the results of your mapping exercise (refer to Step 1) to set target boundaries of your direct operations, your clients' operations, or your product origins. This can be at different spatial scales depending on your business context.

For companies, SBTN requires targets to apply at least within sub-national scale, while financial institutions may go broader. For example, target boundaries may represent specific sites and assets (e.g., a farm or a wastewater outflow), groups of sites, specific ecoregions (e.g., coastal areas), biomes (e.g., the Amazon), political regions (e.g., states), countries, industry sectors in a region (e.g., food and beverage), or commodity-specific production regions (e.g., soy in southern Europe). Identifying target boundaries will enable you to determine where you have presence or influence, and thus where you can act.

Within your target boundaries, use the results of your materiality assessment (Step 1) to help determine priority business activities and value chains. Focus on business activities and clients in your value chain that come with high risk of biodiversity loss related to the product origin, production and manufacturing processes, land or water management practices, resource use, and waste disposal. Also focus on your purchased and marketed products which contain commodities with high impact to biodiversity (see SBTN High Impact Commodity List), and those which you depend on most financially.

Choosing your priorities

Based on SBTN's approach, the next step is to interpret and rank your priorities, including your identified target boundaries, business activities, and value chains. Ranking your priorities requires you to consider the ecological context at the locations in which you or your value chains operate or have influence over. Locations, activities, and value chains with the greatest actual or potential adverse ecological impact should be prioritised for action (see Step 5 for the different types of action). This is often where raw material extraction or other production practices interact with natural areas, and thus where direct impact drivers are prominent. Consider prioritising locations with the following ecological characteristics, and activities and value chains that may have adverse impacts on these areas:

- Areas with high ecological integrity (e.g., intact and unfragmented natural ecosystems), and areas with key biodiversity values (e.g., primary forests, coral reefs, critical habitats of threatened and endemic species, ecological corridors) that may be under threat,

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REGULATORY ASPECTS

Step 2: Prioritization will help companies meet parts of the following EU legal requirements *(Note: Not applicable to all businesses)*:

- ESRS E4 SBM 3 – Material impacts, risks and opportunities and their interaction with strategy and business model.
- ESRS 2 IRO-1 Description of processes to identify and assess material biodiversity and ecosystem-related impacts, risks, dependencies, and opportunities.

- Areas subject to land degradation, where actions are needed help to bring back biodiversity (e.g., areas under intensive agriculture with rapidly declining soil health, or areas with spreading invasive plants), and
- Areas with high ecosystem service provision that support your business.

Additionally, it is necessary to take the following socioeconomic aspects into consideration when prioritising business activities and value chains for action:

- Product-level information, including the composition, quantity, and certifications of products sourced, enabling you to prioritise products or portfolios with a lower biodiversity footprint,
- Product origins, to identify high-risk sourcing countries, sub-national regions, and biomes, and prioritise those with mitigated risks,
- Social issues within your priority locations and value chains, to prioritise those without adverse social impacts, such as violations of human rights, and impacts to health and well-being. This may require consultation with local stakeholders such as Indigenous groups and communities, and
- Stability of supplier relationships, to prioritise more stable relationships in which you have greater leverage to influence and act.

Prioritising locations and value chains requires you to evaluate the feasibility of action and the organisations strategic interest. Your company should focus on locations where there are sufficient financial and human resources available to implement and monitor your biodiversity mitigations. Incorporating your biodiversity priorities into your business mission and objectives is also important, and will enable customers, shareholders, suppliers, and other stakeholders to engage with and support your biodiversity strategy. Identifying areas and locations with potential co-benefits will make this process more feasible. For example, a co-benefit may exist in a location where an impact driver, such as soil pollution, can be reduced to improve an ecosystem service, such as soil quality, for better crop growth.

Finally, based on the above considerations, you can rank your priorities, in order of relevance to your business and to identify which ones you will act on first. You should rank your priorities based on which ones have the greatest positive or adverse impacts to biodiversity, the highest risk, the greatest opportunities for action, and which ones you depend on or invest in most.

Tools to help you rank your priority locations include the SBTN Prioritization Guidance, Biodiversity Impact Metric, and the Species Threat Abatement and Restoration (STAR) metric.

CASE EXAMPLES: Here are concrete examples of how to do **Prioritisation** for different types of organisations.

Primary Producer	Downstream Manufacturer or Retailer	Financial Institutions	Small and Medium-sized Enterprises
Analyze your map of organisational boundaries from Step 1, including all the physical locations and boundaries of your production sites. Choose and rank your priority locations including specific sites and activities where biodiversity values and adverse impacts are greatest. This may include where harvesting or grazing livestock occurs in sensitive habitats, where endangered species live, or where water availability is limited and may be depleted if overused.	Identify your target locations where the highest impacts, dependencies, risks and opportunities exist. Request primary data from your suppliers and collect secondary data to help identify priorities, use STAR metric to rank the locations where you want to set targets, consider financial feasibility and where the ecological and social values are greatest. Consider locations with co-benefits, such as areas where mitigating impacts may increase both biodiversity and food resources for local communities.	Identify target boundaries by focusing on companies in your portfolio that extract or use high impact commodities and those that operate in high-risk regions. Use the Biodiversity Impact Metric and SBTN combined ranking approach to rank these locations based on their risk to biodiversity. Prioritise the locations with high biodiversity values, those which need the most financial support to reduce impacts, and where you have influence by contributing the most monetary funds.	Analyse your site maps and sourcing locations from Step 1, based on their biodiversity values, your potential impacts, and the volume of products that your company is sourcing. If the specific origin locations of your products are known, prioritise sourcing high volume products from areas where the risk of biodiversity and social impact has been mitigated – See Step 5 for specific actions. Join biodiversity initiatives with NGOs, academics, and other stakeholders to increase your capacity to act.

Step 3: Goal and Target Setting

Purpose and Outcome

The purpose of goal and target setting is to establish a clear direction to guide your business's biodiversity efforts in alignment with globally agreed targets and planetary boundaries. Goals refer to timebound high level commitments, whereas targets are more specific, measurable, time-bound, and objective.

Key goals at the international level relevant to nation states and organisations are set out in the post 2020-Global Biodiversity Framework (GBF), the UN Sustainable Development Goals (SDGs), and the Global Goal for Nature.

The Global Goal for Nature (GGN), launched in September 2023 by 27 nature conservation organisations, aims to "*Halt and Reverse Nature Loss by 2030 on a 2020 baseline, and achieve full recovery by 2050*". This complements the UNFCCC's 'net zero' emissions goal. Similarly, the GBF sets out 4 goals for 2050 with 23 targets for 2030. Specifically, target 15 requires businesses to assess, disclose, and reduce biodiversity-related risks and adverse impacts.

The main outcomes of **goal and target setting** are:

- You have set an overarching goal aligned to international frameworks on biodiversity, and
- You have defined a set of specific targets which are time-bound and measurable.

Key processes for setting goals and targets

SBTN is emerging as the leading platform when it comes to setting company-wide targets on biodiversity. Finance for Biodiversity's approach is a more suitable option for financial institutions, while the no net loss (NNL) and net gain approach is mentioned as an option but is considered underdeveloped.

Science-Based Targets for Nature Approach

For companies following this approach, SBTN requires that you set and disclose biodiversity targets for validation. They should be directly related your impacts and dependencies, as identified during the materiality assessment and prioritisation process. Targets should be specific, measurable, attainable, relevant, and time bound. They should be aligned to the GBF targets, and their development should involve key stakeholder consultation.

In the target-setting process, it is important to employ measurable indicators to track progress effectively, while also ensuring the availability of resources, capabilities, and actions necessary to achieve the targets, prevent greenwashing, and meet the designated timeframe. Based on your progress, targets can be refined to enhance specificity at the local level.

At the time of writing this report, SBTN is in the trial phase, in which selected companies could submit 1) freshwater targets, and 2) land-based targets for validation. While initial methods for setting biodiversity targets were released in late 2023, SBTN plans to deliver further guidance by the end of 2024.

SBTN Freshwater targets:

Establishing freshwater targets requires understanding ecological pressures, such as water usage and pollution, estimating the company's impact on the current state of freshwater resources (e.g., river flows and water quality), identifying priority locations (see Step 2), and formulating targets aimed at reaching the desired state of nature, represented by threshold values. Subsequently, employing water models aids in determining the maximum allowable pressures, which form the basis for science-based targets, and developing an action plan to achieve these objectives.

SBTN Land-based targets:

Setting land-based targets within SBTN stipulates three target areas:
- No conversion of natural ecosystems to avoid primary drivers of biodiversity loss, including land use change and GHG emissions,
- Land footprint reduction to reduce ecological degradation that affects biodiversity; and
- Landscape engagement to ensure a stakeholder centered approach for ecosystem regeneration.

REGULATORY ASPECTS

Step 3: Goal and Target setting will help companies meet parts of the following EU legal requirements *(Note: Not applicable to all businesses)*:

- ESRS E4-4 – Targets related to biodiversity and ecosystems.

Once targets are submitted, SBTN initiates a process to validate them to ensure the targets are ambitious enough and up to their standard. Only when targets have been validated, will companies be able to claim they have established a science-based target. However, this validation process is currently in a pilot stage and not yet available for all companies.

Finance for Biodiversity Approach

More applicable to financial institutions is [Finance for Biodiversity's Nature Target Setting Framework](). Under collaboration with SBTN and the United Nations Environment Programme Finance Initiative (UNEP FI), this framework aims to establish a shared understanding among investors regarding target setting and to align private financial flows with the objectives of the GBF.

Initially focusing on listed equity and corporate bonds, the framework will be expanded in 2024 to cover specific targets for ten priority sectors and incorporate other asset classes and positive impact targets. The framework outlines different types of targets: initiation targets to integrate nature-related considerations into governance and strategy by 2026, and sectoral, engagement, and portfolio coverage targets to address biodiversity loss by 2030 or earlier.

No net loss and net gain approach

[No Net Loss for biodiversity]() is an approach where measures are taken to avoid and minimise impacts by offsetting residual impacts. When gain exceeds loss, the term 'net gain' can be used. No net loss and net gain approaches can be embedded into targets and adopted at the portfolio, company, project, or site level. They are particularly relevant to financial institutions as they seek to compensate for many residual adverse biodiversity impacts across an investment portfolio. Using these approaches requires consideration of social and cultural values at the sites of focus in the offsetting process. However, these approaches are often criticised for failing to benefit people as well as nature.

Furthermore, it remains unclear as to what extent offsetting in one place can make up for adverse impacts elsewhere. It is recommended that businesses consider setting more ambitious targets that promote biodiversity mitigation in line with the mitigation hierarchy, before relying on the no net loss and net gain approach - see Step 5 for guidance on the mitigation hierarchy.

CASE EXAMPLES: Here are concrete examples of how to do **Goal and Target Setting** for different types of organisations

Primary Producer	Downstream Manufacturer or Retailer	Financial Institutions	Small and Medium-sized Enterprises
Develop an overarching goal aligned to GBF and the GGN, set science-based targets for specific locations and sites. An example target could be: *100% no conversion of natural ecosystems by 2025.*	Develop an overarching goal aligned to GBF and the GGN. Through value chain engagement, set science-based targets for specific locations and sites in relation to freshwater and land and submit to SBTN for validation. An example target could be: *Companies will source 100% of volumes of commodities from areas with no conversion of natural ecosystems from 2020 and will remediate all past conversion occurring between 2015 and 2020, through engagement in ecosystem projects.*	Develop an overarching goal aligned to GBF and the GGN, set an investment strategy which refers to no net loss and net gain approach. Review portfolio for high-impact sectors and map sub-sectors, set science-based targets for specific locations and site in relation to freshwater and land targets. An example target could be: *100% of companies invested in will have zero conversion of natural ecosystems by 2025 compared with a 2020 baseline.*	Set tangible targets in areas where there are opportunities to take relevant action, e.g. relating to supply chains that are identified as coming from, or likely coming from, high-risk areas. Also, identify whether funding for biodiversity initiatives or whether multi-stakeholder initiatives are available in certain locations.

Step 4: Measurement

Purpose and Outcomes

The purpose of the measurement step is to identify the most suitable biodiversity data to collect, and methods for data collection, to enable you to monitor biodiversity impacts and progress towards reaching your goals and targets. This requires consideration of your baseline state of nature and your specific impact drivers.

The combination of baseline state of nature and impact drivers provides companies and financial institutions with a comprehensive understanding of their ecological standing. It reveals the historical context ("where are we coming from"), current status ("where are we today"), and potential future trajectory ("where are we heading") of their impact on biodiversity. This integrated approach facilitates a holistic assessment of a business's relationship with biodiversity, guiding strategic decision-making and enabling you to monitor performance.

Measurement should be a continuous process over time, with consistent data metrics and collection methods to recognise patterns or changes in the state of biodiversity – See Step 6. Deciding what and where to measure should be based on the organisation's priorities identified in Step 2 and the targets set in Step 3. The type of measurement method and metrics used depends on the business context and capacity of your organisation to collect and analyse biodiversity data.

The main outcomes of **measurement** are:

- You have developed a documented biodiversity measurement approach, which is relevant to the organisation's business context, and
- You know how to measure biodiversity impacts at site level and across value chains.

Key tools for biodiversity measurement

Choosing a baseline

A biodiversity baseline refers to a reference point or condition which changes in biodiversity can be compared to. It represents state of biodiversity at a specific point in time. Baselines are used as a benchmark for monitoring and comparing the state of biodiversity over time. Primary production companies,

and downstream companies should work with their suppliers, to establish their baseline.

The organisation may choose to measure one or more of the following types of baselines, depending on its goals, including:

- **Historical baseline**: Represents biodiversity conditions prior to the initiation of the company's activities, providing insight into the natural state of the environment before human interventions.
- **Pre-operational baseline**: Establishes biodiversity conditions at the outset of the company's operations, serving as a reference point for monitoring changes caused by the company's activities.
- **Reference state baseline**: Defines a desired or optimal biodiversity state that the company aims to achieve or maintain, offering a target for conservation or restoration efforts.
- **Current conditions baseline**: Represents the present state of biodiversity within the company's operational area, serving as a starting point for assessing ongoing impacts and implementing management strategies.
- **Intact ecosystem baseline**: Describes biodiversity in undisturbed or minimally affected ecosystems, providing a reference for assessing the degree of alteration caused by the company's activities.

Measuring your footprint

For financial institutions or companies with numerous products and complex value chains, measuring the so-called *biodiversity footprint* as a starting point may be a more feasible approach than doing a baseline measurement. However, footprinting tools should ideally always be used in combination with primary or secondary data collection and modelling to help validate your findings.

Notable tools for both these types of organisations for measuring the biodiversity footprint of your value chains include Iceberg Data Lab's Corporate Biodiversity Footprint, Carbon4 Finance's Biodiversity Impact Analytics, and NEC's Net Environmental Contribution tool.

REGULATORY ASPECTS

Step 4: Measurement will help companies meet parts of the following EU legal requirements *(Note: Not applicable to all businesses)*:

- ESRS E4-5 – Impact metrics related to biodiversity and ecosystems change.

For financial institutions exclusively, the Biodiversity Footprint for Financial Institutions is also recommended. These tools use various scoring methods to calculate, for example, biodiversity dependence, positive contribution, and biodiversity impact avoidance. See WWF's *Assessing Portfolio Impacts* report for a more complete overview of footprinting and related tools.

When analysing your baseline or footprint, it is important to consider historical impacts, especially from land use changes such as deforestation and agricultural expansion. Regardless of the type(s) of baseline or footprinting method used, the decision and time scale should be justified with evidence.

Metrics and indicators for measuring the state of biodiversity
Metrics are designed to provide specific, measurable data about biodiversity components. Biodiversity metrics can be used to track changes in biodiversity over time, compare different sites or management strategies, and evaluate the effectiveness of the organisation's actions, as described in Step 5.

In most cases, you may choose which metrics best suit your business context. The use of some metrics, however, may be required. For example, through regulations, project approval conditions or supplier contracts.

Biodiversity is complex and place-specific, and there is no single metric that can effectively describe its state. Evaluating your business's impact requires the use of both ecosystem and species-level metrics. These include:

- **Ecosystems**: Measuring ecosystems requires consideration of two main factors: extent and condition. Ecosystem condition or integrity can be evaluated by assessing various elements such as the composition of ecological communities, the structure of ecosystems, including the spatial arrangement of patches at the landscape level, and ecosystem functioning, and
- **Species**: Two factors to consider for individual species are population size and extinction risk. These factors offer insights into the health of a species' population and its relative resilience to both human-induced and naturally occurring changes.

Genetic diversity is a core element of biodiversity, alongside species diversity and ecosystem diversity. However, as indicated by the ALIGN project, methods for companies and financial institutions to effectively measure genetic-level indicators are underdeveloped, hence the focus on metrics for species and ecosystems.
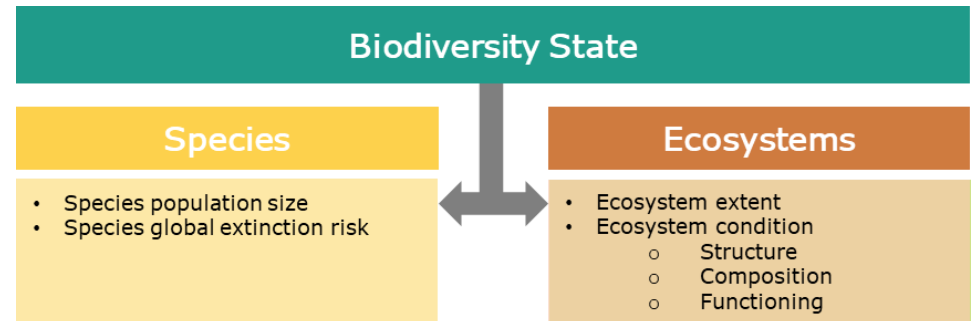

Figure 1: Key metrics for measuring the state of biodiversity. Note, this is a simplified illustration highlighting only selected measurement indicators. As suggested by the ALIGN Project, genetic biodiversity indicators are underdeveloped at this point and have therefore been excluded here.

Companies and financial institutions should choose ecosystem and species metrics to measure and characterize the state of biodiversity based on the priority areas selected in Step 2. The selection of metrics implemented should be linked with corporate goals and targets established in Step 3.

For a deeper understanding of which metrics to choose to measure the baseline, and as a basis for monitoring, we recommend the following resources developed by the ALIGN project:

- Recommendations for a standard on corporate biodiversity measurement and valuation,
- Implementation guidance for measuring biodiversity at specific sites and across value chains, and
- Measuring ecosystem condition – a primer for business.

Data Types and Methodologies
Different methodologies exist to gather data to determine business' potential impacts. These include:

Primary biodiversity state data: Collected on-site through field surveys, these are complex to collect however provide the best results. It is advised to collect

primary data at the highest priority locations (e.g., business areas of highest risk, dependency, or impact, and greatest opportunity). Examples include:

- Mapping of the condition and extent of different ecosystem types,
- Wildlife population monitoring: e.g., bioacoustics, camera traps, counts/inventories,
- eDNA sampling: e.g., soil, water, pollen, and
- Questionnaires and stakeholder engagement: e.g., local communities, local universities, Indigenous groups, or workers located at or near to the site of measurement.

Secondary biodiversity state data: This data can be used where it is not feasible to collect primary data. Examples include:

- Geospatial data layers overlaid with location data of business activities: e.g., ecosystem extent and condition layers, species range and threat data, key biodiversity areas, and species occurrence records derived from primary data collection, models and remote sensing, and
- Secondary information: e.g., literature on habitat sensitivity to impact drivers.

Some of the leading biodiversity datasets with free, open access tools include:

- Integrated Biodiversity Assessment Tool (IBAT) – spatial layers and reports on protected areas, key biodiversity areas, threatened species, etc.
- Global Biodiversity Information Facility (GBIF) – species occurrences and datasets by species group
- Encore – map of dependencies and impacts on nature. Includes a list of other species and ecosystem databases not included in the Encore map.

Modelled pressure-state data: These models quantify how various pressures impact biodiversity, providing insights into the relationship between pressure and biodiversity state, often based on global data. Examples include:

- The GLOBIO model: Designed for scenario analysis to assess the effects of human activities on biodiversity, and
- The ReCiPe model: Evaluates the impacts of emissions and resource extraction on ecosystem quality, human health, and resource scarcity.

See the ALIGN Site Level Implementation Guidance Annex 1 for a comprehensive list of data collection tools and measurement methodologies.

Impact driver category	Impact driver sub-category	Example indicators
Ecosystem use change	Terrestrial land use change	Extent of land use change
	Freshwater ecosystem use change	Extent of freshwater ecosystem use change
	Marine ecosystem use change	Extent of marine ecosystem use change
Climate change	GHG emissions	CO_2 or methane emissions
Pollution	Non-GHG air pollutants	Volume and type of waste generated and disposed
	Water pollutants	Volume and composition of wastewater discharged
	Soil pollutants	Type and quantity of pollutant released to soil
	Solid waste	Volume of generated and disposed waste
Resource exploitation	Water use	Volume of water withdrawn from a waterbody
	Other resource use (e.g., minerals, timber, wildlife)	Quantity of resource used or consumed
Invasive species and other	Biological alterations/ interferences	Area distribution of invasive plants or animals
	Disturbances	Extent of disturbance (e.g., where invasives may establish)

Table 1: Categories and sub-categories of ecological impact drivers, and examples of indicators to measure each type of impact driver.

Measuring drivers of biodiversity loss

Impact drivers represent inputs and outputs of business activities affecting nature, categorised into five main drivers and 12 sub-drivers of nature change. These categories are the standard basis for measurement recognised by SBTN, TNFD and all related EU regulations.

Understanding impact pathways is essential to assess how business activities affect biodiversity, whether directly or through ecological pathways. Table 1 lists the common impact drivers and examples of indicators for measuring them, as recommended by SBTN and the TNFD LEAP Approach.

According to the TRANSPARENT project, the fundamental assumption is that through quantifying and mitigating the impact drivers of business activities, positive environmental changes will occur along impact pathways. See here for further guidance from the Capitals Coalition on measuring biodiversity impact drivers and dependencies.

CASE EXAMPLES: Here are concrete examples of how to do **Measurement** of biodiversity for different types of organisations

Primary Producer

Collect primary data at production areas and areas of potential impact (e.g., nearby forests, downstream waterbodies) using field surveys (e.g., ecosystem condition assessments, wildlife cameras) and eDNA sampling.

Follow regulatory requirements & environmental land use permits.

Collect secondary data, (e.g., ecosystem extent/condition remote sensing data, species ranges) to compare historical data with current state of nature & level of impact.

Downstream Manufacturer or Retailer

Collect primary data at highest priority sites of upstream suppliers or producers (e.g., obtain their EIA and monitoring data).

Engage with local communities or other stakeholders to obtain information where EIA and monitoring data is missing or unobtainable.

Use earth observation tools (e.g. IBAT, STAR metric, Global Forest Watch, EU Copernicus) to collect data on ecosystem condition and extent, species richness.

Measure your overall impact using the Biodiversity Impact Analytics tool.

Financial Institutions

Check primary data collected by companies in the portfolio (e.g., through data vendors, annual reports, and biodiversity strategies).

Measure the footprint of your value chain using the Biodiversity Footprint for Financial Institutions tool.

Collect secondary data on biodiversity pressures for high-priority value chains using ENCORE, like retailers/manufacturers.

Deploy the GLOBIO model to summarize impacts across the portfolio.

Small and Medium-sized Enterprises

For farmers or small forest owners, measure the ecosystem condition in your production area using guidance from the ALIGN project, and the Forest Integrity Assessment Tool.

Measure your footprint using tools such as the Biodiversity Performance Tool and Net Environmental Contribution.

Identify the origins of your high-impact commodities, use data layers such as IBAT, ENCORE, Global Forest Watch and WWF Risk Filter to check for biodiversity pressures at the origin to determine whether your products may be contributing to the impacts.

Step 5: Action

Purpose and Outcomes

Act is the most essential part of the biodiversity strategy as this is where real action is taken for the benefit of biodiversity and your business. This step ensures that you are implementing your strategy to meet the defined corporate targets and reverse biodiversity loss within your area of influence. Effective action will help to generate systemic changes beyond your value chain through impact and risk mitigation and ecological recovery.

The main outcome of **action** is:

- Using the mitigation hierarchy approach, you have developed a clear plan with specific actions to take to mitigate biodiversity loss in your direct operations and value chains.

Key processes for taking action

In the development of your corporate strategy, it is critical to design and implement biodiversity actions, following the mitigation hierarchy. This means prioritising actions to first avoid impacts, followed by efforts to reduce impacts, and then focusing on restoration and regeneration. Additionally, implementing transformational actions is important for systemic change in biodiversity conservation, but initial emphasis should be placed on actions within the value chain. This hierarchy is fundamental to the SBTN, TNFD and the ESRS E4 regulatory standard. The key components of the mitigation hierarchy are:

Avoid: Prevent impacts on biodiversity occurring in the first place including new and potential impacts. SBTN sets out types of avoidance actions. These can include spatial actions (i.e. avoiding activities in a sourcing area) to reduce land use change, such as by preventing mining development of a wetland; technological actions (i.e. avoiding using technologies or using virgin materials) to reduce overall resource consumption and instead using alternative technologies; or temporal activities (i.e. avoiding activities at certain time) such as preventing disturbance during bird nesting season.

Reduce: Minimise biodiversity impacts where eliminating them is not possible. Reducing impacts to biodiversity involves reducing the impact driver. For example, this may include enhancing the efficiency of your operations,
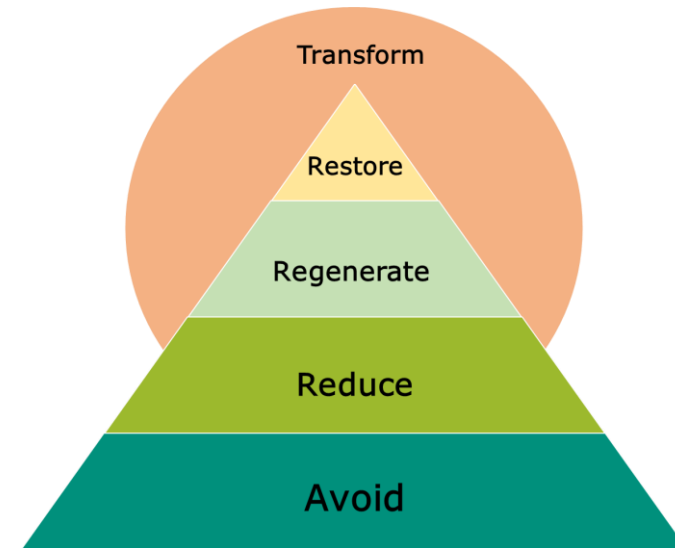

Figure 2: The mitigation hierarchy stipulates that action should be initiated in the bottom of the pyramid, gradually moving to the top.

reducing the intensity of an activity, reducing your reliance on a particular product, or optimising your resource use to minimise waste.

Regenerate: Increase the biophysical function or ecological productivity of an ecosystem. For example, this may be through regenerative agriculture.

Restore: Conduct actions which enable the recovery of an ecosystem. Regenerative and restorative actions are long-term actions and do not necessarily have an immediate impact. This includes activities such as, ecological restoration (e.g., reforestation and restoring and stabilizing riparian

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REGULATORY ASPECTS

Step 5: Action will help companies meet parts of the following EU legal requirements *(Note: Not applicable to all businesses)*:

- ESRS E4-3 – Actions and resources related to biodiversity and ecosystems.

zones), threatened species recovery (e.g., contributing to habitat restoration and breeding programs), rehabilitation of degraded lands and habitats (e.g., fish spawning sites), installing green infrastructure (e.g., vegetated swales to filter storm water), allowance of ecological permeability (e.g., through no tillage), and ecological compensation.

Transform: These actions are focused on system-wide change, for example through technological, economic, institutional, and social factors. These actions are likely to be beyond the company's own value chain. Examples of transformational actions, include within the organisation such as establishing new performance measures; within the value chain such as adopting a circular economy approach; outside of the value chain such as lobbying local and national governments to support restoration activities; and at the system level such as joining industry initiatives.

It is necessary to ensure actions are coordinated both within a company and also within the landscape to ensure that actions do not lead to environmental degradation. Collaboration with other companies working together can lead to absolute reduction of impacts.

Role of "Biodiversity Offsets"

Inspired by carbon markets and their carbon credit system, biodiversity credits are being discussed as a viable pathway to have a positive impact on biodiversity.
The idea is that damage to biodiversity in one place can be mitigated by purchasing biodiversity credits elsewhere.

This idea however remains controversial, for reasons such as it being difficult to measure biodiversity with a single metric or currency, as is the case with CO_2.

With carbon credits, there is a general concern that companies will jump directly to buying biodiversity credits without taking meaningful action to reduce their footprint. In line with the mitigation hierarchy, avoidance, impact reduction, regeneration, and restoration should take precedence over purchasing biodiversity credits.

CASE EXAMPLES: Here are concrete examples of how to take **Action** on biodiversity for different types of organisations.

Primary Producer

Examples of action could include:

Avoid: Changing operations to not harvest within a protected area.

Reduce: Changing inputs such as the amount of fertilizer and pesticides.

Restore: Invest in degraded lands for individual species recovery.

Transform: Work with other industries within the landscape on projects to increase biodiversity.

Downstream Manufacturer or Retailer

Examples of action could include:

Avoid: Commit to avoid sourcing from converted natural ecosystems.

Reduce: Change production processes to reduce water use.

Restore: Require suppliers to implement agro-ecological approaches (e.g., agroforestry).

Transform: Support suppliers to develop a biodiversity strategy.

Financial Institutions

Examples of action could include:

Avoid: Commit to not invest in biodiversity hotspots.

Reduce: Focus investments on less intensive commodities.

Restore: Increase investments in restoration and rehabilitation of lands, and agro-ecological approaches.

Transform: Support customers to develop biodiversity strategies.

Small and Medium-sized Enterprises

Examples of action could include:

Avoid: Avoid harvesting or operations in biodiversity sensitive areas.

Reduce: Identify technologies to reduce hectarage of land used.

Restore: Identify whether there is a multi-stakeholder platform for restoring highly biodiverse environments used by the SME directly or indirectly within a location.

Transform: Work with others in a landscape to improve total biodiversity.

Step 6: Monitoring

Purpose and Outcomes

Monitoring biodiversity involves regularly tracking the impacts of business activities on ecosystems and species, as well as assessing progress of any actions taken to reduce or reverse adverse impacts. The aim of monitoring is to identify trends and patterns in the data collected to identify where and when biodiversity gains and losses are occurring, as well as the magnitude of the impact, to prioritise areas for further investigation and intervention.

Monitoring is an extension of the measurement process, and the same data metrics and collection methodologies selected in Step 4 (Measurement) should be used to collect new data and compare it against the baseline or footprint. Monitoring may be used as a quality control measure.

The main outcomes of **monitoring** are:
- You have established a monitoring regime that helps you understand the changes that occur to biodiversity as a result of your organisation's actions and impacts on biodiversity, whether positive or negative, and
- The monitoring regime will enable you to demonstrate progress towards reaching your goals set in Step 3.

Key tools for monitoring

Below outlines key monitoring processes that a suitable for different scenarios:
- Own operations
- Value chains
- Complex value chains and portfolios

Depending on your organisation's structure and impacts, you may want to choose several, complementary monitoring methodologies.

Monitoring direct impacts within your organisation's own operations

You may monitor the impacts of your own business operations on biodiversity through a combination of various methods (see the TNFD LEAP Approach for further detail), including:
- **Field surveys**: Monitor ecosystem and species indicators within your sites of operation and surrounding habitats, such as forests, rivers, and downstream waterbodies, using the same metrics and techniques used to collect the baseline data in Step 4,
- **Environmental monitoring**: Implement programs to monitor key environmental indicators linked to the impact drivers identified in Step 1 and measured in Step 4, such as water quality, soil health, and vegetation cover, which directly or indirectly affect biodiversity,
- **Stakeholder engagement**: Collaborate with local communities, conservation organisations, and scientific experts to gather data, share knowledge, and assess the broader ecological impacts of the company's activities,
- **Remote sensing technologies**: Utilise satellite imagery, GIS mapping, and other remote sensing tools to monitor changes in land use, deforestation, and habitat fragmentation associated with the company's operations, and
- **Monitoring impact drivers**: Track changes in business activities and resource use with potential impacts such as site or infrastructure expansions, wastewater release, solid waste disposal or greenhouse gas emissions.

Monitoring biodiversity impacts across your value chain

From the double materiality assessment conducted in Step 1 and priorities set in Step 2, you should be aware of the high risk and high opportunity value chains that you want to monitor. Some methods for monitoring biodiversity impacts across your value chain include:
- **Supplier Audits**: Conduct on-site or remote audits of high-risk suppliers to evaluate their environmental practices and assess potential impacts on biodiversity, and
- **Remote sensing**: Utilise satellite imagery, GIS mapping, and other remote sensing tools to monitor changes in ecosystem use, land conversion, and habitat fragmentation associated with the high priority suppliers and producers in your value chain.

REGULATORY ASPECTS

Step 6: Monitoring will help companies meet parts of the following EU legal requirements *(Note: Not applicable to all businesses)*:

- ESRS E4-4 – Targets related to biodiversity and ecosystems.
- ESRS E4-5 – Impact metrics related to biodiversity and ecosystems change.

- **Sustainable Sourcing Practices**: Monitor the implementation of biodiversity mitigations conducted by your upstream suppliers, sub-suppliers, and producers.
- **Life Cycle Assessment**: Consider performing periodic life cycle assessments to identify and track changes following biodiversity mitigation actions implemented by your company and/or suppliers in Step 5, use tools such as the EU Corporate Environmental Footprint and Product Environmental Footprint once available.
- **Stakeholder Engagement**: Conduct regular surveys or interviews with stakeholders along your value chain to gather their perspectives on biodiversity-related issues.
- **Product certification**: Procure and market products certified under EU and ISEAL recognised sustainability standards that support biodiversity. Examples with specific biodiversity criteria include: FSC Forest Management, with Ecosystem Services add-on, the Global Biodiversity Standard (currently in trial phase), and Society for Ecological Restoration's Restoration Certification (currently in trial phase).

Monitoring biodiversity impacts across complex value chains or portfolios

It may not be feasible or practical for companies with hundreds of value chains or financial institutions with diverse portfolios and business relations to monitor biodiversity directly through the site-level ecosystem and species

data. It is recommended to focus on the priority groups of companies, sectors, or portfolios with high risk of adverse biodiversity impact, as selected in Step 2. In this case, monitoring strategies may include a combination of the following methods:
- **Monitoring risk**: Periodically evaluate individual or groups of companies' exposure to biodiversity-related risks, such as deforestation, pollution, and regulatory compliance.
- **ESG integration**: Integrate environmental, social, and governance (ESG) criteria into investment analysis and decision-making processes, considering biodiversity as a key component of environmental performance.
- **Engagement and dialogue**: Engage with the companies in your portfolio to encourage transparency and disclosure regarding their biodiversity impacts, management practices, and conservation efforts.
- **Metrics and reporting**: Develop standardised metrics and reporting frameworks to measure and track biodiversity performance across the investment portfolio, enabling comparability and accountability.

CASE EXAMPLES: See the concrete examples of how to do **Monitoring** in different types of organisations

Primary Producer	**Downstream Manufacturer or Retailer**	**Financial Institutions**	**Small and Medium-sized Enterprises**
Monitor your impact drivers (e.g., high-impact commodities, invasive species) and impacts to biodiversity using the measurement methods (Step 4). **Example timeframe**: conduct seasonal (i.e., 4 times per year) sampling of soil quality, continuous monitoring through wildlife cameras, and annual species counts. **Actions to be monitored**: e.g., reduction land use and associated effects on habitats and species.	Monitor impacts of high priority supply chains e.g., conduct audits, request suppliers get certified, and use satellite imagery to check farms in high-risk regions to ensure they are not clearing primary forest. **Example timeframe**: conduct annual onsite audits, increase if issues identified. Check satellite imagery annually, or each time new imagery is available. **Actions to be monitored**: e.g., proportion of purchased products with certifications.	Monitor the types of companies included in portfolios, and the commodities they produce or market. Monitor the risk profile with the aim of reducing the level of risk across the portfolio. **Example timeframe**: annual or bi-annual analysis of risk portfolio, or every time the portfolio changes significantly. **Actions to be monitored**: e.g., environmental performance of the high priority (e.g., high risk) companies in your portfolio.	Monitor the proportion of your products with sustainability certifications. Monitor your site-level ecosystem condition, and impact drivers such as land-use. **Example timeframe**: annual collection of product certification data, annual ecosystem condition surveys, regular (e.g., monthly) recording of resource use and consumption. **Actions to be monitored**: e.g., land area usage, uptake of certified products.

Step 7: Reporting

Purpose and Outcome

With the increasing awareness of global biodiversity loss and mounting regulatory requirements, companies and financial institutions are seeking effective methods to disclose their biodiversity impacts and contributions.

The purpose of this final step is to provide guidance on the tools and standards for companies and financial institutions to disclose all the necessary elements of your biodiversity strategies, such as your impacts, risks, dependencies, actions, and progress and achievements towards meeting corporate and societal biodiversity objectives.

The main outcomes of **reporting** are:
- You can regularly and publicly disclose your organisation's biodiversity impacts, dependencies, risks, and actions, and
- You can report in a credible way, thereby meeting stakeholder expectations and regulatory requirements.

Key tools for reporting

This section outlines the most relevant international policy and EU legal disclosure requirements and highlights complementary voluntary initiatives and standards that will help you meet legal requirements and stakeholder expectations. While the legal aspects are not mandatory for small and medium sized enterprises (SMEs), the outlined voluntary tools can help SMEs gain credibility and public recognition of their biodiversity efforts. This may help SMEs gain a competitive market advantage and enable them to provide data to downstream companies which require it for their reporting.

Global Biodiversity Framework

Target 15 of the GBF encourages nation states to adopt legal, administrative measures to encourage and enable businesses, and especially large companies and financial institutions, to transparently disclose their biodiversity-related risks, dependencies, and impacts. When companies report in accordance with TNFD Recommendations, Global Reporting Initiative's (GRI) biodiversity standard, and – if relevant – ESRS E4, they help to achieve Target 15 at the EU level.

TNFD Disclosure Framework

Following a strong market demand, TNFD was established to provide recommendations and guidance to companies and financial institutions to disclose high-quality, globally comparable information on sustainability-related risks and opportunities. Informed by International Sustainability Standards Board (ISSB) and Global Reporting Initiative (GRI), it promotes disclosure of materiality information and progress towards nature-related targets.

TNFD's **LEAP Approach** provides guidance to all types of organisations to meet their recommended disclosures. These are:
1. **Governance**: Disclosure of the organisation's governance of nature-related dependencies, impacts, risks, and opportunities,
2. **Strategy**: Disclosure of the effects of nature-related dependencies, impacts risks and opportunities on the organisation's business model, strategy, and financial planning,
3. **Risk and impact management**: Disclosure of the processes used by the organisation to identify, assess, prioritise, and monitor nature-related dependencies, impacts, risks and opportunities, and
4. **Metrics and targets**: Disclosure of the metrics and targets used to assess and manage material nature-related dependencies, impacts, risks and opportunities.

To adhere to TNFD's recommendations, the organisation should disclose information pertaining to a) its plans to respond to nature-related issues in its strategic and decision-making processes; b) progress made on previously disclosed plans during the reporting period; and c) any trade-offs considered regarding nature-related matters.

TNFD advises organisations to report in accordance with ISSB IFRS-S1 (General Requirements) and the six additional TNFD requirements: application of materiality; scope of disclosures; location of nature-related issues; integration with other sustainability-related disclosures; consideration of time horizons; engagement with indigenous peoples, local communities, and affected stakeholders in identifying and assessing nature-related issues.

To guide disclosure and reporting decisions, companies and financial institutions should assess investor preferences, regulatory policies, and the rights and interests of stakeholders. Consideration should be given to the timing of responses to address short-term versus long-term risks appropriately.

Reporting should be conducted annually as per TNFD guidelines and CSRD requirement. Targets included in the reports should be reviewed at least every five years, with organisations adjusting them as necessary in response to changes in strategy or goals.

GRI: 101 Biodiversity 2024

The GRI has released GRI 101: Biodiversity 2024, a more focused standard for companies and financial institutions to report on their biodiversity impacts. Aligned with TNFD and the GBF targets, it guides evaluation and reporting on the most significant biodiversity impacts in business's direct operations and value chains. GRI 101 emphasises transparency throughout the value chain, location-specific impact reporting, new disclosures on direct drivers of biodiversity loss, and reporting on impacts on society.

Adhering to GRI 101: Biodiversity 2024 aids in fulfilling impact-related disclosure requirements of the TNFD recommendations and ESRS E4. It offers comprehensive guidance for reporting impacts within operations and value chains through eight key disclosure requirements, including corporate policies, impact identification, access and benefit sharing, impact locations, drivers of biodiversity loss, biodiversity state changes, and ecosystem services.

The reporting process involves target documentation, validation, and third-party verification. Targets should be reported against baseline values and monitored regularly for progress.

CASE EXAMPLES: Here are concrete examples of how to do **Reporting** for different types of organisations

Primary Producer	Downstream Manufacturer or Retailer	Financial Institutions	Small and Medium-sized Enterprises
Identify whether there is a requirement to meet ESRS disclosure provisions. Use the GRI standard to guide your reporting process. Ensure there is a plan of action for each requirement. Document the indicators used to assess progress against each requirement. Report publicly on an annual basis, ensuring to disclose all your biodiversity impacts, mitigations implemented, and your monitoring results. Share this report widely with key stakeholders.	Identify whether there is a requirement to meet ESRS disclosure provisions. Use the process as set out by the TNFD LEAP Approach. Disclose your governance, strategy, risk and impact management, and metrics and targets (as established through the previous 6 steps of this report) in an annual report. Upload your report to your company web site and other media channels so that potential investors and the public can read it.	Identify whether there is a requirement to meet ESRS disclosure provisions. Use the GRI standard to guide your reporting process. Publicly disclose your most significant biodiversity impacts and dependencies across your portfolio and other business relationships. Highlight your efforts to address biodiversity loss through your business influence and choice of investments. Ensure your reports are accessible to the public.	Identify whether there is a requirement to meet ESRS disclosure provisions. Non-listed SMEs have no disclosure obligations under the ESRS. Reporting should highlight your most significant impacts, mitigations, and progress towards reaching your goals. Share publicly what you have achieved so far through your web site or relevant social media channels. Since there are no legal reporting requirements, reporting may be conducted less often (e.g., bi-annually).

Acronyms

Acronym	Description
AFi	Accountability Framework Initiative
ALIGN	Project funded by the European Commission to support businesses, financial institutions, and others in developing standardised natural capital accounting practices, including a standardised approach to biodiversity measurement
CBD	Convention on Biological Diversity, signed in 1992 by 150 government leaders as a commitment to promoting Sustainable Development
CSDDD	Corporate Sustainability Due Diligence Directive, this requires companies to identify, prevent, mitigate and account for negative human rights and environmental impacts in the company's own operations, their subsidiaries and their value chains
CSRD	Corporate Sustainability Reporting Directive, EU law which requires large companies and listed companies (except listed micro-enterprises) to disclose information on what they see as the risks and opportunities arising from social and environmental issues
EFRAG	European Financial Reporting Advisory Group responsible for developing the ESRS standards that companies subject to CSRD are obligated to report to
ESG	Environmental, social, and governance
ESRS	European Sustainability Reporting Standards which companies regulated under the CSRD shall comply with. ESRS E4 relates to biodiversity and ecosystems
EUDR	European Union Deforestation Regulation aiming to ensure products (cattle, cocoa, coffee, oil palm, rubber, soya and wood) are deforestation-free and produced legally in the country of production
GBF	Global Biodiversity Framework, adopted during the 15th Conference of Parties (COP 15), which sets out a pathway to reach the global vision of a world living in harmony with nature by 2050
GBIF	Global Biodiversity Information Facility
GGN	Global Goal for Nature, a global societal goal to 'Halt and Reverse Nature Loss by 2030 on a 2020 baseline and achieve full recovery by 2050'
GIS	Geographic information system
GRI	Global Reporting Initiative

Acronym	Description
IBAT	Integrated Biodiversity Assessment Tool
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, an intergovernmental body established by nation states to strengthen the science-policy interface for biodiversity and ecosystem services
ISEAL	International Social and Environmental Accreditation and Labelling Alliance, which aims to strengthen sustainability standards
ISSB	International Sustainability Standards Board
IUCN	International Union for Conservation of Nature
KBA	Key biodiversity area
LEAP	Guidance by TNFD to Locate, Evaluate, Assess and Prepare
NEC	Net Environmental Contributions is an organisation that rates companies and economic activities based on their environmental impacts
NNL	No net loss
SBTN	Science Based Targets Network, a coalition of environment non-profits and other organisation which has developed science-based targets for nature
SDGs	Sustainable Development Goals
SFDR	Sustainable Finance Disclosure Regulation is an EU regulation to improve transparency in the market for sustainable investment
SME	Small and medium sized enterprises
STAR	Species Threat Abatement and Restoration metric
TNFD	Taskforce on Nature-related Financial Disclosures which has developed a set of disclosure recommendations and guidance that encourage and enable business and finance to assess, report and act on their nature-related dependencies, impacts, risks, and opportunities
UNEP FI	United Nations Environment Programme Finance Initiative
WWF	World Wide Fund for Nature, an international non-government organisation dedicated to nature conservation

Key Terms

Key term	Description
Baseline	The state of biodiversity within a defined area at a given time, captured through primary and/or secondary data collection
Biodiversity	Biodiversity refers to the variety and variability of life forms on Earth, including species diversity, genetic diversity, and ecosystem diversity
Biodiversity Pressures	Anthropogenic pressures with potential impact to biodiversity, divided into 5 categories of IPBES and 12 sub-categories of SBTN
Biodiversity footprint	The impact of a portfolio, asset class, project or company measured in terms of biodiversity change as a result of production and consumption of particular goods and services
Double materiality	Biodiversity-related risks, impacts, dependencies, and opportunities that are material to a business or organisation. A fundamental concept of the CSRD, TNFD, and SBTN
Impact driver	Measurable inputs to production and non-product outputs of a business activity that affect nature. A single impact driver may be associated with multiple impacts
Double materiality assessment	Identification and assessment of risks, dependencies, impacts and opportunities, including areas for action and how these relate to a company's operations
Risk	Types of risk include: Reputational risk: Changes in perception concerning a company's actual or perceived nature impacts. They can result from direct company impacts, industry impacts and/or impacts of upstream/ downstream operations, Policy risk: changes in the policy context due to new (or enforcement of existing) policies associated with creating positive impacts on nature or mitigating negative impacts on nature, Operational risk: increasing legal and regulatory compliance costs associated with investments and businesses, Nature-related risk: potential threats posed to an organisation that arise from its and wider society's dependencies and impacts on nature, and Market risk: Changing market dynamics, including changes in consumer preferences, arising from changes in physical, regulatory, technological and reputational conditions and stakeholder dynamics.
Value chain	The full lifecycle of a product, including material sourcing, production, consumption, and disposal/recycling

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