




Accountability for Nature:

Comparison of Nature-Related Assessment
and Disclosure Frameworks and Standards



January 2024

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The authors of this report are:



Yi Kui Felix Tin, Hamza Butt, Emma Calhoun,
Alena Cierna, Sharon Brooks.

With input from:

- Romie Goedicke den Hertog, Gabriela Andrea Hermosilla Gonçalves (UNEP FI)

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Acronyms

AASB	Australian Accounting Standards Board
BEES	Biodiversity, Ecosystems and Ecosystem Services
CBD	Convention on Biological Diversity
CC	Capitals Coalition
CDSB	Climate Disclosure Standards Board
COP26	2021 United Nations Climate Change Conference
CSRD	Corporate Sustainability Reporting Directive
ESRS	European Sustainability Reporting Standards
EU	European Union
GBF	Kunming-Montreal Global Biodiversity Framework
GRI	Global Reporting Initiative
GSSB	Global Sustainability Standards Board
IFRS	International Financial Reporting Standards Foundation
IOSCO	International Organization of Securities Commissions
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
ISSB	International Sustainability Standards Board
LEAP	TNFD's LEAP Approach (Locate, Evaluate, Assess, Prepare)
NBSAPs	National Biodiversity Strategy and Action Plans
NCC	Natural Capital Coalition
NFRD	Non-Financial Reporting Directive
NGFS	Network for Greening the Financial System
PRI	Principles for Responsible Investment
SASB	Sustainability Accounting Standards Board
SBTs	Science Based Targets
SBTi	Science Based Targets Initiative
SBTN	Science Based Targets Network
SDGs	Sustainable Development Goals
SEC	Securities and Exchange Commission of the United States
SFDR	Sustainable Finance Disclosure Regulation
TCFD	Task Force on Climate-related Financial Disclosures

TNFD	Taskforce on Nature-related Financial Disclosures
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP FI	United Nations Environment Programme Finance Initiative
UNEP-WCMC	United Nations Environment Programme World Conservation Monitoring Centre
VBA	Value Balancing Alliance
WBCSD	World Business Council for Sustainable Development

Executive summary

This report, co-authored by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) and the United Nations Environment Programme Finance Initiative (UNEP FI), provides an overview of the key methodological and conceptual trends among the private sector assessment and disclosure approaches on nature-related issues. It focuses on trends related to the definitions of environmental concepts, understanding of the relationship between business, finance and nature, and the implications for disclosure. It is primarily aimed at financial institutions and businesses preparing for implementation of nature-related assessment and disclosure approaches in their organizations. However, it is also intended to inform the further development of frameworks and standards on nature by enabling developers to take stock of the evolving assessment and disclosure landscape.

The report presents findings from a comparative research on seven leading standards, frameworks and systems for assessment and disclosure on nature-related issues (referred to as “nature-related assessment and disclosure approaches” in this report). The list of the approaches can be found in Box 1 below. These approaches vary in their specific purpose—which includes disclosure, assessment and/or target setting—and so does their content. The aim of this report is to highlight the common trends, while noting divergences that relate to the differing purposes.

Box 1: Nature-related assessment and disclosure approaches reviewed in this report

- CDP disclosure system
- European Sustainability Reporting Standards (ESRS)
- Global Reporting Initiative (GRI) Standards
- International Sustainability Standards Board (ISSB) Standards¹
- Natural Capital Protocol
- Science Based Targets Network (SBTN) target setting guidance
- Taskforce on Nature-related Financial Disclosures (TNFD) framework

The research was conducted between April and November 2023 and is based on the latest publicly available versions of the documents available in November 2023, as well as interviews with experts from the organizations developing the approaches. Draft versions of future updates made available to the research team for the purposes of this study were also considered. Experts from the organizations developing the covered

assessment and disclosure approaches were invited to review the report in late October - early November 2023. A detailed list of the document versions reviewed for each approach is available in the reference list.

Overall, the study revealed that the reviewed approaches are demonstrating an increasing level of alignment in key concepts and methodological approaches. Examples include cross-referencing of materiality definitions, LEAP approach and SBTN target-setting guidance, improvements in alignment of scoping and prioritization guidance, improvements in integration of science-based assessment methodologies and increased alignment of disclosure requirements and recommendations. Continued efforts to improve alignment are however needed to provide clarity and streamline the requirements for companies.

Further consensus building and development of assessment methodologies is needed to strengthen the recommendations and requirements provided by the approaches. In some areas, for example use of metrics for state of nature measurement, ample scientific research already exists and there is a need to promote consistency across frameworks and standards on the best practice. In others, for example impact measurement in the marine realm, there is a need to leverage conservation science to develop more detailed guidance for private sector assessment and disclosure. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Business and Biodiversity Assessment, expected to be completed in 2025, is going to make an important contribution to solidifying concepts and methodologies to assess and disclose nature-related issues faced by business.

The landscape of private sector assessment and disclosure on nature will continue to evolve. As all approaches have plans for future updates, specific recommendations or requirements of the different approaches may change. The transition from voluntary to mandatory disclosure requirements (see Section 1.2) is likely to continue and be observed in an increasing number of countries. Future research comparing the reviewed approaches would help take stock of the progress on the trends highlighted in this report and challenges in strengthening the approaches and their alignment.

Table 1: Summary of the 11 key findings from the comparative study of the nature-related assessment and disclosure approaches

No	Focus	Key finding
1	Definition of materiality	Definition of materiality differs across the approaches reviewed. Some prescribe financial materiality or environmental and social materiality, while others are flexible in their requirements and guidance. There are also differences in the guidance provided on how companies should identify nature-related issues that are material to assess or disclose.
2	Coverage of realms	While most approaches aim to cover all realms, their disclosure requirements and assessment guidance are often developed primarily with consideration of the land and freshwater realms, with less consideration of the ocean realm. Additional methodologies and guidance on measuring and disclosing nature-related issues in oceans are being developed, and have the potential to address some of the applicability challenges.
3	Coverage of sectors	All approaches aim to be applicable to all sectors. They vary in the expected level of tailoring to the sector context. Many approaches provide additional guidance for sectors generally recognized as associated with high nature-related dependencies and impacts (e.g. agriculture, extractives) and the finance industry.
4	Coverage of value chains	Most approaches require the assessment and disclosure of the company's nature-related issues within their direct operations as well as upstream and downstream value chains. However, there is variation in the expected level of detail of upstream and downstream disclosures as well as the scope of value chain links expected to be covered.
5	Location information requirements	All approaches reflect the importance of location-specific nature-related assessment and disclosure. Several approaches recommend that companies provide spatial data to capture these locations precisely.
6	Nature-related impacts	Assessment of impacts is central to all of the approaches. Most approaches recognize that a comprehensive analysis of business impacts on nature requires looking beyond the impact drivers/pressures resulting from business activities. They recommend or require that companies measure the state of nature and understand how the impact drivers/pressures resulting from their business activities lead to changes in the flow of ecosystem services and stock of ecosystem assets.
7	Nature-related dependencies	Most approaches cover business dependencies on nature. The connections between a company's dependencies and its impacts as well as considerations of the state of nature and external drivers of change in the location are increasingly considered to be a part of the measurement of business dependencies on nature.

No	Focus	Key finding
8	Nature-related risks and opportunities	Approaches use similar definitions and categorizations of nature-related risks and opportunities. While companies are typically expected to disclose the risks and opportunities associated with the most material effects on their financial performance and strategy, some approaches recognize that all risks and opportunities associated with significant impacts on nature or society are or will likely prove financially material over time.
9	Disclosure metrics	All approaches encourage companies to disclose not only a description of their nature-related issues but also metrics and their performance against the metrics. There is variation in the level of prescriptiveness on the choice of metrics.
10	Targets	Most approaches require or recommend companies to set targets for strengthening their performance and action on nature-related issues, and regularly report on their progress towards these targets. An increasing number of approaches is expecting companies to set targets on specific dependencies, impacts, risks or opportunities at locations.
11	Engagement with rights-holders and relevant stakeholders	Companies are encouraged to engage with rights-holders and relevant stakeholders at operation locations and beyond when assessing and disclosing their nature-related issues. Detailed guidance on stakeholder engagement is emerging.

Table 2: Overview of the key characteristics of the nature-related assessment and disclosure approaches reviewed

Characteristic	Nature-related assessment and disclosure approaches						
	CDP disclosure system	European Sustainability Reporting Standards (ESRS)	Global Reporting Initiative (GRI) Standards	International Sustainability Standards Board (ISSB) Standards ²	Natural Capital Protocol	Science Based Targets Network (SBTN) target setting guidance	Taskforce on Nature-related Financial Disclosure (TNFD) framework
Type of approach	Climate and nature reporting platform	Sustainability reporting standards	Sustainability reporting standards	Standards for sustainability-related financial disclosures	Measurement and valuation framework	Guidance on target setting	Risk management and disclosure framework
Voluntary or mandatory	Voluntary	Mandatory ³	Voluntary	Voluntary ⁴	Voluntary	Voluntary	Voluntary
Coverage of nature	Climate, forests and water security questionnaires cover specific nature-related issues	Cover nature and other sustainability issues, include dedicated environmental standards	Cover nature and other sustainability issues, include topic standards on specific environmental issues	Cover nature and other sustainability issues, include dedicated climate standards	Overarching nature coverage	Overarching nature coverage	Overarching nature coverage
Status	New guidance to be released in 2024.	Expected to be in force from January 2024 for the first group of companies.	Release of revised GRI Biodiversity Standard expected in early 2024, other nature-related standards available.	ISSB Standards (IFRS S1 and IFRS S2) issued in June 2023. The CDSB Framework Application Guidance for Biodiversity-related Disclosures and Water-related Disclosures were published in 2021. The SASB Standards were last revised in June 2023.	Current version released in 2016. An Integrated Capital Protocol (replacing Natural Capital Protocol and Social and Human Capital Protocol) will be released in 2024.	First release of SBTs for nature in May 2023, next updates planned for 2024.	TNFD Framework v1.0 released in September 2023.

Characteristic	Nature-related assessment and disclosure approaches						
	CDP disclosure system	European Sustainability Reporting Standards (ESRS)	Global Reporting Initiative (GRI) Standards	International Sustainability Standards Board (ISSB) Standards ²	Natural Capital Protocol	Science Based Targets Network (SBTN) target setting guidance	Taskforce on Nature-related Financial Disclosure (TNFD) framework
Target report preparers	Businesses and financial institutions ⁵	Businesses and financial institutions as specified in the EU CSRD	Businesses, financial institutions and other organizations	Businesses and financial institutions	Businesses and financial institutions	Businesses	Businesses and financial institutions
Target report users ⁶	Financial institutions/ investors, public/civil society	Financial institutions/ investors, businesses, governments, civil society, EU institutions ⁷	Financial institutions/ investors, businesses, governments and regulators, civil society, and any other interested party	Investors, lenders and other creditors	Businesses and financial institutions ⁸	Businesses and financial institutions	Financial institutions/ investors, businesses, regulators, financial service providers, public/civil society ⁹
Definition of materiality	Environmental, social and financial materiality	Environmental, social and financial materiality	Environmental and social materiality ¹⁰	Financial materiality ¹¹	Flexible ¹²	Environmental and social materiality ¹³	Flexible ¹⁴
Availability of realm- or biome-specific guidance	Yes	Yes ¹⁵	No	No	No	Yes	Yes
Scope of sector-specific guidance	Sector-specific disclosure requirements for selected sectors	Sector-specific disclosure requirements for selected sectors ¹⁶	Sector-specific disclosure requirements and guidance for selected sectors	Sector-specific guidance for all sectors ¹⁷	Sector-specific guidance for selected sectors	Selected sector-specific guidance ¹⁸	Sector-specific guidance and disclosure requirements for selected sectors ¹⁹

Characteristic	Nature-related assessment and disclosure approaches						
	CDP disclosure system	European Sustainability Reporting Standards (ESRS)	Global Reporting Initiative (GRI) Standards	International Sustainability Standards Board (ISSB) Standards ²	Natural Capital Protocol	Science Based Targets Network (SBTN) target setting guidance	Taskforce on Nature-related Financial Disclosure (TNFD) framework
Coverage of value chain	Direct operations, upstream and some downstream	Direct operations, upstream and downstream	Direct operations and upstream and downstream (downstream is optional in the GRI Biodiversity Standard)	Direct operations, upstream and downstream	Direct operations, upstream and downstream	Direct operations and upstream (downstream may be covered in future releases)	Direct operations, upstream and downstream
Use of location information in the assessment	Yes	Yes	Yes	Yes	Flexible —tailored to the choice of the business	Yes	Yes
Assessment of business dependencies and impacts on nature	Both dependencies and impacts	Both dependencies and impacts	Impacts, limited assessment of dependencies	Both dependencies and impacts	Both dependencies and impacts	Impacts only (dependencies may be covered in the future)	Both dependencies and impacts
Disclosure on business dependencies and impacts on nature	Both dependencies and impacts	Both dependencies and impacts	Impacts only ²⁰	Both dependencies and impacts (subject to financial materiality, except for certain climate impacts)	Disclosure optional	Impacts only (dependencies may be covered in the future)	Both dependencies and impacts
Assessment of nature-related risks and opportunities	Both risks and opportunities	Both risks and opportunities	Not covered	Both risks and opportunities	Both risks and opportunities	Not covered	Both risks and opportunities
Disclosure on nature-related risks and opportunities	Both risks and opportunities	Both risks and opportunities	Not covered	Both risks and opportunities	Disclosure optional	Not covered	Both risks and opportunities

Characteristic	Nature-related assessment and disclosure approaches						
	CDP disclosure system	European Sustainability Reporting Standards (ESRS)	Global Reporting Initiative (GRI) Standards	International Sustainability Standards Board (ISSB) Standards ²	Natural Capital Protocol	Science Based Targets Network (SBTN) target setting guidance	Taskforce on Nature-related Financial Disclosure (TNFD) framework
Disclosure of nature-related targets	Yes	Yes	Yes	Yes	Disclosure optional	Yes	Yes
Engagement with rights-holders and relevant stakeholders required/recommended	Yes	Yes	Yes	Yes	Yes	Yes	Yes



1. Introduction

1.1 About this report

This report, co-authored by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) and the United Nations Environment Programme Finance Initiative (UNEP FI), aims to provide an overview of the key methodological and conceptual trends among the nature-related assessment and disclosure approaches.

The term “nature-related assessment and disclosure approaches” is used in this report to refer to standards, frameworks and systems for assessment and disclosure on nature-related issues by private sector companies. Frameworks “can be thought of as a set of principles providing guidance and shaping people’s thoughts on how to think about a certain topic” (GRI 2022). Standards represent agreed level of requirements, which is viewed as acceptable for reporting entities to meet (GRI 2022). Frameworks “are normally put into practice in the absence of well-defined standards”; however, they can also provide recommendations on what should be reported, which might inform the development of standards and other regulations in the future (GRI 2022). Reporting platforms or other disclosure systems enable companies to report data on their sustainability performance and impacts. They can support companies’ alignment with voluntary and mandatory disclosure frameworks and standards, other regulatory requirements or market best practice. The list of the approaches covered in this report can be found in Table 3 below.

Table 3: Brief Introduction of the seven nature-related assessment and disclosure approaches covered in this report

Approach	Type of approach	Background information
CDP disclosure system	Climate and nature reporting platform	CDP is a global disclosure system. By providing a voluntary disclosures framework through its three different questionnaires on climate change, forests and water security, CDP helps companies, investors and cities to disclose and manage their impact on the environment, with the data being used by banks, investors, governments and other companies. This study focuses on the CDP questionnaires for companies.
European Sustainability Reporting Standards (ESRS)	Sustainability reporting standards	In July 2023, the European Commission adopted the European Sustainability Reporting Standards (ESRS) for use by all companies subject to the EU Corporate Sustainability Reporting Directive (CSRD). The subjected companies will have to report environmental, social and governance sustainability related information according to the ESRS. Reporting will be mandatory for the first group of companies in financial year 2024. ²¹ The ESRS comprise the General requirements (ESRS 1), General disclosures (ESRS E2), as well as topical standards focusing on environmental (ESRS E1–E5), social (ESRS S1–S4), and governance (ESRS G1) related disclosures. This study focuses on the environmental topical standards (ESRS E1–E5), with particular focus on ESRS E4 on biodiversity and ecosystems.
Global Reporting Initiative (GRI) Standards	Sustainability reporting standards	The Global Reporting Initiative (GRI) is an independent, international organization that helps businesses and other organizations in reporting impacts. The GRI Standards are a modular system of interconnected standards comprising: the GRI Universal Standards (GRI 1–3), the GRI Sector Standards (GRI 11–18), and the GRI Topic Standards (GRI 201–207, 301–308, 401–418). While the Universal Standards are applicable to all companies, the Sector Standards and the Topic Standards apply to companies in specific sectors and when the topics are material respectively. This study focuses on the nature-relate Topic Standards (GRI 304: Biodiversity, GRI 305: Emissions, GRI 306: Waste), with particular focus on the GRI Biodiversity Standard (GRI 304). The study recognizes that the Topic Standards are part of the modular system of standards—relevant information on the Universal and Sector Standards is also captured.
International Sustainability Standards Board (ISSB) Standards	Standards for sustainability-related financial disclosures	The International Sustainability Standards Board (ISSB) was formed in November 2021 by the International Financial Reporting Standards (IFRS) Foundation to develop global accounting and sustainability disclosure standards. The IFRS Foundation consolidated the Sustainability Accounting Standards Board (SASB) and Climate Disclosure Standards Board (CDSB) in 2022. In June 2023, The ISSB issued two sustainability standards based on the exposure drafts, consultation and public feedback: IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2 Climate-related Disclosures. Currently, IFRS S1 and S2 are voluntary, but they are expected to be mandated in different jurisdictions over time. This study describes characteristics of ISSB Standards based on the IFRS S1 and S2 Standards, as well as the SASB Standards and the CDSB Framework Application Guidance, which are referred to within the ISSB Standards for additional guidance.

Approach	Type of approach	Background information
Natural Capital Protocol	Measurement and valuation framework	Developed by the Capitals Coalition, the Natural Capital Protocol is a voluntary framework for decision-making and/or reporting that enables organizations to identify, measure and value their direct and indirect impacts and dependencies on natural capital. Applicable within any business sector to organizations of all sizes and in all operational geographies, the Protocol provides guidance to companies on how to measure, value and integrate natural capital impacts and dependencies into existing business processes such as risk mitigation, sourcing, supply chain management and product design.
Science Based Targets Network (SBTN) target setting guidance	Guidance on target setting	The Science Based Targets Network (SBTN) is a collaborative effort to assist companies and cities in establishing targets and addressing their impacts on the environment. Building on the Initial Guidance that introduced companies the process of setting voluntary science-based targets (SBTs) for nature in 2020, SBTN has further developed technical guidance to provide companies the methodological detail to set targets. Its initial release in May 2023 was primarily focused on the first three steps of target setting. This included the version 1 method for Step 1: Assess and Step 2: Prioritize, as well as the version 1 method for Step 3: Freshwater and the beta version 0.3 for Step 3: Land.
Taskforce on Nature-related Financial Disclosure (TNFD) framework	Risk management and disclosure framework	Established in 2021, the Taskforce on Nature-related Financial Disclosures (TNFD) is a global, market-led initiative with the mission to develop and deliver a risk management and disclosure framework that can be used by organizations of all sizes in all jurisdictions to identify, assess, manage and disclose nature-related dependencies, impacts, risks and opportunities, and with the ultimate aim of supporting a shift in global financial flows away from nature-negative outcomes and toward nature-positive ones. As a voluntary framework, TNFD seeks to provide recommendations and guidance of relevance to a wide range of market participants include financial institutions, corporates and various types of business organizations. In September 2023, TNFD has released Version 1.0 of the framework for market adoption. This was accompanied by the Guidance on the Identification and Assessment of Nature-related Issues: the LEAP Approach. This study considered the TNFD v1.0 framework, the LEAP approach guidance as well as other guidance documents developed by the TNFD.

The report focuses on trends related to the definitions and coverage of environmental management concepts, and the implications for disclosure. The report covers private sector nature-related assessment and disclosure approaches that are globally recognized as important reference points for shaping market best practice. These include both voluntary and mandatory approaches that are already available or are currently in development.

The report builds on comparative research that was conducted between April and November 2023. Key characteristics of the approaches and their conceptualization of nature were analyzed and the observations on common trends and differences were synthesized into the key findings in this report. The list of characteristics reviewed in this study can be found in Table 4 below. Experts from organizations developing the approaches were consulted for clarification on the latest content of their frameworks and standards in late October—early November 2023. A description of the methodology followed in this research can be found in Annex 1 to this report.

Table 4: Characteristics of the nature-related assessment and disclosure approaches selected to be the focus of this study

Characteristics	
Definition of materiality	Nature-related dependencies
Coverage of realms	Nature-related risks and opportunities
Coverage of sectors	Disclosure metrics
Coverage of value chains	Targets
Location information requirements	Engagement with rights-holders and relevant stakeholders
Nature-related impacts	

The report, produced in response to requests from UNEP FI members, will be useful for financial institutions and businesses preparing to implement nature-related assessment and disclosure approaches in their organizations. It offers insights into common requirements across the approaches, which could help organizations identify synergies across multiple approaches and prioritize areas for strengthening organizational systems, processes and internal capacity. The report will also be useful for developers of disclosure frameworks and standards to understand the methodological and conceptual trends in the evolving landscape of assessment and disclosure approaches, helping to inform further iterations. The report reflects key trends among these approaches based on the latest versions of the documents outlining the recommendations and requirements of these approaches available at the time of finalizing this report, in November 2023. These include draft versions that were made publicly available or that were made available to the research team for the purposes of this study. A detailed list of these can be found in the reference list.

As the landscape of nature-related assessment and disclosure approaches continues to evolve, specific contents of the different approaches may change after final or updated versions of these frameworks and standards are released. The report primarily focuses on trends that have been observed across multiple approaches reviewed and are unlikely

to change in the near future. Where information indicated in this report is likely to evolve based on an updated version of a framework, the authors have made an effort to specify this.

1.2 Evolving regulatory landscape of private sector disclosure on nature

With the regulatory landscape on climate disclosure having matured rapidly in the past decade, there is now a growing realization that climate risks are not isolated from, but oftentimes coupled with, risks related to nature and the wider environment. Since the publication of the Taskforce on Climate-related Financial Disclosures (TCFD) disclosure recommendations in 2017, reporting on climate-related risks and opportunities has become more widely recognized as best practice and the number of companies reporting in line with the TCFD is gradually increasing (TCFD 2023). Many countries have also introduced climate-related disclosure requirements for businesses and financial institutions. The growing voluntary and mandatory implementation of climate disclosures not only facilitated improved availability of data to inform climate-positive investment and decision-making, but also amplified the interest in further environmental disclosure considerations. In 2019, the Network for Greening the Financial System (NGFS), which brings together 114 central banks and financial supervisors, acknowledged that risks associated with nature, alongside climate, are significant, growing and in demand of immediate mitigation action (NGFS 2023).

Building on the growing interest in environmental disclosure beyond climate, multiple nature-related disclosure frameworks and standards have emerged in recent years.

The Taskforce on Nature-related Financial Disclosures (TNFD), which was announced in 2020, published its disclosure recommendations and additional guidance in September 2023 (TNFD 2023a; TNFD 2023b). The Science Based Targets Network (SBTN), which aims to mirror the work by the Science Based Targets Initiative (SBTi) on climate, has released the first set of guidance documents on setting nature targets in May 2023 (SBTN 2023a). Existing reporting and disclosure systems, frameworks and standards, including CDP and the Global Reporting Initiative (GRI) Standards, have also been driving broader environmental disclosure (GRI 2021; CDP 2023b; CDP 2023c; CDP 2023d). In developing new and updated disclosure recommendations, these initiatives can build on lessons from a growing body of research and guidance on assessment of nature-related issues including the Natural Capital Protocol (NCC 2016a), the Align project (UNEP-WCMC et al. 2022), the Transparent project (VBA, CC and WBCSD 2023) and the assessments conducted by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (IPBES 2019).

Voluntary frameworks such as the TNFD are expected to inform national, regional and international standards on nature-related disclosure for business and finance. At the 2021 United Nations Climate Change Conference (COP26), the International Financial Reporting Standard (IFRS) Foundation announced the establishment of the International Sustainability Standards Board (ISSB) (IFRS 2021). ISSB released the first batch of standards for sustainability disclosures to meet the needs of investors in June 2023,

including IFRS S1 General Sustainability-related Disclosures and IFRS S2 Climate-related Disclosures (ISSB 2023a; ISSB 2023b). Over time, the ISSB Standards are expected to be adopted and enforced in different jurisdictions, especially after the endorsement from the International Organization of Securities Commissions (IOSCO) (IOSCO 2023). As of October 2023, numerous countries including Australia, Brazil, Canada, Mexico, Nigeria, United Kingdom and Zimbabwe have announced their intent to adopt the ISSB Standards (AASB 2023; IFRS 2023a; ISSB 2023a). The ISSB has expressed its intention to expand its coverage of environmental issues and identified Biodiversity, Ecosystems, and Ecosystems Services (BEES) as a potential theme to explore in a recent public consultation on workplan priorities (IFRS 2023b).

Alongside the global ISSB Standards, critical advancements have been made in the development and adoption of national and regional disclosure standards for climate- and nature-related issues. In the EU, the Sustainable Finance Disclosure Regulation (SFDR) has been introduced in 2019 with the first financial institutions required to disclose their sustainability performance in 2021 (European Commission 2023a). In January 2023, the Corporate Sustainability Reporting Directive (CSRD) has entered into force and the first set of companies are expected to disclose against the European Sustainability Reporting Standards (ESRS) in 2024 (European Commission 2023b). In the United States, the Securities and Exchange Commission (SEC) has proposed a rule on climate-related disclosures that, if adopted, would require all publicly registered companies to disclose on climate in line with the GHG Protocol and TCFD recommendations (US SEC 2022). A recent review of sustainability reporting regulation by the United Nations Conference on Trade and Development (UNCTAD) has mapped case studies of existing or planned sustainability reporting regulation in several countries, including China, Colombia, India and the Russian Federation (TD/B/C.II/ISAR/105). Another study by the CDP found relevant regulations in Indonesia and Brazil (CDP 2023a). GRI's 2023 Carrots and Sticks report found that GRI Standards were referenced in 512 policies in 92 countries (Chalmers *et. al* 2023).

An important driver of national regulation on business and finance disclosure on nature is the Kunming-Montreal Global Biodiversity Framework (GBF) adopted at the 2022 UN Biodiversity Conference COP15. The GBF provides a framework of action to halt and reverse the loss of biodiversity by 2030, and the 196 countries that are parties to the Convention on Biological Diversity will be responsible for achieving the GBF goals and targets and monitoring progress (CBD 2022). This includes Target 15 through which the countries that are parties to the CBD commit to “take legal, administrative or policy measures to encourage and enable businesses, and in particular to ensure that large and transnational companies and financial institutions [...] regularly monitor, assess, and transparently disclose their risks, dependencies and impacts on biodiversity” (CBD 2022). As countries update their National Biodiversity Strategy and Action Plans (NBSAPs) by COP16 in late 2024 and start implementing them to contribute to the 2030 targets, national regulations requiring business and finance disclosure on biodiversity and nature are likely to be introduced around the world.

2. Key findings

2.1 Key finding 1: Definition of materiality

Key finding 1: Definition of materiality differs across the approaches reviewed. Some prescribe financial materiality or environmental and social materiality, while others are flexible in their requirements and guidance. There are also differences in the guidance provided on how companies should identify nature-related issues that are material to assess or disclose.

Among the nature-related assessment and disclosure approaches reviewed, some approaches prescribe a specific definition of materiality, while others leave companies the flexibility to choose their preferred materiality approach. GRI Standards and the SBTN target-setting methods reflect an environmental and social materiality approach. According to the GRI Standards, “a topic is material when it represents the company’s most significant impacts on the economy, environment, and people, including impacts on human rights” (GSSB 2021). According to the SBTN methods, pressures stemming from economic activities are considered as material when they are known or assumed to lead to impacts on the environment and “impacts on human wellbeing experienced directly or through degradation of the environment” (SBTN 2023b). While SBTN methods are primarily guided by environmental and social materiality considerations, they allow the introduction of information on financial materiality when making the decision about where to begin target setting in Step 2d. More detailed definitions of materiality used by the different approaches can be found in Table 5 below.

ISSB Standards, on the other hand, use financial materiality, requiring companies to disclose information that could be relevant for investors and other target report users. In the ISSB Standards, companies are required to disclose all sustainability-related risks and opportunities “that could reasonably be expected to affect an entity’s prospects” (ISSB 2023a). However, companies are also required to disclose all material information about these sustainability-related risks and opportunities. The material information could include not only qualitative and quantitative data on the sustainability risks and opportunities that a company is facing, but potentially also data on the dependencies and impacts that give rise to these risks and opportunities. What specifically should be reported on the sustainability-related risks and opportunities is determined by “whether omitting, misstating or obscuring that information could reasonably be expected to influence the decisions made by primary users of general-purpose financial reports” (ISSB 2023a).

Both ESRS and CDP use definitions of materiality that span both financial and environmental and social considerations. ESRS require use of double materiality. A sustainability matter is material if it meets the criteria for impact materiality or financial materiality or both. Impact materiality is determined based on whether the sustainability matter is related to a company's impacts (actual or potential) on people and the environment. Financial materiality uses the same definition as ISSB—a matter is considered to be material if omitting, misstating or obscuring information about it could reasonably be expected to influence decisions made by primary users of general-purpose financial reports. Aligning with ESRS and other disclosure approaches, the CDP questionnaires were developed to capture information necessary for understanding the company's impacts ("inside-out") on the environment, as well as information essential for understanding the company's position, performance, and development regarding climate change and environmental degradation ("outside-in").

Both TNFD and the Natural Capital Protocol use a flexible materiality approach—allowing companies to assess and disclose information based on their own materiality preferences or requirements in their jurisdictions. Whether an issue is material will depend on the company's choice of materiality approach, which the TNFD and Natural Capital Protocol recommend companies set out prior to their assessment. The TNFD disclosure recommendations also outline that companies should clearly state within their reports the materiality approach applied and be consistent across all of their disclosures. TNFD recommends that companies apply the ISSB's definition of materiality as a baseline. Report preparers who want or need to report to a different materiality approach may apply an impact materiality approach to identify information in addition. The TNFD recommends the impact materiality definition from GRI for report preparers who want or need to apply an impact materiality process in the absence of any regulatory guidance that may be relevant to the organization. The Natural Capital Protocol was designed as a framework to guide assessments for different purposes. It focuses on the importance of identifying what is material in relation to the assessment's objectives and applications. Which information is material to assess and/or disclose therefore depends on the purpose for which an assessment guided by the Natural Capital Protocol is conducted.

There is differing guidance on the process companies should follow to identify nature-related issues that are material. TNFD provides guidance on materiality assessment in the LEAP approach. While it does not prescribe a particular set of materiality criteria or thresholds, it offers guidance for both impact materiality assessment (LEAP approach component E4) and risk and opportunity materiality assessment (component A4) and recommends companies base the criteria for what they consider to be material on the definition of materiality that they choose to apply. Where relevant, TNFD encourages companies to refer to the ISSB for its definition of financial materiality, GRI criteria for impact materiality, and recognises companies may be under jurisdictions that favour the ESRS definition. The ISSB Standards allow companies to choose their own criteria and thresholds to determine whether a matter is material or not. They refer companies to the SASB standards and the CDSB Framework Application Guidance for guidance on assessing magnitude and nature of sustainability-related risks and opportunities to understand their materiality. Both ESRS and GRI Standards outline specific aspects of

impacts that should be measured to determine the materiality of impacts.²² For actual negative impacts, the severity of the impact should be considered, determined by (1) scale, (2) scope and (3) irremediable character of the impact. For potential negative impacts, both severity and likelihood should be considered. When assessing positive impacts, materiality is determined by (1) the scale and scope for actual impacts; and (2) the scale, scope, and likelihood for potential impacts. The ESRS, which also cover risks and opportunities, also specify that the materiality of these should be assessed based on their likelihood of occurrence and the potential magnitude of their financial effects.

An initial materiality screening to prioritise areas where more detailed assessment should be carried out is often required or recommended. According to the GRI Standards, for example, before proceeding with disclosures under individual topic standards, companies are required to conduct a materiality assessment to determine which topic standards (including biodiversity, water and other nature-related standards) they should be disclosing against. To report against specific topic standards, companies need to assess in more detail which impacts are the most significant. In the TNFD's LEAP approach, an initial scoping and prioritization is complemented by an assessment of dependency and impact materiality at the last stage of the evaluation phase (E4), after measuring the dependencies and impact. The materiality of risks and opportunities is also assessed in the final stage of the Assess phase of LEAP (A4), while the decision on what information should be disclosed is made during the Prepare phase. ESRS require companies to complement initial prioritisation with the final materiality assessment of dependencies, impacts, risks and opportunities, which should be completed after these nature-related issues have been identified and measured. SBTN also expects companies to conduct an initial materiality screening in Step 1 and justify how pressures were or were not deemed material. The Natural Capital Protocol currently uses the term "materiality assessment" to refer to the process at the start of the assessment of dependencies and impacts.²³ The prepared new version of the Protocol, the Integrated Capital Protocol, will align its guidance on when and how a materiality assessment should be conducted more closely with TNFD.

Table 5: Definition of materiality and conceptualization of the materiality assessment used in the nature-related assessment and disclosure approaches

Approach	Materiality applied	Description of the materiality used	At what stage in the assessment process should companies conduct a materiality assessment?	What are the criteria defining whether an issue is material or not?
CDP	Environmental, social and financial materiality	CDP states that their questionnaires reflect a double materiality perspective. They define this as including the information necessary for understanding impacts of the company (“inside-out”) on the environment and information necessary for understanding position, performance and development of the company regarding climate change and environmental degradation (“outside-in”).	N/A	N/A
ESRS	Environmental, social and financial materiality	<p>According to ESRS, companies are required to report on sustainability matters based on the double materiality principle, which prescribes that an issue is material if it is relevant from either financial materiality or impact materiality perspective.</p> <p>ESRS outline the following definition of financial materiality: The financial materiality assessment corresponds to the identification of information that is considered material for primary users of general-purpose financial reports in making decisions relating to providing resources to the entity. Information is considered material for primary users of general-purpose financial reports if omitting, misstating or obscuring that information could reasonably be expected to influence decisions that they make on the basis of the undertaking’s sustainability statement.</p> <p>ESRS outline the following definition of impact materiality: A sustainability matter is material from an impact perspective when it pertains to the undertaking’s material actual or potential, positive, or negative impacts on people or the environment over the short-, medium- and long-term time horizons.</p>	<p>Initial materiality screening</p> <p>+</p> <p>More detailed assessment of the materiality of dependencies, impacts, risks and opportunities after they are measured to determine what should be disclosed</p>	<p>Impact Materiality:</p> <ul style="list-style-type: none">Actual negative impacts:<ul style="list-style-type: none">Severity of the impact (Severity is based on (1) the scale; (2) scope; (3) irremediable character of the impact)Potential negative impacts:<ul style="list-style-type: none">Severity and likelihood of the impact.Actual positive impacts:<ul style="list-style-type: none">Scale and scope of the impactPotential positive impacts:<ul style="list-style-type: none">Scale, scope and likelihood of the impact <p>Financial Materiality:likelihood of occurrence the potential magnitude of the financial effects.</p>

Approach	Materiality applied	Description of the materiality used	At what stage in the assessment process should companies conduct a materiality assessment?	What are the criteria defining whether an issue is material or not?
GRI	Environmental and social materiality ²⁴	<p>The GRI Standards' materiality approach focuses on impacts, enabling companies to report on their most significant impacts on the environment, economy, and the people.</p> <p>Material topics are defined by GRI as topics that represent the company's most significant impacts on the economy, environment, and people, including impacts on their human rights.</p>	<p>Initial screening of material topics +</p> <p>More detailed assessment of most significant impacts after they are measured to determine what should be disclosed</p>	<p>Criteria for determining the significance of the impacts:</p> <ul style="list-style-type: none"> Actual negative impacts: <ul style="list-style-type: none"> Severity of the impact (Severity is based on (1) the scale; (2) scope; (3) irremediable character of the impact) Potential negative impacts: <ul style="list-style-type: none"> Severity and likelihood of the impact. Actual positive impacts: <ul style="list-style-type: none"> Scale and scope of the impact Potential positive impacts: <ul style="list-style-type: none"> Scale, scope and likelihood of the impact
ISSB	Financial materiality ²⁵	<p>The process for determining what is material for each company is focused on the company's risks and opportunities.</p> <p>Information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that primary users of general-purpose financial reports make on the basis of those reports, which include financial statements and sustainability-related financial disclosures.</p>	<p>Initial materiality screening +</p> <p>More detailed assessment of material risks and opportunities after they are measured to determine what should be disclosed²⁶</p>	<p>The IFRS S1 states that materiality judgements are specific to an entity. The ISSB Standards do not specify any thresholds for materiality or predetermine what would be material in a particular situation.</p>
Natural Capital Protocol	Flexible ²⁷	<p>The Natural Capital Protocol is designed to provide assessment guidance for a wide range of purposes and therefore it allows companies to choose their own materiality approach. Within the Protocol, an impact or dependency on natural capital is 'material' if consideration of its value, as part of the set of information used for decision making, has the potential to alter that decision.</p>	<p>"Materiality assessment" is conducted at the scoping stage when determining which dependencies and/or impacts are most relevant for inclusion in the natural capital assessment.</p>	<p>Flexible. Companies can choose their own criteria.</p>

Approach	Materiality applied	Description of the materiality used	At what stage in the assessment process should companies conduct a materiality assessment?	What are the criteria defining whether an issue is material or not?
SBTN	Environmental and social materiality ²⁸	<p>SBTN specifies that companies should use an environmental and societal lens in their assessment of materiality.</p> <p>SBTN defines materiality as the importance of pressures stemming from economic activities, due to their impacts on the environment and their impacts on human health experienced directly or through degradation of the environment.</p> <p>Companies can also apply a financial materiality or risk-based perspective at the end of step 2d to consider risks that could lead to financial losses or missed opportunities in their target setting strategies.</p>	<p>Initial materiality screening in Step 1</p> <p>+</p> <p>More detailed assessment of materiality of pressures through the later steps of the target-setting methodology</p>	<p>The use of materiality screening tools from either the prescriptive or the flexible approach in determining the materiality results. The five criteria for determining when an issue is material are:²⁹</p> <ul style="list-style-type: none"> ▪ Magnitude ▪ Irreversibility ▪ Frequency of impact ▪ Likelihood of impact ▪ Timing of impact
TNFD	Flexible ³⁰	<p>TNFD uses a flexible materiality approach, which supports the reporting needs of all report preparers and report users globally, including their preferences and regulatory requirements regarding materiality. Companies should set out their approach to materiality—aligning to external standards or regulatory requirements where appropriate—to help report users understand the context of the information being presented by the report preparer.</p>	<p>Initial materiality screening in the L2 component of the LEAP approach</p> <p>+</p> <p>More detailed assessment of material dependencies and impacts in E4, of risks and opportunities in A4 and of all nature-related issues when preparing the disclosures in P3 to determine what should be disclosed.</p>	<p>When assessing financial materiality, TNFD recommends consistency with the ISSB and TCFD by assessing which risks and opportunities are of the most significant financial effect by estimating magnitude, likelihood, vulnerability, speed of onset and additional criteria of the severity of impacts on nature and impacts to society. If assessing impact materiality, TNFD recommends companies align with the criteria set out by GRI.</p>

2.2 Key finding 2: Coverage of realms

Key finding 2: While most approaches aim to cover all realms, their disclosure requirements and assessment guidance are often developed primarily with consideration of the land and freshwater realms, with less consideration of the ocean realm. Additional methodologies and guidance on measuring and disclosing nature-related issues in oceans are being developed, and have the potential to address some of the applicability challenges.

Most nature-related assessment and disclosure approaches reviewed in this report aim to provide frameworks and methodologies that are applicable to all realms of nature. TNFD, GRI and ESRS explicitly state that their disclosure recommendations and assessment guidance are designed to be relevant to land, freshwater and ocean realms. Natural Capital Protocol and ISSB do not explicitly specify which realms they cover, but they are intended to be relevant for all companies, regardless of the locations of their operation sites. An overview of the realm coverage by the different approaches can be found in Table 6 below.

Guidance is emerging to address the specific challenges associated with assessment and disclosure of nature-related issues in the ocean realm. In the ocean realm, more often than in land or freshwater realms, companies' impact drivers can result in impacts thousands of kilometres away.³¹ Compared to most land and freshwater ecosystems, the ecological characteristics of oceans also tend to be more variable over time and seasons of the year.³² Locating, attributing and measuring impacts in the ocean realm can therefore be more challenging, which could result in underestimating the scope of nature-related issues. Some of the reviewed approaches are beginning to address these challenges by developing guidance for the ocean realm or specific marine biomes. For example, SBTN will be releasing initial target setting guidance for the ocean realm in 2024. ESRS include among their environmental standards ESRS E3 on water and marine resources, which outlines disclosure requirements on water discharges in the oceans and extraction and use of marine resources. The TNFD, as another example, has released a biome-specific guidance for the marine shelf biome, which addresses some aspects of the challenges outlined above.³³ The guidance differentiates between localized and diffused dependencies and impacts a company might have in interactions with a marine ecosystem. It also provides a list of metrics relevant for the marine shelf biome. TNFD is also in the process of developing sector-specific guidance for multiple sectors, including aquaculture and fisheries, and may develop further biome guidance for ocean biomes.³⁴ This will provide companies with further insights on measuring and disclosing their nature-related issues in the ocean.

Some approaches also include provisions helping companies overcome constraints in data availability for the ocean realm. When assessing nature-related issues in the ocean, companies may struggle to find certain types of secondary data in the necessary quality. For some metrics, baseline data are also not available. While new metrics and datasets are being developed and access to existing ocean data is being improved,³⁵ closing the gap on the data available for the ocean realm will require technological

advances, significant resources and time. Some nature-related assessment and disclosure approaches include provisions allowing companies to overcome these data constraints. For example, GRI Standards allow companies to report estimates where precise measurements are not feasible, provided the methodology for obtaining the estimates is also disclosed.

Table 6: Coverage of realms by the nature-related assessment and disclosure approaches

Approach	Intended coverage of realms	Realm or biome-specific guidance available?
CDP	Land Freshwater Atmosphere	Climate, forests and freshwater (within questionnaires)
ESRS	All realms	ESRS E3 Water and marine resources
GRI	All realms	No
ISSB	All realms	No
Natural Capital Protocol	All realms	No
SBTN	All realms	Land Freshwater Ocean (in development)
TNFD	All realms	Currently there is biome-specific guidance available for the following biomes: tropical and sub-tropical forests, savannas and grasslands, river and streams, marine shelf, and intensive land use systems. TNFD may develop specific guidance for other biomes depending on feedback from market participants.

2.3 Key finding 3: Coverage of sectors

Key finding 3: All approaches aim to be applicable to all sectors. They vary in the expected level of tailoring to the sector context. Many approaches provide additional guidance for sectors generally recognized as associated with high nature-related dependencies and impacts (e.g. agriculture, extractives) and the finance industry.

All the reviewed nature-related assessment and disclosure approaches can be applied to all sectors with varying flexibility for adaptation to the sectoral context. A core, sector-agnostic methodology facilitates implementation of the approach and contributes to greater comparability of disclosures across sectors, which is particularly important for investors, regulators and civil society. However, in certain sectors, these sector-agnostic methodologies can be challenging to implement or open scope for differences in implementation. While many disclosure approaches have developed or are expected to develop sector-specific guidance, the guidance varies in scope, sectoral coverage and classification of the sectors. Table 7 below summarizes the sectoral coverage and scope of the sector-specific guidance provided by different approaches.

Where sector-specific guidance is available, priority is given to additional guidance on sectors widely recognized as associated with high nature-related dependencies and impacts and additional guidance for the finance industry. The TNFD, for example, has released draft versions of sector-specific LEAP approach³⁶ guidance for the oil and gas, metals and mining, forestry and paper, food and agriculture, electric utilities and power generators, chemicals, biotechnology and pharmaceuticals, aquaculture and additional guidance for financial institutions. These guidance documents offer recommendations on implementing the cross-sector TNFD LEAP approach as well as tools and data that are particularly relevant for the sector in question. The TNFD guidance will also include sector disclosure metrics, which are part of the TNFD's measurement architecture. GRI, as another example, has released sector-specific standards for oil and gas, coal, as well as agriculture, aquaculture and fishing sectors. GRI standards for mining, textiles and apparel and financial services are currently under development, and standards for other sectors with significant sustainability impacts will be added gradually.

Some approaches provide sector-specific guidance for all sectors. The ISSB Standards invite companies to refer to the SASB Standards as well as broader best practice in each sector. In relation to the IFRS S2 Standard on Climate-related Disclosures, ISSB provide industry-based guidance for all SASB sectors that outlines which disclosure topics and metric are likely to be relevant for a company in the given sector. The ESRS are also expected to eventually provide sector-specific standards for all sectors of the economy, but these will be published gradually, with the first set (including Agriculture, Mining, quarrying and coal, Oil and gas and Road transport) expected to be released for public consultation in the second half of 2024.

There are notable differences in the level of prescriptiveness of the sector-specific guidance. The ISSB invites companies to consider the SASB Standards, the Industry-based Guidance on Implementing IFRS S2 and best practice within their sector but

leaves scope for the company to decide why the mentioned sustainability issues may not be relevant. GRI's sector-specific standards, on the other hand, outline the likely material topics and disclosures for each sector. Companies are expected to report against these on a comply or explain basis—they may determine which topics are not relevant for them to report but they need to provide an explanation for this. The ESRS sector-specific standards will outline the disclosures that all companies in a given sector will be required to report against, subject to the materiality assessment. Although companies will be able to justify why they are not providing information against a specific disclosure, this more prescriptive approach is designed to enable a high level of comparability within a given sector. Within the CDP questionnaires, there are modules and questions for specific sectors such as Agriculture, Energy, Oil and gas, Coal and Metals and mining alongside general questions that all CDP reporting companies are presented with.

TNFD provides both sector-specific guidance, which offers recommendations but leaves room for flexibility, and sector-specific disclosure metrics, which include both required (“core”) and optional (“additional”) metrics. The TNFD sector-specific guidance offers additional guidance and tools for companies from a given sector on how to conduct a LEAP assessment, which prepares companies for the disclosure but is not required to follow for TNFD-aligned disclosure. The TNFD additional guidance for financial institutions also provides guidance for financial institutions to apply the TNFD recommended disclosures. The TNFD also provides core sector disclosure metrics, which are sector-specific disclosure metrics that are required for all companies in a given sector on a comply or explain basis. TNFD has also proposed additional sector disclosure metrics, which are optional but cover issues that are relevant to many companies in a given sector. However, the lists of sector-specific disclosure metrics developed by the TNFD are not intended to be exhaustive—companies are expected to disclose on all material nature-related issues.

SBTN currently provides sector-specific guidance only for Step 3: Land methods, although separate guidance for the finance sector is in development. All companies are encouraged to apply the SBTN Technical Guidance that has been released to date, spanning the assessment of material pressures (Step 1), prioritisation of locations and business components for target setting (Step 2) and setting of the targets (Step 3). The Step 3 Technical Guidance on freshwater targets and on land targets is, however, more applicable to companies in some sectors rather than others (e.g. the land targets guidance is relevant especially to the Forestry, Land and Agriculture sectors as it builds on the SBTi FLAG guidance). Step 3 Technical Guidance on land targets includes sector-specific requirements on which companies should be setting no conversion targets, land footprint reduction targets and landscape engagement targets.³⁷ Guidance on how SBTN methods can be relevant to the finance sector is currently being developed.

Table 7: Sectoral coverage and scope of the sector-specific guidance of the reviewed nature-related assessment and disclosure approaches

Approach	Scope of sector-specific guidance	Sectoral coverage of the sector-specific guidance
CDP	CDP’s disclosure system includes some sector-specific disclosure requirements. There are specific modules for some sectors, which include requests for information either in addition or instead of the general questions.	<p>The following sectors are covered by specific modules in one or more of the CDP company questionnaires:</p> <ul style="list-style-type: none">▪ Agricultural commodities▪ Food, beverage & tobacco▪ Paper & forestry▪ Electric utilities▪ Oil & gas▪ Chemicals▪ Coal▪ Metals & mining▪ Financial services,▪ Cement▪ Construction▪ Transport services▪ Transport OEMs▪ Steel▪ Real estate
ESRS	ESRS are currently in the process of developing sector-specific standards, which will be applicable to all companies within a sector. They will address impacts, risks and opportunities not covered, or not sufficiently covered, by the sector-agnostic standards.	<p>The first set of sector-specific standards (including Agriculture, Mining, quarrying and coal, Oil and gas and Road transport) is expected to be released for public consultation during the second half of 2024. In the coming years, ESRS are expected to provide sector-specific standards for all sectors of the economy.</p>
GRI	While the GRI Universal Standards and Topic Standards can be used by an organization of any size, type, sector or geographic location, GRI has also developed Sector Standards applicable to companies in specific sectors. They describe the sustainability context for a sector, outline organizations’ likely material topics based on the sector’s most significant impacts, and list disclosures that are relevant for the sector to report on.	<p>GRI has already released the following Sector Standards:</p> <ul style="list-style-type: none">▪ Oil and gas (GRI 11)▪ Coal (GRI 12)▪ Agriculture, aquaculture, and fishing sectors (GRI 13) <p>Development of the following Sector Standards is currently under way:</p> <ul style="list-style-type: none">▪ Mining▪ Textiles and Apparel▪ Financial Services <p>GRI has plans to develop standards for 40 sectors, with priority given to those that have the highest impact on the economy, environment and society.</p>

Approach	Scope of sector-specific guidance	Sectoral coverage of the sector-specific guidance
ISSB	<p>ISSB recommends companies refer to the SASB Standards as well as broader best practice in each sector. The SASB Standards include industry-specific guidance and disclosure topics that are likely to be material for companies in the given sector, as well as disclosure requirements and relevant metrics. They also include guidance on how to compile disclosure-relevant data.</p> <p>In addition to this, the IFRS S2 on Climate-related Disclosures includes an annex on Industry-based Guidance on implementing Climate-related Disclosures. The annex details what climate-related metrics should be reported and how they can be measured for 68 industries.</p>	<p>The SASB Standards that ISSB invites companies to refer to for sector-specific guidance on material sustainability issues, and the industry specific guidance for IFRS S2 on Climate-related disclosures cover all sectors of the economy, divided into the following 11 categories:</p> <ul style="list-style-type: none"> Consumer goods Extractives & Minerals processing Financials Food & Beverage Health Care Infrastructure Renewable Resources & Alternative Energy Resource Transformation Services Technology & Communications Transportation
Natural Capital Protocol	<p>The Natural Capital Protocol is designed to be a broad and flexible framework that is applicable to any business sector, operating in any geography, at any organizational level. Four sector guides are available to accompany the Protocol and provide more specific but voluntary guidance.</p>	<ul style="list-style-type: none"> Forest Products Apparel Food and Beverage Finance
SBTN	<p>SBTN does not provide sector-specific guidance, with the exception of selected sector-specific requirements in the step 3: Land methods. All companies, except consultancies and financial institutions, are encouraged to apply the methods developed by SBTN to assess material pressures (Step 1) and prioritize locations and business components for target setting (Step 2). Some of the water and land target setting methodologies are more applicable to companies in some sectors rather than others (e.g. the land targets guidance is relevant especially to the Forestry, Land and Agriculture sectors).</p>	<p>Selected sector-specific guidance within the Step 3 methods. Finance sector guidance in development.</p>

Approach	Scope of sector-specific guidance	Sectoral coverage of the sector-specific guidance
TNFD	<p>In addition to cross-sector recommendations and guidance, the TNFD has provided both sector-specific guidance and sector-specific disclosure metrics. The sector-specific guidance provides recommendations and tools for applying the TNFD LEAP approach. The use of the sector guidance and the LEAP approach are not required for TNFD-aligned reporting but the guidance will likely significantly shape how companies in the given sector apply the TNFD recommendations. The additional guidance for financial institutions is unique in that it covers how financial institutions should apply the TNFD disclosure recommendations.</p> <p>The sector-specific disclosure metrics include core sector disclosure metrics, which are required for TNFD aligned disclosures for all companies in a given sector on a comply or explain basis and additional sector disclosure metrics, which are recommended for disclosure, where relevant. The list of additional sector-specific disclosure metrics is not intended to be exhaustive, companies can report metrics for any other nature-related issues that they determine to be relevant and material.</p>	<p>As of December 2023, draft sector-specific guidance has been published for the following sectors:</p> <ul style="list-style-type: none"> Financial institutions Oil and gas Metals and mining Forestry and paper Food and agriculture Electric utilities and power generators Chemicals Biotechnology and pharmaceuticals Aquaculture <p>Draft sector disclosure metrics are available for consultation for the following sectors:</p> <ul style="list-style-type: none"> Consumer goods Apparel & textiles Extractives Mining & mineral processing, Construction Materials, Oil and Gas Food & beverage Food (excluding aquaculture); Food & beverage retail; Restaurants, Food (Aquaculture) Infrastructure Real estate, Utilities (Electric utilities & power generators) Renewable resources & alternative energy Forestry & paper: Forestry management

2.4 Key finding 4: Coverage of value chains

Key finding 4: Most approaches require the assessment and disclosure of the company's nature-related issues within their direct operations as well as upstream and downstream value chains. However, there is variation in the expected level of detail of upstream and downstream disclosures as well as the scope of value chain links expected to be covered.

Most approaches require assessment and disclosure of the company's direct operations as well as upstream and downstream value chains. TNFD, ESRS, CDP, ISSB and the Natural Capital Protocol all recommend that companies assess and disclose not only the nature-related issues in their direct operations but also in their entire value chain. While GRI Standards generally expect companies to report on all impacts resulting from their own activities or business relationships, the GRI Biodiversity Standard requires reporting on direct operations and upstream only—information on the downstream is recommended. SBTN currently covers direct operations and upstream, but it is expected to extend its coverage to downstream in the future. An overview of which parts of the value chain are covered by the different approaches can be found in Table 8 below.

The scope of which upstream and downstream activities should be assessed and disclosed is significantly shaped by the materiality perspective. According to the ISSB Standards, which use financial materiality, the decision on what upstream and downstream nature-related issues are relevant to disclose should be based on the needs of investors. Companies should disclose all upstream and downstream risks and opportunities that “could reasonably be expected to affect the entity's prospect” and the dependencies and impacts that give rise to them (ISSB 2023a). According to the ESRS, which prescribe double materiality, a company could be required to disclose on the negative impacts on nature associated with the sourcing of commodities, even where these negative impacts do not translate into material business risks for the company. TNFD, which does not require a specific materiality definition, highlights the implications of the decision on the materiality definition for the value chains assessment and disclosure in their guidance.

SBTN prescribes specific criteria for scoping out the value chains that should be included in the target-setting process. Companies implementing SBTN guidance are expected to compile a list of all direct operations and upstream activities that feed into the companies' direct operations. The assessment and subsequent target setting on impacts is however required only for the direct operations and value chain links associated with the most material impacts. This includes value chain links related to commodities that appear on the SBTN High Impact Commodity list, and other material value chain links that add up to at least 67% spend or volumes purchased.³⁸

TNFD and ESRS provide broad guidance on how companies should prioritize their assessment of value chains to capture all nature-related issues that are relevant to disclose. Although TNFD recommends that companies disclose all material nature-related issues in their direct operations and value chains, it recognizes that some companies may need to take a “deep and narrow” or “broad and shallow” approach in

the early years of their reporting. The value chain coverage should then be expanded over time. The TNFD LEAP approach recommends that during the Locate phase companies narrow down their value chain focus on parts that are most likely to be associated with nature-related issues using sector, geography and supply chain filters, including the SBTN High Impact Commodity List. TNFD, however, does not specify a cut-off for the proportion of value chain links that can be deprioritized from later stages of the assessment. The value chain prioritization outlined in the ESRS is closely aligned with TNFD recommendations, and ESRS also refer to the LEAP approach.

Some approaches allow for a less detailed reporting on the value chain. This includes enabling a lower level of coverage and the use of proxy data. For example, according to both ESRS and TNFD, if companies are not able to collect the necessary information about their upstream and downstream value chain after making a reasonable effort to do so, they can instead estimate it, including using sector-average data and other proxies. ESRS in addition to this set out a transitional phase for the first three years of a company's sustainability reporting. Companies are allowed to omit value chain information during the transitional phase if it is not available, provided they explain why the information is not available, the efforts made to obtain it and plans to obtain it in the future. When disclosing information on policies, actions and targets, companies may limit the information on their upstream and downstream value chain to information available in-house and publicly available information. SBTN, as another example, allows companies to use less precise, more uncertain and less spatially resolved information to determine target boundaries (referred to as "target boundary B"), in the cases where companies lack national or subnational location data for a portion of their commodities and upstream activities. Companies are required to improve data availability on their upstream suppliers over time and gradually reduce the proportion of activities that fall within 'target boundary B'.

Table 8: Overview of the current value chains coverage by the different nature-related assessment and disclosure approaches

Approach	Value chains coverage	Extent of value chains disclosure
CDP	Direct operations, upstream and some downstream	<p>The CDP questionnaires focus mainly on reporting the information related to the dependencies, impacts, risks and opportunities stemming from a company's direct operations. However, specific questions within the CDP questionnaires ask companies to provide information on nature-related issues in their value chains. For example, the biodiversity questions within the Climate questionnaire invite companies to report the impacts and dependencies in their direct operations as well as upstream and downstream. Another example is the Forest questionnaire, in which companies are asked to disclose upstream supply chain information on avoiding deforestation and conversion of other natural ecosystems.</p> <p>CDP also have a supplier engagement programme, where the purchasing companies are encouraged to invite their suppliers to report through CDP. The value chain data collected through the supplier engagement programme complements the information on nature-related issues associated with companies' direct operations.</p>
ESRS	Direct operations, upstream and downstream	<p>In general, the ESRS cross-cutting standards state that in sustainability statements, companies are required to include information on the material impacts, risks and opportunities (and dependencies³⁹) associated with their direct operations as well as their business relationships in the upstream and/or downstream value chains.</p> <p>However, companies will only need to include value chain information that is material, and information required by any specific requirements set in the topical standards. If companies are unable to collect the required value chain information, they can estimate the information using all reasonable and supportable information, such as sector-average data and other proxies. When companies disclose their policies, actions, and targets addressing the nature-related issues, they should also include value chain information to the extent that these policies, actions, and targets involve actors in the value chain.</p> <p>Recognizing the data challenges on value chain reporting, the ESRS have set out a transitional phase for the first three years of sustainability reporting. Companies are allowed to omit unavailable value chain information in the condition that they have demonstrated their efforts, provided explanation and the future action plans. They can also limit the information on their upstream and downstream value chain partners to information available in-house and publicly available information when disclosing information on policies, actions and targets.</p>

Approach	Value chains coverage	Extent of value chains disclosure
GRI	Direct operations, upstream and downstream (downstream is optional in the GRI Biodiversity Standard)	In the GRI Standards, the entire value chain should be considered in the assessment of a company's impacts. GRI 3 (see requirement 3-3-b) enables organizations to report on all material topics, whether a company is involved with the negative impacts through its activities or as a result of its business relationships (including business relationship upstream and downstream the value chain). Specific GRI Topic Standards may require or recommend information for an organization's upstream and downstream value chain. Examples include Scope 3 emissions in GRI 305 or GRI 306-1 on waste along the value chain. GRI 304 on biodiversity requires reporting on direct operations and upstream only—information on the downstream is recommended.
ISSB	Direct operations, upstream and downstream	According to the ISSB Standards, companies should disclose sustainability-related risks and opportunities related to the full range of activities, resources and relationship used and relied on from conception to end-of-life of the companies' products or services. In other words, covering not only direct operations but also all upstream and downstream value chain stages.
Natural Capital Protocol	Direct operations, upstream and downstream	The Natural Capital Protocol allows companies to determine the scope of value chain covered by their assessment, i.e., the upstream, direct operations and downstream, depending on the purpose of their assessment. It provides guiding questions to companies on what aspects to assess along the value chain.
SBTN	Direct operations and upstream (downstream may be covered in future releases)	<p>SBTN v1 methods require companies to assess the impacts (deriving from pressures and triggered through changes in states) associated with their directly owned or operated sites and facilities or other assets. For upstream activities, SBTN requires companies to assess impacts associated with the goods and services they have purchased that support these direct operations. Once companies have completed a high-level screening of these direct operations and upstream activities (Step 1a of the SBTN methods), they then go on to estimate pressure and state values for 100% of their direct operations, and all their high impact commodities⁴⁰ as well as at least 67% of their total purchased goods and services in terms of spend or volume, deemed to be material after the materiality screening (Step 1b of the SBTN methods). The remaining upstream activities, beyond the minimum 67% coverage, do not need to be assessed but should be included on a list or inventory of all upstream value chain links for the company in question.</p> <p>Targets set in Step 3 should eventually cover all activities within companies' direct operations and upstream that are known or expected to have a material impact on nature (based on their Step 1 assessments). However, companies are expected to set targets first on the locations where action is needed most urgently and for activities which have the highest contribution to the pressure categories.</p> <p>While SBTN guidance does not currently require companies to set targets on the downstream parts of their value chain, companies are encouraged to seek solutions for assessing, tracking and managing their downstream impacts. Downstream guidance is expected to be developed in the future.</p>

Approach	Value chains coverage	Extent of value chains disclosure
TNFD	Direct operations, upstream and downstream	<p>The TNFD recommends that companies disclose on the full set of material nature-related dependencies, impacts, risks and opportunities, including climate, of their operations and across their value chains. This includes a consideration of the upstream and downstream value chains. For financial institutions, this includes financed, facilitated, investment and insured activities and assets.</p> <p>The TNFD expects that organizations will need to take a deep and narrow approach at first, investigating a small number of highly material issues in detail in the early years of disclosure, before expanding their investigations over time to obtain a fuller picture. The coverage should expand over time.</p>

2.5 Key finding 5: Location information requirements

Key finding 5: All approaches reflect the importance of location-specific nature-related assessment and disclosure. Several approaches recommend that companies provide spatial data to capture these locations precisely.

The need for location information is paramount in all approaches. All nature-related assessment and disclosure approaches recognize that nature-related dependencies, impacts, risks and opportunities are location specific. The need for information on all locations where a company or its value chain partners have activities, is emphasized across the different approaches. For example, TNFD's general disclosure requirements state that the consideration of the geographic location of the company's interface with nature should be integral to the assessment of nature-related issues and their disclosure if they are material. The LEAP approach guidance recommends companies start their assessment by compiling a list of locations including their direct operations and value chain activities in order to locate their interface with nature. SBTN, as another example, recognizes that impacts are location specific and therefore setting effective science-based targets in managing nature-related impacts across different locations will require the use of location and spatial information. In Step 1, companies are asked to provide location information for all their directly owned or operated sites as well as the known or expected sourcing locations and spend or volume on each category of the procurement. In Step 2, companies should then use the information on all parts of the value chain and pressures identified as material to determine which locations and economic activities to include within their "boundaries" for each target, and where to act first. An overview of the location information requirements across the nature-related assessment and disclosure approaches can be found in Table 9 below.

Location specific disclosure is increasingly required. Some approaches require spatially explicit disclosure with varying degrees of precision for direct operations and upstream and downstream activities. For example, when companies disclose their nature-related dependencies and impacts as part of the TNFD Strategy A disclosure, they must include a description of the material dependencies and impacts on nature. This description should encompass the location of the dependency/impact with reference to the location(s) identified in Strategy D and specify whether the dependency/impact is related to the company's direct operations or to its upstream or downstream value chains.⁴¹ TNFD encourages companies to disclose spatial data as part of Strategy D disclosures, if possible, but this is not required. According to the ESRS, when companies are disclosing impacts and dependencies, they should break the information down by site and describe where the sites are located. Further information also needs to be disclosed on companies' negative impacts on biodiversity sensitive areas. Another example is the GRI Biodiversity Standard, which requires companies to disclose the location of their most significant impacts on biodiversity. This disclosure should include the location and size in hectares of their operational sites, along with information related to the ecologically sensitive areas that are in or near these operational sites. GRI

Biodiversity Standard also asks companies to report the products in their supply chains that have the most significant impacts on biodiversity and indicate the countries or jurisdictions where they are developed. The standard strongly encourages disclosure of spatial data—recommending companies report on the locations of their direct operation sites using polygon outlines or maps where possible. For the supply chain, the standard acknowledges that spatial data may not be possible to report and specifies companies can report only the country or jurisdiction where the spatial data are not available.

Prioritization of locations is often recommended and there is increasing convergence on the criteria used to determine the ecological significance of areas. Recognizing companies can have multiple sites but do not necessarily have material nature-related issues in all of them, most approaches recommend a degree of prioritization between locations. Several approaches are aligned or in the process of aligning more closely with the location prioritization criteria recommended by TNFD. As part of component L3 of the LEAP approach, TNFD asks companies to identify where the value chain activities and direct operations with potentially moderate and high dependencies are located, along with the biomes and specific ecosystems that they interface with. In L4, companies identify where these are in ecologically sensitive locations, based on criteria such as ecosystem integrity, biodiversity importance, water risks and importance for communities (for more information, see Box 2 below). Aligned with TNFD, the GRI Biodiversity Standard puts forward a similar process that companies can follow to identify the locations with the most significant impacts on biodiversity. It recommends companies consider the direct drivers of biodiversity loss, the proximity to ecologically sensitive areas, and the state of biodiversity. The ESRS E4 similarly recommends that companies identify sites that are most likely to be material in the early stages of their assessments. It encourages the use of the LEAP approach and prioritizing sites based on integrity and importance of biodiversity and ecosystems. Some of the criteria defining biodiversity-sensitive areas are similar to the criteria for sensitive locations specified by TNFD but some differences remain.

Box 2: TNFD's definition of sensitive locations

According to the TNFD v1.0, "sensitive locations are locations where the assets and/or activities in its direct operations—and, where possible, upstream and downstream value chain(s)—interface with nature in:

- Areas important for biodiversity; and/or
- Areas of high ecosystem integrity; and/or
- Areas of rapid decline in ecosystem integrity; and/or
- Areas of high physical water risks; and/or
- Areas of importance for ecosystem service provision, including benefits to Indigenous Peoples, Local Communities and stakeholders."

(TNFD 2023b)

Detailed description of the sensitive location criteria and recommended data sources can be found in the TNFD disclosure recommendation Strategy D⁴² and in TNFD's guidance on the Locate stage of LEAP.⁴³

SBTN also uses information on ecological significance to prioritize locations for initial target-setting efforts. SBTN's Step 2 method provides a prescriptive approach for companies to interpret the environmental significance of their impacts in different locations, using information on the state of nature in these locations. This includes using indicators on ecosystem integrity, species threats, water availability, water pollution and others. The process allows companies to determine which locations should be prioritized for target setting from an environmental perspective. Companies can complement this with feasibility or strategic prioritization considerations. It is expected that companies expand their target coverage over time. SBTN methods have helped inform the Locate phase of the TNFD LEAP approach, and there are plans for further alignment between the two approaches on the ecological significance criteria used for prioritization.

There is a divergence among approaches on the need to disclose locations with biodiversity significance that are not expected to be associated with material impacts or dependencies. TNFD disclosure recommendation Strategy D asks companies to disclose all priority locations in direct operations, upstream and downstream. This includes not only the locations where the company has identified material nature-related issues but also all locations where the company interfaces with ecologically sensitive areas.⁴⁴ The GRI Biodiversity Standard, on the other hand, requires companies to disclose only the operational sites with the most significant impacts on biodiversity and ecologically sensitive areas that are in or near these operational sites. The ESRS E4 on biodiversity and ecosystems also requires companies to disclose only direct operation sites with material impacts and dependencies and provide information on the ecological status of the areas where they are located. In addition to this, companies are required to disclose any biodiversity-sensitive areas in these sites that are negatively impacted by the company's activities.

Table 9: Overview of the location information requirements across the nature-related assessment and disclosure approaches

Approach	Is assessment of nature-related issues location-specific?	Is disclosure of nature-related issues location-specific?	Is spatial data required/recommended to be disclosed?	Is prioritization based on location allowed/recommended?	Do companies need to disclose where they interface with nature in areas of biodiversity significance?
CDP	Yes	Yes	Spatial data is not required, but recommended for certain topics (e.g. list of names and locations for production and processing sites in commodity supply chains)	Currently no, but intend to include in the near future.	Yes, the climate change questionnaire requires companies to report whether they have activities located in or near 'biodiversity-sensitive areas' and if they fall within the operational site's area of influence.
ESRS	Yes	Yes	No	Yes, companies are recommended to identify the relevant sites where they are likely to have material dependencies and impacts in the list of locations based on the approach outlined in the ESRS Application Requirements. ⁴⁵	Yes, under ESRS E4, companies are required to disclose whether they have sites located in or near biodiversity-sensitive areas and where activities related to these sites negatively impact these areas. If these sites are material, companies are further required to provide the list of material sites and disclose the locations by specifying the biodiversity-sensitive areas impacted.
GRI	Yes	Yes	Spatial data (e.g. polygon outlines or maps) is required for direct operations and recommended for value chain.	Yes, companies should prioritize locations based on an assessment of their biodiversity and ecosystem service importance.	Yes, the GRI Biodiversity Standard requires disclosure of locations with the most significant (material) impacts that are in areas of biodiversity significance.
ISSB	Yes	Not required but recommended. ⁴⁶	No	Not required, but prioritization of locations is recommended in the CDSB Framework Application Guidance.	Not a distinct disclosure requirement, but companies may include this information in their description of risks and opportunities if it is material.
Natural Capital Protocol	Yes	N/A	N/A	Yes, using location information is recommended to scope and prioritize the assessment.	N/A

Approach	Is assessment of nature-related issues location-specific?	Is disclosure of nature-related issues location-specific?	Is spatial data required/recommended to be disclosed?	Is prioritization based on location allowed/recommended?	Do companies need to disclose where they interface with nature in areas of biodiversity significance?
SBTN	Yes	Yes, targets and reporting on progress should be location specific.	N/A	Yes, companies are required to identify, interpret and prioritize the most material sites to measure, set and disclose targets with the use of location information in Steps 1 and 2 of the SBTN guidance.	No, according to the current guidance companies do not need to publicly disclose this information. However, companies will need to provide data to SBTN specifying which of their locations are of highest significance for biodiversity and other environmental concerns.
TNFD	Yes	Yes	Spatial data is not required but is recommended.	Yes, companies are recommended to prioritize locations in the Locate phase of the LEAP approach.	Yes. Under the disclosure recommendation Strategy D, companies are required to disclose all locations where the company's direct operations, and upstream and/or downstream and/ or financed assets and activities, where relevant, are in ecologically sensitive areas. Criteria for ecologically sensitive areas are provided and include areas of biodiversity importance. The ecologically sensitive locations are expected to be disclosed regardless of the materiality of the company's impacts in these locations.

2.6 Key finding 6: Nature-related impacts

Key finding 6: Assessment of impacts is central to all of the approaches. Most approaches recognize that a comprehensive analysis of business impacts on nature requires looking beyond the impact drivers/pressures resulting from business activities. They recommend or require that companies measure the state of nature and understand how the impact drivers/pressures resulting from their business activities lead to changes in the flow of ecosystem services and stock of ecosystem assets.

Assessment of business impacts on nature is crucial in all of the reviewed approaches but plays a different role depending on the type of the approach. It can inform reporting on impacts as part of disclosure or target setting, or support risk and opportunity assessments. The GRI Standards are specifically designed to enable organizations to report their most significant impacts on the economy, nature and people. SBTN methods are developed to help companies set targets that will assist management of business impacts on nature. CDP, ESRS, Natural Capital Protocol and TNFD support companies in assessment and/or disclosure of their nature-related impacts alongside other issues, the understanding of which should also be informed by impact measurement. The ISSB Standards, which are designed to support the information needs of investors, lenders and other creditors, require companies to disclose impacts on nature only if these give rise to material risks and opportunities (with the exception of Scope 1–3 greenhouse gas emissions required in IFRS S2). The ISSB Standards however recommend that companies measure and analyze their impacts, in order to gain a comprehensive understanding of their risks and opportunities. They refer to the CDSB Framework Application Guidance and SASB Standards, which provide guidance on impact measurement and proposed metrics for a range of different impacts on nature (e.g. water withdrawal, oil spills). An overview of which approaches recommend or require assessment and disclosure of business impacts on nature can be found in Table 10 below.

Disclosure of nature-related impacts involves disclosure of quantitative metrics. For example, TNFD asks companies to disclose their impacts, the metrics used by the company to measure these impacts and their values under recommended disclosures Strategy A and Metrics & Targets B. The ESRS similarly specify that companies need to report their material impacts on nature, impact metrics and performance against these to meet the Strategy Disclosure Requirements and Metrics and Target Disclosure Requirements within the environmental standards. The GRI Biodiversity Standard, as another example, requires quantitative information to be disclosed on the impact drivers/pressures and their state of nature context associated with the most significant impacts.

Some approaches provide comprehensive step-by-step guidance on how impacts should be measured. For example, TNFD's LEAP approach provides a detailed guidance to companies on how to identify and measure their nature-related impacts, and on how this information should feed into the risk and opportunity assessment as well as the disclosure reports. The ISSB Standards refer to the CDSB Framework Application Guidance. SBTN's target setting guidance outlines the recommended approach for measuring business impacts on nature within the Step 1–3 guidance documents released to date, with further details to be added in the future. Meanwhile, the Natural Capital Protocol was developed as a standardized framework to identify, measure and value business impacts and dependencies on nature through providing a nine-step guidance divided into four stages.

Other approaches provide guidance only on the aspects of business impact measurement that are required for all disclosing companies in the interest of ensuring comparability of disclosure reports. The ESRS, for example, do not include a detailed step-by-step guidance on how companies should structure their measurement of impacts on nature. But specific paragraphs under the topical standards' application requirements provide recommendations on the components that the business impact measurement should include. For example, the application requirements under ESRS E4 on biodiversity and ecosystems specify the types of direct drivers of biodiversity loss that should be assessed. Similarly, GRI Standards provide guidance on how different disclosure requirements should be approached within the topic standards. For example, GRI 303 on water and effluents includes guidance on how areas with water stress can be assessed, publicly available and credible tools that companies can use for that assessment, and instructions on how to report the impacts.

Looking more closely at what the measurement of business impacts on nature is expected to cover, nearly all of the approaches cover all IPBES direct drivers of biodiversity loss and ecosystem change. The IPBES direct drivers of biodiversity loss and ecosystem change include natural resource use and exploitation, land- and sea-use change, pollution, climate change and introduction of invasive species (IPBES 2019). TNFD, ESRS, GRI and ISSB cover all of them.⁴⁷ CDP questionnaires cover most of the direct drivers within the climate change, forest and water security questionnaires. SBTN technical guidance currently focuses primarily on land use and land use change, freshwater use and freshwater pollution, with further details on other types of impact drivers/pressures expected to be included in future guidance documents released. This will build on the indicator framework proposing different types of pressure and state of nature indicators that companies are expected to use during Step 1 to assess their direct operations and value chain.⁴⁸

State of nature assessment is also recognized by most approaches as a necessary part of impact measurement that is expected to include both species- and ecosystem-level assessments. ESRS, GRI, ISSB, Natural Capital Protocol, SBTN and TNFD all specify that measurement of impact drivers/pressures should be accompanied by an assessment of the state of nature and an assessment of the changes to the ecosystem assets or services to which the impact drivers/pressures have led or are likely to lead.^{49,50,51} The questions in the CDP questionnaires primarily focus on capturing the companies' impact drivers/pressures and policies and procedures that the company uses to manage them, but some questions ask for additional context on the state of nature. For example, in the water security questionnaire companies are asked to indicate the proportion of their water withdrawn from areas of water stress. ESRS, GRI, ISSB, SBTN and TNFD also all explicitly state that companies should be assessing species abundance and species risks as part of the measurement of the state of nature.⁵² This provides complementary information to changes in ecosystem condition and extent, and it captures impacts on species diversity and specific focal species. However, there is limited guidance on how companies should conduct the baseline measurements of the state of nature, how frequently the full method should be repeated and what methods could be appropriate for tracking changes within these intervals.

Table 10: Overview of the requirements and recommendations on assessment and disclosure of business impacts on nature by the nature-related assessment and disclosure approaches.

Approach	Are impacts recommended or required to be assessed?	Are impacts required to be disclosed?	What guidance on measurement of business impacts on nature is provided?	What components are included in the measurement of impacts?			Types of impact-related metrics required or recommended for disclosure
				Impact drivers/Pressures	Changes to the state of nature	Changes in the flow of ecosystem services and stock of ecosystem assets	
CDP	Yes	Yes	Limited guidance—Clarifications in the questionnaires	Yes, impact drivers/pressures specific to questionnaire themes	Included for specific questions only	Not Included	<ul style="list-style-type: none"> Specific impact driver/pressure metrics Selected state of nature metrics, e.g. water accounting and intensity metrics
ESRS	Yes	Yes	Limited guidance—ESRS E1–5 Application Requirements	Yes, covering all IPBES direct drivers	Yes, including ecosystem extent, condition and species risks	Yes	<ul style="list-style-type: none"> Impact driver/pressure metrics State of species metrics Ecosystem extent and condition metrics
GRI	Yes	Yes	Limited guidance—Guidance under disclosure requirements for environmental topic standards	Yes, covering all IPBES direct drivers	Yes, including ecosystem extent, condition and species risks	Yes	<ul style="list-style-type: none"> Impact driver/pressure metrics
ISSB	Yes	Yes, if giving rise to material risks or opportunities	Full guidance—CDSB Framework Application Guidance and SASB Standards	Yes, covering all IPBES direct drivers	Yes, CDSB Framework Application Guidance recommends measurements of ecosystem extent, condition, integrity and species risks	Yes, included in the CDSB Framework Application Guidance	None
Natural Capital Protocol	Yes	N/A ⁵³	Full guidance—Natural Capital Protocol Measure and Value Steps 5–6	Yes, covering all IPBES direct drivers	Yes, including all changes in state of natural capital	Yes	N/A

Approach	Are impacts recommended or required to be assessed?	Are impacts required to be disclosed?	What guidance on measurement of business impacts on nature is provided?	What components are included in the measurement of impacts?			Types of impact-related metrics required or recommended for disclosure
				Impact drivers/Pressures	Changes to the state of nature	Changes in the flow of ecosystem services and stock of ecosystem assets	
SBTN	Yes	Yes (as part of disclosing progress against targets)	Full guidance—SBTN Technical Guidance on Steps 1–3. This includes an indicator framework in helping companies to map the pressures to states.	Yes, covering land use and land use change, freshwater use and freshwater pollution primarily, with further guidance on other types of impact drivers/pressures expected in the near future	Yes, including ecosystem extent, integrity and connectivity, and species risks ⁵⁴	Yes	<ul style="list-style-type: none"> Impact driver/pressure metrics Pressure-sensitive state of nature metrics (SoN_p) Biodiversity significance state of nature metrics (SoN_b)
TNFD	Yes	Yes	Full guidance—LEAP approach guidance on the Evaluate phase and accompanying Annex 2 on how to measure changes in the state of nature	Yes, covering all IPBES direct drivers	Yes, including ecosystem extent, condition and species risks	Yes	<ul style="list-style-type: none"> Impact driver/pressure metrics State of nature metrics Ecosystem services metrics

2.7 Key finding 7: Nature-related dependencies

Key finding 7: Most approaches cover business dependencies on nature. The connections between a company's dependencies and its impacts as well as considerations of the state of nature and external drivers of change in the location are increasingly considered to be a part of the measurement of business dependencies on nature.

Reflecting the recognition that business dependencies on nature are associated with significant risks and opportunities, all approaches that consider nature-related risks to companies cover business dependencies on nature. TNFD and ESRS both specify that companies should assess their dependencies on nature and disclose the most material ones. CDP covers specific types of business dependencies on nature through its questionnaires. ISSB Standards require companies to disclose the dependencies that result in material risks and opportunities. ISSB Standards also refer to the CDSB Framework Application Guidance, which recommends that companies assess all potentially significant dependencies on nature. An overview of the requirements and recommendations on the assessment and disclosure of business dependencies on nature by the approaches can be found in Table 11 below.

The GRI Biodiversity Standard and SBTN are primarily focused on business impacts on nature and society, but they encourage companies to consider dependencies on nature in connection with the impacts. The GRI Biodiversity Standard asks companies to report how the ecosystem services upon which the companies and other stakeholders depend could be affected, but it does not provide a detailed guidance on how companies should measure the size of their dependencies on nature. In the case of SBTN, while dependencies are not currently included in the guidance on assessment (Step 1) and target setting (Step 3), companies are able to introduce information on dependencies when choosing priority locations for target setting and action (Step 2).

There is recognition that businesses depend upon nature not only for provisioning ecosystem services but also for regulating and maintenance and cultural ecosystem services. TNFD, ESRS, GRI, Natural Capital Protocol as well as ISSB's CDSB Framework Application Guidance all recommend that companies identify their dependencies on all ecosystem services, including provisioning services, regulation and maintenance services and cultural services. CDP's climate, forest and water security questionnaires cover only specific ecosystem services, but these include all three types of ecosystem services.

There is increasing recognition that assessing business dependencies requires measuring companies' reliance on the ecosystem service as well as understanding how the ecosystem service and the state of nature supporting it might change. Measurement of business dependencies on nature can include different components: (1) measurement of the business's reliance on the ecosystem service, (2) measurement of impact drivers resulting from the business's own activities (3) measurement of external drivers of change, (4) assessment of the state of nature supporting the ecosystem service and (5) assessment of the availability and quality of the ecosystem service (UNEP 2023a). TNFD, Natural Capital Protocol and the ISSB's CDSB Framework

Application Guidance explicitly list all five components in their recommendations on how business dependencies should be measured. The ESRS specify that companies should consider how they are affected by their dependencies on natural capital and how their impact drivers could be affecting the ecosystem services upon which they depend. The guidance within the environmental ESRS standards does not explicitly present measurement of external drivers of change and state of nature as an integral part of evaluating business dependencies on nature. Companies are, however, expected to disclose whether the ecosystem services they depend upon are likely to be disrupted. They are also encouraged to draw on climate and nature scenarios, as part of which, the impacts caused by other stakeholders in the landscape and expected changes in the state of nature would be considered.

Table 11: Overview of the requirements and recommendations on assessment and disclosure of business dependencies on nature by the nature-related assessment and disclosure approaches.

Approach	Are dependencies recommended or required to be assessed?	Are dependencies required to be disclosed?	What guidance on measurement of business dependencies on nature is provided?	What components are included in the measurement of dependencies?				
				Reliance on the ecosystem service	External drivers of change	Impact drivers	Changes to the state of nature	Ecosystem services
CDP	Yes	Yes	Limited guidance—Clarifications as part of questionnaires	Yes	Not included	No	Not included	Not included
ESRS	Yes	Yes	Limited guidance—ESRS E1–5 Application Requirements	Yes	Not explicitly part of dependency measurement, considered through nature scenarios	Yes, covering all IPBES direct drivers	Not explicitly part of dependency measurement, considered through nature scenarios	Yes
GRI	Yes (limited)	Only as part of the reporting on impacts	Limited guidance—Guidance under disclosure requirements for environmental topic standards	Yes (as part of the reporting on impacts)	No	Yes, covering all IPBES direct drivers (as part of the reporting on impacts)	No	Yes (as part of the reporting on impacts)

Approach	Are dependencies recommended or required to be assessed?	Are dependencies required to be disclosed?	What guidance on measurement of business dependencies on nature is provided?	What components are included in the measurement of dependencies?				
				Reliance on the ecosystem service	External drivers of change	Impact drivers	Changes to the state of nature	Ecosystem services
ISSB	Yes	Yes, if giving rise to material risks and opportunities	Full guidance—CDSB Framework Application Guidance and SASB Standards	Yes	Yes	Yes, covering all IPBES direct drivers	Yes, CDSB Framework Application Guidance includes ecosystem extent, condition, integrity and species risks	Yes, included in the CDSB Framework Application Guidance
Natural Capital Protocol	Yes	N/A ⁵⁵	Full guidance—Natural Capital Protocol Measure and Value Steps 5–6	Yes	Yes	Yes, covering all IPBES direct drivers	Yes, including all changes in the state of natural capital	Yes
SBTN	No ⁵⁶	No	N/A	N/A	N/A	N/A	N/A	N/A
TNFD	Yes	Yes	Full guidance—LEAP approach guidance on the Evaluate phase and accompanying Annex 2 on how to measure changes in the state of nature	Yes	Yes	Yes, covering all IPBES direct drivers	Yes, including ecosystem extent, condition and species risks	Yes

2.8 Key finding 8: Nature-related risks and opportunities

Key finding 8: Approaches use similar definitions and categorizations of nature-related risks and opportunities. While companies are typically expected to disclose the risks and opportunities associated with the most material effects on their financial performance and strategy, some approaches recognize that all risks and opportunities associated with significant impacts on nature or society are or will likely prove financially material over time.

Nature-related risks and opportunities for business and finance are a fundamental part of approaches that consider financial materiality and they all adopt similar definitions. While nature-related impacts and dependencies have effects on nature and people, nature-related risks and opportunities relate to the assessed company only. Other stakeholders in the landscape may face their own sets of nature-related risks and opportunities, and several of the approaches encourage companies to consider these as part of estimating potential indirect or systemic risks and in their engagement with vulnerable communities. However, when estimating the value of nature-related risks and opportunities faced by a given company, companies are expected to capture how the risks and opportunities relate to them and their performance. An overview of the risk and opportunity coverage by the different approaches can be found in Table 12 below.

There are also similar categorizations of risks and opportunities. CDP, ESRS, ISSB Standards and TNFD all differentiate between acute physical and chronic physical risks. In addition to this, most approaches recognize different types of transition risks, including policy and legal risks, technology risks, market risks and reputation risks. ESRS and TNFD also recognize a third category of risks—systemic risks.^{57,58} For opportunities, the names of the categories tend to vary but resource efficiency, products and services, market, as well as financial incentives are commonly included in the categorizations (see Table 12 below). ESRS and TNFD also highlight opportunities that benefit nature through companies improving their sustainability performance, such as ecosystem protection, restoration and regeneration and sustainable use of natural resources.

While companies are typically expected to disclose the risks and opportunities associated with the most material effects on their financial performance and strategy, some approaches recognize that all risks and opportunities associated with significant impacts on nature or society are material or will likely prove financially material to the company over time. ESRS, ISSB Standards and TNFD all outline that companies should assess the likelihood and magnitude of nature-related risks as well as their type. These factors should feed into the estimation of the severity of the risks and opportunities and their current and anticipated financial effects. Although these three approaches allow companies to determine the exact methodology and criteria for identifying material risks and opportunities, they require the companies to (1) align it with the definition of materiality and (2) document the methodology followed as part of their disclosure reports. TNFD, which does not prescribe a specific definition of materiality, recommends that all companies (including those using a financial materiality approach)

prioritize risks and opportunities not only based on their likelihood and magnitude but also based on additional criteria, including the severity of impacts on nature and of implications for society. These additional prioritization criteria will capture the risks and opportunities that may not appear material based on the currently estimated likelihood and magnitude, but which could significantly affect a company's financial position or strategy over short-, medium- or long-term.

The approaches currently provide limited guidance on assessing and managing compound and systemic nature-related risks. All of the reviewed approaches acknowledge that nature-related risks can compound into disproportionately larger or new risks. However, they provide limited guidance on how company-level assessments should consider these to effectively and efficiently capture the full scope of nature-related risks that companies may face. The ESRS, ISSB and TNFD expect companies to assess each risk separately and prioritize the most material ones. They do not prescribe specific methods for how companies should consider interlinkages between different risks. None of the reviewed approaches require or recommend specific metrics for assessment and disclosure of nature-related systemic risks.⁵⁹ Companies are able to choose their preferred methodologies for measuring these.

Table 12: Overview of the requirements and recommendations on assessment and disclosure of nature-related risks and opportunities

Approach	Risks and opportunities recommended/required to be assessed?	Are risks and opportunities required to be disclosed?	What guidance on measurement of risks and opportunities is provided?	Types of risks	Types of opportunities	What information is expected to be disclosed about risks and opportunities?
CDP	Yes	Yes	Limited guidance— Clarifications as part of questionnaires	Physical risks, including: <ul style="list-style-type: none"> ▪ Acute physical risks ▪ Chronic physical risks Regulatory Reputational and markets Technological	Efficiency Resilience Markets Products & services Financial incentives Other	Different questions in the climate change, forest and water security questionnaires cover elements of: <ul style="list-style-type: none"> ▪ Financial effects of specific risks and opportunities ▪ Effects on the company's business model and value chain from specific risks and opportunities ▪ Effects on the company's strategy and decision-making from specific risks and opportunities
ESRS	Yes	Yes	Limited guidance— ESRS E1–5 Application Requirements	Physical risks, including: <ul style="list-style-type: none"> ▪ Acute physical risks ▪ Chronic physical risks Transition risks, including: <ul style="list-style-type: none"> ▪ Policy and Legal ▪ Technology ▪ Market ▪ Reputation Systemic risks, including: <ul style="list-style-type: none"> ▪ Ecosystem collapse risks ▪ Aggregated risk ▪ Contagion risks 	Business performance opportunities, including: <ul style="list-style-type: none"> ▪ Resource efficiency ▪ Products and services ▪ Markets ▪ Capital flow and financing ▪ Reputational capital Sustainability performance opportunities, including: <ul style="list-style-type: none"> ▪ Ecosystem protection, restoration and regeneration ▪ Sustainable use of natural resources 	For material risks and opportunities: <ul style="list-style-type: none"> ▪ Anticipated financial effects (For opportunities does not need to be quantified.) ▪ Whether they are likely to materialize in short-, medium- and long-term. ▪ Which impacts and dependencies the risks relate to. ▪ Critical assumptions used to estimate the financial effects, and the level of uncertainty.
GRI	No	No	N/A	N/A	N/A	N/A

Approach	Risks and opportunities recommended/ required to be assessed?	Are risks and opportunities required to be disclosed?	What guidance on measurement of risks and opportunities is provided?	Types of risks	Types of opportunities	What information is expected to be disclosed about risks and opportunities?
ISSB	Yes	Yes	Full guidance— Within the ISSB Standards as well as in the CDSB Framework Application Guidance and the SASB Standards	Physical risks, including: <ul style="list-style-type: none"> Acute physical risks Chronic physical risks Policy & Legal Market Technology Reputational ⁶⁰	Resource efficiency Products, services and market Financial incentives Reputational & relationship with stakeholders ⁶¹	For material risks and opportunities: <ul style="list-style-type: none"> Effects on financial position and cash flows (Quantitative information can be omitted if the effects cannot be separated, the uncertainty is high or the company does not have the capacity to provide quantitative information.) Effects on the company's business model and value chain Effects on strategy and decision-making Whether they are likely to materialize in short-, medium- and long-term.
Natural Capital Protocol	Yes	N/A ⁶²	Limited guidance provided on how assessments of impacts and dependencies can inform identification of risks and opportunities, as well examples provided on risks and opportunities.	Operational Legal and regulatory Financing Reputational and Marketing Societal	Operational Legal and regulatory Financing Reputational and Marketing Societal	N/A
SBTN⁶³	No	No	N/A.	N/A	N/A	N/A

Approach	Risks and opportunities recommended/ required to be assessed?	Are risks and opportunities required to be disclosed?	What guidance on measurement of risks and opportunities is provided?	Types of risks	Types of opportunities	What information is expected to be disclosed about risks and opportunities?
TNFD	Yes	Yes	Full guidance— The disclosure recommendations and the LEAP approach	Physical risks, including: <ul style="list-style-type: none"> ▪ Acute physical risks ▪ Chronic physical risks Transition risks, including: <ul style="list-style-type: none"> ▪ Policy ▪ Market ▪ Reputation ▪ Technology ▪ Liability Systemic risks, including: <ul style="list-style-type: none"> ▪ Ecosystem stability ▪ Financial stability 	Business performance opportunities, including: <ul style="list-style-type: none"> ▪ Resource efficiency ▪ Products & services ▪ Markets ▪ Capital flows and financing ▪ Reputational capital Sustainability performance, including: <ul style="list-style-type: none"> ▪ Ecosystem protection, restoration and regeneration ▪ Sustainable use of natural resources 	For material risks and opportunities: <ul style="list-style-type: none"> ▪ Description of each nature-related risk and opportunity identified Whether they are likely to materialize in short-, medium- and long-term. ▪ How they arise from the company's dependencies and impacts on nature ▪ The TNFD risk and opportunity category to which the risk or opportunity belongs. ▪ Effects on the company's business model, value chain and strategy ▪ Effects on financial position ▪ Quantitative information covering all core global and core sector risk and opportunity metrics on a comply or explain basis, as well as any other relevant metrics. ▪ Related targets and transition plans, if applicable.

2.9 Key finding 9: Disclosure metrics

Key finding 9: All approaches encourage companies to disclose not only a description of their nature-related issues but also metrics and their performance against the metrics. There is variation in the level of prescriptiveness on the choice of metrics.

While the inclusion of metrics is core to assessment and disclosure, there are varying levels of flexibility in the choice of metrics that are required or recommended to disclose across the approaches. Both GRI and TNFD prescribe some specific metrics that companies need to disclose but expect companies to go beyond these and disclose metrics on all nature-related issues that are material to the reporting company. The GRI Standards explicitly require disclosure of several metrics if the given nature-related issues are material for the reporting company. For instance, if the company identifies it contributes to exploitation of natural resources, examples of the required metrics include the volume of water withdrawal and consumption in megalitres or type and quantity of wild species used and their species extinction risk in locations. TNFD sets out the core disclosure metrics, which are to be disclosed on a comply or explain basis for all companies looking to report in line with the TNFD recommendations. The 14 core disclosure metrics at the global level are complemented with core disclosure metrics for specific sectors and biomes. The TNFD also provides an extensive list of additional disclosure metrics that organizations should disclose, where relevant, to best represent their material nature-related issues, based on their specific circumstances, and a list of assessment metrics in the LEAP approach guidance. An overview of how prescriptive the disclosure metrics requirements and recommendations are across the different approaches can be found in Table 13 below.

ESRS prescribe some metrics but, in many cases, give companies the flexibility to select their own so long as they align with the necessary characteristics. ESRS specify certain metrics that all companies reporting against a particular ESRS environmental standard must disclose. For instance, companies reporting against ESRS E2 on pollution are required to disclose the amounts of pollutants emitted, and those reporting against ESRS E3 on water, need to disclose their total water consumption in m³. Companies reporting against ESRS E4 on biodiversity and ecosystems are required to disclose two metrics: (1) the number and (2) the area size (in hectares) of sites owned, leased, or managed in or near biodiversity-sensitive areas that the company negatively affects. For other nature-related issues, ESRS E4 gives companies the flexibility to choose their own metrics but provides specific recommendations regarding the elements these metrics should cover. For example, if companies directly contribute to the impact drivers of land-use change, freshwater-use change, and/or sea-use change, they are encouraged to report on metrics measuring changes in ecosystem structural connectivity and changes to the spatial configuration of the landscape.

ISSB Standards also give companies the flexibility to select their disclosure metrics as long as they are in line with recommended guidance or established best practice.

ISSB prescribes some specific disclosure metrics on greenhouse gas emissions in the IFRS S2 on Climate-related Disclosures. For other environmental sustainability issues, ISSB does not currently provide separate standards and companies are asked to refer to the general guidance within the IFRS S1 General Sustainability-related Disclosures standard. This specifies companies should base their choice of disclosure metrics on guidance in the SASB Standards. They may also refer to the CDSB Framework Application Guidance and best practice within the sector or geographical region in which the company is operating. For information on best practice, ISSB recommends reviewing recommendations of other standard-setting bodies and sustainability reports of other companies in the same industry or region.

Table 13: Overview of the flexibility in choosing the disclosure metrics across the nature-related assessment and disclosure approaches

Approach	Flexibility in choosing which metrics are disclosed
CDP	<p>Limited flexibility. CDP expect companies to have full disclosure of the required metrics (i.e. completing all the data points they are presented with) as minimum in their questionnaire.</p> <p>Both the CDP forests and water security questionnaires require companies to report on a range of nature-related issues. Examples of some these include:</p> <ul style="list-style-type: none"> ■ Percentage of commodity volumes verified as deforestation- and/or conversion-free (Forests) ■ Percentage of processing facilities in supply chain with DCF/NDPE commitments; % of processing facilities in supply chain with deforestation/conversion monitoring systems in place to measure the performance of several actors in the supply chains (Forests) ■ Engagement and investment in landscape/jurisdictional initiatives; percentage of commodity volumes produced/sourced from landscape/jurisdictional initiatives (Forests) ■ Respondents reporting that sufficient amounts of good quality freshwater available for use is 'vital' or 'important' for their direct operations (Water security) ■ Percentage of water risks reported that are physical (Water security) ■ Percentage of water opportunities relating to efficiency (Water security)
ESRS	<p>The five ESRS environmental standards include disclosure requirements on metrics and targets. In some of the environmental standards, ESRS specify some metrics that all companies reporting against these standards should disclose. Examples include scope 1–3 GHG emission in the ESRS E1 standard on climate change, amounts of pollutants emitted by the company in the ESRS E2 on pollution, total water consumption in m3 in the ESRS E3 on water or total weight of products used in the production in the ESRS E5 on circular economy.</p> <p>In the ESRS E4 on biodiversity and ecosystems, the disclosure requirements on metrics and targets prescribe only two specific metrics that all companies reporting against that standard need to disclose: number and area size (in hectares) of sites owned, leased or managed in or near biodiversity-sensitive areas that the company is negatively affecting. For reporting on other nature-related issues, ESRS E4 leave companies the flexibility to choose their metrics but outlines specific recommendations on what elements these metrics should cover. For example, companies that find they have material impacts on ecosystems are recommended to disclose metrics on ecosystem extent and condition.</p>
GRI	<p>GRI Standards include several required metrics to capture the company's contribution to direct drivers of biodiversity loss. Examples include:</p> <ul style="list-style-type: none"> ■ Area size in hectares of a company's operational sites with the most significant impacts on biodiversity ■ Volume of water withdrawal and consumption ■ Species extinction risk of wild species used ■ Ecosystem extent in hectares <p>For other aspects of the company's impacts on nature, GRI Standards leave companies the flexibility to choose the metrics but outline what the metrics should cover or provide some recommendations for metrics. For example, for measurement of ecosystem condition the GRI Biodiversity Standard recommends reporting condition-adjusted hectares.</p>

Approach	Flexibility in choosing which metrics are disclosed
ISSB	<p>ISSB Standards prescribe some specific disclosure metrics on greenhouse gas emissions in the IFRS S2 Climate-related Disclosures.</p> <p>For other environmental sustainability issues, ISSB does not currently have separate standards. The IFRS S1 requires companies to consider the SASB Standards when identifying disclosure metrics that capture their sustainability risks and opportunities, and recommends companies refer to:</p> <ul style="list-style-type: none"> ■ The CDSB Framework Application Guidance ■ The most recent pronouncements of other standard-setting bodies whose requirements are designed to meet the information needs of users of general purpose financial reports ■ The sustainability-related risks and opportunities identified by entities that operate in the same industry(s) or geographical region(s).
Natural Capital Protocol	<p>The Natural Capital Protocol offers a flexible approach on metrics used in assessment, and leaves flexibility to companies in determining whether they report on the results of their assessment—ranging from qualitative, quantitative and monetary approaches and their related metrics, based on the purpose of their assessment. It provides guidance on factors to consider when selecting assessment and disclosure metrics, along with some illustrative examples.</p>
SBTN	<p>The SBTN methods released to date cover Steps 1–3. They focus on the information required to be submitted for validation. Guidance on external disclosures from companies (Step 5) is still under development.</p> <p>SBTN provides guidance for the choice of metrics in different steps of the target setting process (from Step 1–3), the degree of certainty companies must have about their measurements for these metrics and the spatial resolution of the data associated with these increases as companies move through the methods. For instance, in Step 1, companies may have a general estimate for the ecosystem conversion they have contributed to over the last five years at national level, but as they move to Step 3 and setting targets, they must measure hectares of deforestation or conversion since a given cut-off date within a sourcing area or smaller spatial unit.</p> <p>In general, SBTN methods aim to use indicators that reflect (1) appropriateness and ability to describe the company's activity, (2) controllability and the company's ability to affect the metric directly, and (3) comprehensiveness in their ability to capture the full picture, including pressures generated by the company and the associated changes in the state of nature (as well as changes in impacts/benefits from this). This means that companies may need to use multiple indicators and metrics together in order capture the full extent of their impacts (negative and positive) on nature.</p>

Approach	Flexibility in choosing which metrics are disclosed
TNFD	<p>TNFD differentiates between disclosure metrics and assessment metrics. For disclosure metrics, it differentiates between core disclosure metrics and additional disclosure metrics.</p> <ul style="list-style-type: none"> Core disclosure metrics are recommended to be disclosed on a comply or explain basis by all companies looking to align with TNFD recommendations. They are intended to support comparability within and across sectors on areas of high priority. The state of nature core disclosure metrics are currently listed as placeholders. Additional disclosure metrics that do not need to be disclosed by all companies but are recommended for disclosure, where relevant, to best represent an organization's material nature-related issues, based on their specific circumstances. <p>In addition to a set of 14 core disclosure metrics and more than 25 additional disclosure metrics at the global level, TNFD also provides core and additional disclosure metrics for selected sectors and biomes with the aim to cover more sectors and biomes over time. TNFD disclosure recommendations explain that companies and financial institutions are expected to go beyond the lists of core and additional disclosure metrics and disclose all metrics that are relevant and material to their organization.</p>

2.10 Key finding 10: Targets

Key finding 10: Most approaches require or recommend companies to set targets for strengthening their performance and action on nature-related issues, and regularly report on their progress towards these targets. An increasing number of approaches is expecting companies to set targets on specific dependencies, impacts, risks or opportunities at locations.

Most of the nature-related assessment and disclosure approaches reviewed expect companies to set targets for nature and biodiversity action. SBTN's core purpose is to build on SBTi climate target-setting guidance and develop additional methods, guidance and tools to support companies in setting science-based targets on nature. CDP, ESRS, GRI, ISSB and TNFD all encourage, or require, companies to set nature-related targets with a specific timeframe and clear geographical and value chain scope. Companies are recommended to set targets that are aligned with international and regional goals and policies. For instance, SBTN, TNFD, ESRS, CDP and GRI all specify that companies should disclose their short-, medium-, and long-term targets, and demonstrate how these targets align with global policy goals such as the Paris Agreement, GBF and Sustainable Development Goals (SDGs). In addition to this, SBTN and ESRS also require companies to describe how their targets align with the mitigation hierarchy.⁶⁴ An overview of what different approaches require companies to disclose about their nature-related targets can be found in Table 14 below.^a

Companies are expected to set not only targets at a corporate level but also location specific ones. For example, SBTN requires companies to set targets at site level based on the land and freshwater technical guidance documents for Step 3.⁶⁵ TNFD specifies that companies may aim to set three types of targets: business model targets, operational targets, and nature interface targets. The nature interface targets include targets on final impact drivers, state of nature and size and quality of an ecosystem service. The GRI Biodiversity Standard, as another example, requires companies to explain how their targets are related to their most significant impacts at location and how these targets are identified with the use of scientific evidence that is relevant to appropriate local sustainability contexts.

SBTN, as the approach specifically focused on target setting, provides a structured and detailed approach to the target setting process. The SBTN target-setting guidance aims to support companies in determining what types of targets they should be setting, how they should be setting them and how they can achieve progress towards them. This includes assessing the materiality and estimating pressures in the value chain (Step 1), interpreting and prioritizing locations based on pressure and state data

a Finally, additional guidance on nature target setting for financial institutions can be found in the Principles for Responsible Banking (PRB) Nature Target-Setting Guidance authored by UNEP FI with support from PRB signatories, which can be accessed here (unepfi.org/industries/banking/nature-target-setting-guidance/). Finance for Biodiversity Foundation has also released the Nature Target Setting Framework for Asset Owners and Asset Managers, which can be accessed here (financeforbiodiversity.org/ffb-foundation-launched-the-naturetarget-setting-framework-for-asset-managers-and-asset-owners/).

(Step 2), measuring, setting and disclosing targets (Step 3), taking action (Step 4) and tracking progress (Step 5). SBTN's Step 3 guidance also outlines how companies should determine appropriate levels of ambition for targets set for selected locations. SBTN will allow companies to validate their targets as being in line with the SBTN methods.

The approaches designed to support disclosure are less prescriptive on how companies should set their nature-related targets, and recommend companies follow SBTN or other target-setting guidance. The GRI Biodiversity Standard, for example, allows companies to follow any approach to target setting that draws on methods supported by scientific evidence. It requires companies to describe the methods they have chosen to identify the targets as well as the metrics they have chosen to set those targets. Although TNFD does not require a specific target-setting methodology to be followed in its disclosure recommendations, organizations are required to provide a description of the targets and associated metrics, and the methodology used to set the target and baseline. TNFD's LEAP approach guidance, however, strongly recommends companies refer to the SBTN methods. TNFD and SBTN have also jointly co-authored the Guidance for corporates on science-based targets for nature. The ESRS, as another example, do not require a specific target-setting methodology either. Companies are, among other characteristics, required to describe whether they have used ecological thresholds and allocations of impact when determining their targets, and whether these thresholds and allocations are based on scientific evidence. ESRS E2, E3 and E5 also reference SBTN as a useful guidance.

While regular reporting on progress toward targets is required, the specific information to be provided as evidence of the progress varies among the approaches. ESRS, GRI, ISSB, and TNFD require companies to report the indicators and metrics used to evaluate their progress in achieving the targets as well as baseline data alongside their annual performance data to facilitate easier comparison. ISSB, and TNFD also ask companies to report any revisions or adjustments to nature-related targets and the justifications for these. Both TNFD and GRI expect companies to provide an explanation of any instances where the company exceeds or falls short of the target trajectory. As an approach specifically focusing on targets, SBTN covers the above requirements and recommendations and specifies that companies should outline any adaptive management actions they have taken to address underperformance on targets. SBTN has not yet released its Step 5 guidance on tracking progress, which is expected to provide additional clarifications and details on how companies should be reporting on their progress towards targets.

Table 14: Overview of disclosure requirements and recommendations on targets across the nature-related assessment and disclosure approaches

Approach	What is recommended or required to disclose on targets?				
	Alignment with international goals/policies	Target specifications	Target setting process	Target scope and horizon	Monitoring of progress
CDP	<ul style="list-style-type: none"> Target alignment with frameworks 	<ul style="list-style-type: none"> Quantitative targets and qualitative goals that have been set Purpose of the target Links to the business strategy 	<ul style="list-style-type: none"> Approach in setting the targets Explanation if targets are not set, and if there are any future plans in setting the targets⁶⁶ 	<ul style="list-style-type: none"> Timeline for achieving the targets 	<ul style="list-style-type: none"> The baseline value and base year from which progress is measured The performance against the disclosed targets Metrics used to evaluate performance and effectiveness
ESRS⁶⁷	<ul style="list-style-type: none"> Whether the targets are informed by, and/or aligned with the Kunming-Montreal Global Biodiversity Framework, the Planetary Boundaries, relevant aspects of the EU Biodiversity Strategy for 2030 and other biodiversity and ecosystem-related national policies and legislation 	<ul style="list-style-type: none"> How the target is addressing the identified dependencies, impacts, risks and opportunities Target applicability to the mitigation hierarchy A description of the relationship of the target to the policy objectives The defined target level to be achieved Milestones or interim targets 	<ul style="list-style-type: none"> Application of ecological thresholds and allocations of impacts Involvement of biodiversity offsets The methodologies and significant assumptions used to define targets Whether the targets are science based⁶⁸ Whether and how stakeholders have been involved in target setting Any changes in targets and measurement methodologies within the defined time horizon 	<ul style="list-style-type: none"> Geographical scope of the targets Operations and value chain coverage of the target The period to which the target applies 	<ul style="list-style-type: none"> The baseline value and base year from which progress is measured The performance against the disclosed targets Metrics used to evaluate performance and effectiveness
GRI⁶⁹	<ul style="list-style-type: none"> How the targets are informed by the 2050 Goals and 2030 Targets in the Kunming-Montreal Global Biodiversity Framework or other authoritative intergovernmental instruments Whether the targets are based on legislation or voluntary 	<ul style="list-style-type: none"> Linkage of the targets to the most significant impacts How targets are informed by scientific evidence Whether and how the targets take into account the sustainability context of the impacts Value of the target Base year of the targets 	<ul style="list-style-type: none"> Methods used to identify targets Metrics used in setting the targets The monitoring, reporting and reviewing process that has been adopted 	<ul style="list-style-type: none"> Activities and business relationships to which the goals and targets apply Target timeline and milestones 	<ul style="list-style-type: none"> Progress made in achieving the targets and goals during the reporting year Indicators used to evaluate progress Methods used to measure performance against targets

Approach	What is recommended or required to disclose on targets?				
	Alignment with international goals/policies	Target specifications	Target setting process	Target scope and horizon	Monitoring of progress
ISSB	<ul style="list-style-type: none"> In IFRS S2 only: Whether the entity used a climate-related scenario aligned with the latest international agreement on climate change 	<ul style="list-style-type: none"> The specific quantitative or qualitative target the entity has set Milestones and interim targets 	<ul style="list-style-type: none"> The metric used in setting the target 	<ul style="list-style-type: none"> The period for which the target applies The base period from which progress is measured 	<ul style="list-style-type: none"> Metrics to be used in monitoring the progress Performance against each target and analysis of trends or changes in the company's performance Revisions to the target and an explanation for those revisions
Natural Capital Protocol⁷⁰	N/A	N/A	N/A	N/A	N/A
SBTN⁷¹	<ul style="list-style-type: none"> Alignment with these goals and policies is built into the methodologies; companies do not need to provide separate disclosures on this topic 	<ul style="list-style-type: none"> SBTs for nature will correspond to the pressures/impact drivers they seek to manage, and the locations where this management will occur Once validated by SBTN, companies will use approved target language to communicate about their targets Companies will prepare action plans to inform how they to meet the target⁷² Companies will also specify when they anticipate updating their targets (e.g. every five years) 	<ul style="list-style-type: none"> Organizational scope included in initial assessment (financial vs. operational control, business units, acquired or sold businesses) Baseline (e.g. year or period) included Baseline value for each pressure managed through targets (i.e. estimations for each pressure in the baseline year or period) Methods used (for Step 1, 2 and 3), specifying version and year Suite of indicators and metrics used to set the target Models used to set the target Indication of whether stakeholder consultations took place to inform targets 	<ul style="list-style-type: none"> Geographical scope of the target Timeframe for achieving the target, including interim milestones and anticipated checkpoints for recalculation 	<p>For each target:</p> <ul style="list-style-type: none"> Progress from baseline and on track assessment Adaptive management actions if targets are not on track Explanation to any changes to targets, indicators and monitoring plans <p>At corporate level:</p> <ul style="list-style-type: none"> Progress toward coverage of all business units if business unit approach used Progress within each target boundary (i.e. progress toward coverage of all activities and locations material for each pressure) Progress toward coverage of all material upstream activities, if some included in Target Boundary B⁷³ in the first year

Approach	What is recommended or required to disclose on targets?				
	Alignment with international goals/policies	Target specifications	Target setting process	Target scope and horizon	Monitoring of progress
TNFD	<ul style="list-style-type: none"> Whether and how the target aligns with or supports the targets and goals of the Kunming-Montreal Global Biodiversity Framework, the Paris Agreement on climate change, the Sustainable Development Goals, Planetary Boundaries and other global reference environmental treaties, policy goals and system-wide initiatives 	<ul style="list-style-type: none"> The strategy or risk management objective the target seeks to address The targeted value of the metric Short- and medium-term interim targets or target trajectory for the metric Targets in scope that covers changes to impact drivers, improve or maintain the flow of ecosystem services, changes to business activities and processes correlated with dependencies and impacts, Halt and reverse nature loss and improve or maintain the state of nature Proportion of targets that address short term, medium term and long term risks and opportunities 	<ul style="list-style-type: none"> The baseline year and level of the metric The methodology used to set the target and baseline 	<ul style="list-style-type: none"> The timeframe for achieving the target Proportion of targets that are time-bound and quantifiable Proportion of geographical sites/priority locations that are covered by targets 	<ul style="list-style-type: none"> The metric used to quantify the target and monitor performance Performance against the target relative to the baseline or reference condition on a historical and current year basis If the organization exceeded or fell short of the target trajectory or is projected to do so, an explanation of the reasons and disclosure of any resulting adjustment or resetting of targets from the prior period

2.11 Key finding 11: Engagement with rights-holders and relevant stakeholders

Key finding 11: Companies are encouraged to engage with rights-holders and relevant stakeholders at operation locations and beyond when assessing and disclosing their nature-related issues. Detailed guidance on stakeholder engagement is emerging.

Engagement with rights-holders and relevant stakeholders is highlighted as important for understanding the full scope of nature-related issues in all the reviewed approaches. TNFD, for example, recommends companies engage with Indigenous Peoples, Local Communities, affected and other stakeholders. It defines stakeholders as persons or groups who are directly or indirectly affected by a company's activities, as well as those who may have interests and/or the ability to influence its activities. Affected stakeholders include marginalized groups such as migrant workers, women, elders, children or youth, Indigenous Peoples and people with disabilities. Engagement is described by TNFD as an interactive process that should be characterized by two-way communication and good faith on both sides to be effective. It can include meetings, hearings or consultation proceedings. SBTN defines stakeholders as people who can affect a company's projects or activities or those who may be positively or negatively affected in connection with a company's environmental impacts. It similarly places a particular emphasis on engagement with local stakeholders most likely to be affected by the companies' actions, including Indigenous Peoples, frontline and fenceline communities, women, smallholders and other vulnerable workers within the company value chain. SBTN emphasizes that effective stakeholder engagement requires communication, listening, learning, collaboration, reciprocity and trust-building. It should follow a set of core principles including respect for human rights and core tenets of justice, equity, diversity and inclusion (JEDI), recognition of underlying inequities and power structures, and be embedded in an understanding of the place. An overview of the requirements and recommendations on engagement with rights-holders and other relevant stakeholders across the approaches can be found in Table 15 below.

The ESRS specifically differentiate between two categories of stakeholders with which a company needs to engage. The first category are the affected stakeholders, which should include affected communities, Indigenous Peoples and other rights-holders. The second are users of sustainability statements and other user groups such as business partners, civil society and governments. According to the ESRS, companies' decisions on which issues are material to assess and disclose should be primarily informed by engagement with affected stakeholders. Both affected stakeholders and users of sustainability statements should be consulted at a later stage of the assessment, to provide inputs or feedback on its findings.

Some of the reviewed approaches provide more detailed initial guidance on how companies should engage with rights holders and relevant stakeholders throughout the entire assessment and disclosure process. For instance, TNFD's Guidance on Engagement with Indigenous Peoples, Local Communities, and Affected Stakeholders

provides detailed advice on how companies should engage with Indigenous Peoples, Local Communities and affected stakeholders in every phase of the LEAP approach and when preparing their disclosure reports.⁷⁴ It outlines best practice for identifying relevant stakeholders, preparing for engagement, designing and conducting the engagement and involving stakeholders in the monitoring and evaluation process. SBTN, as another example, published a version 0.1 Stakeholder Engagement Guidance, which is aligned with the guidance from the TNFD. It provides step-by-step recommendations on how companies can achieve JEDI objectives and work with stakeholders as they set science-based targets for nature.⁷⁵ This guidance can be expected to evolve further in future releases. GRI Standards, on the other hand, provide definitions of concepts related to stakeholder engagement and additional information in GRI 1: Foundation. Additional guidance is also provided in the descriptions of different disclosures in universal and topic standards.

Specific disclosure requirements on engagement outcomes and processes are also starting to emerge. TNFD, for example, expects companies to draw on engagement processes in preparing reporting against all disclosure recommendations and also includes specific provisions in two disclosure recommendations: Governance C and Strategy D. Governance C disclosure recommendation asks companies to disclose their human rights policies and engagement activities with respect to Indigenous Peoples, Local Communities, affected and other stakeholders, in the assessment of, and response to, nature-related issues. Strategy D disclosure recommendation asks companies to disclose the locations of their assets and activities that meet the criteria for priority locations, which include areas of importance for ecosystem service provision that bring benefits to Indigenous Peoples, Local Communities and stakeholders. Another example are the CDP forest and water security questionnaires. They include specific questions on how companies take into consideration different types of stakeholders when identifying and assessing their impacts, risks and opportunities. The GRI Standards cover stakeholder engagement through different disclosures in their modular system of interconnected standards. The GRI Universal Standards, which apply to all companies, require companies to describe their approach to stakeholder engagement and specify the stakeholders and experts whose views have informed the process of determining material topic standards. This is complemented with additional disclosures in each topic standard. The GRI Biodiversity Standard, for example, asks companies to report their access and benefit sharing measures, which are the measures the companies use to access genetic resources and the associated traditional knowledge that is held by indigenous and local communities. Companies are also asked to describe any measures taken to minimize negative impacts on stakeholders resulting from their impacts on biodiversity for all operational sites with the most significant biodiversity impacts. In addition to this, GRI Biodiversity Standard expects companies to indicate whether their operational sites with the most significant biodiversity impacts are in areas important for the delivery of ecosystem service benefits to stakeholders and to describe how different beneficiaries in the landscape could be affected by the company's impacts on ecosystem services.

Recommendations and requirements are beginning to emerge on how considerations of impacts on and risks to affected stakeholders and rights-holders should be mainstreamed into all nature-related disclosures. There is an increasing recognition that nature-related, social and human rights issues cannot be fully understood when they are assessed or reported on in silos. Through the stakeholder engagement guidance documents and other updates, approaches are starting to recommend and require that when companies disclose on nature-related issues, they also specify how these issues connect to social and human rights issues. An important milestone in relation to this is going to be the publication of the Integrated Capital Protocol in 2024, which will replace the Natural Capital Protocol and Social and Human Capital Protocol. Practical considerations supporting alignment between environmental and social reporting, such as clarity on how locations should be labelled or impact information aggregated, are also improving the usability of disclosure information for cross-cutting analysis of environmental, social and human rights issues.

Table 15: Overview of the requirements, recommendations and guidance on engagement with rights-holders and other relevant stakeholders across the approaches.

Approach	Is engagement with rights-holders and other relevant stakeholders encouraged?	Is engagement guidance provided?
CDP	<p>Yes, in different sections of the CDP questionnaires. For instance, CDP asks companies to disclose their engagement with the stakeholders in the value chain on issues related to climate, forests and water. This includes the type, details, rationale for engagement and its impacts.</p> <p>In the forest questionnaire, if companies are engaged in landscape and/or jurisdictional methods to sustainable land use, they are asked to disclose how their actions support the method through multi-stakeholder alignment and community capacity building. Companies are also expected to disclose the stakeholders they have considered and the relevant issues while identifying and assessing issues.</p> <p>In the forests and water security questionnaires, companies are also asked to report their policies and commitments to respecting internationally recognised human rights, including the rights of Indigenous Peoples, local communities, workers, and others who may be affected by company activities.</p>	Not provided.
ESRS	<p>Yes. Under ESRS, engagement with affected stakeholders is central to the company's identification and assessment of actual and potential negative impacts, and the determination of their materiality. When companies report the process to identify and assess material impacts, dependencies, risks and opportunities, the materiality assessment should include engagement with relevant stakeholders.</p> <p>The engagement process is also required to be disclosed under the Strategy Disclosure Requirements. For instance, ESRS E4 require companies to include details on the involvement of stakeholders, including holders of indigenous and local knowledge, when describing the resilience of their strategy and business model in relation to biodiversity and ecosystems.</p>	Limited. ESRS primarily outline several disclosure requirements related to engagement in various reporting areas and topical standards. However, they provide limited guidance on how companies should conduct the stakeholder engagement activities.
GRI	<p>Yes, GRI Standards include several disclosures that require knowledge of and engagement with rights-holders and other stakeholders in the landscape.</p> <p>In the GRI Biodiversity Standard, for example, companies are asked to report their access and benefit sharing measures, which would be used by the company to access genetic resources and the associated traditional knowledge that is held by indigenous and local communities. Companies are also asked to describe any measures taken to minimise negative impacts on stakeholders resulting from the company's impacts on biodiversity. For all operational sites with the most significant biodiversity impacts, GRI Biodiversity Standard expects companies to indicate whether these sites are in areas important for the delivery of ecosystem service benefits to stakeholders and to describe different beneficiaries in the landscape could be affected by impacts on ecosystem services.</p>	Yes. Guidance and examples on how companies should engage with affected rights-holders and stakeholders are provided in different standards under specific disclosures related to engagement.
ISSB	<p>Yes, within the CDSB Framework Application Guidance (which is referenced in IFRS S1). The guidance outlines engagement and collaboration as a key characteristic to be considered when preparing information for the mainstream report. The guidance highlights that stakeholders may have specific dependencies on biodiversity, including women, local and indigenous communities. Participation in collaborative actions is fundamental for effective biodiversity management.</p>	Yes. While no specific guidance on engagement is provided within IFRS S1 and S2, in the CDSB Framework Application Guidance that the ISSB Sustainability Standards refer to, there is guidance on stakeholder engagement and cooperation.

Approach	Is engagement with rights-holders and other relevant stakeholders encouraged?	Is engagement guidance provided?
Natural Capital Protocol	Yes. Stakeholder engagement is an integral element throughout the whole Natural Capital Protocol. Natural capital assessment should consider all potential natural capital impacts and/or dependencies that may be important or material to the business and its stakeholders. Under the Scoping stage, companies are required to identify the stakeholders and their level of engagement in the assessment. These stakeholders can range from the ones directly related to the business, including shareholders, and suppliers, to entities and rights-holders that are affected by the natural capital impacts and/or dependencies such as indigenous and local communities.	Yes. Relevant sections in the Natural Capital Protocol offer explanations and guidance on the involvement, consideration, and engagement of stakeholders and right-holders at each stage of the process.
SBTN	<p>Yes. Stakeholder engagement plays a crucial role in the process of establishing science-based targets for nature. SBTN strongly recommends that companies use its Stakeholder Engagement Guidance as they use the technical guidance on target setting (Steps 1–3) in order to ensure that their targets benefit nature <i>and</i> people.</p> <p>As an example, companies are strongly recommended to factor in the needs of local stakeholders and rights-holders, including Indigenous Peoples, local communities and other affected and often marginalised groups (such as women, youth, elderly, migrant workers), during their evaluation of feasibility and strategic interest of different locations (Step 2d) ahead of forming a target setting strategy and applying methods in Step 3.</p> <p>When setting targets in Step 3, companies are required to consult stakeholders to select an appropriate modelling approach (freshwater method), and to consider the objectives of multiple local stakeholders when setting landscape engagement targets (land method).</p>	Yes. SBTN released the Stakeholder Engagement Guidance v0.1 (beta) in May 2023. This document offers companies a comprehensive, step-by-step guidance on stakeholder engagement, covering areas including the significance of engagement in setting science-based targets, the identification of critical stakeholders, the timing and methodology for engaging with various stakeholders, as well as their involvement in the monitoring and evaluation process. The final version of the Guidance will be released in conjunction with the Step 4 and Step 5 guidance in 2024.
TNFD	Yes. Engagement with Indigenous Peoples, Local Communities, affected and other stakeholders is an integral part in the TNFD Framework. The TNFD general requirement 6 has listed the engagement with Indigenous Peoples, Local Communities (IP and LCs) and affected stakeholders a crucial element for any robust identification, assessment, and management of nature-related issues. TNFD recommended disclosure Governance C requires companies to describe the activities to engage with the IP and LCs, affected and other stakeholder groups when assessing and responding to nature-related dependencies, impacts, risks and opportunities. Engagement is also integrated throughout the entire LEAP approach. For instance, when evaluating nature-related dependencies and impacts, companies should factor in the environmental assets and ecosystem services that different stakeholder and rights-holder groups depend on and how business activities impact their dependencies on nature and access to ecosystem services.	Yes, TNFD released the 'Guidance on Engagement with Indigenous Peoples, Local Communities, and Affected Stakeholders' as part of version 1.0 in September 2023. This document offers detailed guidance to companies on the engagement process, covering multiple areas including the identification of relevant stakeholders and rights-holders, background information on international standards related to engagement, the preparation of appropriate policies, processes, systems, and strategies for engagement, methodologies for designing and conducting engagement, as well as the involvement of Indigenous Peoples, Local Communities, and affected stakeholders during monitoring and evaluation.

Annex 1: Methodology

This section outlines the research methodology used in this study. The study relied on a qualitative review of selected leading approaches to private sector assessment and disclosure on nature-related issues. The data collection was led by UNEP-WCMC while the analysis of the findings and their synthesis into the report was completed by UNEP-WCMC and UNEP FI.

Approaches covered and characteristics reviewed

During the inception phase, scoping research and initial consultations with selected assessment and disclosure approaches were conducted to determine which approaches should be covered in this report and which characteristics should be analyzed. The list of the nature-related assessment and disclosure approaches covered in this study can be found in Table 3 above. The key criteria for selection of the approaches were (1) coverage of biodiversity and nature issues, (2) relevance at global level or across multiple regions and (3) time relevance.

The characteristics of the nature-related assessment and disclosure approaches that were selected to be the focus of this study are listed in Table 16 below. They include biodiversity and nature concepts, methodological issues for understanding the relationship between companies and nature as well as more general characteristics that shape the scope of what is assessed and disclosed.

Table 16: Characteristics of the nature-related assessment and disclosure approaches selected to be the focus of this study

Characteristics	
Definition of materiality	Nature-related dependencies
Coverage of realms	Nature-related risks and opportunities
Coverage of sectors	Disclosure metrics
Coverage of value chains	Targets
Location information requirements	Engagement with rights-holders and relevant stakeholders
Nature-related impacts	

Data collection

The data collection was conducted in several rounds, with initial desk research and interviews completed between May and July 2023 and further desk research completed between August and November 2023 to address updates released by the reviewed approaches.

Desk review

The key sources of information included official published documents covering the disclosure approaches and their methodologies, any further guidance provided by the approaches and draft versions of these documents same (e.g. the exposure draft of GRI Topic Standard for Biodiversity). Detailed lists of the versions of the documents considered in drafting of this report can be found in the reference list. The documents outlining the approaches were complemented by review of existing research and guidance documents comparing the different approaches as well as other secondary sources (e.g. news pieces, information materials, websites) available online and shared by the representatives of different organizations developing the approaches. The information collected through the desk review was synthesized into a summary of each characteristic for each approach, to facilitate a comparison of the characteristics across the different approaches..

Interviews

Semi-structured interviews were conducted with representatives of the organizations who developed or are developing the nature-related assessment and disclosure approaches. The purpose of these interviews was to triangulate the information identified through the desk research, and enable inclusion of upcoming revisions that were not public at the time of writing. All interviews were conducted virtually and included at least two representatives from the relevant organizations. The full list of the experts interviewed can be found in Annex 2.

The questions shown in Annex 3 were used as guidance during the interviews. The context of a specific organization, in addition to the gaps in information reviewed during the desk research were used to tailor the questions.

Data analysis

The data collected through the desk research on the agreed characteristics was qualitatively analyzed and the key findings were drawn as a result. The findings of the research process were discussed within the research team. Draft versions of the report were shared for review with the interviewees and other relevant representatives of the organizations developing the nature-related assessment and disclosure approaches in late October—early November 2023.

Limitations

Some limitations exist in this research, which include but are not limited to:

- **Inherent differences:** Approaches reviewed in this report differ in type and the purposes they are designed to serve. ESRS, GRI and ISSB are disclosure standards, TNFD is a risk management and disclosure framework and Natural Capital Protocol is a measurement and valuation framework. SBTN is a target-setting guidance while CDP is a disclosure system. Each of these approaches plays an important role in the corporate disclosure landscape. When comparing the seven approaches against the selected characteristics in this research, our analysis took into consideration the specific context and function of these approaches. Nevertheless, some of the differences outlined in this report are inherent to the type and purpose of the approaches covered.
- **Ongoing iteration and development:** Several approaches are currently undergoing the process of further development or iteration which meant that in some cases researchers had to rely on the latest available draft of the given approach. Certain details of the approaches may change during the publication or shortly after the publication of this report. The report primarily focuses on trends that have been observed across multiple approaches reviewed and are unlikely to change in the near future. Where information indicated in this report is likely to evolve based on an updated version of the approach, the authors have made an effort to specify this.
- **Information sharing constraints:** Due to ongoing updates and sensitive nature of information, some interview respondents were not able to share the full details of the approaches' planned future contents or strategy. Researchers had to rely on the information that was publicly available at the time of conducting the study or that the representatives of the different disclosure approaches were willing to make available for the purpose of the study.



Annex 2: Full list of experts interviewed

CDP	Barbro Doevre, Mabel Smith
ESRS	Pedro Faria, Philippe Diaz, Rita Marinhos
GRI	Elodie Chene, Matthew Dunn, Sharon Hagen
IFRS Foundation	Francesca Recanati, Greg Waters
Natural Capital Protocol	Marta Santamaria
SBTN	Samantha McCraine
TNFD	Alessandra Melis, Emily McKenzie



Annex 3: Interview questions

The below are examples of the questions that were asked. The questions were tailored to the approach based on initial findings from the desk research.

- To get an understanding of your approach, we reviewed the following documents [name documents reviewed]. Are there any other materials you would recommend us to review?
- Your approach has defined Materiality as “.....”, why?
- Based on [name document reviewed], you recommend disclosures on business impacts and dependencies as follows “.....”. Would you be able to elaborate more on this?
- You propose companies use [methodology name] as the methodology for measurement/assessment. What are the major justifications behind?
- Your approach has currently covered A,B, and C sectors. Any plans to further expand into other sectors such as D,E, and F?

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Endnotes

- 1 The International Financial Reporting Standards (IFRS) Foundation has established the International Sustainability Standards Board (ISSB) to develop the IFRS Sustainability Disclosure Standards, also referred to as ISSB Standards. The ISSB Standards make references to the Sustainability Accounting Standards Board (SASB) Standards and Climate Disclosure Standards Board (CDSB) Framework Application Guidance. When describing ISSB Standards requirements and recommendations, our report also refers to the SASB and CDSB guidance.
- 2 The characteristics of ISSB Standards in this table are based on the IFRS S1 and S2 Standards, as well as the SASB Standards and the CDSB Framework Application Guidance that the ISSB Standards refer to for additional guidance.
- 3 ESRS will be mandatory for companies subject to the EU Corporate Sustainability Reporting Directive (CSRD). Other companies may choose to voluntarily report against ESRS. EFRAG will also produce a standard for SMEs, which will be voluntary.
- 4 ISSB Standards are expected to be mandated in different jurisdictions, similarly to the IFRS Accounting Standards.
- 5 CDP also has questionnaires for cities and states and regions. These are not covered in this research.
- 6 Target report users refer to individuals or groups who are expected to use the reports created by report preparers.
- 7 More information on the primary users of ESRS-aligned reporting can be found in ESRS 1 General requirements.
- 8 The Natural Capital Protocol provides additional guidance for the financial institutions.
- 9 More information on the target users of TNFD-aligned reports can be found on page 16 of the TNFD v1.0 recommendations.
- 10 GRI Standards refer to “the most significant impacts on the economy, environment and people”.
- 11 ISSB Standards envision financial materiality as determined through the understanding of the company’s sustainability impacts and dependencies.
- 12 Natural Capital Protocol recommends the approach to materiality should be tailored to the circumstance of the business and purpose of the assessment.
- 13 While SBTN has a major impact/environmental/social materiality focus, it allows the introduction of information on financial materiality when making the decision about where to begin target setting in Step 2d.
- 14 TNFD does not prescribe a specific approach to materiality. They recommend the ISSB definition of financial materiality as a baseline but acknowledge that companies may choose a different approach, including but not limited to the GRI impact materiality approach or ESRS double materiality approach.
- 15 ESRS E3 focuses on water and marine resources.
- 16 ESRS is planning to develop sector-specific standards for all sectors in the near future.
- 17 ISSB Standards make reference to the SASB Standards (SICS classification across 77 industries) for sector-specific guidance.
- 18 SBTN provides selected sector-specific guidance within the Step 3 methods. SBTN’s finance sector guidance is in development.
- 19 TNFD draft real economy sector-specific guidance will continue to be published in batches throughout 2024 for feedback.
- 20 Includes impacts on ecosystem services on which the company or other stakeholders in the landscape depend.

- 21 Companies previously subject to the EU Non-Financial Reporting Directive (NFRD) and large non-EU listed companies with more than 500 employees will have to start reporting under ESRS in financial year 2024. The standard will be applicable to large non-listed companies in 2025, with other types of companies becoming subject to the CSRD over the following years.
- 22 GRI refers to materiality as the significance of the negative and positive impacts.
- 23 The materiality assessment will be conducted at a different stage in the future Integrated Capital Protocol
- 24 GRI Standards refer to “the most significant impacts on the economy, environment and people”.
- 25 ISSB Standards envision financial materiality as determined through the understanding of companies’ dependencies and impacts.
- 26 Initial materiality screening is recommended in the CDSB Framework Application Guidance to which ISSB Standards refer for additional guidance.
- 27 Natural Capital Protocol recommends the approach to materiality should be tailored to the circumstance of the business and purpose of the assessment.
- 28 While SBTN has a major impact/environmental/social materiality focus, it allows the introduction of information on financial materiality when making the decision about where to begin target setting in Step 2d.
- 29 The SBTN glossary stated that Parameters used to understand significance (e.g. time frame, geographic distribution, potential severity) should correspond to societal preferences and the views and knowledge of those who live and are connected to place.
- 30 TNFD does not prescribe a specific approach to materiality. They recommend the ISSB definition of financial materiality as a baseline but acknowledge that companies may choose a different approach, including but not limited to the GRI impact materiality approach or ESRS double materiality approach.
- 31 For example, ocean currents can transport plastic waste across the globe (Erik van Sebille et al 2020) or diffuse oil released from offshore drilling to a large area (Murray 2018).
- 32 For example, the spatiotemporal variability of methane in shallow near-shore habitats ranges globally from 6 to 460 nM throughout the year (Roth et al 2022). Another example is that many oceanic species have non-linear migration and dispersal ranges that can exceed thousands of miles and follow variable patterns (Putnam, 2018).
- 33 For further information: <https://tnfd.global/publication/guidance-by-biome/#publication-content>
- 34 Draft TNFD sector-specific guidance for aquaculture guidance is expected to be published in December 2023, and draft fisheries guidance in 2024. Both will be finalised based on feedback from consultation in 2024.
- 35 For example, IBAT is in the process of integrating a data layer on of marine STAR, UNEP-WCMC is continually updating the Ocean+ platform and UNEP-WCMC and ORRAA are working on updating the Coastal Risk Index.
- 36 The LEAP approach is TNFD’s recommended approach to identification and assessment of nature-related issues. Companies do not need to follow the LEAP approach to prepare their TNFD disclosure reports, it is a voluntary additional guidance.
- 37 More information can be found in Table 3 in the SBTN Step 3 Target Setting Guidance: Land v0.3. Accessible here: sciencebasedtargetsnetwork.org/wp-content/uploads/2023/05/Technical-Guidance-2023-Step3-Land-v0.3.pdf
- 38 The SBTN requirement to cover value chain links that add up to at least 67% spend or volumes purchase applies for value chain links associated with direct operations activities, which are known to be material for at least one of the pressure categories. Companies could exclude direct operations activities and their associated upstream links if the direct operations activities in question have no known material impacts.
- 39 In ESRS E4 Biodiversity and Ecosystems, companies are required to describe their process to identify and assess material biodiversity- and ecosystem-related impacts and dependencies across the value chain and the associated risks and opportunities.
- 40 SBTN High Impact Commodity List can be found here: <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2023/05/SBTN-High-Impact-Commodity-List-v1.xlsx>
- 41 Strategy D defines priority locations as locations that are material (i.e., where an organization has identified material nature- related issues) and sensitive (i.e., where the assets and/or activities in its direct operations— and, where possible upstream and downstream value chain(s)—interface with nature in: areas important for biodiversity; and/or areas of high ecosystem integrity; and/or areas of rapid decline in ecosystem integrity; and/or areas of high physical water scarcity risks; and/or areas of importance for ecosystem service provision, including benefits to Indigenous Peoples, Local Communities and stakeholders).

- 42 TNFD v1.0 Recommendations can be accessed here: <https://tnfd.global/publication/recommendations-of-the-taskforce-on-nature-related-financial-disclosures/#publication-content>
- 43 TNFD Guidance on the identification and assessment of nature-related issues: the LEAP approach can be accessed here: <https://tnfd.global/publication/additional-guidance-on-assessment-of-nature-related-issues-the-leap-approach/#publication-content>
- 44 For TNFD's definition of ecologically sensitive locations, see Box 2. TNFD disclosure recommendation Strategy D expects companies to disclose all ecologically sensitive locations identified in their direct operations. Disclosure of ecologically sensitive locations for the upstream and downstream parts of the value chain is recommended where possible.
- 45 The detailed guidance can be found in Application Requirement 7 in ESRS E4 Biodiversity and Ecosystems
- 46 While ISSB does not require the disclosure of nature related issues to be location-specific, the CDSB Framework Application guidance for biodiversity-related disclosures recommends that organizations disclose the geographical specificity of their biodiversity dependencies, impacts, risks and opportunities.
- 47 TNFD and ESRS also include freshwater use change. ISSB Standards do not directly refer to the IPBES direct drivers of biodiversity loss and ecosystem change but they refer to the CDSB Framework Application Guidance that covers all IPBES drivers.
- 48 SBTN's Indicator Framework V1 can be found in the annex to the Step 1 methods. These can be accessed here: <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2023/05/Technical-Guidance-2023-Step1-Assess-v1.pdf>
- 49 Adopted from the System of Environmental-Economic Accounting—Ecosystem Accounting (SEEA EA), TNFD defines state of nature as the condition and extent of ecosystems, and species population size and extinction risk, including positive or negative changes.
- 50 ISSB Standards refer to the CDSB Framework Application Guidance, which recommends assessment of the state of nature as part of impact measurement.
- 51 SBTN's definition of the state of nature covers both biotic and abiotic components of ecosystems.
- 52 ISSB Standards refer to the CDSB Framework Application Guidance, which recommends this
- 53 Natural Capital Protocol provides a flexible voluntary guidance, and impact reporting is only one of the potential uses.
- 54 SBTN uses the term "state of nature" differently from how it is used in this report. SBTN's definition of state of nature includes both biotic and abiotic components. The abiotic state of nature measurements would cover assessments of water availability, water pollution/eutrophication etc.
- 55 Natural Capital Protocol provides a flexible voluntary guidance, and dependencies reporting is only one of the potential uses.
- 56 Since SBTN focuses on targets supporting management of business impacts on nature, it does not currently include dependencies in its guidance on assessment (Step 1) and target setting (Step 3). However, it does allow for companies to introduce information on dependencies when choosing priority locations for target setting and action (Step 2).
- 57 Nature-related systemic risks are risks arising from the breakdown of the entire system, rather than the failure of individual parts. Nature-related systemic risks are characterised by modest tipping points combining indirectly to produce large failures and cascading interactions of physical and transition risks. One loss triggers a chain of others and stops systems from recovering their equilibrium after a shock. Nature-related systemic risk covers more than only risk to a financial system (i.e. financial stability risk). It also covers the risks from the breakdown of natural systems (i.e. ecosystems) (TNFD, 2023).
- 58 ISSB Standards define these risk types in IFRS S2 on climate-related disclosures. The different risk categories are also described in the CDSB Framework Application Guidance, to which the ISSB Standards refer.
- 59 For definition of systemic risks, see footnote 60.
- 60 ISSB Standards define these different risks in IFRS S2 on climate-related disclosures. The different risk categories are also described in the CDSB Framework Application Guidance, to which the ISSB Standards refer.
- 61 ISSB Standards define these risk types in IFRS S2 on climate-related disclosures. The different risk categories are also described in the CDSB Framework Application Guidance, to which the ISSB Standards refer.
- 62 Natural Capital Protocol provides a flexible voluntary guidance, and risk and opportunity reporting is only one possible use.

- 63 Since SBTN focuses on targets supporting management of business impacts on nature, it does not provide guidance on assessment of risks and opportunities, but it does allow for companies to introduce information on risks and opportunities when choosing priority locations for target setting and action (Step 2).
- 64 As defined by the Cross Sector Biodiversity Initiative (CBSI), the mitigation hierarchy is: 'the sequence of actions to anticipate and avoid impacts on biodiversity and ecosystem services; and where avoidance is not possible, minimize; and, when impacts occur, rehabilitate or restore; and where significant residual impacts remain, offset (Cross Sector Biodiversity Initiative 2015).
- 65 Oceans Technical Guidance is currently being developed by SBTN.
- 66 Under module F6 of the deforestation questionnaire, when applicable, CDP asks companies to explain why they do not have target(s) in place for decreasing production and/or consumption for disclosed commodity(ies), alongside any plans to set targets in the future.
- 67 The ESRS requirements and recommendations in this table are based on ESRS E4 and the ESRS 2 Minimum Disclosure Requirement.
- 68 Determined by (1) whether ecological thresholds/allocations have been used in setting the target and (2) whether the ecological thresholds/allocations used are based on scientific evidence.
- 69 The GRI requirements and recommendations in this table are based on the GRI Biodiversity Standard and the GRI 3 Disclosure 3-3 that is relevant for all nature-related topics.
- 70 Natural Capital Protocol provides a flexible voluntary guidance, and target setting is only one of the potential uses.
- 71 The SBTN requirements are primarily focused on the information required to be submitted for validation; guidance on external disclosures from companies (Step 5) is still under development. Content included here is based on SBTN 2023 technical guidance and plans for the SBTN target dashboard.
- 72 Action plans are currently only required to be disclosed to the SBTN Validation Team.
- 73 In SBTN, Target Boundary B refers to activities where more precise locations for target setting are needed, and therefore where companies need to plan for increasing traceability.
- 74 TNFD on Engagement with Indigenous Peoples, Local Communities and Affected Stakeholders can be accessed here: tnfd.global/publication/guidance-on-engagement-with-indigenous-peoples-local-communities-and-affected-stakeholders/#publication-content
- 75 SBTN Stakeholder Engagement Guidance can be accessed here: sciencebasedtargetsnetwork.org/wp-content/uploads/2023/05/Technical-Guidance-2023-Stakeholder-Engagement-Guidance-beta.pdf

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unepfi.org



info@unepfi.org



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