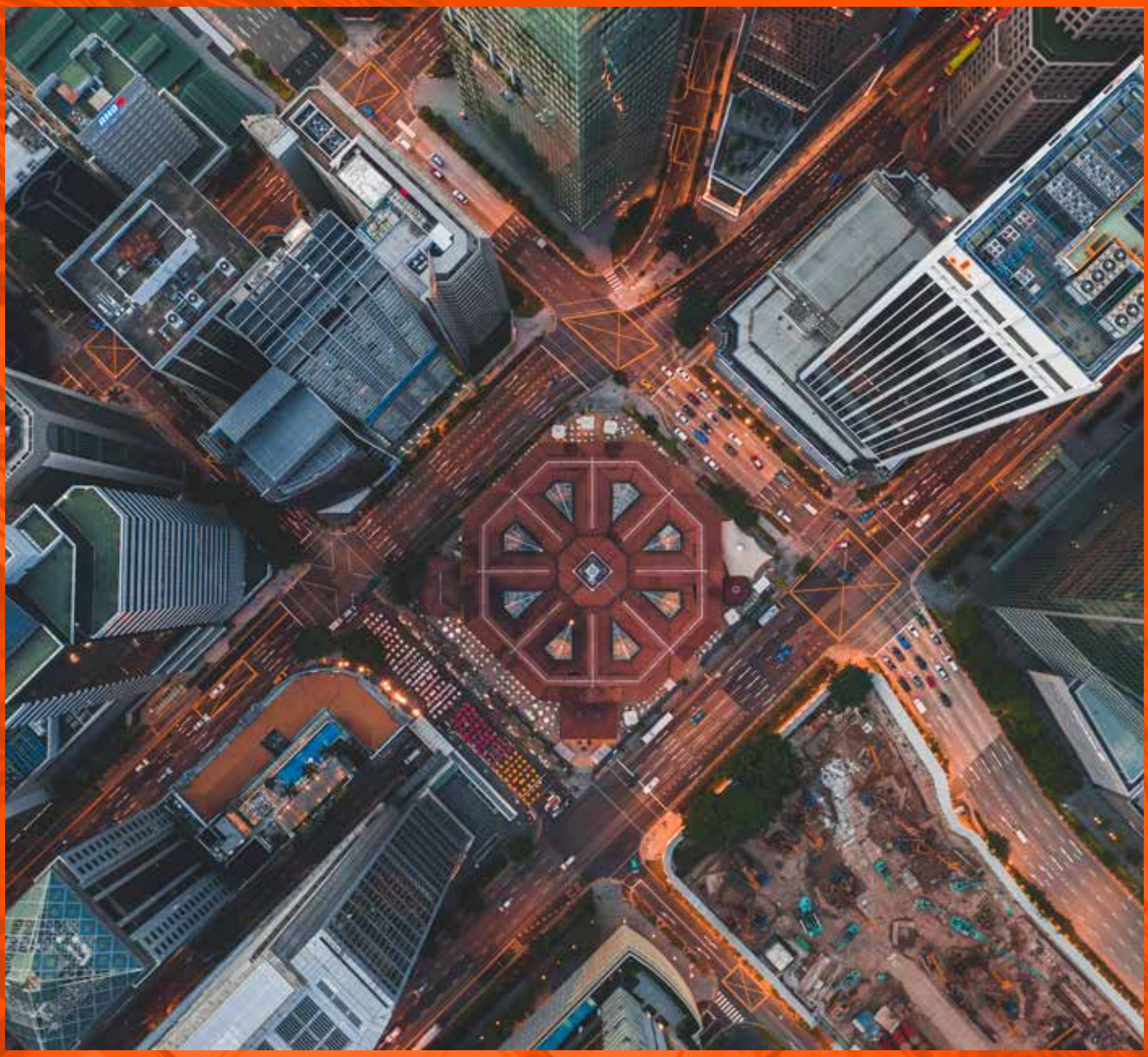


Sector guidance

Additional guidance for financial institutions

Version 1.0 September 2023

tnfd.global

Taskforce on Nature-related Financial Disclosures

Contents

1. Introduction

This document provides proposed additional guidance for financial institutions on the TNFD's recommended disclosures. It includes:

- Section 2: Guidance for financial institutions on the TNFD recommended disclosures. This should be read in conjunction with the TNFD Recommendations;
- Section 3: Guidance on the TNFD metrics architecture for financial institutions, including a set of proposed TNFD disclosure metrics for financial institutions. This should be read in conjunction with the metrics annexes in the TNFD Recommendations;
- Annex 1: A list of reference sectors to support the application of the proposed core disclosure metric for financial institutions on exposure to sectors; and
- Annex 2: A list of examples of metrics already in use by financial institutions as they assess and disclose nature-related issues. These are illustrative examples only and not considered best or recommended practice.

This guidance uses general formulations that can be applied by banks, insurance companies, asset managers and owners, and development financial institutions, but where relevant also indicates how the guidance may apply to specific sub-sectors. This approach to sub-sectors has been adopted to streamline the guidance and avoid overlaps with financial product disclosure regulatory regimes. The guidance is intended to be applied at the level of an entity and not a financial product.

Financial institutions should also refer to TNFD additional guidance for all sectors and for real economy sectors of interest to their financing activities. These documents provide guidance only and are not required for organisations reporting against the TNFD recommended disclosures.

The TNFD additional guidance covers:

- Identification and assessment of nature-related issues (the LEAP approach);
- Sector-specific guidance on the LEAP approach and sector metrics;
- Biome-specific guidance; and
- Additional guidance on two cross-cutting components of the LEAP approach:
  - Scenario analysis; and
  - Engagement with Indigenous Peoples, Local Communities and affected stakeholders.

1.1. Feedback

While the Taskforce does not intend to change its recommended disclosures, it will publish periodic updates to its additional guidance over the next two years to incorporate feedback from market participants and other stakeholders and to expand coverage to other sectors and biomes.

In line with this open innovation approach, the Taskforce welcomes further feedback from financial institutions on this guidance to inform iterative development before a final version is published in 2024.[1]

The Taskforce is particularly interested in feedback on the proposed disclosure metrics for financial institutions outlined in this document and encourages financial institutions to pilot test the application of these metrics. The TNFD expects further developments on data and methodologies in the future and will revise this guidance in response to these developments.

1 A first draft of the TNFD disclosure guidance for financial institutions was published in November 2022 and a second draft in March 2023.

2. Additional guidance on the recommended disclosures

This additional guidance for financial institutions should be read in conjunction with the TNFD Recommendations, which set out the recommended disclosures and guidance for all sectors.

For ease of reference, the TNFD's 14 recommended disclosures are summarised in Figure 1.

Figure 1: TNFD's recommended disclosures

Governance	Strategy	Risk & impact management	Metrics & targets
Disclose the organisation's governance of nature-related dependencies, impacts, risks and opportunities.	Disclose the effects of nature-related dependencies, impacts, risks and opportunities on the organisation's business model, strategy and financial planning where such information is material.	Describe the processes used by the organisation to identify, assess, prioritise and monitor nature-related dependencies, impacts, risks and opportunities.	Disclose the metrics and targets used to assess and manage material nature-related dependencies, impacts, risks and opportunities.
Recommended disclosures	**Recommended disclosures**	**Recommended disclosures**	**Recommended disclosures**
A. Describe the board's oversight of nature-related dependencies, impacts, risks and opportunities. **B**. Describe management's role in assessing and managing nature-related dependencies, impacts, risks and opportunities. **C**. Describe the organisation's human rights policies and engagement activities, and oversight by the board and management, with respect to Indigenous Peoples, Local Communities, affected and other stakeholders, in the organisation's assessment of, and response to, nature-related dependencies, impacts, risks and opportunities.	**A**. Describe the nature-related dependencies, impacts, risks and opportunities the organisation has identified over the short, medium and long term. **B**. Describe the effect nature-related dependencies, impacts, risks and opportunities have had on the organisation's business model, value chain, strategy and financial planning, as well as any transition plans or analysis in place. **C**. Describe the resilience of the organisation's strategy to nature-related risks and opportunities, taking into consideration different scenarios. **D**. Disclose the locations of assets and/or activities in the organisation's direct operations and, where possible, upstream and downstream value chain(s) that meet the criteria for priority locations.	**A**(i) Describe the organisation's processes for identifying, assessing and prioritising nature-related dependencies, impacts, risks and opportunities in its direct operations. **A**(ii) Describe the organisation's processes for identifying, assessing and prioritising nature-related dependencies, impacts, risks and opportunities in its upstream and downstream value chain(s). **B**. Describe the organisation's processes for managing nature-related dependencies, impacts, risks and opportunities. **C**. Describe how processes for identifying, assessing, prioritising and monitoring nature-related risks are integrated into and inform the organisation's overall risk management processes.	**A**. Disclose the metrics used by the organisation to assess and manage material nature-related risks and opportunities in line with its strategy and risk management process. **B**. Disclose the metrics used by the organisation to assess and manage dependencies and impacts on nature. **C**. Describe the targets and goals used by the organisation to manage nature-related dependencies, impacts, risks and opportunities and its performance against these.

2.1. Governance

Disclose the organisation's governance of nature-related dependencies, impacts, risks and opportunities.

Investors, lenders, insurance underwriters and other users of nature-related financial disclosures are interested in understanding the governance processes, controls and procedures the organisation uses to monitor and manage nature-related issues. They are specifically interested in understanding the role an organisation's board plays in overseeing nature-related issues, as well as management's role in assessing and managing those issues.

Such information supports evaluations of whether nature-related issues receive appropriate board and management attention and whether the organisation's governance body/bodies have an appropriate level of skill and competence available to do so. The governance disclosures therefore cover the organisation's governance of nature-related dependencies, impacts, risks and opportunities.

A. Describe the board's oversight of nature-related dependencies, impacts, risks and opportunities	No additional guidance for financial institutions.
B. Describe management's role in assessing and managing nature-related dependencies, impacts, risks and opportunities	No additional guidance for financial institutions.
C. Describe the organisation's human rights policies and engagement activities, and oversight by the board and management, with respect to Indigenous Peoples, Local Communities, affected and other stakeholders, in the organisation's assessment of, and response to, nature-related dependencies, impacts, risks and opportunities	Financial institutions should also describe how they have worked with investee companies, counterparties or clients with whom they have financial relationships through advisory, investing, lending or insurance to help ensure they undertake outreach and engage relevant Indigenous Peoples, Local Communities and affected stakeholders in their assessment of, and response to, nature-related dependencies, impacts, risks and opportunities.

2.2. Strategy

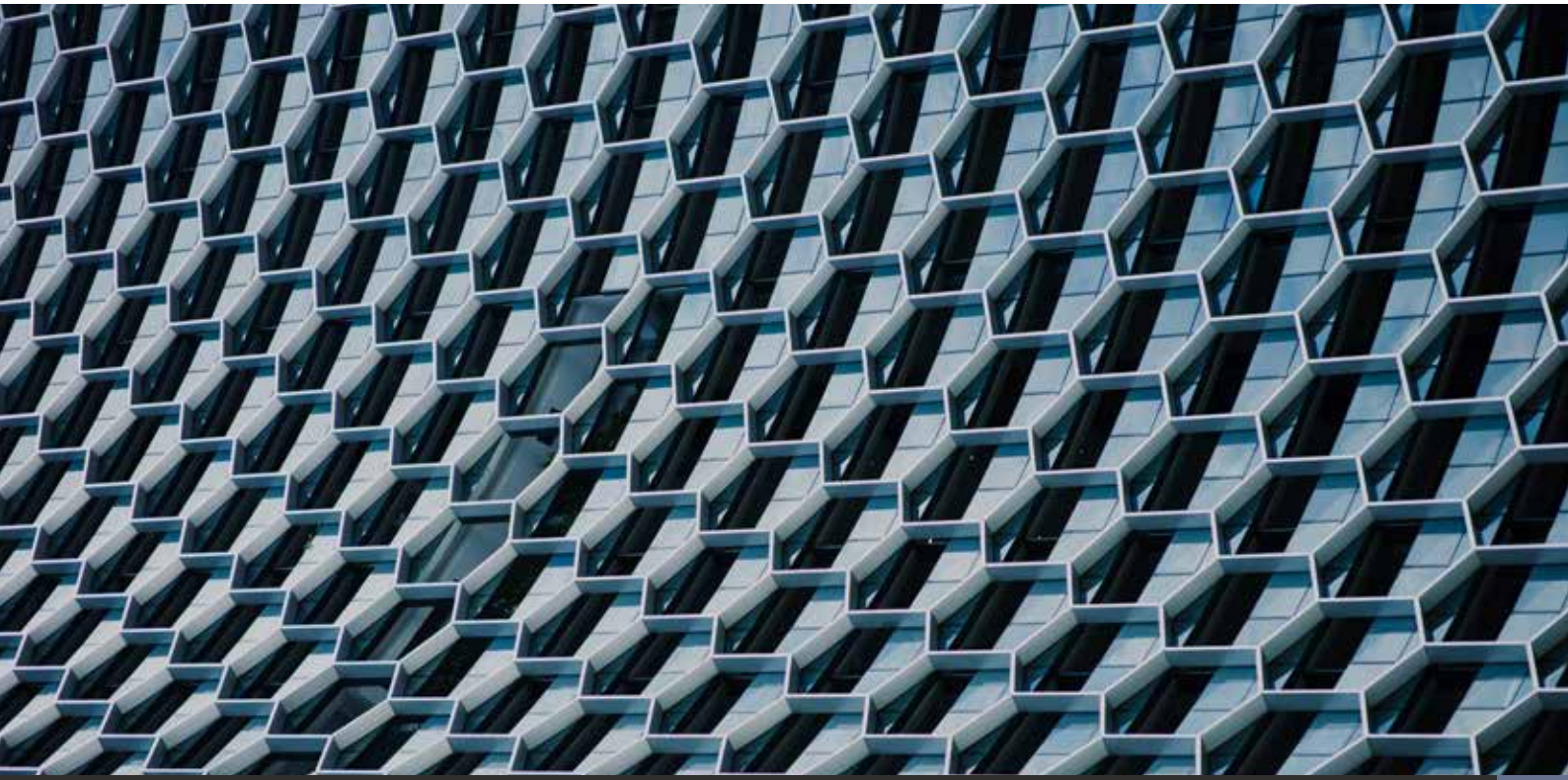
Disclose the effects of nature-related dependencies, impacts, risks and opportunities on the organisation's business model, strategy and financial planning where such information is material.

Investors and other stakeholders are interested in understanding the approach the organisation uses to manage nature-related issues and how nature-related issues may affect an organisation's business model, strategy and financial planning over the short, medium and long term. Such information is used to inform expectations about the future performance of an organisation.

A. Describe the nature-related dependencies, impacts, risks and opportunities the organisation has identified over the short, medium and long term	No additional guidance for financial institutions.
B. Describe the effect nature-related dependencies, impacts, risks and opportunities have had on the organisation's business model, value chain, strategy and financial planning, as well as any transition plans or analysis in place	A financial institution should also describe sector, realm or biome-specific standards and policies (covering, for example, forestry, fisheries, palm oil or mining), particularly if these standards and policies impose limits or other due diligence standards on investment, lending or insurance activities. A financial institution should also provide information on how nature-related risks and opportunities are considered in investment selection, investment advice, and product and service offerings. For example: • An insurer should describe how nature-related dependencies, impacts, risks and opportunities in its value chain affect the insurance offerings or insurer investments on a sector or at a geographic level; • A bank should describe how its loan due diligence has been affected by the consideration of the borrower's nature-related dependencies, impacts, risks and opportunities; and • An asset manager or asset owner should describe how nature-related dependencies, impacts, risks and opportunities are factored into product development and investment or ownership strategy.

	Without disclosing proprietary details or information, this may include a description of how adjustments are determined to: • Terms and conditions, pricing or portfolio composition for lending, advisory, underwriting and investments; and/or • Integration of nature into risk management, investment management and insurance hazard models. This may also include a financial institution's risk standards, due diligence requirements and other policies on a sector or topic basis. For clients, counterparties and investee companies that have been identified as having the most significant nature-related dependencies, impacts, risks and opportunities, a financial institution should describe any additional engagement or due diligence processes applied to encourage them to manage their own nature-related dependencies, impacts, risks and opportunities management and disclosure. Such activities may be done individually or collectively through stewardship and engagement platforms. The overall process should be described and some specific examples and measurable outcomes from due diligence and engagement could be provided where this does not violate client confidentiality. In all cases, business, client and investment confidential information is not expected to be disclosed.

C. Describe the resilience of the organisation's strategy to nature-related risks and opportunities, taking into consideration different scenarios	A financial institution that performs scenario analysis to assess nature-related risks and opportunities should describe how the outputs from the scenario analysis are used in risk management processes, given the financial institution's activities and the relevant timeframes (e.g. the maturity of loans for banks differs from the holding periods of asset owners, which differs from the liability duration for insurers and re-insurers, and these may affect how such information is considered). It is recognised that there may be limitations to the granularity of information that can be disclosed for confidentiality or competitive reasons. At a minimum, information provided should give an indication of the kinds of analysis done, the main conclusions and learnings, the limitations of the analysis and any decisions or changes made in light of the conclusions from the scenario analysis.
D. Disclose the locations of assets and/or activities in the organisation's direct operations and, where possible, upstream and downstream value chain(s) that meet the criteria for priority locations	A financial institution should disclose the locations in their direct operations that meet the definition of priority locations in the guidance for all sectors.



2.3. Risk and impact management

Describe the processes used by the organisation to identify, assess, prioritise and monitor nature-related dependencies, impacts, risks and opportunities.

Investors and other stakeholders are interested in understanding how an organisation's nature-related dependencies, impacts, risks and opportunities are identified, assessed, prioritised and monitored, and whether those processes are integrated into existing risk management processes. Such information helps users of nature-related financial disclosures to evaluate the organisation's overall risk processes and risk and impact management activities.

A non-exhaustive list of response indicators and metrics that may help organisations to demonstrate the process used to identify, assess, prioritise and manage nature-related dependencies, impacts, risks and opportunities is provided in Annex 2 of the TNFD Recommendations.

A(i) Describe the organisation's processes for identifying, assessing and prioritising nature-related dependencies, impacts, risks and opportunities in its direct operations	No additional guidance for financial institutions.
A(ii) Describe the organisation's processes for identifying, assessing and prioritising nature-related dependencies, impacts, risks and opportunities in its upstream and downstream value chain(s)	For a financial institution, the primary focus should be on downstream value chains, which are effectively the financial institutions' financial, investment and insurance portfolios.
B. Describe the organisation's processes for managing nature-related dependencies, impacts, risks and opportunities	No additional guidance for financial institutions.
C. Describe how processes for identifying, assessing, prioritising and monitoring nature-related risks are integrated into and inform the organisation's overall risk management processes	A financial institution should describe, as relevant, how the organisation's risk functions (in the case of all institutions), underwriting units (in the case of insurers), lending teams (in the case of banks) and investment teams (in the case of asset managers and owners) monitor nature-related dependencies, impacts, risks and opportunities in its direct operations and financial portfolios. A financial institution should also describe the integration of nature-related risk considerations into other risk management categories, such as credit risk, market risk, operational risk, underwriting risk and investment risk.

2.4. Metrics and targets

Disclose the metrics and targets used to assess and manage material nature-related dependencies, impacts, risks and opportunities.

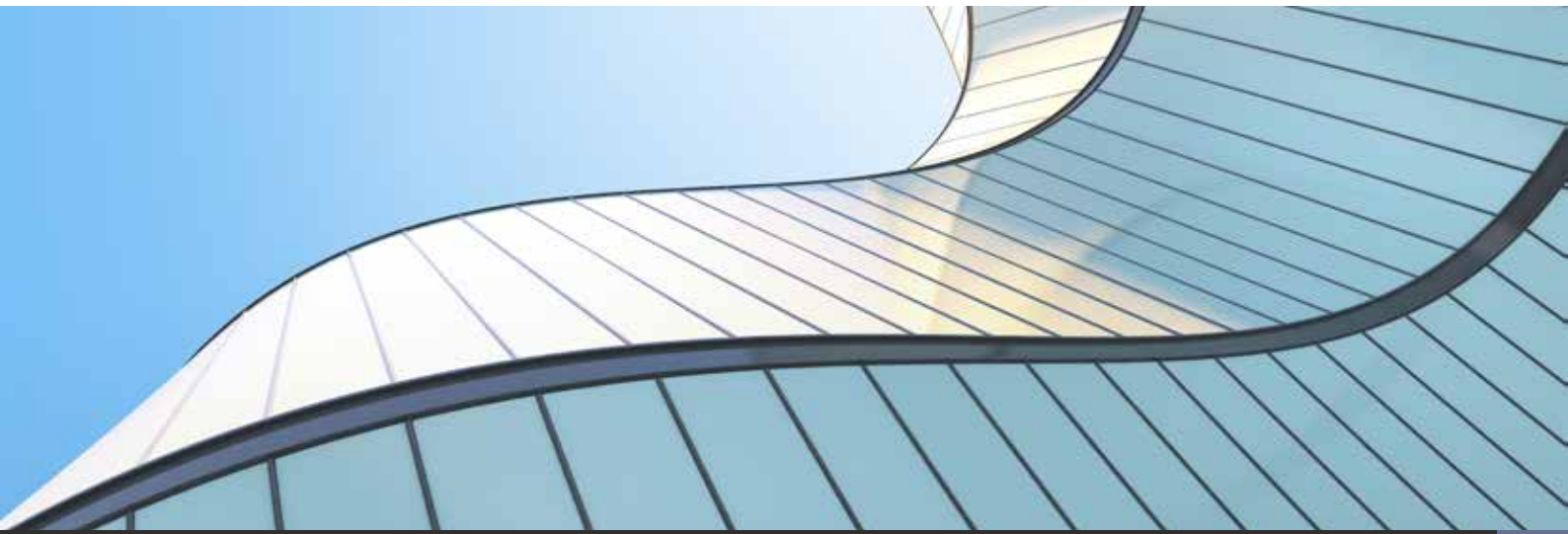
Investors and other stakeholders are interested in understanding an organisation's performance in relation to nature-related issues, including progress towards any targets the organisation has set and how an organisation measures and monitors its nature-related dependencies, impacts, risks and opportunities.

Disclosure of the metrics and targets used by an organisation to identify, evaluate, assess and manage material nature-related dependencies, impacts, risks and opportunities helps investors and other stakeholders to assess an organisation's risk-adjusted returns, its ability to meet current and future financial obligations, its general exposure to nature-related issues, and its progress in managing or adapting to those issues. Disclosure of metrics and targets on a consistent basis helps investors and other stakeholders to compare organisations within a sector or industry.

The TNFD intends to increase the specificity on methodologies in its guidance over time, as practices and standards further develop.

A. Disclose the metrics used by the organisation to assess and manage material nature-related risks and opportunities in line with its strategy and risk management process	A financial institution should include: • All **core global risk and opportunity disclosure metrics** listed in Annex 1 of the TNFD Recommendations; and • **Any other relevant metrics**, drawing on the TNFD additional disclosure indicators and metrics in Annex 2 of the TNFD Recommendations, Annex 2 of this additional guidance, and the financial institution's own assessment metrics, as appropriate. Metrics should be reported at the appropriate level (e.g. geography, asset class, portfolio, portion of portfolio, or whole entity-level) to most accurately reflect the magnitude of risks and opportunities described in Strategy A. The description of the metrics' scopes and methodologies applied should include whether these are identified and categorised based on regulatory or voluntary taxonomies, market-based standards or internal definitions. Financial institutions may find it helpful to refer to the guidance on metrics in Section 3 of this document.

B. Disclose the metrics used by the organisation to assess and manage dependencies and impacts on nature	A financial institution should include: • All **core global dependency and impact disclosure metrics**, provided in Annex 1 of the TNFD Recommendations, for each material dependency and impact in the financial institution's direct operations described in Strategy A, if any; • The **core dependency and impact disclosure metrics for financial institutions** outlined in Section 3.2 of this document, reported at the group consolidated entity level to the extent possible, rather than by material issue; and • **Any other relevant metrics**, drawing on the TNFD additional disclosure indicators and metrics listed in Section 3.3 of this document, Annex 2 of the TNFD Recommendations and the financial institution's own assessment metrics as appropriate. The underlying assumptions and methodologies behind any estimates should be clearly stated and based on the best available information about the locations and activities of companies. Such disclosures are expected to be at an aggregate level and not at the level of individual portfolio holdings, transactions or exposures, to avoid confidentiality concerns. As and when possible, this disclosure should include a breakdown by sector or geography (e.g. country, biome and/or ecosystem). Financial institutions may find it helpful refer to the guidance on metrics in Section 3 of this document.
C. Describe the targets and goals used by the organisation to manage nature-related dependencies, impacts, risks and opportunities and its performance against these	No additional guidance for financial institutions.



3. Additional guidance on metrics, targets and transition plans

This additional guidance on metrics for financial institutions should be read in conjunction with the TNFD Recommendations, which set out the TNFD metrics architecture and global disclosure metrics.

For financial institutions, most dependencies and impacts on nature are likely to arise through their portfolios – their financial activities – rather than their direct operations, as has been the case with Scope 3 emissions reporting aligned with the TCFD recommendations.

While the Greenhouse Gas Protocol has provided a universal measurement basis for emissions reporting for over two decades, no equivalent universal measurement standard exists for the other dimensions of nature. The Taskforce recognises that this and the lack of data currently provided by investees and clients adds complexity for financial institutions to the task of assessing and disclosing the dependencies and impacts on nature of their financed activities.

In light of the current data limitations for financial institutions to report the TNFD core global metrics for their portfolios, the Taskforce proposes an adaptation of the TNFD disclosure metrics architecture for financial institutions. As outlined in the TNFD Recommendations, this architecture is comprised of three categories of disclosure metrics:

1. **Core global disclosure metrics** – recommended for disclosure by all organisations across all sectors, on a comply or explain basis;
2. **Core sector disclosure metrics** – recommended for disclosure by all organisations within the specific sector, on a comply or explain basis; and
3. **Additional disclosure metrics** – recommended for disclosure, where relevant, to best represent an organisation's material nature-related issues, based on their specific circumstances.

Organisations that pilot tested the TNFD draft guidance showed it was possible to assess dependencies and impacts of financed activities. Examples of what is possible are provided in Annex 2 and the TNFD guidance on the LEAP approach.

3.1. TNFD's core global disclosure metrics – application by financial institutions

3.1.1. Risks and opportunities

A financial institution should disclose all core global risk and opportunity disclosure metrics provided in Annex 1 of the TNFD Recommendations.

Box 1: What are risk and opportunity metrics for financial institutions?

Risk metrics for financial institutions are metrics used to assess the potential for loss due to nature-related risks specifically. These could include potential losses on lending for banks, underwriting for insurers, or investments for asset managers and owners.

Opportunity metrics for financial institutions are metrics used to track nature-related opportunities specifically. These could include lending and advisory opportunities for banks, underwriting opportunities for insurers, or investment opportunities for asset managers and owners. These will often be in the form of individual products or transactions, so can be disclosed as absolute amounts or relative to a portfolio total.

In calculating risk metrics, financial institutions can start with established assessment methods such as heatmapping, as outlined in the TNFD Guidance on identification and assessment of nature-related issues – the LEAP Approach. Heatmaps can show the potential financial exposure to transition or physical risk (based on an understanding of dependencies and impacts) as a percentage of total financial exposure. Tools such as ENCORE and the WWF Biodiversity Risk Filter are available to help start with a high-level qualitative sector analysis to inform heatmapping.

The TNFD recognises that other key concepts, methodologies and definitions now familiar with respect to climate-related risk analysis (e.g. scenario pathways and Value at Risk[2] methodologies) still need further development to support disclosures on quantitative potential losses. The Taskforce provides additional guidance on the methods for assessing and quantifying nature-related risks in its guidance on the LEAP approach and will be working with a range of partner organisations in the coming years on these issues.

Box 2: Definitions of exposure and vulnerability

Exposure: The presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected.

Source: IPCC (2022) Annex II: Glossary*. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.*

Financial exposure: The amount (usually expressed in monetary terms) of exposure to the risk of suffering a loss in a particular transaction or with respect to any kind of investments. It represents the amount an investor stands to lose in an investment should the investment fail.

Source: Corporate Finance Institute Basel Committee on Banking Supervision (BCBS) – concept of Exposure at Default (or credit exposure) for banks.

Vulnerability: The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements, including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.

Source: IPCC (2022) Annex II: Glossary*. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.*

3.1.2. Dependencies and impacts

A financial institution should disclose all core global dependency and impact disclosure metrics, listed in Annex 1 of the TNFD Recommendations for each material dependency and impact in the financial institution's direct operations described in Strategy A, if any.

2 Value at Risk is a measure of a potential loss in a portfolio, which estimates how much a set of investments might lose at a maximum, with a given probability (e.g. 99.5%, 99.9%), in a set time period. It requires estimation of the probability distribution for the changes in the value of the portfolio. TCFD (2020) Forward-Looking Financial Sector Metrics.

Financial institutions are also encouraged to disclose the core global dependency and impact disclosure metrics for the financial institution's lending and/or assets under management and/or underwriting portfolios, as and where possible.

Improved disclosure of dependency and impact data by corporates over time is expected to allow financial institutions to move toward disclosure of financed nature dependency and financed nature impact metrics, similar to the financed emissions disclosures for climate. Corporate data on specific impacts in specific locations will also support risk analysis by financial institutions. This may be in the form of individual impacts or aggregated through an index metric, as described further in Section 3.2.

3.2. TNFD's core sector disclosure metrics for financial institutions

The TNFD also proposes two core sector disclosure metrics to support financial institutions' disclosure of their exposure to sectors with material nature-related dependencies and impacts, and exposure to sensitive locations, as set out in Box 3.

While financial institutions may need to start with a limited scope for their disclosures, given data availability and dependency on investee and client reporting, financial institutions should ultimately aim to cover all the financial institution's assets and/or assets under management and/or underwriting portfolios. The scope of any disclosures with respect to the portfolios covered should be clearly stated, following TNFD general requirement 2.

Box 3: Core sector metrics for financial institutions

Metric 1 – Exposure to sectors

Financial institutions should disclose a metric that represents the **financial exposure to a defined set of sectors** considered to have material nature-related dependencies and impacts.

- For banks: absolute amount or percentage of lending volume.
- For asset owners and managers: absolute amount or percentage of invested or owned assets.
- For insurers: absolute amount or percentage of net premiums written or total sums insured.

The TNFD has identified a set of sectors that should be considered for this disclosure (see Annex 1). This is based on input from knowledge partners and standard industry sector classification codes. The specification of a set of sectors for this metric aligns with the initial approach of the TCFD, which defined carbon-related assets as exposures to sectors for which the TCFD provided additional guidance.

Metric 2 – Exposure to sensitive locations

Financial institutions should disclose a metric that represents the **financial exposure to companies with activities in sensitive locations**.

- For banks: absolute amount or percentage of lending volume.
- For asset owners and managers: absolute amount or percentage of invested or owned assets.
- For insurers: absolute amount or percentage of net premiums written or total sums insured.

Sensitive locations are locations where the assets and/or activities in an organisation's 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 affected stakeholders.

Further guidance on the definition of sensitive locations, and tools and data to identify and assess those locations, is provided in the Guidance on the identification and assessment of nature-related issues: The LEAP approach see component L4.

3.3. TNFD's additional disclosure metrics for financial institutions

The TNFD recommends that financial institutions disclose, where relevant, additional metrics aligned with the drivers of nature change, in order to best represent the institution's material nature-related issues, based on its specific circumstances.

This can also go further and provide more detailed disclosure on individual topics of interest to the primary users of the financial institution's sustainability reporting and other stakeholders. Such topics might include exposure to companies without adequate risk management policies covering the risks of deforestation, pollution or water use.

The European Union's Sustainable Finance Disclosure Regulation (SFDR) provides examples of such additional metrics. Table 1 maps the SFDR adverse impact metrics to the drivers of nature change and selected TNFD core global metrics.[3]

Disclosure may also be made in aggregate using biodiversity footprint or other index metrics. Footprint and index metrics may be of particular relevance, given that they can potentially aggregate across different impact drivers in different industries using a common unit of measure, such as Mean Species Abundance (MSA), Potentially Disappeared Fraction (PDF), the Biodiversity Intactness Index (BII) and the Ecosystem Integrity Index (EII). This is an illustrative and non-exhaustive list.

If using a biodiversity footprint metric or other index metrics, it is important to be aware of their specific scope and the difference between modelled impacts and actual impacts that may deviate or require further analysis. Furthermore, it is important to understand that not all impact drivers may accurately be covered by existing footprinting approaches.

Financial institutions are therefore encouraged to consider the purpose and desired outcome in a specific use of these metrics.

The Taskforce continues to assess the use case and decision-usefulness of these emerging indicators. They are still maturing, and there are concerns about the level of aggregation and approximation involved in the methodologies, the lack of location-specificity and the currency of some of the underlying data. If disclosing footprint metrics, an organisation should describe the inputs and assumptions in the analysis.

3 With the exception of total spatial footprint, plastic pollution and invasive alien species, for which corresponding metrics were not identified at this stage. This will be kept under review.

Table 1: TNFD additional disclosure metrics for financial institutions – SFDR principal adverse impact equivalents

Driver of nature change	Indicator	Additional disclosure metric for financial institutions[4]	Core global metric
Climate change	GHG emissions	GHG Emissions (Scope 1, 2, 3) (Core PAI 1)	Refer to IFRS-S2 Climate-related Disclosure Standard.
Land/ freshwater/ ocean use change	Extent of land/ freshwater/ ocean-use change		Total spatial footprint (km^2) (sum of): • Total surface area controlled/managed by the organisation, where the organisation has control (km^2); • Total disturbed area (km^2); and • Total rehabilitated/restored area (km^2).
Land/ freshwater/ ocean use change		Share of investments in investee companies that engage in activities that cause land degradation, desertification or soil sealing (Additional PAI 10) Share of investments in companies without a policy to address deforestation (Additional PAI 15)	Extent of land/freshwater/ocean ecosystem use change (km^2) by: • Type of ecosystem;[5] and • Type of business activity. Extent of land/freshwater/ocean ecosystem conserved or restored (km^2), split into: • Voluntary; and • Required by statutes or regulations. Extent of land/freshwater/ocean ecosystem that is sustainably managed (km^2) by: • Type of ecosystem;[5] and • Type of business activity.
Pollution/ pollution removal	Pollutants released to soil split by type	Tonnes of inorganic pollutants equivalent per million EUR invested, expressed as a weighted average (Additional PAI 1)	Pollutants released to soil (tonnes) by type, referring to sector-specific guidance on types of pollutants.

4 Based on the EU SFDR Principal Adverse Impact (PAI) indicator near equivalents.

5 When disclosing on ecosystem types, refer to the International Union for Conservation of Nature Global Ecosystem Typology.

Driver of nature change	Indicator	Additional disclosure metric for financial institutions[4]	Core global metric
Pollution/ pollution removal	Wastewater discharged	Tonnes of emissions to water generated by investee companies per million EUR invested, expressed as a weighted average (Core PAI 8)	Volume of water discharged (m^3), split into: • Total; • Freshwater; and • Other.[6] Including: • Concentrations of key pollutants in the wastewater discharged, by type of pollutant, referring to sector-specific guidance for types of pollutants; and • Temperature of water discharged, where relevant.
Pollution/ pollution removal	Waste generation and disposal	Tonnes of hazardous waste and radioactive waste generated by investee companies per million EUR invested, expressed as a weighted average (Core PAI 9) Tonnes of non-recycled waste generated by investee companies per million EUR invested, expressed as a weighted average (Additional PAI 13) Share of real estate assets not equipped with facilities for waste sorting and not covered by a waste recovery or recycling contract (Additional PAI 20)	Weight of hazardous and non-hazardous waste generated by type (tonnes), referring to sector-specific guidance for types of waste. Weight of hazardous and non-hazardous waste (tonnes) disposed of, split into: • Waste incinerated (with and without energy recovery); • Waste sent to landfill; and • Other disposal methods. Weight of hazardous and non-hazardous waste (tonnes) diverted from landfill, split into waste: • Reused; • Recycled; and • Other recovery operations.

6 Freshwater: (≤1,000 mg/L Total Dissolved Solids). Other: (>1,000 mg/L Total Dissolved Solids). Reference: GRI (2018) GRI 303-4 Water discharge.

Driver of nature change	Indicator	Additional disclosure metric for financial institutions[4]	Core global metric
Pollution/ pollution removal	Plastic pollution		Plastic footprint as measured by total weight (tonnes) of plastics (polymers, durable goods and packaging) used or sold broken down into the raw material content.[7] For plastic packaging, percentage of plastics that is: • Re-usable; • Compostable; • Technically recyclable; and • Recyclable in practice and at scale.
	Non-GHG air pollutants	Tonnes of air pollutants equivalent per million EUR invested, expressed as a weighted average (Additional PAI 2) Tonnes of ozone-depleting substances equivalent per million EUR invested, expressed as a weighted average (Additional PAI 3)	Non-GHG air pollutants (tonnes) by type : • Particulate matter ($PM_{2.5}$ and/or PM_{10}); • Nitrogen oxides (NO_2, NO and NO_3); • Volatile organic compounds (VOC or NMVOC); • Sulphur oxides (SO_2, SO, SO_3, SO_X); and • Ammonia (NH_3).

7 Raw material content: % of virgin fossil-fuel feedstock; % of post-consumer recycled feedstock; % of post-industrial recycled feedstock; % of virgin renewable feedstock.

Driver of nature change	Indicator	Additional disclosure metric for financial institutions[4]	Core global metric
Resource use/ replenishment	Water withdrawal and consumption from areas of water scarcity	Average amount of water consumed by the investee companies (m^3) per million EUR of revenue of investee companies (Additional PAI 6) Share of investments in investee companies without water management policies (Additional PAI 7) Share of investments in investee companies with sites located in areas of high water stress without a water management policy (Additional PAI 8)	Water withdrawal and consumption[8] (m^3) from areas of water scarcity, including identification of water source.
Resource use/ replenishment	Quantity of high-risk natural commodities sourced from land/ocean/ freshwater	Shares of investments in investee companies without sustainable land/agriculture practices or policies (Additional PAI 11) Share of investments in investee companies without sustainable oceans/ seas practices or policies (Additional PAI 12)	Quantity of high-risk natural commodities[9] (tonnes) sourced from land/ocean/freshwater, split into types, including proportion of total natural commodities. Quantity of high-risk natural commodities[9] (tonnes) sourced under a sustainable management plan or certification programme, including proportion of total high-risk natural commodities.

8 Water consumption is equal to water withdrawal less water discharge. Reference: GRI (2018) GRI 303-5.

9 Users should refer to the Science Based Targets Network (SBTN) High Impact Commodity List (HICL) and indicate what proportion of these commodities represent threatened and CITES listed species.

Driver of nature change	Indicator	Additional disclosure metric for financial institutions[4]	Core global metric
Invasive species and other	**Placeholder indicator:** Measures against unintentional introduction of invasive alien species (IAS)[10]		Quantity/percentage of high-risk procurement with appropriate measures against unintentional introduction of IAS, or low-risk designed procurement and/or quantity/percentage of high-risk activities operated under appropriate measures to prevent unintentional introduction of IAS, or low-risk designed activities.
State of nature	**Placeholder indicator:** Ecosystem condition	Share of investments in investee companies with sites/operations located in or near to biodiversity-sensitive areas where activities of those investee companies negatively affect those areas (Core PAI 7)	For those organisations that choose to report on state of nature metrics, the TNFD encourages them to report the following indicators, and to refer to the TNFD additional guidance on measurement of the state of nature in Annex 2 of the LEAP approach: • Level of ecosystem condition by type of ecosystem and business activity; • Species extinction risk. There are a number of different measurement options for these indicators. The TNFD does not currently specify one metric as there is no single metric that will capture all relevant dimensions of changes to the state of nature and a consensus is still developing. The TNFD will continue to work with knowledge partners to increase alignment.
State of nature	**Placeholder indicator:** Species extinction risk	Share of investments in investee companies that have operations affecting threatened species (Additional PAI 14.1) Share of investments in investee companies without a biodiversity protection policy covering operational sites owned, leased, managed in, or adjacent to, a protected area or an area of high biodiversity value outside protected areas (Additional PAI 14.2)	

10 Due to the measurement of levels of invasive species for organisations being a developing area, the chosen core global indicator focuses on whether an appropriate management response is in place for the organisation. The additional sets of metrics contain measurement of the level of invasive species within an area. The TNFD intends to do further work with experts to define 'high-risk procurement', 'low-risk designed procurement', 'high-risk activities' and 'low-risk designed activities'.

3.4. Other considerations for metrics and disclosures by financial institutions

Data limitations and future developments

The TNFD recognises that: 1) financial institutions have a number of data dependencies on their investees, customers and clients; and 2) when obtaining data on portfolio exposures, financial institutions will often rely on external data providers, and at times, proxy and/or modelled data. As companies start to assess and disclose aligned with the TNFD Recommendations, it can be expected that more and better quality data and analytics will become available directly from companies over time.

There is also considerable innovation underway in nature-related data and metrics and financial institutions may wish to trial these new tools and datasets as part of their assessment and disclosure activities. Whether financed dependency and financed impact metrics should be at the level of individual topics (see Annex 2) or in aggregate form (e.g. footprint metrics[11]) is still being evaluated by the Taskforce. The Taskforce will consult with market participants on this.

Use of estimates

Financial institutions may need to make estimates based on the best available information about the locations and activities of companies. The underlying assumptions and methodologies behind such estimates should be clearly stated. As and when possible, this disclosure should include a breakdown by sector or geography (e.g. country, biome and/or ecosystem).

In all cases, such disclosures are expected to be at an aggregate level disclosure and not at the level of individual companies, transactions or exposures to avoid confidentiality concerns.

Disclosures around target setting and transition planning

The TNFD recommended disclosure Metrics and Targets C recommends that organisations provide information and data on target setting and should take into account the goals and objectives of the Kunming–Montreal Global Biodiversity Framework.

Financial institution targets should be oriented toward driving changes in the real economy. The TNFD is aware that other financial sector groups are working on target setting frameworks and thus recommends that financial institutions consult the work of Finance for Biodiversity Foundation, the United Nations Environment Programme Finance Initiative (UNEP FI), and the Science Based Targets Network. The TNFD will continue to work with these and other partners to develop joint guidance on nature-related target setting and transition planning for financial institutions.

11 At this stage, when corporate disclosure is not yet widely available, footprinting analytical tools may provide a basis for relevant disclosure of these metrics. Using such tools can provide insights on portfolio composition and help direct actions to manage nature-related dependencies, impacts, risks and opportunities. The footprint metrics landscape is evolving rapidly. The TNFD is preparing a discussion paper on the current landscape of footprinting tools and methodologies to provide information on what currently exists, the decision needs they can meet, current limitations and gaps, and how these could be addressed.

Annex 1: Sector list and mapping for core financial institution metric on exposure to sectors

The following list of priority sectors is based on a continuous review of sources from the TNFD's knowledge partners[12] as well as experience from the TNFD pilots. The sectors have been defined in the first instance according to GICS 6-digit industry codes as the ISSB's IFRS-S2 Standard (see paragraph B58-B63) recommended the use of these codes for disclosures of financed emission impact metrics in the case of climate. Additional mappings have been provided to the standard industry codes according to the NACE, ISIC and ICB sector classifications. This list will continue to be reviewed following new developments from knowledge partners and scientific literature.

Name of GICS sector/industry	GICS – 6-digit industry (18 March 2023 version with 83 industries in total)	ICB – 6-digit sector	NACE Rev 2 – 4-digit (From SBTN Materiality Tool Jan 2023 version)	ISIC – 4-digit (From SBTN Materiality Tool Jan 2023 version)
Oil, gas and consumable fuels	101020	601010	5.10, 5.20, 6.10, 6.20, 7.21, 8.92, 19.10, 19.20, 24.46, 35.21-35.23, 46.71, 49.50	510, 520, 610, 620, 721, 892, 1910, 1920, 2420, 3520, 4661, 4930
Chemicals	151010	552010 (and include 50203015, which are plastics)	20.11-20.17, 20.20, 20.30, 20.51-20.60, 22.19, 22.21, 23.14	2011, 2012, 2013, 2021, 2022, 2029, 2030, 22,19, 220, 2310

12 See UN Environment Programme, UNEP Finance Initiative, and Global Canopy (2020) Beyond 'Business as Usual': Biodiversity Targets and Finance Managing biodiversity risks across business sectors; World Economic Forum (2020) Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy; SBTN Sectoral Materiality Tool for Step 1a (version 2 – July 2021); World Benchmarking Alliance (2022) Nature Benchmark Methodology; Finance for Biodiversity (2023) Briefing paper Top 10 biodiversity-impact ranking of company industries.

Name of GICS sector/industry	GICS – 6-digit industry (18 March 2023 version with 83 industries in total)	ICB – 6-digit sector	NACE Rev 2 – 4-digit (From SBTN Materiality Tool Jan 2023 version)	ISIC – 4-digit (From SBTN Materiality Tool Jan 2023 version)
Construction materials	151020	501010	8.11, 8.12, 23.11, 23.12, 23.20, 23.31, 23.32, 23.51, 23.52, 23.61-23.65, 23.69-23.99	810, 2310, 2391, 2392, 2394, 21395, 2396, 2399
Containers and packaging	151030	502030 (but exclude 50203000, which are diversified industrials and exclude 50203015, which are plastics)	16.24, 17.21, 22.22, 23.13, 23.19, 25.91	1623, 1702, 2220, 23310, 2599
Metals and mining	151040	551020, 551030	7.10, 7.29, 8.93, 8.99, 9.90, 24.10-24.45, 24.51-24.54, 25.50, 25.61, 25.99, 32.11	710, 729, 893, 899, 2410, 2420, 2431, 2432, 2591, 2592, 3211
Paper and forest products	151050	551010 (but exclude 55101020, which are textiles)	2.10, 2.20, 2.40, 16.10-16.22, 17.11-17.29	210, 240, 1610, 1621, 1622, 1701, 1709
Construction services (includes manufacture of metal products)	201030, 252010, 601010, 601020	501010, 551020	25.11, 41.10 – 43.99	2511, 4100 – 4390
Sewerage, waste collection, treatment and disposal	202010	651030	37.00, 38.00	3700-3832

Name of GICS sector/industry	GICS – 6-digit industry (18 March 2023 version with 83 industries in total)	ICB – 6-digit sector	NACE Rev 2 – 4-digit (From SBTN Materiality Tool Jan 2023 version)	ISIC – 4-digit (From SBTN Materiality Tool Jan 2023 version)
Transport and associated services (includes passenger airlines)	203020, 203040, 203030, 203050, 101020	502010 (but exclude 50201020, which are defense), 502060	49.10-52.23	4911-5223
Automobiles	251020	401010	29.10, 30.91	29120, 3091
Textiles, apparel and luxury goods	252030	402040 (but include 55101020, which are textiles)	13.10-13.99, 14.11-14.39, 15.11-15.20, 32.12, 32.13	1311, 1312, 1313, 1391, 1392, 1393, 1394, 1399, 1410, 1420, 1430, 1511, 1512, 1520, 3211, 3212
Beverages and food products (includes agriculture)	302010, 302020	451010, 451020, 451030	01.11-01.70, 02.30, 03.11, 03.12, 03.21, 03.22, 10.11-10.92, 11.01-11.07, 12.00, 46.11, 46.23	111-170, 230, 311, 312, 321, 322, 1010-1080, 1101-1104, 1200, 4610, 4620,
Personal care products	303020	452010 (but exclude 45201010, which are food retailers and exclude 45201015, which are drug retailers)	20.42	2023
Pharmaceuticals	352020	201030	21.10, 21.20	2100

Name of GICS sector/industry	GICS – 6-digit industry (18 March 2023 version with 83 industries in total)	ICB – 6-digit sector	NACE Rev 2 – 4-digit (From SBTN Materiality Tool Jan 2023 version)	ISIC – 4-digit (From SBTN Materiality Tool Jan 2023 version)
Semiconductors and semiconductor equipment	453010	10102010	28.99	2829
Utilities (including electric utilities, gas utilities, independent power and renewable electricity producers, and water utilities)	551010, 551020, 551040, 551050	65101010, 65101015, 65103035, 65020000, 65102020	35.11-35-14, 35.30	3510, 3530

Annex 2: Examples of nature-related metrics used by financial institutions

This annex provides a non-exhaustive set of examples of nature-related metrics that have been used and disclosed by financial institutions. These examples cover nature-related dependencies, impacts, risks and opportunities. It is for general reference and to support financial institutions as they begin to consider the disclosure of metrics following the TNFD recommendations.

In addition to the example metrics, overviews and links are provided to a range of further methodology descriptions, tool providers and case studies, including those from four nature-related financial sector specific initiatives: the Finance for Biodiversity Foundation, the Partnership for Biodiversity Accounting Financials (PBAF), the Cambridge Institute for Sustainability Leadership (CISL) Centre for Sustainable Finance and the UN Environment Programme Finance Initiative (UNEP FI) nature programme.

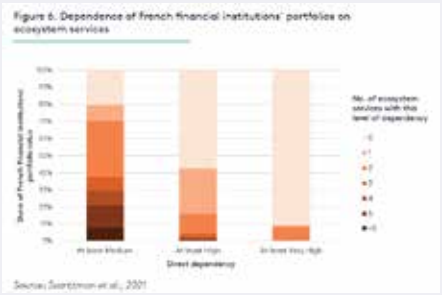
Overview – Categories of example nature-related metrics observed in public disclosures

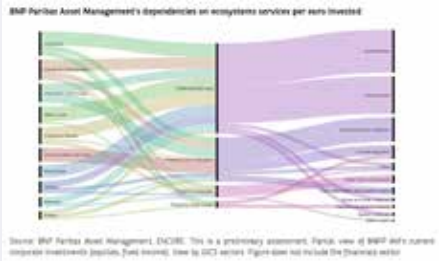
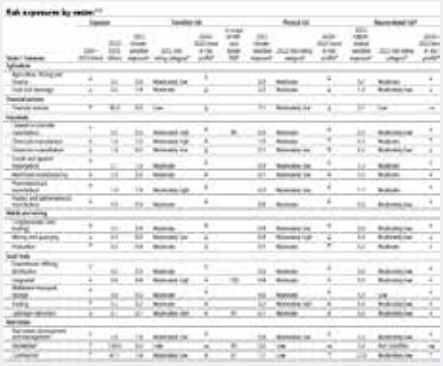
Metric type	Category	Sub-category
Dependency	Potential dependency	Exposure to sectors or companies with material dependencies on nature (heatmap)
Impact	Potential impact	Exposure to high/moderate impact or sensitive sectors or companies active in sensitive locations (heatmap)
		Footprint based
Risk	Physical risk	Financial exposure to physical risks
	Transition risk	Financial exposure to transition risks
	Risk measures	Impacts on specific risk parameters or portfolio measures, such as expected loss[13]

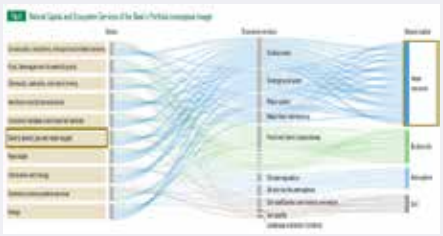
13 Current examples of portfolio risk measures are scenario-based point measures. This should be distinguished from portfolio level value at risk measures. Value at risk is also a measure of a potential loss in a portfolio, which estimates how much a set of investments might lose at a maximum, with a given probability (e.g. 99.5%, 99.9%), in a set time period. It requires estimation of the probability distribution for the changes in the value of the portfolio.

Metric type	Category	Sub-category
Opportunity	Exposure to nature-related opportunities	Volume of financial flow (investment, lending, insurance) with companies or sectors where activities are deemed to have material exposure to nature-related opportunities
	Mitigation of nature-related risk	Volume of financial flow (investment, lending, insurance) with evidence of material mitigation of nature-related risk, such as engagement, due diligence or sustainability-linked KPIs
	Positive impacts	Volume of financial flow (investment, lending, insurance) that targets measurable positive impacts on nature

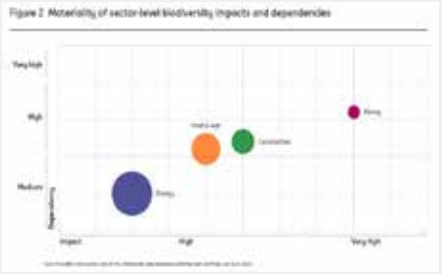
Example dependency metrics for financial institutions

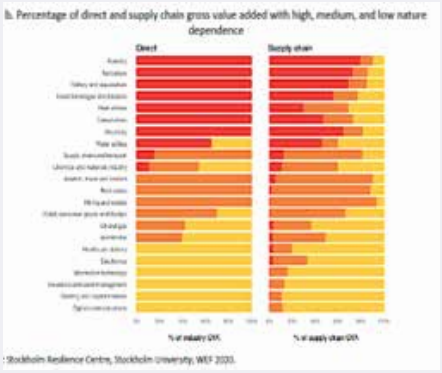
Example dependency metrics for financial institutions				
Category: Potential dependency				
Sub-category	**Example metrics**	**Potential breakdown**	**Examples of practical application**	**Limitations**
Exposure to sectors or companies with material dependencies on nature (heatmap)	• Exposure in millions (USD) to sectors or companies with high or medium dependency on nature • Exposure as percentage of total portfolio amount/value • Top X companies in portfolio with high or medium dependency on ecosystem services	• By nature topic, such as ecosystem service • By sector • By geography, such as country or biome	1. NGFS (2022) 'Central banking and supervision in the biosphere', p.34 Figure 6. Dependence of French financial institutions' portfolios on ecosystem services.  2. Vivid Economics (2022) 'Nature and financial institutions in Africa: A first assessment of opportunities and risks', p.21 Exhibit 2. Exposure to agriculture and extractives as percentage of total portfolio value. 	Potential dependencies only and not necessarily actual dependencies Approaches are often sector-based and do not capture company specifics within sector

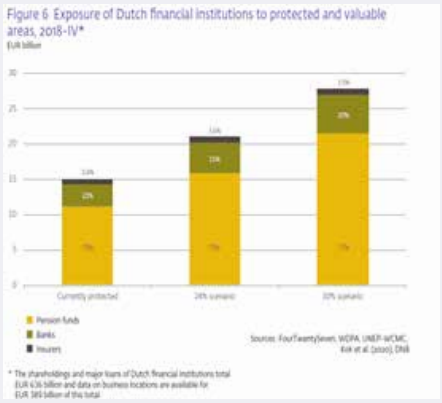
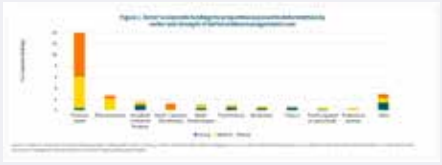
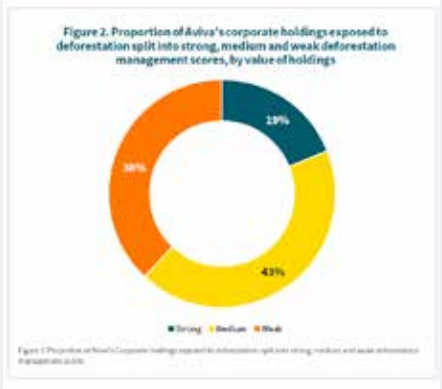
Example dependency metrics for financial institutions				
Category: Potential dependency				
Sub-category	**Example metrics**	**Potential breakdown**	**Examples of practical application**	**Limitations**
			3. BNP Paribas Asset Management (2022) 'Sustainable by nature: Our biodiversity roadmap 2021', p.15. Dependency on ecosystem services per euro invested  4. UBS (2023) 'Climate and nature report 2022', p.40. Climate and nature risk exposures by sector using ENCORE dependency ratings 	

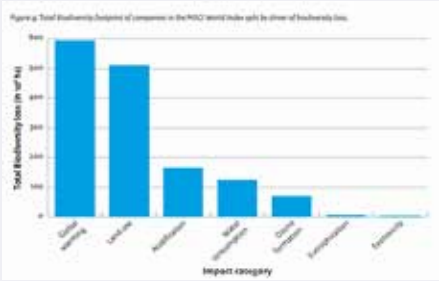
Example dependency metrics for financial institutions				
Category: Potential dependency				
Sub-category	**Example metrics**	**Potential breakdown**	**Examples of practical application**	**Limitations**
			5. Norinchukin Bank (2023) 'Norinchukin Bank's Initiatives to Strengthen Sustainability Management Annex 1', p 10. Natural capital and ecosystem services of the bank's portfolio (conceptual image) 	

Example impact metrics for financial institutions

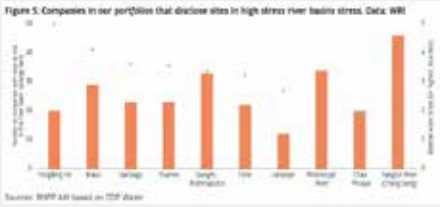
Example impact metrics for financial institutions				
Potential impact				
Sub-category	**Example metrics**	**Potential breakdown**	**Reference/s**	**Limitations**
Exposure to high impact or sensitive sectors or companies active in sensitive locations (heatmap)	• Exposure in millions (USD) to sectors or companies with high or medium impact on nature; • Exposure as percentage of total portfolio amount/value • Top X companies in portfolio with high or medium impacts on nature loss or impact drivers	• By nature topic, such as impact driver • By sector • By geography, such as country or biome	1. E.SUN FHC (2022) 'Climate and Environmental Report 2021', p.26. The identification of high natural-environmental-sensitive industries, using SBTN materiality assessment based on impact pressures  2. ING (2023) 'Climate report 2022', p.42. Materiality assessment of biodiversity impacts and dependencies by sector 	Potential impacts only and not necessarily actual impacts Approaches are often sector based and do not capture company specifics within sector

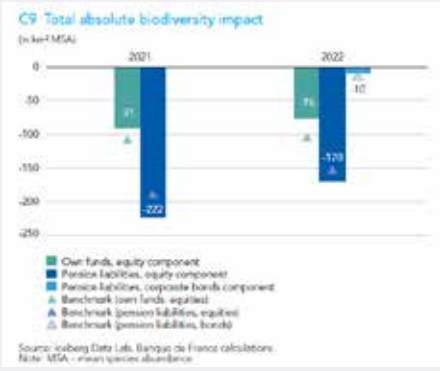
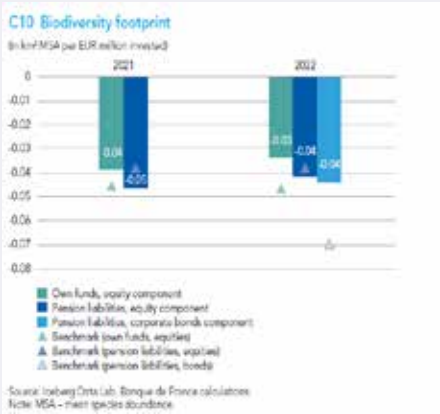
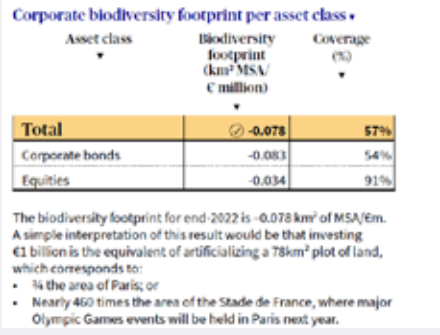
Example impact metrics for financial institutions				
Potential impact				
Sub-category	**Example metrics**	**Potential breakdown**	**Reference/s**	**Limitations**
			3. Coalition of Finance Ministers for Climate Action (2022) 'An overview of nature-related risks and potential policy actions for Ministries of Finance: Bending the curve of nature loss', p.21, Figure 2. b) Percentage of direct and supply chain gross value added with high, medium and low nature dependence or impact  4. SMBC (2023) 'TNFD Report 2023', p 23. Impact heatmap 	

Example impact metrics for financial institutions				
Potential impact				
Sub-category	**Example metrics**	**Potential breakdown**	**Reference/s**	**Limitations**
	• Exposure in millions (USD) to companies operating in or near key biodiversity areas/critical habitats (e.g. using IBAT) • Exposure in millions (USD) to companies operating in or near areas with endangered species (e.g. using the Species Threat Abatement and Restoration (STAR) metric) • Exposure as percentage of total portfolio amount/value	By geography, such as country or biome	1. DNB (2021) 'Indebted to Nature', p27. Exposure of Dutch financial institutions to protected and valuable areas, 2018-IV  2. Aviva (2022), p.14 and 15. 'Biodiversity Report 2022', holdings exposed to deforestation risk with assessment of risk policies   	

Example impact metrics for financial institutions				
Potential impact				
Sub-category	**Example metrics**	**Potential breakdown**	**Reference/s**	**Limitations**
Footprint	Measures of biodiversity intactness or richness, such as: • Mean Species Abundance (MSA) • Potentially Disappeared Fraction (PDF) • Biodiversity Intactness index (BII) Financed absolute biodiversity footprint (MSA or PDF, loss/ km²/year) Biodiversity intensity per unit of capital employed (MSA or PDF per million EUR of capital employed)	By impact driver or in aggregate	1. Netherlands Enterprise Agency (2021) 'Biodiversity footprint for financial institutions exploring biodiversity assessment', p.14. Figure 4: Total Biodiversity footprint of companies in the MSCI World Index split by driver of biodiversity loss  2. BNP Paribas Asset Management (2022), 'Sustainable by nature sequel: Our portfolio biodiversity footprint'. Figure 8: Selected fund-specific results 	Potential impacts only and not necessarily actual impacts Approaches are often based on country and sector averages Not all impact drivers covered by current methodologies

Example impact metrics for financial institutions				
Potential impact				
Sub-category	**Example metrics**	**Potential breakdown**	**Reference/s**	**Limitations**
			3. LFDE (2022), 'Climate and biodiversity report', pp.58-59. Indicator No. 5 – Biodiversity footprint of funds that are below that of benchmark index 	

Example impact metrics for financial institutions				
Potential impact				
Sub-category	**Example metrics**	**Potential breakdown**	**Reference/s**	**Limitations**
			4. BNP Paribas Asset Management (2021), p.20. 'Sustainable by nature: Our biodiversity roadmap 2021' – water footprint  5. BNP Paribas Asset Management (2021), p.23. 'Sustainable by nature: Our biodiversity roadmap 2021' – forest footprint 	

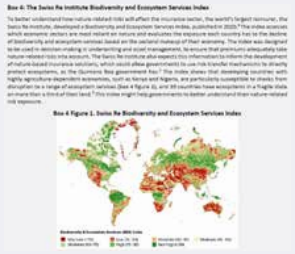
Example impact metrics for financial institutions				
Potential impact				
Sub-category	**Example metrics**	**Potential breakdown**	**Reference/s**	**Limitations**
			6. Banque de France (2023), p33-35. 'Responsible Investment Report 2022' – portfolio footprint   7. AXA (2023), p.33. 'Climate and Biodiversity Report 2023' – portfolio biodiversity footprint 	

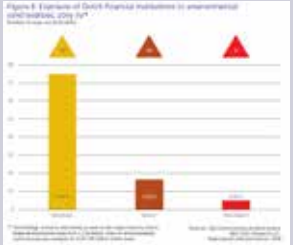
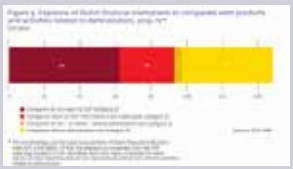
Asset class	Biodiversity footprint (km² MSA/ € million)	Coverage (%)
Total	-0.078	57%
Corporate bonds	-0.083	54%
Equities	-0.034	91%

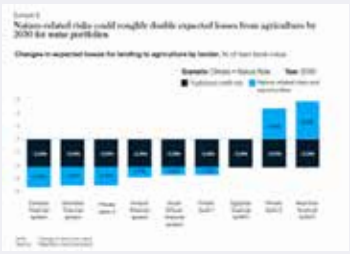
The biodiversity footprint for end-2022 is -0.078 km² of MSA/€m. A simple interpretation of this result would be that investing €1 billion is the equivalent of artificializing a 78km² plot of land, which corresponds to:

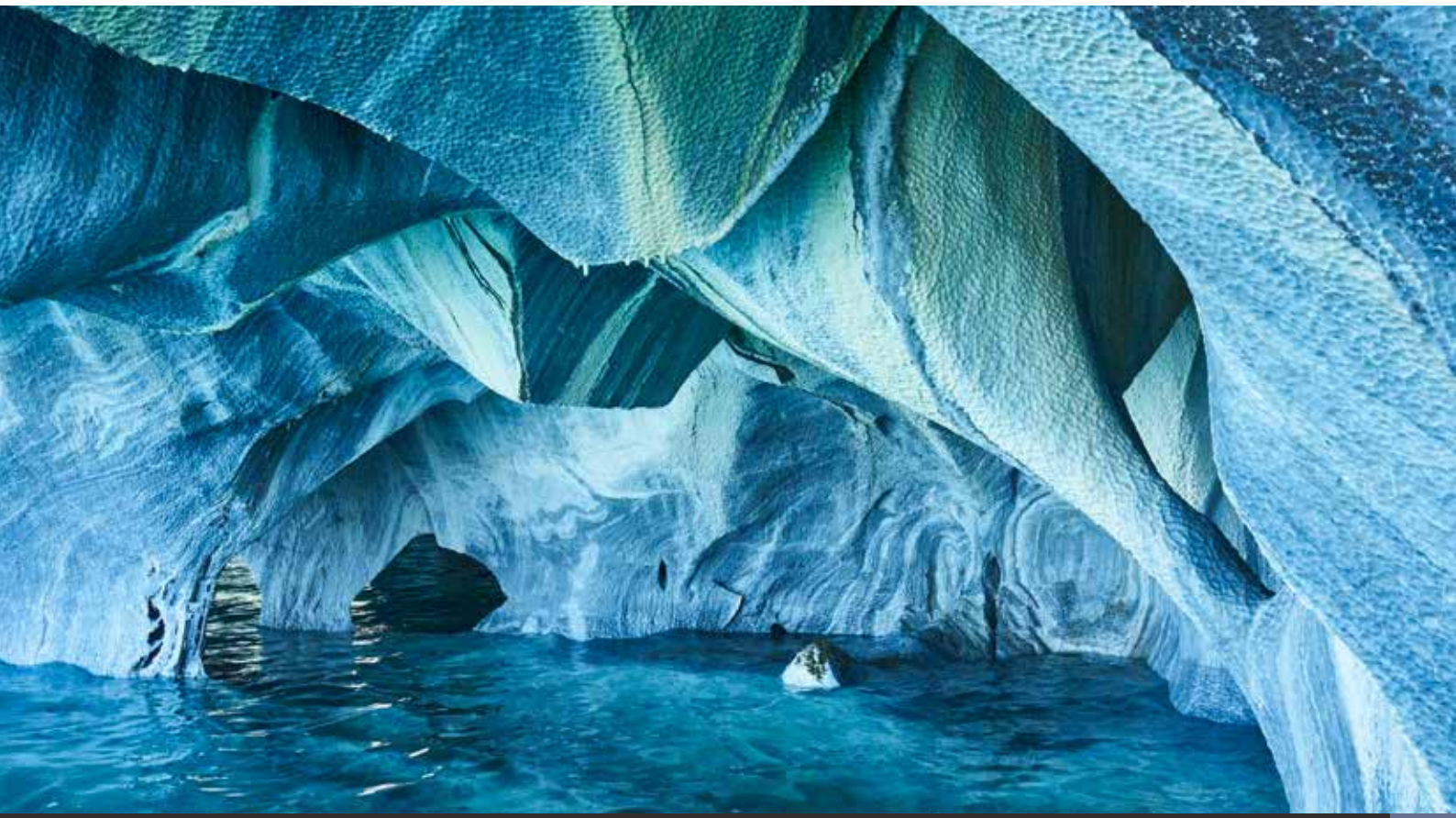
- ¼ the area of Paris; or
- Nearly 460 times the area of the Stade de France, where major Olympic Games events will be held in Paris next year.

3. Example risk metrics for financial institutions

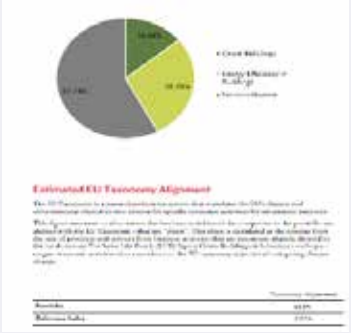
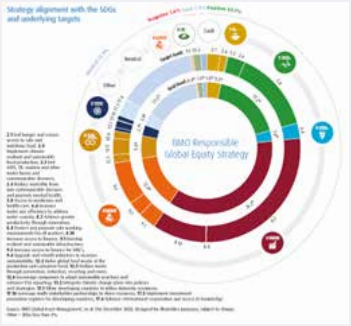
Example risk metrics for financial institutions					
Category	**Sub-Category**	**Example metrics**	**Potential breakdown**	**Reference/s**	**Limitations**
Physical risk	Exposure to physical risks	Assets under management, lending, financing, or insurance activities exposed to material physical risks (absolute volume or %)	• By sector • By geography, such as country or biome	1. CISL & HSBC (2022), pp.6-7. 'Nature-related financial risk: use case. Impact of water curtailment on credit rating of heavy industry companies in East Asia'  2. Coalition of Finance Ministers for Climate Action (2022) 'An Overview of Nature-related Risks and Potential Policy Actions for Ministries of Finance: Bending the Curve of Nature Loss', p.37. Box 4. The Swiss Re Institute Biodiversity and Ecosystem Services Index 	Needs methodology to determine physical risk When used for a portfolio, may require prioritisation step to determine which exposures are in scope

Example risk metrics for financial institutions					
Category	**Sub-Category**	**Example metrics**	**Potential breakdown**	**Reference/s**	**Limitations**
Transition risk	Exposure to transition risks	Assets under management, lending, financing, or insurance activities exposed to material transition risks (absolute volume or %)	• By sector • By geography, such as country or biome	1. CISL, Deutsche Bank and Union Bancaire Privée (UBP) (2022). 'Nature-related financial risk: use case. The EU Farm to Fork Strategy and Fertiliser Companies', p.4. Table 1 – Fertiliser equity value at risk from policies to reduce fertiliser usage  2. De Nederlandsche Bank (DNB) (2021), 'Indebted to Nature', p.33, p.35. Figure 8 Exposure of Dutch financial institutions to environmental controversies, 2019. Figure 9 Exposure of Dutch financial institutions to companies with products and activities related to deforestation, 2019  	Needs methodology to determine transition risk When used for a portfolio, may require prioritisation step to determine which exposures are in scope
		Assets under management, lending, financing, or insurance activities in companies with environmental controversies (absolute volume or %) and heightened reputational risk	• By sector • By geography, such as country or biome		Needs uniform methodology to determine controversies and/or determine which controversies are in scope for reporting

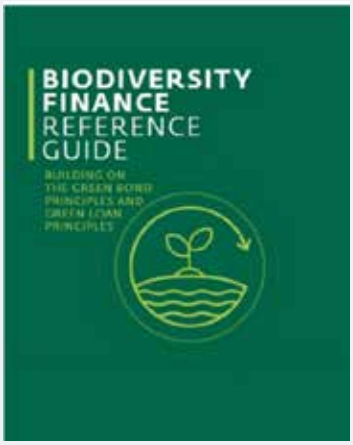
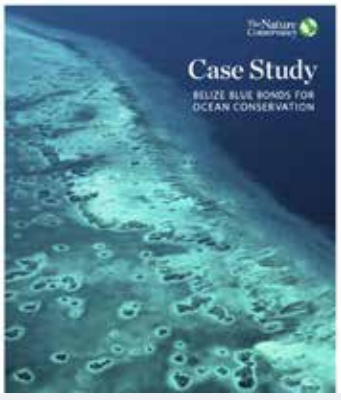
Example risk metrics for financial institutions					
Category	**Sub-Category**	**Example metrics**	**Potential breakdown**	**Reference/s**	**Limitations**
Risk measures	Impacts on specific risk parameters (loss potential)	Changes in Probability of Default (PD), Loss Given Default (LGD), or Expected Loss (EL); Changes in investment or insured value for given set of exposures/ portfolios	• By specific set of exposures/ portfolios	Vivid Economics (2022) 'Nature and financial institutions in Africa: A first assessment of opportunities and risks', p. 25. Exhibit 6 – Nature-related risks could roughly double expected losses from agriculture by 2030 for some portfolios (note: accounts for transition and physical risk) 	Needs a scenario to estimate change in risk and no industry standard methodology yet exists for how to estimate risk parameter changes



4. Example opportunity metrics for financial institutions

Example opportunity metrics for financial institutions					
Category	**Sub-category**	**Example metrics**	**Breakdown**	**Reference/s**	**Limitation**
Exposure to nature-related opportunities	N/A	Volume of financial flow (investment, lending, insurance) to deliver nature-based opportunity, such as green bonds issued with use of proceeds related to nature-specific activities Percentage of investments that make a substantial contribution to defined objectives, such as SDGs or EU Taxonomy 6 – protection and restoration of biodiversity and ecosystems	• Absolute amounts • Proportion of total financing flows	1. Swiss Life (2022) 'Equity green building and infrastructure fund report' following EU Taxonomy criteria  2. BMO GAM (2021) 'Responsible global equity strategy ESG profile and impact report', p.4. Strategy alignment 	Needs explanation and recognised definition of nature-related opportunity

Example opportunity metrics for financial institutions					
Category	**Sub-category**	**Example metrics**	**Breakdown**	**Reference/s**	**Limitation**
Mitigation of nature-related risk	N/A	Volume of financial flow (investment, lending, insurance) with evidence of material mitigation of nature-related risk through, for example, engagement, due diligence or sustainability-linked KPIs	• Absolute amounts • Proportion of total financing flows	1. ABN AMRO (2022) 'ABN AMRO's impact on biodiversity', p.8. Figure 3 – ABN AMRO 2021 and 2020 impact on biodiversity loss: main drivers (%) and actions taken to reduce impacts  2. UBS Asset Management (2022) 'Stewardship Annual Report 2021', p.81, p.87. Number of environmental focused engagements and case studies   3. Blackrock, Investment Stewardship Annual Report 2022, p.141. 	Needs explanation and recognised definition of nature-related risk mitigation

Example opportunity metrics for financial institutions					
Category	**Sub-category**	**Example metrics**	**Breakdown**	**Reference/s**	**Limitation**
Nature-positive impacts	N/A	Volume of financial flow (investment, lending, insurance) that targets nature-positive impact via a quantified measure	• Absolute amounts • Proportion of total financing flows	1. UNEP FI and UNEP-WCMC (2021) 'Biodiversity Target-setting: Guidance for banks'  2. IFC (2023) Biodiversity Finance Reference Guide  3. The Nature Conservancy – Case Studies on Belize and Barbados Blue Bonds 	Needs explanation and recognised definition of nature-positive impacts Target setting approaches for financial institutions still in development

Links to more information and examples – Finance for Biodiversity Foundation

Finance for Biodiversity Foundation (2022) Act Now! The why and how of biodiversity integration by financial institutions,

Finance for Biodiversity Foundation (2022) Guide on biodiversity measurement approaches,

Finance for Biodiversity Foundation (2022) Guide on engagement with companies.

These three guides offer an introduction to biodiversity integration by financial institutions based on guidance on the TNFD LEAP approach, the Science Based Targets Network (SBTN), European Central Bank, Finance for Biodiversity Foundation, and other documents.

Links to more information and examples – PBAF

PBAF Q&A – Introduction to biodiversity impact assessment Offering an introduction to biodiversity impact assessment for financial institutions in 16 questions and answers.

PBAF Standard v 2023 Dependencies Provides guidance on the steps in a dependency assessment and includes PBAF requirements and recommendations for financial institutions and data providers.

PBAF Standard v 2022 Biodiversity impact assessment – Overview of approaches Provides an overview of different biodiversity impact assessment approaches that can be used by financial institutions.

See reference list for links to these guides.

PBAF Standard v 2022 Biodiversity impact assessment – Footprinting: Presents PBAF's view on biodiversity footprinting.

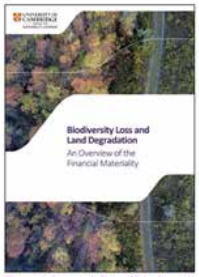
Links to more information and examples – CISL

Cambridge Institute for Sustainability Leadership Centre for Sustainable Finance works with banks and asset managers to:

- Determine a common language and framework for nature risk;
- Identify and assess the financial risks of nature loss; and
- Measure and manage such risks.

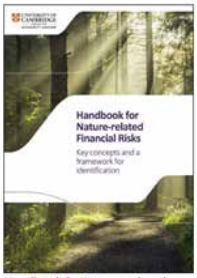
To achieve these objectives CISL, financial institutions and academics have co-created frameworks and use cases to:

- Enable the financial community to integrate nature loss into decision-making; and
- Catalyse the reallocation of capital to economic activities that protect and restore nature.



Financial materiality of biodiversity loss and land degradation

Business briefings detailing the current ways that biodiversity loss and land degradation are financially material.



Handbook for Nature-related Financial Risks

Explaining key concepts and providing a framework for risk identification.

Integrating Nature: The case for action

The case for action on nature-related financial risks

Links to more information and examples – UNEP FI

UNEP FI provides cutting-edge innovations and frameworks and develops industry-wide tools linking science, policy, economics and finance, bringing nature to the heart of financial decision-making. UNEP FI helps banks, insurers and investors identify and address their impact on the natural world. Financial institutions can make use of frameworks, guidance, tools and capacity-building activities including:

- Unboxing Nature-related Risks Insights from the UNEP FI-led TNFD Piloting Programme
- How to set biodiversity targets; and
- Oceans, forests and food.

Harmful marine extractives: Deep-Sea Mining

Harmful marine extractives: Offshore Oil & Gas

Prioritising Nature-related Disclosures

Nature in a haystack: Leveraging public nature-related data in disclosure frameworks

Annex 3: References

- CDP and Planet Tracker (2022) High and dry: How water issues are stranding assets
- Dutch financial institutions Biodiversity Working Group – Overview of resources and case studies
- Finance for Biodiversity (2022) Guide on biodiversity measurement approaches (2nd edition)
- Finance for Biodiversity (2022) Guide on engagement with companies
- Finance for Biodiversity (2022) Briefing paper: Top 10 biodiversity-impact ranking of company industries
- Global Canopy (2023) Forest 500 – 2023: A watershed year for action on deforestation. Annual Report 2023
- Nature Finance initiative
- Network for Greening the Financial Systems (NGFS) (2023) Nature-related financial risks: A conceptual framework to guidance action by central banks and supervisors
- NGFS–INSPIRE (2022) Central banking and supervision in the biosphere: An agenda for action on biodiversity loss, financial risk and system stability
- NGFS-INSPIRE (2022) Beyond climate: Addressing financial risks from nature and biodiversity loss
- OECD Environment Policy Paper (2023) Assessing biodiversity-related financial risks: Navigating the landscape of existing approaches
- Power, S, Dunz, D. and O. Gavryliuk (2022) An overview of nature-related risks and potential policy actions for Ministries of Finance: Bending the curve of nature loss Coalition of Finance Ministers for Climate Action
- Race to Zero Assessing the Financial Impact of the Land Use Transition on the Food and Agriculture Sector
- Taskforce on Nature Markets (2023) Making nature markets work: Shaping a global nature economy in the 21st century. NatureFinance
- Trase Earth – Overview on trade and financing of commodities driving deforestation worldwide
- United Nations Environment Programme (2022) State of finance for nature. Time to act: Doubling investment by 2025 and eliminating nature-negative finance flows
- University of Cambridge Institute for Sustainability Leadership (CISL) (2022) Integrating climate and nature: the rationale for financial institutions Cambridge, UK: University of Cambridge Institute for Sustainability Leadership
- University of Cambridge Institute for Sustainability Leadership (CISL) 2023) Roadmap: Identification and integration of nature-related risks and impacts in underwriting and insurance brokerage
- World Bank (2023) Biodiversity and finance: A preliminary assessment of physical risks for the banking sector in emerging markets
- World Benchmarking Alliance (2022) The methodology for the 2022 nature benchmark methodology
- World Economic Forum Global Future Council on Nature-based Solutions (2022) Scaling investments in nature: The next critical frontier for private sector leadership
- World Economic Forum (2022) Location matters: Using spatial intelligence for business action on nature and climate
- WWF (2021) Assessing portfolio impacts: Tools to measure biodiversity and SDG footprints of financial portfolios
- WWF (2022) Seeing the forest for the trees: A practical guide for financial institutions to take action against deforestation and conversion risks

Taskforce on Nature-related Financial Disclosures

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