



**Taskforce on Nature-related  
Financial Disclosures**

**The TNFD Nature-related  
Risk and Opportunity  
Management and  
Disclosure Framework  
Beta v0.3 Annex 3.4  
Illustrative Assessment  
and Disclosure Metrics for  
Financial Institutions**

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# Annex 3.4: Illustrative Assessment and Disclosure Metrics for Financial Institutions

## Introduction

This document is intended to give market participants an indication of the TNFD's ongoing work identifying Assessment and Disclosure Metrics of relevance to, and use by, financial institutions.

This work is ongoing, and the Taskforce expects to publish a draft set of Disclosure Metrics, including for financial institutions, as part of the release of v0.4 of the TNFD beta framework in March 2023. This will provide market participants with additional time to review and provide feedback to the Taskforce until June 2023 before the Taskforce publishes v1.0 of the TNFD framework in September 2023.

The TNFD expects to publish a set of recommended draft Disclosure Metrics in v0.4 of the beta framework. The metrics outlined in this supplement are illustrative only.

This supplement should be read in conjunction with the draft Additional Guidance for Financial Institutions for the TNFD disclosure recommendations (see Annex 3.3).

### The TNFD is evaluating four types of Assessment and Disclosure Metrics for financial institutions:

1. Dependency metrics
2. Impact metrics
3. Risk metrics
4. Opportunity metrics



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For each type, categories and subcategories are provided, including illustrative metrics and the potential ways in which the metrics can be broken down (e.g. by sector, by ecosystem service, by country and by biome) that the Taskforce is continuing to evaluate.

The Taskforce does not envisage that financial institutions will choose to use all subcategories of metrics or will use any given metric for their entire portfolio of exposures. The use of specific metrics should be guided by what is considered meaningful and material. It is important to consider the scope of any metric (e.g. the portfolios it will be applied to and how that relates to the entire portfolio) as well as methodologies applied, data limitations, and purpose for the metric. The Taskforce recognises that for both qualitative and quantitative information, financial institutions have a reliance on disclosures from non-financial corporates and there may therefore be limitations to what financial institutions can assess and disclose at any point in time.

References to examples of publicly available disclosures are provided throughout this supplement to help illustrate what financial institutions are already using to support their reporting. Additionally, overviews and links are provided to a range of further sources of methodology descriptions, tool providers and case studies.

This document will continue to evolve as the TNFD disclosure recommendations and the additional financial institution disclosure guidance (see Annex 3.5) evolves, and the Taskforce develops draft Disclosure Metrics. Therefore, it is considered a work in progress until the TNFD complete framework is published in September 2023. The Taskforce welcomes feedback from market participants on this illustrative set of Assessment and Disclosure Metrics for financial institutions ahead of the v0.4 release in March 2023.

### Overview – Categories of illustrative Assessment and Disclosure metrics for financial institutions

Metric type	Category	Sub-category
Dependency	Potential dependency	Exposure to sectors or firms with material dependencies on nature
Impact	Potential impact	Footprint based
		Revenue based
Risk	Physical risk	Exposure to physical risks
	Transition risk	Exposure to transition risks
	Risk measures	Impacts on specific risk parameters (e.g. expected loss)
	Value at risk	Value at risk (VaR)
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 opportunity
	Mitigation of nature-related risk	Volume of financial flow (investment, lending, insurance) with evidence of material mitigation of nature-related risk (e.g. engagement, due diligence, sustainability linked KPIs)
	Nature positive solutions	Volume of financial flow (investment, lending, insurance) with demonstrated positive impacts on nature



## 1. Illustrative dependency metrics for financial institutions

Category	Sub-category	Illustrative metrics	Potential breakdown	Practical example	Limitations
Potential dependency	Exposure to sectors or firms with material dependencies on nature	<ul style="list-style-type: none"> <li>Exposure in millions (USD) to sectors or firms with high or medium dependency on ecosystem services;</li> <li>Exposure as percentage of total portfolio amount / value</li> </ul> Top X (e.g. 10) firms in portfolio with high or medium dependency on ecosystem services	<ul style="list-style-type: none"> <li>By ecosystem service</li> <li>By sector</li> <li>By geography (e.g. country or biome)</li> </ul>	1. NGFS (2022) <a href="#">‘Central banking and supervision in the biosphere’</a> , p.34 Figure 6. <a href="#">Dependence of French financial institutions’ portfolios on ecosystem services.</a> 2. Vivid Economics (2022) <a href="#">‘Nature and financial institutions in Africa: A first assessment of opportunities and risks’</a> , p.21 Exhibit 2. <a href="#">Exposure to agriculture and extractives together ranges from 2% to 20% of total portfolio value.</a>	Potential dependencies only and not actual dependencies

## 2. Illustrative impact metrics for financial institutions

Category	Sub-category	Illustrative metrics	Potential breakdown	Practical example	Limitations
Potential impact	Exposure to sectors or firms operating in high risk locations	<ul style="list-style-type: none"> <li>Exposure in millions (USD) to high impact sectors</li> <li>Exposure as percentage of total portfolio amount / value</li> </ul>	By sector		Only indication of sector specific impact drivers Potential impact only and not an actual impact
		<ul style="list-style-type: none"> <li>Exposure in millions (USD) to firms operating in or near key biodiversity areas / critical habitats</li> <li>Exposure as percentage of total portfolio amount / value</li> </ul>	By geography (e.g. country or biomes)	<a href="#">De Nederlandsche Bank (2021) ‘Indebted to Nature’</a> , p27 <a href="#">Exposure of Dutch financial institutions to protected and valuable areas, 2018-IV</a>	
		<ul style="list-style-type: none"> <li>Exposure in millions (USD) to firms operating in or near areas with endangered species (e.g. using STAR)</li> <li>Exposure as percentage of total portfolio amount</li> </ul>	By geography (e.g. country or biomes) or by species	Allianz (2021) Sustainable Investment Report – Race to Zero, pp. 62-63 <a href="#">Figure 46a Equity Portfolio – Location-based risk ratings of portfolio companies’ facilities vis-à-vis IUCN Critically Endangered species</a> <a href="#">Figure 47a Fixed Income Portfolio – Location-based risk ratings of portfolio companies’ facilities vis-à-vis Critically Endangered species</a>	

## Illustrative impact metrics for financial institutions (continued)

Category	Sub-category	Illustrative metrics	Potential breakdown	Practical example	Limitations
Potential impact		<ul style="list-style-type: none"> <li>Share of investments in investee companies with sites/operations located in or near to areas of biodiversity importance where activities of those investee companies negatively affect those areas</li> <li>Share of investments in investee companies whose operations affect threatened species</li> <li>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</li> </ul>	By sector By geography (e.g. country or biomes)	<a href="#">EU Sustainable Finance Disclosure Regulation Principal Adverse Impact Indicators</a>	

## Illustrative impact metrics for financial institutions (continued)

Category	Sub-category	Illustrative metrics	Potential breakdown	Practical example	Limitations
Potential impact	Footprint	Measures of biodiversity intactness – e.g. <ul style="list-style-type: none"> <li>Financed absolute biodiversity footprint (e.g. Mean Species Abundance (MSA) [loss/km2/year])</li> <li>Biodiversity intensity per unit of capital employed [e.g. MSA per million EUR of capital employed]</li> </ul> Measures of species richness – e.g. Potentially Disappeared Fraction of Species (PDF)	By impact driver (IPBES) By scope/ value chain By sector	1. Netherlands Enterprise Agency (2021) <a href="#">‘Biodiversity Footprint for Financial Institutions Exploring Biodiversity Assessment’</a> , p. 14 Figure 4: <a href="#">Total Biodiversity footprint of companies in the MSCI World Index split by driver of biodiversity loss</a> 2. <a href="#">Axa (2022), Climate and Biodiversity Report</a> , p. 61 <a href="#">Illustrative example of a hypothetical Biodiversity Footprint</a> 3. BNP Paribas Asset Management (2022), <a href="#">Sustainable by Nature Sequel: Our Portfolio Biodiversity Footprint</a> Figure 8: <a href="#">Selected fund-specific results</a>	<ul style="list-style-type: none"> <li>Potential impact not actual impact</li> <li>Not all impact drivers covered by current methodologies</li> <li>Dependence on assumptions and secondary data</li> </ul>

## Illustrative impact metrics for financial institutions (continued)

Category	Sub-category	Illustrative metrics	Potential breakdown	Practical example	Limitations
	Revenue	Measures of revenue of companies (investee, lending or insured) with revenues that can be attributed to positive or negative impacts on nature	By impact driver (IPBES) By green taxonomy category By SDG	<p>1. <a href="#">Allianz (2021) 'Sustainable Investment Report - Race to Zero' pp.65-56</a> <a href="#">Figure 50 - Companies' operational impact score in 4 biodiversity pressures - Equity</a> <a href="#">Figure 51 - Companies' operational impact score in 4 biodiversity pressures - Fixed Income</a></p> <p>2. BMO GAM (2021) <a href="#">'Responsible Global Equity Strategy ESG Profile and Impact Report'</a>, p.4 <a href="#">Strategy alignment with the SDGs and underlying targets</a></p>	<ul style="list-style-type: none"> <li>Requires a mechanism to attribute revenues to positive or negative impacts</li> <li>Potential not actual impact</li> <li>Dependency on secondary</li> </ul>

## 3. Illustrative risk metrics for financial institutions

Category	Sub-Category	Illustrative metrics	Potential breakdown	Practical example	Limitations
Physical risk	Exposure to physical risks	AuM, lending, financing, or insurance activities exposed to material physical risks (absolute volume or %)	<ul style="list-style-type: none"> <li>By sector</li> <li>By geography (e.g. country or biome)</li> </ul>	<p>1. CISL &amp; HSBC (2022) <a href="#">'Nature-related financial risk: use case. Impact of water curtailment on credit rating of heavy industry companies in East Asia.'</a>, pp.6-7</p> <p>2. Coalition of Finance Ministers for Climate Action (2022) <a href="#">'An Overview of Nature-related Risks and Potential Policy Actions for Ministries of Finance: Bending the Curve of Nature Loss'</a>, p.37</p> <p>Box 4: <a href="#">The Swiss Re Institute Biodiversity and Ecosystem Services Index</a></p>	Needs methodology to determine physical risk

## Illustrative risk metrics for financial institutions (continued)

Transition risk	Exposure to transition risks	AuM, lending, financing, or insurance activities exposed to material transition risks (absolute volume or %)	<ul style="list-style-type: none"> <li>• By sector</li> <li>• By geography (e.g. country or biome)</li> </ul>	<p>1. CISL, Deutsche Bank and Union Bancaire Privée (UBP) (2022). <a href="#">‘Nature-related financial risk: use case. The EU Farm to Fork Strategy and Fertiliser Companies.’</a></p>	Needs methodology to determine transition risk
		AuM, lending, financing, or insurance activities in companies with environmental controversies (absolute volume or %) and heightened reputational risk	<ul style="list-style-type: none"> <li>• By sector</li> <li>• By geography (e.g. country or biome)</li> </ul>	<p>Table 1 – <a href="#">Fertiliser equity value at risk from policies to reduce fertiliser usage</a>, p.4</p> <p>2. <a href="#">De Nederlandsche Bank (DNB) (2021), ‘Indebted to Nature’</a>, p.33, p.35</p> <p>Figure 8 <a href="#">Exposure of Dutch financial institutions to environmental controversies, 2019</a></p> <p>Figure 9 <a href="#">Exposure of Dutch financial institutions to companies with products and activities related to deforestation, 2019</a></p>	Needs uniform methodology to determine controversies

## Illustrative risk metrics for financial institutions (continued)

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	<ul style="list-style-type: none"> <li>• By specific set of exposures / portfolios</li> </ul>	<p>1. Vivid Economics (2022) <a href="#">‘Nature and financial institutions in Africa: A first assessment of opportunities and risks’</a>, p. 25</p> <p>Exhibit 6 – <a href="#">Nature-related risks could roughly double expected losses from agriculture by 2030 for some portfolios</a></p>	Needs a scenario to estimate change in risk
	Nature Value at risk (VaR)	Expected loss under given scenario High / Medium / Low potential credit risk exposure	<ul style="list-style-type: none"> <li>• By sector</li> </ul>	<p><a href="#">Moody’s Investor Services (2020), ESG – Global Heat map: Sectors with \$3.4 trillion in debt face heightened environmental credit risk, p.2</a></p> <p><a href="#">Exhibit 1 – Number of sectors facing very high or high environmental credit risk continues to rise</a></p>	No standard method yet and depends on transition scenario paths

## 4. Illustrative opportunity metrics for financial institutions

Category	Sub-category	Illustrative metrics	Breakdown	Reference/s	Limitation
Exposure to nature-related opportunities	N/A	Volume of financial flow (investment, lending, insurance) to deliver nature-related opportunity	<ul style="list-style-type: none"> <li>Absolute amounts</li> <li>Proportion of total financing flows</li> </ul>	<a href="#">TCFD Metrics Guidance 2021</a>	Needs explanation of what is nature opportunity
	N/A	Volume of financial flow (investment, lending, insurance) with evidence of material mitigation of nature-related risk (e.g. through engagement, due diligence, sustainability linked KPIs)	<ul style="list-style-type: none"> <li>Absolute amounts</li> <li>Proportion of total financing flows</li> </ul>	1. LFDE (2021), <a href="#">Climate and Biodiversity Report</a> , pp. 58-59 <a href="#">Indicator No. 5 – Biodiversity Footprint below index</a> 2. ABN AMRO (2022) <a href="#">‘ABN AMRO’s impact on biodiversity’</a> , p.8 Figure 3 – <a href="#">ABN AMRO 2021 and 2020 impact on biodiversity loss: main drivers (%)</a> 3. UBS <a href="#">Asset Management (2021) ‘Stewardship Annual Report 2021’</a> , p.81, p.87	Needs definitions / evidence of mitigation
Mitigation of nature-related risk	N/A	Volume of financial flow (investment, lending, insurance) with demonstrated positive impacts on nature / target via a quantified measure	<ul style="list-style-type: none"> <li>Absolute amounts</li> <li>Proportion of total financing flows</li> </ul>		Needs explanation of what is nature positive
	N/A	• % of investments that make a substantial contribution to EU Taxonomy objective 6 (protection and restoration of biodiversity and ecosystems)	<ul style="list-style-type: none"> <li>Absolute or proportion of total financing flows</li> </ul>	<a href="#">EU Taxonomy - Disclosure Metrics</a>	EU Taxonomy not yet complete for environment and only applicable in EU
Nature-based solutions / nature positive solutions					
EU Taxonomy Alignment					

Links to more information and examples – Finance for Biodiversity

### [Finance for Biodiversity \(2022\) Guide on biodiversity measurement approaches](#)

The Guide provides a comprehensive overview of seven tools for measuring biodiversity currently in use by financial institutions: [BFFI](#), [BIA-GBS](#), [CBF](#), [GBSFI](#), [GID](#), [ENCORE](#) and [IBAT](#). It highlights which tools might be the most suitable for specific organisational focus areas, business applications and asset categories and shows the strengths and weaknesses of each. The Guide also details the data and resource requirements for each tool and gives insights on what scopes and pressures are covered.

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 sixteen questions and answers.

Target group: Financial institutions and impact investors that are just starting to orientate themselves on biodiversity impact assessment.

### [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 and includes a chapter on positive impact.

Target group: Financial institutions and impact investors that have limited knowledge and experience; more experienced financial institutions and impact investors

### [PBAF Standard v 2022 Biodiversity impact assessment – Footprinting](#)

Presents PBAF’s view on biodiversity footprinting: what biodiversity footprints need to comply with to provide the right information to financial institutions. Includes requirements and recommendations.

Target group: Financial institutions and impact investors with some experience with impact assessment; data providers and tool developers

## Links to more Information and examples - CISL

The Cambridge Institute for Sustainability Leadership's Center for Sustainable Finance is working closely with member banks and asset managers to:

- Determine a common language and framework for nature risk
- Identify and assess the financial risks of nature loss
- 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
- Catalyse the reallocation of capital to economic activities that protect and restore nature

Learn more:

[www.cisl.cam.ac.uk/centres/centre-for-sustainable-finance/nature-related-financial-risks](http://www.cisl.cam.ac.uk/centres/centre-for-sustainable-finance/nature-related-financial-risks)

## Links to more information and examples – UNEP FI

UNEP FI provides the financial community with 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:

- Support for identifying and managing nature risks and making disclosures (referencing the TNFD)
- How to set biodiversity targets
- Oceans, forests and food

Learn more:

[www.unepfi.org/nature/nature/](http://www.unepfi.org/nature/nature/) and [www.unepfi.org/publications/guidance-on-biodiversity-target-setting/](http://www.unepfi.org/publications/guidance-on-biodiversity-target-setting/)

## Additional resources

- [NGFS – INSPIRE paper on biodiversity loss, financial risk and system stability](#)
- [Coalition of Finance Ministers for Climate Action paper on nature-related risks](#)
- [WEF Global Future Council on Nature Based Solutions](#)
- [Nature Finance initiative](#)
- [Taskforce on Nature Markets](#)
- [WWF report on assessing portfolio impacts including tools to measure biodiversity and SDG footprints](#)
- [Dutch financial institutions Biodiversity Working Group overview of resources and case studies](#)
- [Finance for Biodiversity Guide on Engagement and Stewardship](#)
- [World Benchmarking Alliance Nature Benchmark methodology](#)
- [Council for Economic Policies on approach to environmental risks](#)
- [MSCI on using geospatial analysis to understand biodiversity risks](#)
- [CDP and Planet Tracker on water issues and stranded assets](#)
- [Global Canopy Forest 500 deforestation report](#)
- [Race to Zero Assessing Financial Impact of Land Use Transition on Food and Agriculture System](#)
- [Cambridge Institute for Sustainability Leadership paper on integrating climate and nature](#)

## Additional resources on priority sectors

- UN Environment Programme, UNEP Finance Initiative and Global Canopy (2020) [‘Beyond Business as Usual’: Biodiversity Targets and Finance Managing biodiversity risks across business sectors](#), p.31, Table 2. Highest priority sub-industries based on their potential dependencies and impacts on biodiversity.
- 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.

## Additional resources on targets

- UNEP FI and UNEP-WCMC (2021) [‘Biodiversity Target-setting: Guidance for banks’](#)





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