

A close-up photograph of a tiger's face, partially obscured by lush green bamboo leaves. The tiger's eyes are a striking orange-gold color, and its fur shows the characteristic black stripes. The background is a dense thicket of similar green leaves, creating a natural, camouflaged setting.

How financial institutions can help solve the biodiversity crisis

White paper

May 2023

The EY logo, consisting of the letters 'EY' in a bold, white, sans-serif font. A yellow diagonal bar is positioned above the 'Y'.

Building a better
working world



Getting started on the TNFD framework in Asia-Pacific financial services

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Nature is under threat



With nature declining at unprecedented rates across the world, biodiversity risks are as serious as climate change risks for our civilization.

As with climate change, financial services will play a critical role helping humanity to solve the biodiversity crisis. Banks, asset managers and insurers can and must reorient capital flows away from activities with a detrimental impact on biodiversity, and toward those that will safeguard, restore and protect the natural world.

Doing so will require institutions to understand the biodiversity risks in their portfolios and work with companies to prioritize and overcome them. This will require new capabilities and new risk assessment processes.

The world's cornerstone framework for nature risk assessment is being developed by the Taskforce on Nature-related Financial Disclosures (TNFD). When it is finalized in September 2023, the framework will support a shift in global financial flows toward nature-positive outcomes.

The TNFD has set out an internal risk and opportunity assessment approach (LEAP – Locate, Evaluate, Assess, Prepare) that can help provide the key inputs to a financial institution's disclosures.

Asia-Pacific's largest TNFD pilot test

During 2022, Ernst & Young Advisory Pte Ltd ("EY") teams assisted our financial services clients in Asia-Pacific to pilot test and provide feedback on the TNFD's framework. Heads of ESG and sustainability from 70 financial institutions from the region participated in initial awareness sessions, and 12 financial institutions and three corporates representing Singapore, Hong Kong SAR, Taiwan and New Zealand gave feedback on the TNFD LEAP framework.

The pilot testing made clear that financial institutions in Asia-Pacific need to rapidly accelerate their biodiversity risk assessment. Those wishing to get ahead of the curve have important opportunities to act now to start preparing for TNFD adoption.

The EY report-back on the pilot testing, *TNFD – making it real*, provides extensive insights and analysis for institutions, regulators and policymakers, and the TNFD itself. This white paper summarizes its key points and recommends actions for institutions to implement now. Feedback from the pilot in 2022

“

Organizations should not wait to “fix climate” before they address nature. The opportunity is for organizations now to work through nature risk at the same time as climate risk, building both into mainstream risk management processes. This will prevent duplication and enable institutions to be ready to assess nature risk and provide biodiversity data as required.

Wolfram Hedrich
EY Asia-Pacific Sustainable Finance co-lead



has been assessed against new beta versions (including v0.4) to clarify what has been addressed, and what can still be considered.

The team acknowledges and is grateful for the special contribution to the pilot of World Wide Fund for Nature (WWF) teams across Asia-Pacific.

Key findings from TNFD pilot in Asia-Pacific

The pilot testing project developed 11 “use cases”, creating practical examples that narrow the scope of the LEAP assessment, making its application more workable.

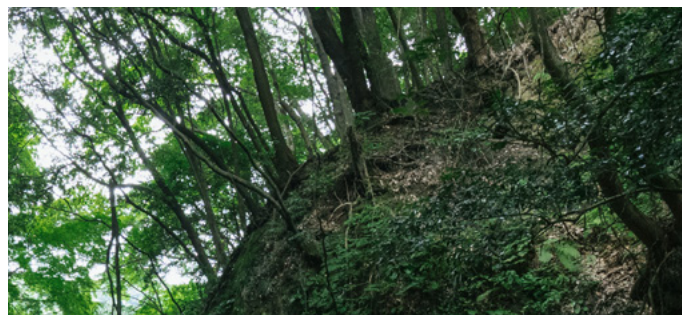
EY teams chose the use cases based on sectors that are materially relevant for nature-related impact and dependencies, while also representing relevant exposure for the financial sector in Asia-Pacific. The use cases were:

- ▶ Palm oil production and processing
- ▶ Beef and dairy production
- ▶ Commercial fishing and seafood processing
- ▶ Real estate development
- ▶ Food and beverage wholesale and retail
- ▶ Open cast (cut) mining exploration and production
- ▶ Hydropower development and production
- ▶ Oil and gas exploration and production
- ▶ Textile manufacturing and distribution
- ▶ Offshore windfarm development and operations

In the context of their chosen use cases, pilot testing participants provided feedback on each scoping question and LEAP component, their experience of applying the framework, key challenges of applying the LEAP, and what would be needed to perform and accelerate their LEAP assessment.

Access our full *TNFD – making it real* report for worked LEAP examples for:

- ▶ Palm oil production and processing
- ▶ Beef and dairy production
- ▶ Hydropower development and production



Stumbling blocks included

- ▶ The difficulty of conducting LEAP at scale
- ▶ The lack of spatial data for assets and ecosystem interaction data
- ▶ The lack of data analysis capabilities and technical know-how in relevant teams



Suggested accelerators included

- ▶ Practical assistance in scaling the LEAP process.
- ▶ Tools such as nature-positive taxonomies.
- ▶ Risk registers in relation to different business activities.
- ▶ Sustainability standards and case studies.
- ▶ The need for better data quality and analytics capabilities.
- ▶ Significant internal training and capability uplift.
- ▶ More clarity on the business case for nature to make it a more strategic imperative among competing priorities.

Start preparing now

The pilot testing made clear that Asia-Pacific organizations do not need to wait for the final version of the framework to begin preparing for TNFD adoption. Immediate recommended actions include:

Raise awareness and educate

- ▶ Create internal awareness of and excitement around the financial sector's role in restoring, conserving, and protecting the natural world.
- ▶ Build the business case and get buy in from executive management.
- ▶ Upskill management and teams in first- and second-line roles.

Establish roles and ownership for TNFD

- ▶ Identify not only the teams that would own the TNFD disclosure, but others involved in providing input to the framework and internal and external engagement (e.g., teams responsible for client engagement, risk management, and data and analytics).
- ▶ Determine roles and ownership for various components aligned with organizational priorities, TNFD roadmap and strategic direction.

Shape policy and framework development

- ▶ Engage with policy makers and industry initiatives whether that is on coordinated responses to policy proposals or capability build.
- ▶ Become a TNFD member and provide active feedback to TNFD consultation and pilot testing initiatives, and follow initiatives like the TNFD data catalyst to improve your understanding of available tools and data sources.

Identify material exposure in your portfolio

- ▶ Perform initial portfolio analysis to identify material exposure or hotspots in your portfolio.
- ▶ Prepare a heatmap to understand priority business lines, financial products, material sectors and locations.
- ▶ Identify data, resourcing and capability gaps to perform the LEAP assessment and ongoing disclosure in line with TNFD recommendations.

Define your priorities and prepare a roadmap

- ▶ Leverage initial portfolio analysis to identify your priorities in terms of where further deep dive analysis will be needed and start formulating your strategic direction in terms of your financed biodiversity footprint and nature-related risk management.
- ▶ Prepare a roadmap to close gaps and continuously mature the LEAP assessment and disclosure in line with TNFD framework and recommendations.

Engage and build capabilities

- ▶ Start engaging with companies and suppliers to address their biodiversity impact and dependencies.
- ▶ Engage with external data and rating providers, and stay on top of market developments, especially on new standards, frameworks, and technologies.
- ▶ Engage with wider industry forums and build partnerships in the market.

How to start using the LEAP analysis immediately

Within the *TNDF – making it real* report, EY advisors include a Get Started guide with a 5-step staged approach for institutions to get started on LEAP assessment. This can be tested immediately, even if asset-level data is not available. High-level assessments can still yield useful insights to help institutions understand where further analysis should be done, where more data is required and where to start engaging with customers. By starting in this way, institutions can understand the scope of their TNFD exposure and gradually build capability while maturing over time.

1

Initial hotspot and sector materiality assessment – for initial prioritization

2

Portfolio-level analysis – to determine risk exposure and inform risk strategy

3

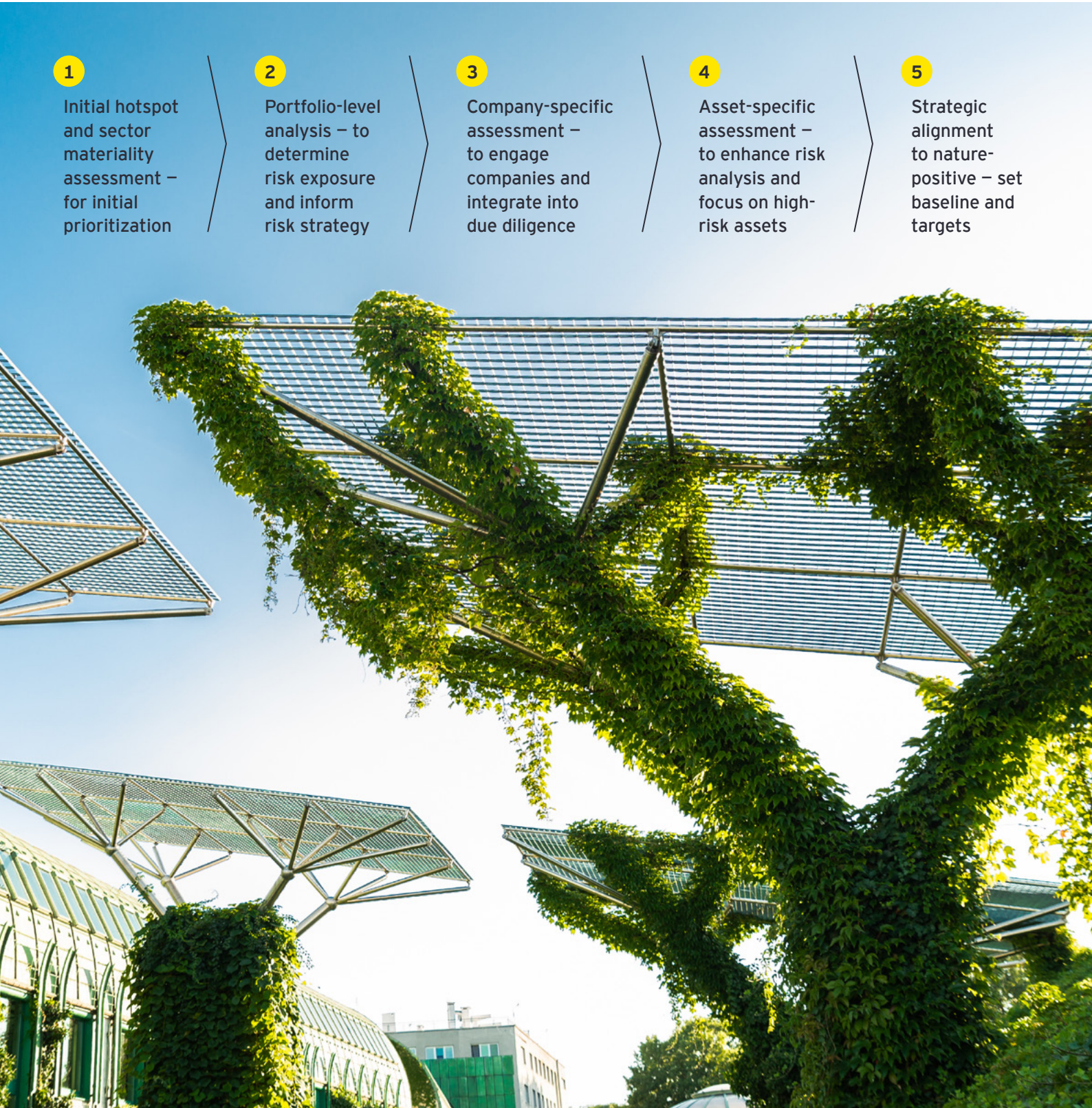
Company-specific assessment – to engage companies and integrate into due diligence

4

Asset-specific assessment – to enhance risk analysis and focus on high-risk assets

5

Strategic alignment to nature-positive – set baseline and targets



1 Initial hotspot and sector materiality assessment – analysis by sector (and geography) to prioritize your portfolio for LEAP

<p>Purpose of stage</p>	<ul style="list-style-type: none"> ▶ Identifies critical hotspots such as business activities or locations with increased focus due to their interaction with biodiversity or your organization's priorities (e.g., zero deforestation) and/or ▶ Identifies material sectors with impact and dependency on nature and relative to your exposure in those sectors. ▶ Analyzes portfolio for critical hotspots and material sectors to prioritize areas further for the LEAP assessment. ▶ Defines which of the entry points to LEAP (e.g., biome, geography, sector or asset class) is best suited for your organization. ▶ Understand feasible and appropriate levels of assessment and where more data is required on sectors or companies.
<p>Summary of approach</p>	<p>Perform an initial prioritization of your portfolio and create heatmaps based on your potential exposure to nature-related issues and qualitative materiality/risk ratings for sectors and countries.</p> <p>Note: This stage aligns with the TNFD's additional guidance on methods for risk assessments, specifically the "heatmap" method. However, this EY stage adds to the TNFD by providing practical examples and enhancing the approach to cover other potential criteria for initial scoping and prioritization, including location, biomes, and other relevant factors.</p> <p>(For the full set of steps in this stage request the TNFD – making it real report)</p>
<p>Data requirements</p>	<ul style="list-style-type: none"> ▶ Primary industry codes or country information (to map the portfolio to respective sector and countries). ▶ Asset-level location information (to analyze the portfolio's exposure to areas of critical biodiversity and nature depletion).
<p>Expected outcome (examples) and other considerations</p>	<ul style="list-style-type: none"> ▶ Heatmap can be an overview of material sectors, split by country, or by impact drivers, and shown in relation to the portfolio/AUM. ▶ Allows the categorization of the portfolio into areas that require, and where it is feasible to conduct, a deep dive based on asset classes or financial instruments and data availability. ▶ Prioritizes the portfolio for more detailed analysis based on material sectors and financial exposure or critical hotspots.

2 Portfolio-level analysis – to determine your risk exposure and risk strategy and your portfolio allocation

Purpose of stage	<ul style="list-style-type: none"> ▶ Takes a pragmatic approach to assess risk exposure where limited company information or asset-location data is available, using sector and geography risk as proxies. ▶ Highlights the significance of location for biodiversity risk assessments and supports a scalable approach, without forgoing the “Locate” phase. ▶ Identifies data gaps early, to determine what nature, company and asset location data is required, and develops a roadmap to source data over time. ▶ Leverages sectoral analysis and use cases to identify new product development and investment opportunities. ▶ Enables the setting of sector-specific policies and risk appetite and to establish initial targets to reduce the negative impact on biodiversity.
Summary of approach	<ul style="list-style-type: none"> ▶ Assess the prioritized portfolio based on the outcomes of the heatmap in stage 1. ▶ Leverage proxies for an initial assessment of the portfolio, given the limitation of widely available company environmental and asset location data. ▶ Follow the TNFD “asset tagging” approach, differentiating the assessment on the basis of sectors, business processes, products and countries.¹ ▶ Deconstruct portfolio companies and assets for a more granular assessment into sectors, industries, products, country or region, by using proxies such as companies’ sector/industry and country revenue, or production data. ▶ Perform materiality assessment creating risk ratings for sectors/industries and countries in scope and assign ratings to companies based on their sector, industry and country revenue. ▶ This stage provides mostly qualitative materiality assessment, resulting in insights about financial exposure to material impact, dependencies, physical and transition risks in your portfolio. <p>(For the full set of steps in this stage request the TNFD – making it real report)</p>
Data requirements	<ul style="list-style-type: none"> ▶ Disaggregated revenue data, corporate or ownership structure data, or production data. ▶ Nature-data including current integrity of ecosystems by country or region.
Expected outcome (examples) and other considerations	<ul style="list-style-type: none"> ▶ Allows a view of financial exposure to sectors and sub-sectors with material impact/dependency, split by impact driver, or by country and shown absolute or in % of portfolio. ▶ Allows a view of financial exposure to material physical or transition risks, split by country, biome and shown in absolute or in % of portfolio. ▶ Allows a view of financial exposure to companies with risk to policy change, environmental controversies, proximity to protected, high integrity areas or areas with high ecosystems collapse risks. ▶ May lead to a nature-related risk and opportunity register for different processes and products.

1. This EY stage is aligned with the TNFD “asset tagging” approach, asset tag level 1 (processes), asset tag level 2 (products) and asset tag level 3 (products and countries), with the difference that the EY stage also brings in a spatial overlay with level 1 processes, where possible. TNFD, Beta v0.4 Annex 4.6 “Guidance on LEAP: Methods for assessing nature-related risks”, March 2023.

3 Company-specific assessment – to engage companies and integrate into your risk management

Purpose of stage	<ul style="list-style-type: none"> ▶ Provides the starting point for your client engagement and begins to increase the quality of nature-related client data. ▶ Provides ability to integrate nature-related risk assessments into your risk standards, due diligence and credit review/investment processes. ▶ Enables clear management actions including requiring impact and risk mitigation measures (e.g., by requiring additional standards or certifications from clients). ▶ Engages with your clients to support them in their transition to a nature-positive business model. ▶ Captures the positive impact of companies, as earlier stages mostly focus on materiality in terms of negative impact and dependencies. ▶ Provides a more company-specific assessment to allow for benchmarking between companies of the same sector and region.
Summary of approach	<ul style="list-style-type: none"> ▶ Perform a deep dive on priority companies based on the outcomes of the portfolio level analysis in stage 2. ▶ Follow the TNFD 'asset tagging' approach, differentiating the assessment based on sectors, business processes, products and countries.² ▶ Apply the same approach as stage 2, using proxies and modelled data, but start to improve data accuracy (e.g., by using production and consumption data for footprint models, or source actual environmental pressure data from companies) and consider impact mitigation and positive impact. ▶ Aim to reflect in companies' risk profiles how strong their policies and risk management practices are in comparison to other companies. ▶ Develop from a mostly qualitative methodology to consider quantitative assessment (e.g., impact density by impact driver, modelled impact to state of nature). <p>(For the full set of steps in this stage request the <i>TNFD – making it real</i> report)</p>
Data requirements	<ul style="list-style-type: none"> ▶ Company production and consumption data, environmental data (e.g., water use/land converted) sourced from companies to improve data quality for biodiversity footprint calculations.³ ▶ Company-specific data on companies' risk policies and mitigation measures (e.g., sourced from data providers, due diligence, client discussions). ▶ Company-specific impact and dependency risk ratings (e.g., through emerging data providers and rating agencies)
Expected outcome (examples) and other considerations	<ul style="list-style-type: none"> ▶ Company-specific outcomes could include relative biodiversity footprint by company (e.g., MSA/PDF),⁴ or relative impact intensity for a selected impact driver by company (e.g., relative deforestation intensity by company), or risk rating by company. ▶ Results aggregated at the portfolio level could include portfolio biodiversity footprint, absolute or per unit of capital employed, total aggregated portfolio impact per impact driver (e.g., total extent of land-use change). Number of companies with material risk rating. Financial exposure to material physical or transition risks, split by country, biome and shown in absolute or in % of portfolio.

2. This EY stage is aligned with TNFD's "asset tagging" approach, asset tag level 1 (processes), asset tag level 2 (products) and asset tag level 3 (products and countries), with the difference that the EY stage also brings in a spatial overlay with level 1 processes, where possible. TNFD, Beta v0.4 Annex 4.6 "Guidance on LEAP: Methods for assessing nature-related risks", March 2023.

3. Iceberg Datalab, "Corporate Biodiversity Footprint – Methodological guide," April 2022.

4. Mean Species Abundance: Measures "intactness". MSA compares the actual abundance of native species in a given ecosystem to their (estimated) abundance if the ecosystem would be in an undisturbed state. Potentially Disappeared Fraction: Measures "intactness". PDF shows the percentage of species lost on 1 m (land) or in 1 m (water) in one year time in a specific area due to environmental pressures. (Source: Finance for Biodiversity, Guidance on biodiversity measurement approaches, October 2022).

4 Asset-specific assessment – to enhance your analysis of high-risk assets

Purpose of stage	<ul style="list-style-type: none"> ▶ Increases quality and granularity of nature-related risk assessments of your portfolio companies. ▶ Ensures site-based risk analysis for proceed-based financing (e.g., project-related financing, green bonds) or non-listed/real asset investments (e.g., infrastructure). ▶ Gathers requirements to ensure ongoing monitoring and data collection. ▶ Provides location-relevant and quantitative metrics to inform specific topics of engagement regarding your high-risk assets. ▶ Helps understand more about your exposure to companies with activities in areas that are low integrity or require restoration. ▶ Helps identify opportunities for investment in nature’s restoration.
Summary of approach	<ul style="list-style-type: none"> ▶ Perform an asset nature-related risk assessment using the TNFD “asset tagging” approach, based on physical asset-level data, including detailed local-level biome/ecosystem considerations.⁵ <p>(For the full set of steps in this stage request the <i>TNFD – making it real</i> report)</p>
Data requirements	<ul style="list-style-type: none"> ▶ Asset location data, asset ecosystem interaction data and company specific data (e.g., coordinates, size of project/operations site, details on projects and processes, production and consumption data, environmental data, suppliers). ▶ Asset specific data can be sourced from third party providers (e.g., providing asset locations of businesses across certain region), internal data sourced from client (e.g., through client conversations, EIAs, due diligence processes e.g., collateral information) or from corporate disclosures. ▶ Nature exposure and nature risk data e.g., integrity of ecosystems in respective areas, criteria to determine priority locations (e.g., protected area), and information to link impact, dependencies and risks to a locations state of nature. ▶ Establish a process to collate additional company data or more precise asset specific information, more granular data from client’s interface with nature including across the value chain. ▶ Over time, institutions will be able to leverage company disclosures with more specific information on company specific impacts, dependencies, and risks. Organizations will need a process to source information and the analytical data capabilities to interrogate it.
Expected outcome (examples) and other considerations	<ul style="list-style-type: none"> ▶ Asset-level results could include site-specific impact quantified (e.g., land converted) risk registers, including material risks for the particular project/site, and considering timeframes of risks. ▶ Results aggregated at the portfolio level could include financial exposure in priority locations, aggregated impact of portfolio by impact driver, financial exposure to material physical or material transition risks split by sector, geography or biome.

5. TNFD, Beta v0.4, Annex 4.6 “Guidance on LEAP: Methods for assessing nature-related risks”, March 2023.

5 Strategic alignment to nature-positive – set your baseline and targets

Purpose of stage	<ul style="list-style-type: none"> ▶ Ensures strategic alignment with the Global Biodiversity Framework (GBF) and transforms your portfolio toward nature-positive outcomes. ▶ Uses an underlying analysis of your portfolio impacts and risks to set a baseline and establish clear targets and key indicators to track and monitor progress.
Summary of approach	<ul style="list-style-type: none"> ▶ Determine your portfolio's baseline footprint and understand your exposure in line with key areas to set targets (e.g., for realms, key issues, pressure points or priority locations). ▶ Consider carefully the specific actions required to demonstrate an institution's contribution to a nature-positive world. Few companies are genuinely "nature-positive" yet.⁶ ▶ In line with the global goal for a nature-positive world by 2030, focus ambition levels on reducing, reversing, and restoring all negative impacts on nature by 2030. Prioritize mitigating negative impact while also pursuing restoration.⁷ ▶ Use the Science Based Targets Network (SBTN) and the UNEP FI Principles for Responsible Banking (PRB): Biodiversity Target Setting Guidance to translate global goals into clear portfolio targets.^{8,9} (For the full set of steps in this stage request the <i>TNFD – making it real</i> report)

6. Business for Nature, "How business and finance can contribute to a nature positive future now," 17 October 2022.

7. Business for Nature, "How business and finance can contribute to a nature positive future now," 17 October 2022.

8. Science Based Target Network (SBTN), "Science-based Target for Nature – Initial Guidance for Business," September 2020.

9. UNEP-WCMC, UNEP-FI, "Biodiversity Target-setting – Principles for Responsible Banking," June 2021.

Example of tools and databases used in the 5-stage approach

Biodiversity ESG Metrics, NatureAlpha >

[Click here](#)

Biodiversity Impact Assessment Tool, ISS >

[Click here](#)

Biodiversity Intactness Index, National History Museum >

[Click here](#)

EXIOBASE consortium >

[Click here](#)

ENCORE, Natural Capital Finance Alliance, UNEP-WCMC >

[Click here](#)

Global Biodiversity Score™ (BIA-GBS), CDC Biodiversity >

[Click here](#)

Iceberg Datalab, Carbon Footprint Measurement >

[Click here](#)

Integrated Biodiversity Assessment Tool (IBAT) >

[Click here](#)

Maps, Crowther Lab >

[Click here](#)

SBTN Sectoral Materiality Tool, Science Based Targets Network (SBTN) >

[Click here](#)

SPOTT, ZSL >

[Click here](#)

CatNet®, Swiss Re >

[Click here](#)

The biodiversity Risk Filter, WWF >

[Click here](#)

The ESG Risk Platform, RepRisk >

[Click here](#)

Trase, SEI & Global Canopy >

[Click here](#)

How EY teams can help

Reach out to our team or your regular EY advisor for a discussion on further defining the 5-step approach for your own organization, as well as help with nature-based strategies, finance and reporting, regulatory impacts, sustainability risk, data solutions and a range of assurance services.

The *TNFD – making it real* report includes more practical guidance as well as three full use case examples.

Request a copy [here](#).

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