



**Taskforce on Nature-related
Financial Disclosures**

Beta framework

**The TNFD Nature-related
Risk and Opportunity
Management and
Disclosure Framework
Final Draft – Beta v0.4**

March 2023

framework.tnfd.global

Contents

| | |
|---|----|
| 1. Introducing v0.4 of the TNFD framework | 3 |
| 1.1. Developing the TNFD framework | 4 |
| 1.2. Providing final feedback to the Taskforce | 5 |
| 1.3. Updates in v0.4 of the beta framework | 10 |
| 1.4. The TNFD framework at a glance | 12 |
| 2. The draft TNFD recommended disclosures | 14 |
| 2.1. General requirements | 16 |
| 2.2. Recommended disclosures – Adaptations to the TCFD four pillars | 18 |
| 2.3. Disclosure implementation guidance – Changes since the v0.3 beta release | 19 |
| 2.4. Additional disclosure guidance for sectors and biomes | 26 |
| 3. The LEAP approach | 27 |
| 3.1. Overview of updates since the v0.3 release | 30 |
| 3.2. Updated guidance on scoping the assessment (Scoping phase) | 34 |
| 3.3. Updated guidance on identifying priority locations (Locate phase) | 36 |
| 3.4. New guidance on risk assessment methods | 37 |
| 3.5. New guidance on engagement with affected stakeholders | 39 |
| 3.6. Additional guidance by sector and biome | 40 |
| 4. Core concepts and definitions | 45 |
| 5. The approach to metrics | 46 |
| 5.1. Assessment metrics | 53 |
| 5.2. Response metrics | 53 |
| 5.3. Disclosure metrics | 58 |
| 5.3.1. Overview of TNFD disclosure metrics | 61 |
| 6. The approach to target setting and scenarios | 70 |
| 6.1. New guidance on target setting | 70 |
| 6.2. New guidance on scenario analysis | 70 |
| 7. Priority areas for final framework development | 72 |
| 8. Engage – Co-create the TNFD framework | 73 |
| 9. Learn more | 75 |



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1. Introducing v0.4 of the TNFD framework

The Taskforce on Nature-related Financial Disclosures (TNFD) was established in 2021 in response to the growing need to factor nature into financial and business decisions. Society and business depend fundamentally on the services nature provides, and so the acceleration of nature loss globally is an increasing source of risk to businesses and providers of financial capital. There are opportunities for businesses and financial institutions to manage these risks, engage sustainably with nature, and achieve positive outcomes for nature, their organisations and society.

The loss of nature has brought the resilience of our planet's ecosystems to a critical point, and this carries significant risks for societies and businesses. Governments around the world are increasingly recognising the importance of halting and reversing this nature loss, with over 190

states committing to a set of ambitious goals and targets under the Global Biodiversity Framework (GBF) in December 2022.¹ Biodiversity loss is also now recognised by the world's central banks as a source of systemic risk alongside climate change.²

The TNFD is a global, market-led initiative with the mission to develop and deliver a risk management and disclosure framework for organisations to report and act on evolving nature-related risks and opportunities, with the ultimate aim of supporting a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes.

The Taskforce is now nearing the end of its two-year framework design and development phase for the first integrated risk management and disclosure framework for nature-related issues (v1.0), due in September 2023 and ready for market adoption. This document summarises the full and final draft (v0.4) of the core elements of the TNFD framework.

The TNFD is developing a framework, not a standard. In developing the framework and its recommendations, the TNFD is working closely with existing standards bodies as knowledge partners. The framework draws from and feeds into relevant standards throughout, including those of the International Sustainability Standards Board (ISSB),

This document summarises the full and final draft (v0.4) of the core elements of the TNFD framework.

¹ The Kunming-Montreal Global Biodiversity Framework (GBF) was adopted during the fifteenth meeting of the Conference of the Parties (COP 15) of the Convention on Biological Diversity. It sets out an ambitious pathway to reach the global vision of a world living in harmony with nature by 2050. Among the Framework's key elements are 4 goals for 2050 and 23 targets for 2030.

² Network for Green the Financial System (NGFS), March 2022, Central banking and supervision in the biosphere: An agenda for action on biodiversity loss, financial risk and system stability. NGFS Occasional Paper. Available at: <https://www.ngfs.net/en/central-banking-and-supervision-biosphere-agenda-action-biodiversity-loss-financial-risk-and-system>

the Global Reporting Initiative (GRI) and the European Financial Reporting Advisory Group (EFRAG) among others.

The Taskforce is made up of [40 senior executives](#) from corporates, financial institutions and market intermediaries from around the world and led by the [TNFD Co-Chairs](#), Elizabeth Mrema and David Craig. Collectively, the Taskforce members represent institutions with over US\$20 trillion in assets under management and a footprint in over 180 countries across five continents. The Taskforce is supported by a larger institutional support base, the [TNFD Forum](#), consisting of 1,000 organisations globally, and a network of 18 core knowledge partners, including leading global scientific, conservation and standards development bodies. These organisations are actively contributing to the design and development of specific aspects of the framework.

1.1 Developing the TNFD framework

To develop the framework, the TNFD has adopted an open innovation approach, developing the framework with the market. This has involved the release of a series of prototype frameworks, called 'beta' versions, for feedback and pilot testing with market participants and other stakeholders (see Box 1). The TNFD framework has been viewed over 90,000 times by stakeholders in over 149 countries and territories since the release of the first beta version (v0.1) in March 2022. Over 200 organisations are pilot testing the beta framework, providing valuable feedback on its usability and relevance.

The TNFD's open innovation approach has enabled the engagement and feedback of market participants and other stakeholders through a range of channels:

- The [online TNFD framework platform](#), including feedback forms and interactive functionalities;
- Desktop and in-depth pilot tests of the beta framework on entire businesses or product lines by corporates, and investment, insurance and credit portfolios by financial institutions;
- Dedicated engagement with different stakeholder groups, including with Indigenous Peoples and Local Communities and ongoing dialogue with a range of civil society organisations;
- 11 TNFD [Consultation Groups](#) in eight countries and three regions;
- The [Nature-related Data Catalyst](#), established by the TNFD, which now includes over 135 nature-related data providers, spanning financial data aggregators, non-profit convenors of data, nature-technology companies, academia, government agencies, non-profit tool providers, data infrastructure providers and financial institutions; and
- Presentations, webinars and focus group meetings globally with a wide range of stakeholders, including market participants, policy makers, regulators, industry associations, other sustainable finance initiatives, representatives of Indigenous Peoples and Local Communities and conservation groups.

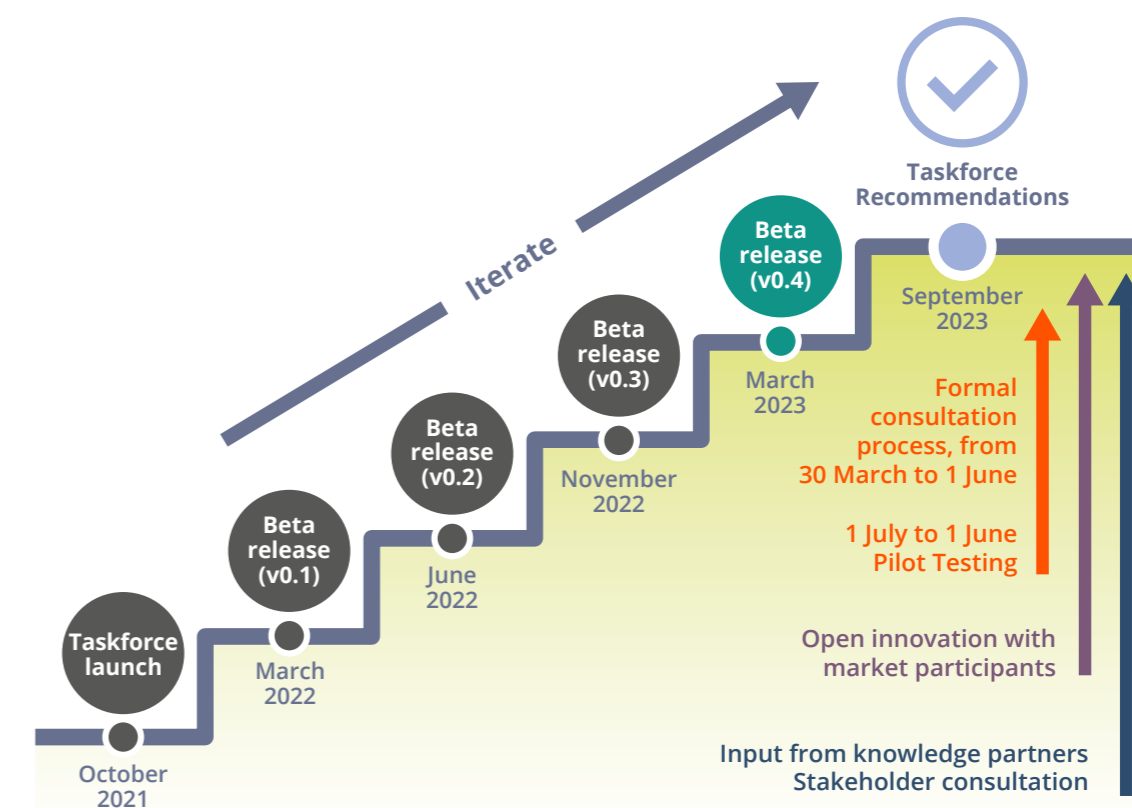
1.2 Providing final feedback to the Taskforce

The TNFD is grateful to all those who have provided feedback on the beta framework to date and invites market participants and other stakeholders to continue to provide feedback on this v0.4 beta framework until **1 June 2023**. All feedback received before that deadline will be reviewed and evaluated to inform the final recommendations (v1.0) to be launched in September 2023.

The Taskforce is launching a formal public consultation process from 30 March until 1 June 2023. This will be open to organisations and individuals in addition to the general feedback the TNFD collects through its general feedback survey. Both formal comment letters and general feedback can be submitted via the TNFD framework site:

- **The TNFD's formal public consultation process:** A formal comment letter and summary of feedback can be uploaded to the TNFD framework site from 30 March 2023. All submissions made through this channel will be made publicly available on the TNFD framework [site](#). Market participants will have the option to disclose formal responses to the TNFD framework either as individuals or organisations. Feedback through the formal consultation can be provided [here](#):
- **TNFD's general feedback process:** Individuals and organisations may continue to explore the framework site and provide feedback through the general feedback survey [here](#), or using the feedback function at the end of specific pages on the framework site. All feedback surveys completed before 1 June 2023 will be considered by the Taskforce before publishing its complete recommendations in September 2023.

Figure 1: TNFD timeline



Box 1: Updates on the TNFD's market engagement efforts

The TNFD continues to consult and engage to collect feedback from market participants across a range of countries and sectors, and a variety of stakeholders.

Pilot testing

The TNFD pilot testing programme is central to its open innovation approach to design and develop the TNFD framework with a focus on ensuring it is both science-based and practical to use. Nearly 200 organisations are currently designing, implementing or have completed a pilot test of the TNFD beta framework to explore its application in their organisational context. Approximately half of these pilots are financial institutions and half are corporates. Pilots cover all moderate to high nature-risk sectors identified as priorities by the TNFD in the v0.2 beta release, all realms and 40 countries across six continents. The feedback received from pilots to date has been instrumental to this v0.4 beta framework update.

The pilot testing programme includes pilots led by the TNFD's pilot programme partners: the United Nations Environment Programme Finance Initiative (UNEP FI), Financial Sector Deepening Africa (FSD Africa), Agence Française de Développement (AFD), World Business Council For Sustainable Development (WBCSD), International Council on Mining and Metals (ICMM) and Global Canopy. Since November 2022, the TNFD has engaged two new partners to advance pilots in specific sectors and support the development of additional guidance for those sectors: Ipieca, the global oil and gas association, in the energy sector and Textile Exchange in the textile and apparel sector.

A number of organisations have signalled an intention to continue pilot testing the framework beyond the deadline for feedback of 1 June 2023 because of the learning and capability building benefits for their organisation. To support those efforts, the TNFD will be sharing insights and experiences from the pilot testing undertaken over the past year through a series of TNFD Forum events.

Engagement with civil society, Indigenous Peoples and Local Communities

The TNFD has partnered with the International Union for Conservation of Nature (IUCN) to engage with a range of representatives of Indigenous Peoples and Local Communities to leverage their knowledge and provide their voice and perspective to help design and develop the TNFD framework. The TNFD has held over 10 online and in-person meetings and sessions with the International Indigenous Forum on Biodiversity (IIFB), and bilateral sessions with civil society organisations working on societal dimensions of nature-related issues, to gather their input on the beta framework as it has been developed. In addition, pilot testing by Indigenous and Community-based Enterprises is being established and will run beyond June 2023.

This ongoing dialogue with Indigenous Peoples, Local Communities and civil society representatives has informed the development of both the draft recommended disclosures and [guidance on engagement with affected stakeholders](#), which is being released in draft as part of this v0.4 release (see Section 3.5). This guidance has been developed following the [discussion paper on 'Societal dimensions of nature-related risk management and disclosure – Considerations for the TNFD framework'](#) which was published in November 2022. The Taskforce welcomes additional feedback from market participants and other stakeholders on the draft guidance on engaging affected stakeholders.

Regional and national Consultation Groups

To increase awareness, outreach and engagement on the TNFD framework in markets where there has been strong interest, market-led TNFD Consultation Groups have been activated at a national or regional level. Consultation Groups are championed by Taskforce members and convened by business or financial associations in local languages, highlighting local contexts. Participation in Consultation Groups is open to all institutional members of the TNFD Forum from that jurisdiction. There are 11 Consultation Groups, spanning four continents, as shown in Table 1.

Table 1: TNFD Consultation Groups

| Consultation Group region | Convening organisation |
|---------------------------|---|
| Australia and New Zealand | Responsible Investment Association of Australasia (RIAA) |
| ASEAN | World Business Council on Sustainable Development (WBCSD) |
| Brazil | Conselho Empresarial Brasileiro para o Desenvolvimento Sustentável (CEBDS) |
| Colombia | Asociación Nacional de Empresarios de Colombia (ANDI) |
| France | Entreprises pour l'Environnement (EpE) and Finance for Tomorrow |
| India | Confederation of Indian Industry (CII) |
| Japan | Keidanren Committee on Nature Conservation (KCNC) |
| Netherlands | Dutch Banking Association (NVB) |
| Nordics | Finance Denmark |
| Switzerland | Swiss Sustainable Finance and UN Global Compact Network Switzerland and Liechtenstein |
| United Kingdom | Green Finance Institute |

Additional Consultation Groups are expected to be announced through 2023 and in future years to deepen engagement, capability building and uptake of TNFD recommendations.

- Learn more about TNFD Consultation Groups at: <https://tnfd.global/consultation-and-engagement/consultation-groups/>
- For more details on the TNFD's engagement efforts, see the TNFD webpage on [Consultation and Engagement](#).

Nature-related Data Catalyst

Building on the [TNFD's Nature-related Data and Analytics Discussion Paper](#) published in March 2022, the TNFD established the [Nature-related Data Catalyst](#) in July 2022. The Data Catalyst convenes a range of market participants across the nature-related data landscape, including nature-related data providers.

The Data Catalyst aims to improve the ease, speed and scale of access to nature-related data and analytic tools to support adoption of the TNFD framework. The goal of the Data Catalyst is to explore how best to address shortcomings in the current landscape of nature-related data, while identifying and encouraging the development of – and access to – nature-related data, analytics and tools.

The Nature-related Data Catalyst now has over 135 participants, spanning financial data aggregators, non-profit convenors of data, nature-technology companies, academia, government offices, non-profit tool providers, data infrastructure providers and financial institutions. Since its launch in November 2022, the Nature-related Data Catalyst members have:

- Helped populate the [TNFD Tool Catalogue](#), with over 100 tools currently listed;
- Increased understanding of the current capabilities and requirements of nature-related data across different sectors, through a series of workshops with data providers and data users;
- Explored real-life examples of nature-related data issues faced by TNFD framework end-users, to identify potential solutions and develop case studies;
- Begun to investigate proxies relevant to application of the TNFD framework, and data requirements, outputs and key limitations, to build understanding of how to use proxies appropriately; and
- Begun to develop a standardised qualitative approach to describing data and tool quality, aligned with data best practices and data standards already in use. These data quality descriptions could feed into a data-use decision tree that will assist TNFD users to select the right data for their purposes and understand key data limitations.

A study is being undertaken to scope the needs for – and a possible approach to develop – a global public data utility for nature-related data. The work is being done in collaboration with a range of partner organisations and will be published later in 2023. Market participants and a number of G20 governments have signalled strong interest in exploring global approaches to address data challenges that could inhibit the uptake of the TNFD recommendations. The work of the Nature-related Data Catalyst and the findings of the public data utility scoping study will help to inform the TNFD's final recommendations published in September 2023.

1.3 Updates in v0.4 of the beta framework

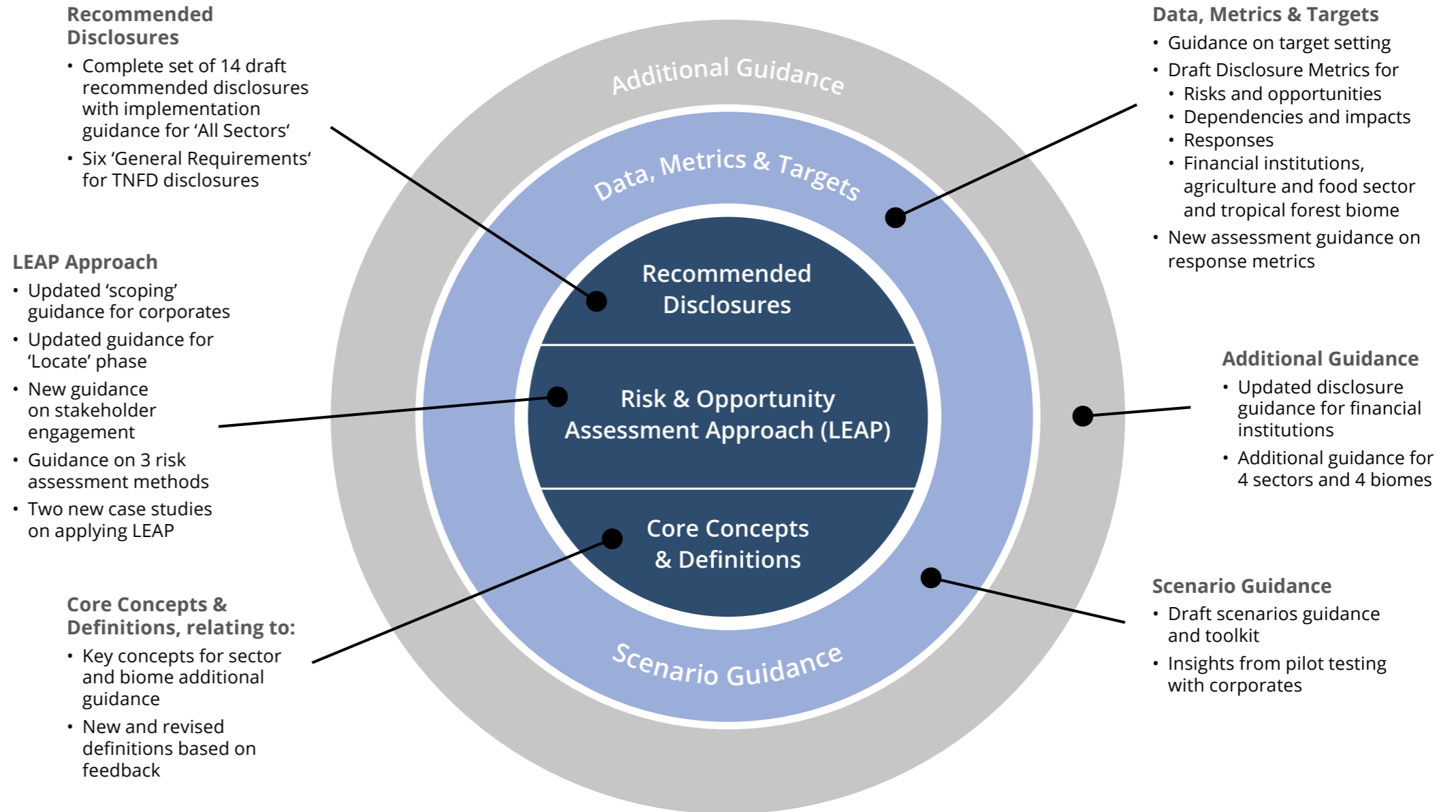
This release marks the fourth and final TNFD beta framework publication (v0.4). For the first time, market participants can view a full representation of the framework, including examples of additional guidance by sector and biome. The Taskforce encourages and welcomes feedback by 1 June 2023 ahead of publication of its full set of recommendations in September 2023.

The core components and overall structure of the framework remain unchanged and consistent with v0.3. The Taskforce has developed and updated a range of guidance to help users interpret and apply the LEAP approach and to ensure the TNFD framework can be applied. The new and updated guidance documents included in the v0.4 release are shown in Figure 2.

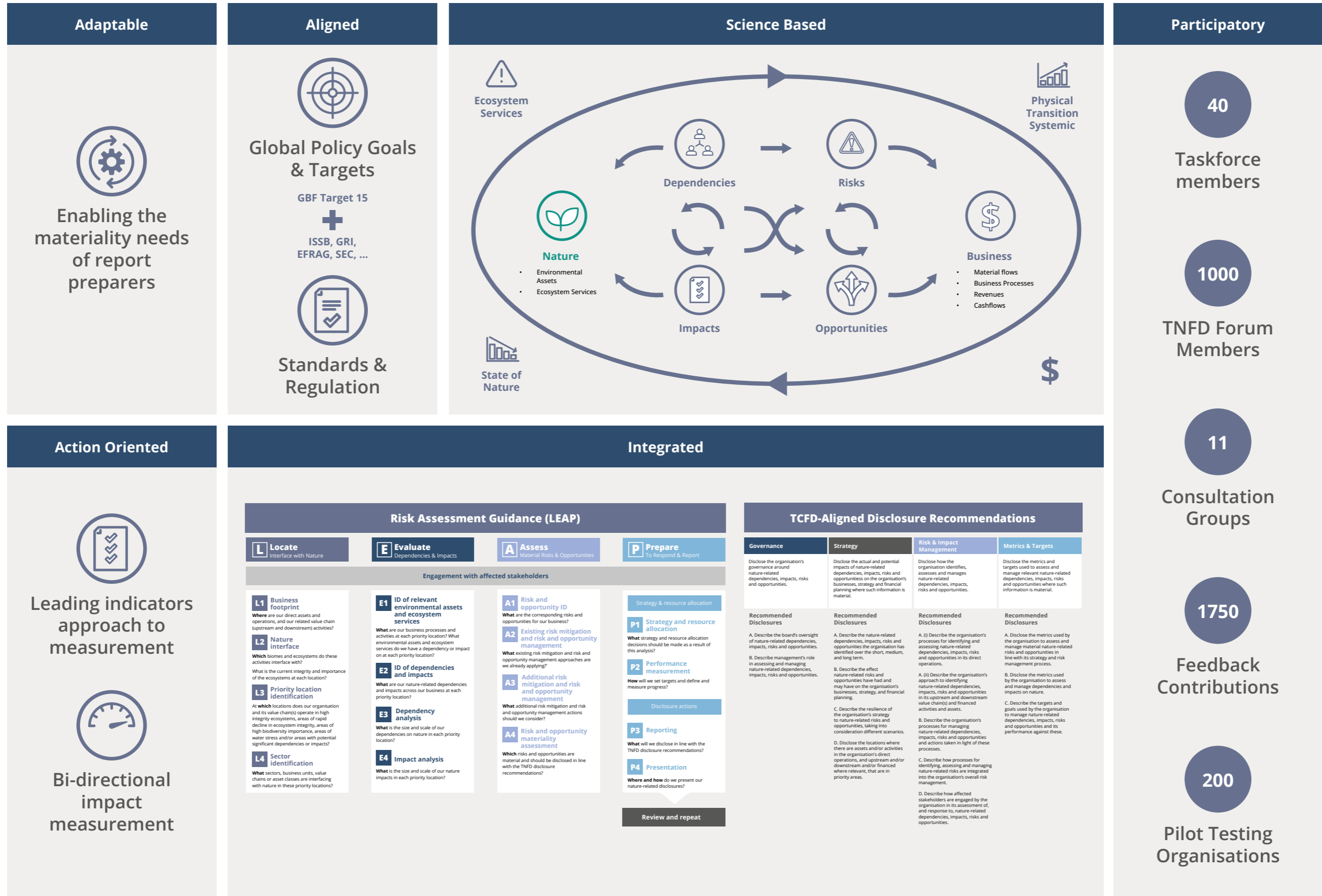
Throughout the TNFD framework, the term 'nature-related issues' refers collectively to the four core concepts in the TNFD framework: nature-related dependencies, impacts, risks and opportunities.

The changes in v0.4 are based on ongoing research and development by the Taskforce through Working Groups and feedback from a range of market participants, knowledge partners and other stakeholders. An overview of these updates in v0.4 are provided in subsequent sections of this report.

Figure 2: Updates to the TNFD beta framework in v0.4



1.4 The TNFD framework at a glance



2. The draft TNFD recommended disclosures

Overview and alignment with TCFD

The Taskforce continues to align, design and develop the TNFD framework based on the disclosure approach and guidance developed by the Task Force on Climate-Related Financial Disclosures (TCFD).

Market participants have been clear in their feedback to the TNFD that consistency of approach, structure and language with the TCFD is essential to support early market adoption of a risk management and disclosure framework for nature-related risks. This will support a move to integrated sustainability disclosures over time, covering both climate and nature, as standards by the ISSB, GRI and government regulators come into effect.

In developing its recommended disclosures, the Taskforce has sequentially addressed three guiding questions since its inception and over the previous three beta releases:

- Which of the TCFD recommended disclosures apply well to the nature context and can *carry over* with minimal, if any, change in approach and language to maximise consistency and support integrated sustainability disclosures?
- Which of the TCFD recommended disclosures remain relevant but need some *adaptation* to the nature context?
- What *additional* disclosures might be warranted and should be considered by the TNFD, given the particular characteristics of nature-related dependencies, impacts, risks and opportunities?

To retain a strong alignment with the structure and approach of the TCFD, while appropriately reflecting what is distinct for the nature context, the Taskforce has:

- Introduced a new **general requirements component** to the overall approach to disclosure and corporate reporting;
- Retained the **four pillars** of the TCFD Recommendations – Governance, Strategy, Risk Management and Metrics and Targets – with Impact Management incorporated into Risk Management;
- **Carried over all 11 TCFD recommended disclosures** into the TNFD recommended disclosures, providing maximum consistency of content and enabling report users to start reporting on nature-related issues alongside, or integrated with, climate-related issues.

- **Revised language for the third pillar of the TNFD disclosure recommendations to 'Risk and Impact Management'** (changed from the initial TCFD language 'Risk Management'). This revised language is proposed by the TNFD to enable disclosure of nature-related dependencies and impacts, alongside the nature-related risks and opportunities for those report users who may wish, or need, to do so.
- **Adapted the approach taken to incorporate value chain impacts** (Scope 3 climate reporting) to the nature context as 'direct' operations, 'upstream', 'downstream' and 'financed'.
- **Developed additional guidance, building from TCFD guidance** where it exists. This includes new guidance on scenario analysis to inform strategy and on key topics for nature, such as engagement with affected stakeholders.

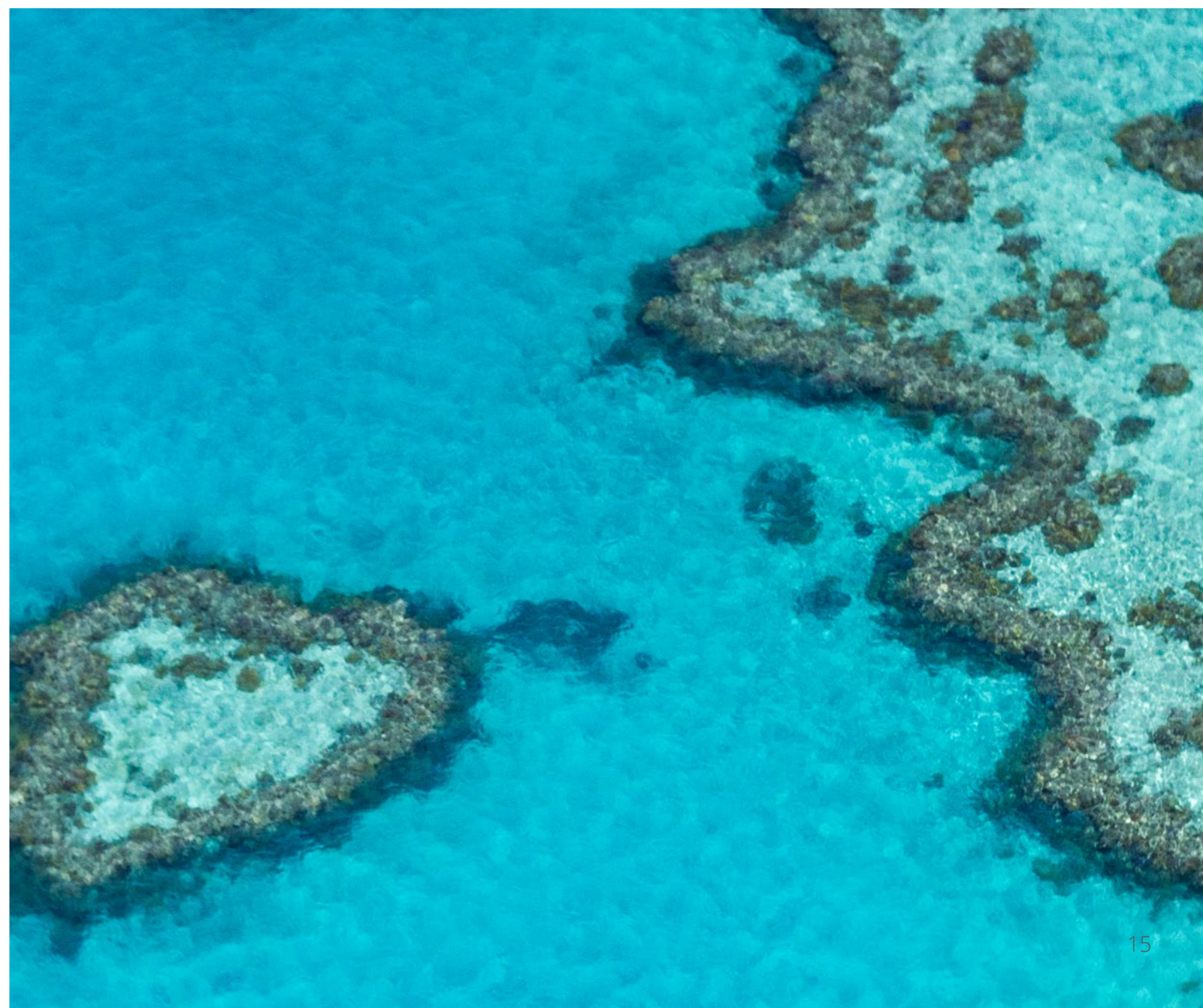
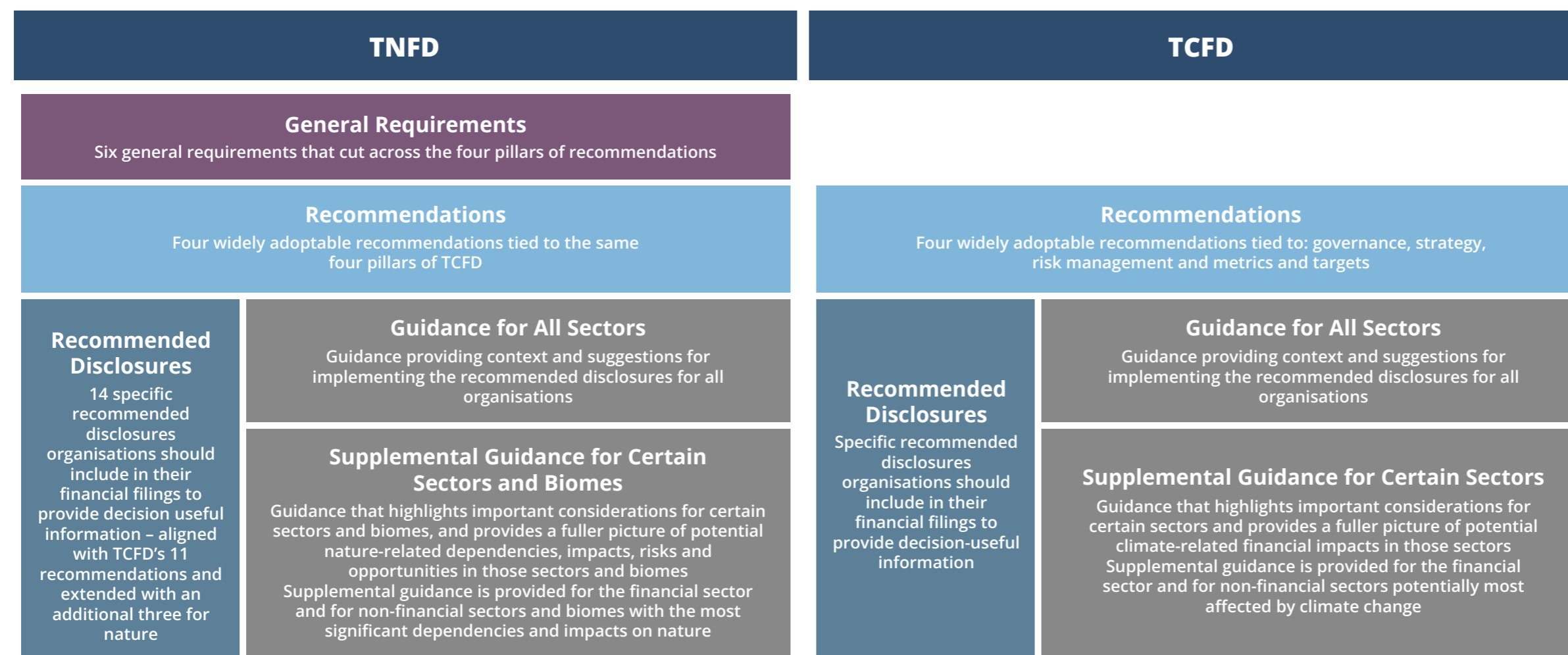


Figure 3: TNFD's approach to disclosure guidance, building on TCFD's approach



2.1 General requirements

The first TNFD beta release in March 2022 included a set of general requirements cutting across the four disclosure pillars.

The general requirements were created to help ensure expectations are aligned across report preparers and users on what adoption of the TNFD framework means. Report users can then check consistency of disclosures against the TNFD general requirements.

The general requirements have been updated in this release and now cover:

1. **Approach to materiality:** The organisation should set out its approach to materiality – aligning to external standards or regulatory requirements where appropriate – to help report users understand the context of the information being presented by the report preparer;
2. **Scope of disclosures:** The organisation should provide a description of the scope of the disclosures, both in terms of the coverage of the business and value chain, as well as which elements of the TNFD framework have been disclosed against, and plans to extend this scope in the future;

3. **Consideration of nature-related issues:** The organisation should identify nature-related risks and opportunities based on an assessment of dependencies and impacts on nature;
4. **Location:** The organisation should consider the specific locations of its interface with nature as integral to the assessment;
5. **Integration with other sustainability issues:** The organisation's nature-related disclosures should consider, and be integrated with to the extent possible, other sustainability-related disclosures, including climate-related disclosures, with any alignment, contributions and possible trade-offs clearly identified; and
6. **Stakeholder engagement:** The organisation should take consideration of stakeholder engagement into account across its disclosures.

General requirements 1, 5 and 6 are new and additional to the original list set out in v0.1 of the beta framework in March 2022. The general requirement on consideration of capabilities for nature-related risk and opportunity assessment and management has been removed as it was not judged needed in the context of TNFD general requirements.

Figure 4: TNFD's proposed six general requirements

| General Requirements |
|---|
| 1. Approach to materiality |
| 2. Scope of disclosures |
| 3. Links between nature-related dependencies and impacts, and risks and opportunities |
| 4. Location |
| 5. Integration with other sustainability issues |
| 6. Stakeholder engagement |

2.2 Recommended disclosures – Adaptations to the TCFD four pillars

Based on feedback received across the three previous beta releases of the framework, this final draft provides a complete set of proposed recommended disclosures.

The Taskforce has streamlined the proposed recommended disclosures from the 15 proposed in v0.3 to 14 in this final draft.

In summary:

- The intent of all 11 TCFD recommended disclosures has been retained by the TNFD, maximising consistency of approach between climate and nature reporting recommendations;
- The concept of Scopes for emission reporting (Scope 1, 2 and 3) has been adapted to direct, upstream, downstream and financed because the climate-related notion of Scope 2 reporting does not carry over to the nature context. Market participants indicated that the Scope 3 equivalent for nature needs to be clearly articulated;
- Two of the new *additional* recommended disclosures proposed by the TNFD remain, with revised wording for each disclosure statement:
 - Strategy D (proposed in v0.1), covering priority locations; and
 - Risk and Impact Management E (proposed in v0.3, and now Risk and Impact Management D in v0.4), covering stakeholder engagement;
- The new *additional* recommended disclosure Metrics and Targets D (proposed in v0.3) on nature and climate targets alignment has been removed. However, the intent of including climate-nature target alignment has been retained by incorporating this as General Requirement 5 on integration with other sustainability issues. This reflects the need to consider connections across sustainability issues in all TNFD disclosures rather than just in one standalone disclosure; and
- The previously proposed *additional* recommended disclosure (Risk and Impact Management D proposed in v0.3, looking at sourcing of inputs) has been incorporated into Risk and Impact Management A to maximise conceptual and sequential alignment of the recommended disclosures with those in the TCFD

framework. To retain this alignment, the Taskforce has proposed Risk and Impact Management A be split into two parts: A(i), covering direct operations; and A(ii) covering upstream, downstream and financed activities and assets.

These changes have been made by the Taskforce to streamline the recommended disclosures as much as possible, retain the alignment to the structure and approach of the TCFD and ensure they apply clearly to the nature context.

These new and revised disclosures are shown in Figure 5.

2.3 Disclosure implementation guidance – Changes since the v0.3 beta release

This final draft framework (v0.4) includes a complete set of disclosure guidance for 'All Sectors', building on the first draft in v0.1, as described above. Revisions have been made in response to feedback received and to improve clarity and consistency across the recommended disclosures.

The TNFD approach to implementation guidance mirrors that proposed by the TCFD, with the important nature-specific addition of biome guidance, given the location-specific character of nature-related dependencies and impacts (distinct from climate-related impacts from emissions).

Since the v0.3 beta release in November 2022, the following changes have been made to the implementation guidance for the TNFD recommended disclosures:

General

Aligned with TCFD guidance, additional narrative text has been added at the start of each disclosure pillar to support interpretation, with implementation guidance developed to support report preparers across all disclosures.

Governance

The guidance for the recommended disclosures under the governance pillar have been strengthened:

- 'Should consider including' is replaced with 'should include';
- The guidance is expanded to cover dependencies and impacts as well as risks and opportunities; and
- The guidance for Governance B now asks 'how' the organisation has assigned nature-related responsibilities to management-level positions, in addition to 'whether'.

Strategy

The guidance for the Strategy pillar has been revised as follows:

| Recommended disclosure | Update in v0.4 |
|------------------------|--|
| Strategy A | <ul style="list-style-type: none"> Expanded to provide guidance on the information organisations should provide as part of the disclosure for dependencies and impacts, as well as risks and opportunities. It has been made explicit that the dependencies and impacts listed should be linked to the priority locations identified in Strategy D. The request for information on processes for identifying risks and opportunities has been moved to Risk and Impact Management. |
| Strategy B | <ul style="list-style-type: none"> The list of areas for consideration has been removed. |
| Strategy C | <ul style="list-style-type: none"> Guidance has been broadened to discuss an increased rate of change of nature-related risks, as well as a change in the level of risks. It is now also specified that the analysis should consider the financial performance and position over the short, medium and longer term. The word 'impact' is replaced with 'effects' where not talking about impacts on nature to avoid confusion in terms. An additional recommendation has been added that the organisation disclose the resources it can put in place to adapt its strategy, if required, to address future nature-related risks and opportunities. |
| Strategy D | <ul style="list-style-type: none"> The disclosure has been changed to clarify the criteria for identifying ecosystems that should be disclosed (see Section 3.3 for more details). It now refers to locations in: <ul style="list-style-type: none"> High integrity ecosystems; Areas of rapid decline in ecosystem integrity; Areas of high biodiversity importance; Areas of water stress; and Areas where the organisation is likely to have significant potential dependencies and/or impacts. The guidance also requests disclosure of the definitions the organisation has used to identify the ecosystems for disclosure. |

Risk and Impact Management

As described above, recommended disclosures under the Risk and Impact Management pillar have been restructured from the proposed list in v0.3 as follows.

| Recommended disclosure | Update in v0.4 |
|-------------------------------------|---|
| Risk and Impact Management A | <ul style="list-style-type: none"> Recommended disclosure Risk and Impact Management D from v0.3, which asked for information on the organisation's approach to locating the source of inputs, has been folded into Risk and Impact Management A. Risk and Impact Management A now has two parts: <ul style="list-style-type: none"> A(i) asks an organisation to disclose its process for identifying and assessing nature-related dependencies, impacts, risks and opportunities in its direct operations. A(ii) asks the same for the organisation's value chain(s). This split allows an organisation to adopt different approaches for its direct operations and value chain. A(ii) gives organisations the option to identify a subset of elements of the value chain, with a request to disclose how those elements were determined. This split in approaches for Risk and Impact Management A is in recognition of the challenge to value chain reporting in the short to medium term due to data and analytics limitations, and because of data sharing and reporting dependencies across value chains (for example, financial institutions requiring data from corporate clients). The expectation is that the ease of value chain reporting will improve over time as data and analytics improve, with new technologies and data standards and programmes to improve traceability and data integrity and availability. |
| Risk and Impact Management B | <ul style="list-style-type: none"> The guidance has been broadened to include the actions taken in light of the risk management process. The guidance includes examples of the types of information that organisations might disclose on how they have taken such actions both in their direct operations and in their interactions with the value chain. |
| Risk and Impact Management C | <ul style="list-style-type: none"> The guidance has been broadened slightly to include 'whether' as well as 'how' the processes for managing nature-related issues are integrated into an organisation's wider risk management. |

| | |
|-------------------------------------|---|
| Risk and Impact Management D | <ul style="list-style-type: none"> What was formerly Risk and Impact Management E is now Risk and Impact Management D, with new disclosure guidance added in line with the new draft guidance on engagement with affected stakeholders (see Section 3.5). |
|-------------------------------------|---|

Metrics and Targets

The Metrics and Targets recommended disclosures and accompanying guidance have been updated in line with the overall approach to metrics and targets in v0.4 of the beta framework.

| Recommended disclosure | Update in v0.4 |
|------------------------|----------------|
|------------------------|----------------|

| | |
|------------------------------|--|
| Metrics and Targets A | <ul style="list-style-type: none"> The guidance has been broadened to include indicators as well as metrics and a request that they be disclosed at the individual risk and opportunity level. The discussion in the guidance of shadow pricing has been replaced with financial quantification of risks and opportunities. |
|------------------------------|--|

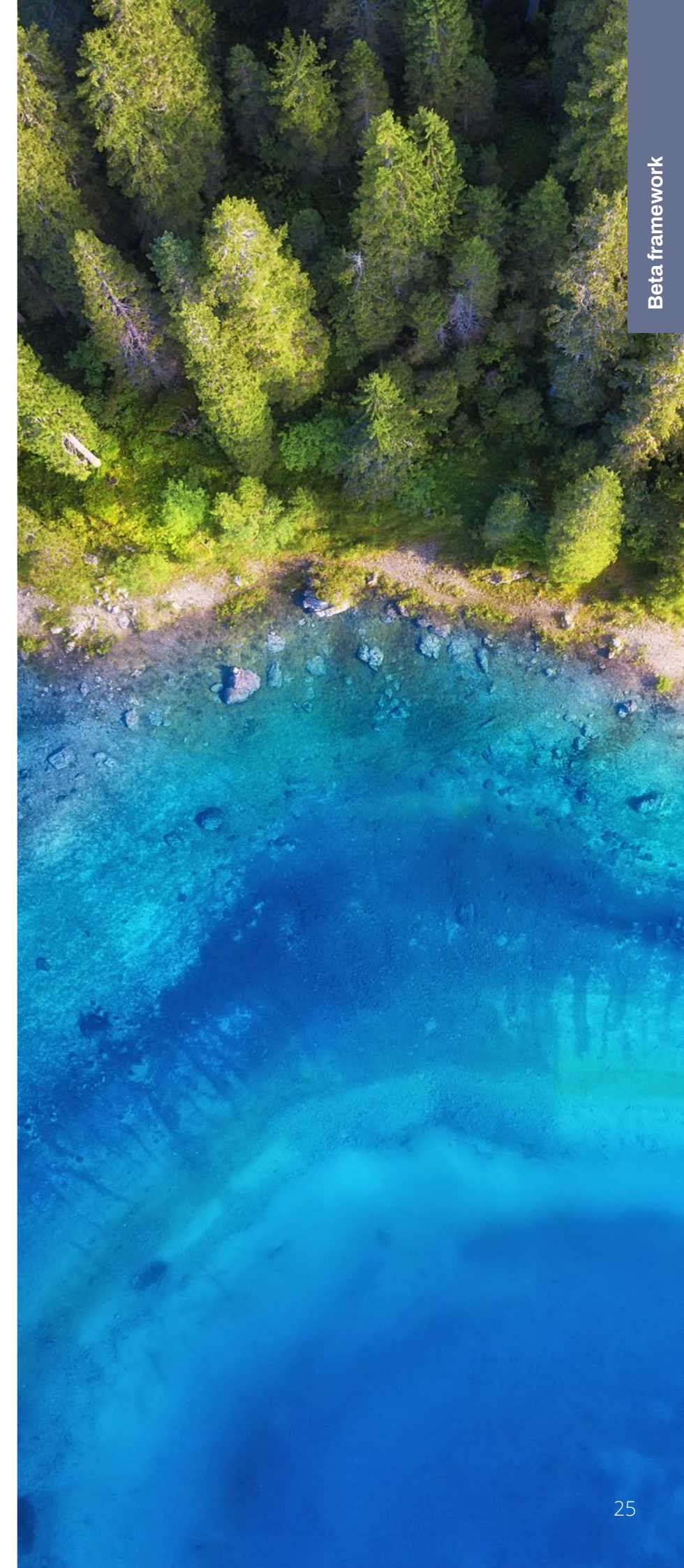
| | |
|------------------------------|---|
| Metrics and Targets B | <ul style="list-style-type: none"> The guidance has been expanded to list the key categories of metrics that an organisation should disclose, covering the main types of dependencies and impacts an organisation is likely to have on nature in the priority locations from disclosures Strategy A and D. There is also a request for metrics to be disclosed against historical baselines, reference states and/or industry averages, as well as the suggestion of forward-looking indices, and a request for a description of the methodology used. |
|------------------------------|---|

| | |
|------------------------------|---|
| Metrics and Targets C | <ul style="list-style-type: none"> The guidance has been expanded to reflect the additional thinking now in the additional guidance on target setting. This includes lists of the types of targets an organisation might set, as well as a request for disclosure of the methodology used to set the target, performance against the targets, and whether and how the targets align with global policy goals for nature. |
|------------------------------|---|

| | |
|------------------------------|---|
| Metrics and Targets D | <ul style="list-style-type: none"> This recommended disclosure proposed in v0.3 on climate-nature interactions has been removed and replaced with the new general requirement 5. |
|------------------------------|---|

Figure 5: The TNFD's final draft recommended disclosures

| TNFD Nature-related Disclosure Recommendations (v0.4) | | | |
|--|---|---|---|
| Governance | Strategy | Risk & Impact Management | Metrics & Targets |
| Disclose the organisation's governance around nature-related dependencies, impacts, risks and opportunities. | Disclose the actual and potential impacts of nature-related dependencies, impacts, risks and opportunities on the organisation's businesses, strategy and financial planning where such information is material. | Disclose how the organisation identifies, assesses and manages nature-related dependencies, impacts, risks and opportunities. | Disclose the metrics and targets used to assess and manage relevant nature-related dependencies, impacts, risks and opportunities where such information is material. |
| Recommended Disclosures | Recommended Disclosures | Recommended Disclosures | Recommended Disclosures |
| <p>A. Describe the board's oversight of nature-related dependencies, impacts, risks and opportunities.</p> <p>B. Describe management's role in assessing and managing nature-related dependencies, impacts, risks and opportunities.</p> | <p>A. Describe the nature-related dependencies, impacts, risks and opportunities the organisation has identified over the short, medium, and long term.</p> <p>B. Describe the effect nature-related risks and opportunities have had and may have on the organisation's businesses, strategy, and financial planning.</p> <p>C. Describe the resilience of the organisation's strategy to nature-related risks and opportunities, taking into consideration different scenarios.</p> <p>D. Disclose the locations where there are assets and/or activities in the organisation's direct operations, and upstream and/or downstream and/or financed where relevant, that are in priority areas.</p> | <p>A. (i) Describe the organisation's processes for identifying and assessing nature-related dependencies, impacts, risks and opportunities in its direct operations.</p> <p>A. (ii) Describe the organisation's approach to identifying nature-related dependencies, impacts, risks and opportunities in its upstream and downstream value chain(s) and financed activities and assets.</p> <p>B. Describe the organisation's processes for managing nature-related dependencies, impacts, risks and opportunities and actions taken in light of these processes.</p> <p>C. Describe how processes for identifying, assessing and managing nature-related risks are integrated into the organisation's overall risk management.</p> <p>D. Describe how affected stakeholders are engaged by the organisation in its assessment of, and response to, nature-related dependencies, impacts, risks and opportunities.</p> | <p>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.</p> <p>B. Disclose the metrics used by the organisation to assess and manage dependencies and impacts on nature.</p> <p>C. Describe the targets and goals used by the organisation to manage nature-related dependencies, impacts, risks and opportunities and its performance against these.</p> |



2.4 Additional disclosure guidance for sectors and biomes

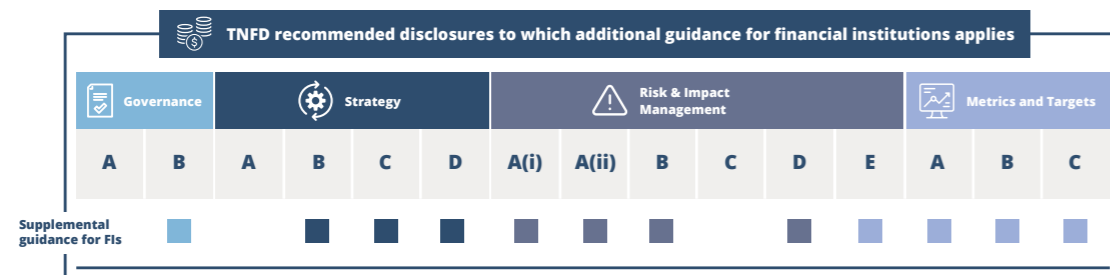
Additional disclosure guidance for financial institutions

In v0.4 of the beta framework, the TNFD has updated its additional guidance for financial institutions to apply the TNFD draft recommended disclosures. This now provides a complete set of draft guidance for financial institutions for each of the proposed recommended disclosures, complementing the guidance for all sectors. As in previous beta versions of the framework, the guidance is applicable to all financial services industries prioritised by the TNFD:

- Banks;
- Insurance companies;
- Asset managers;
- Asset owners; and
- Development finance institutions (including public development banks).

[The draft guidance is provided in full in Annex 4.4.](#)

Figure 6: Overview of TNFD’s additional disclosure guidance for financial institutions



Additional guidance for real-economy sectors and biomes

The v0.4 beta release includes draft additional guidance on the LEAP approach for four sectors and four biomes (see Section 3.6 for more details),³ as well as disclosure metrics for organisations operating in the agriculture and food sector and interfacing with the tropical forests biome as illustrative examples (see Section 5.3 on disclosure metrics).

³ Additional sector guidance is provided in v0.4 for financial institutions, agriculture and food, mining and metals, and energy (covering oil and gas, and electric utilities and power generators. Additional biome guidance in v0.4 covers tropical forests, rivers and streams, marine shelf and intensive land use systems.

3. The LEAP approach

At the heart of the TNFD framework is the recognition that dependencies and impacts on nature are location-specific and present risks and opportunities to organisations. All companies and financial institutions – large and small, across sectors and along value chains – need to identify and assess their nature-related issues, regardless of whether they are required to disclose those to capital providers, regulators and other stakeholders. The LEAP approach provides a structured approach to do so.

The LEAP approach is not, however, a mandated process to adhere to the TNFD’s recommended disclosures for organisations that need to disclose material issues to capital providers, regulators and other stakeholders. Not everything that is identified, assessed and evaluated using the LEAP approach is recommended by the TNFD to be disclosed.

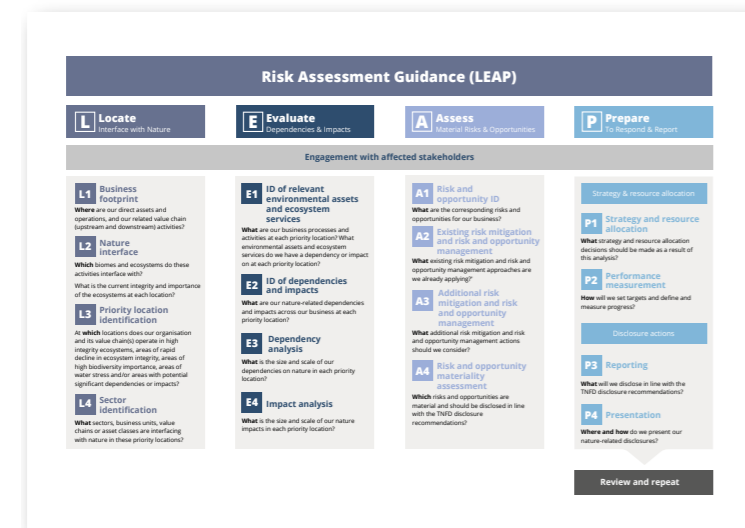
Not everything that is identified, assessed and evaluated using the LEAP approach is recommended by the TNFD to be disclosed.

Figure 7: Users of components of the TNFD framework

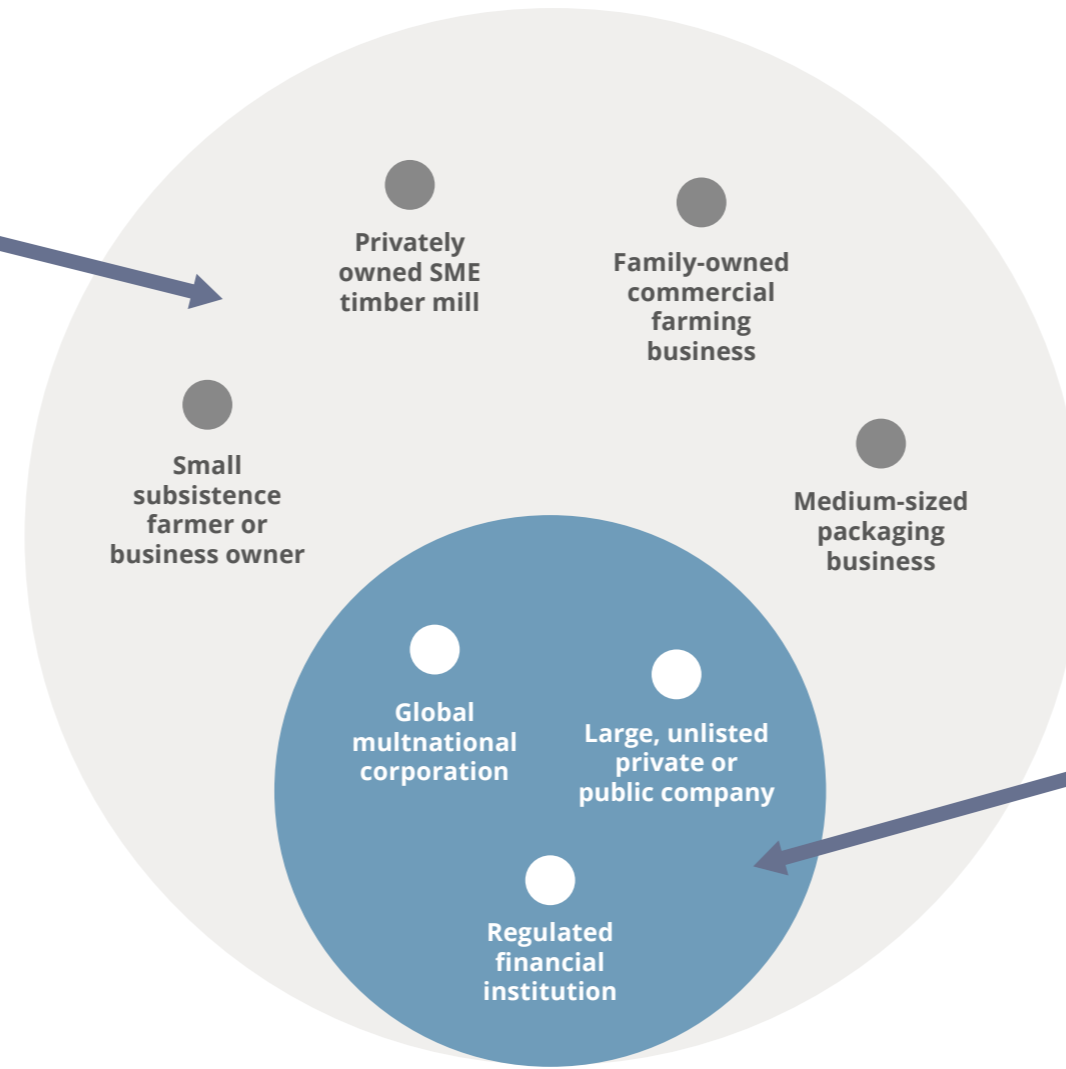
Framework Users

Companies and financial institutions of all sizes and across all sectors interacting with nature and participating in global business supply chains and financial system

Framework component of value to users: LEAP



Companies using the LEAP approach to assess nature-related issues



Companies disclosing against TNFD recommendations

Report Preparers & Users

Companies and financial institutions required to disclose information to regulators and other stakeholders, including capital providers

Framework components of value to users: LEAP + Disclosure Recommendations

| TNFD Nature-related Disclosure Recommendations (v0.4) | | | |
|--|---|---|--|
| Governance | Strategy | Risk & Impact Management | Metrics & Targets |
| <p>Disclose the organisation's governance around nature-related dependencies, impacts, risks and opportunities.</p> <p>Recommended Disclosures</p> <p>A. Describe the board's oversight of nature-related dependencies, impacts, risks and opportunities.</p> <p>B. Describe management's role in assessing and managing nature-related dependencies, impacts, risks and opportunities.</p> | <p>Disclose the actual and potential impacts of nature-related dependencies, impacts, risks and opportunities on the organisation's business, strategy and financial planning where such information is material.</p> <p>Recommended Disclosures</p> <p>A. Describe the nature-related dependencies, impacts, risks and opportunities the organisation has identified over the short, medium, and long term.</p> <p>B. Describe the effect nature-related risks and opportunities have had and may have on the organisation's business, strategy, and financial planning.</p> <p>C. Describe the resilience of the organisation's strategy to nature-related risks and opportunities, taking into consideration different scenarios.</p> <p>D. Describe the locations where there are assets and/or activities in the organisation's direct operations, and upstream and/or downstream and/or financed where relevant, that are in priority areas.</p> | <p>Disclose how the organisation identifies, assesses and manages nature-related dependencies, impacts, risks and opportunities.</p> <p>Recommended Disclosures</p> <p>A. (i) Describe the organisation's processes for identifying and assessing nature-related dependencies, impacts, risks and opportunities in its direct operations.</p> <p>(ii) Describe the organisation's approach to identifying nature-related dependencies, impacts, risks and opportunities in its upstream and downstream value chain(s) and financed activities and assets.</p> <p>B. Describe the organisation's processes for managing nature-related dependencies, impacts, risks and opportunities and actions taken in light of these processes.</p> <p>C. Describe how processes for identifying, assessing and managing nature-related risks are integrated into the organisation's overall risk management.</p> <p>D. Describe how affected stakeholders are engaged by the organisation in its assessment of, and response to, nature-related dependencies, impacts, risks and opportunities.</p> | <p>Disclose the metrics and targets used to assess and manage relevant nature-related dependencies, impacts, risks and opportunities where such information is material.</p> <p>Recommended Disclosures</p> <p>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.</p> <p>B. Disclose the metrics used by the organisation to assess and manage dependencies and impacts on nature.</p> <p>C. Describe the targets and goals used by the organisation to manage nature-related dependencies, impacts, risks and opportunities and its performance against these.</p> |

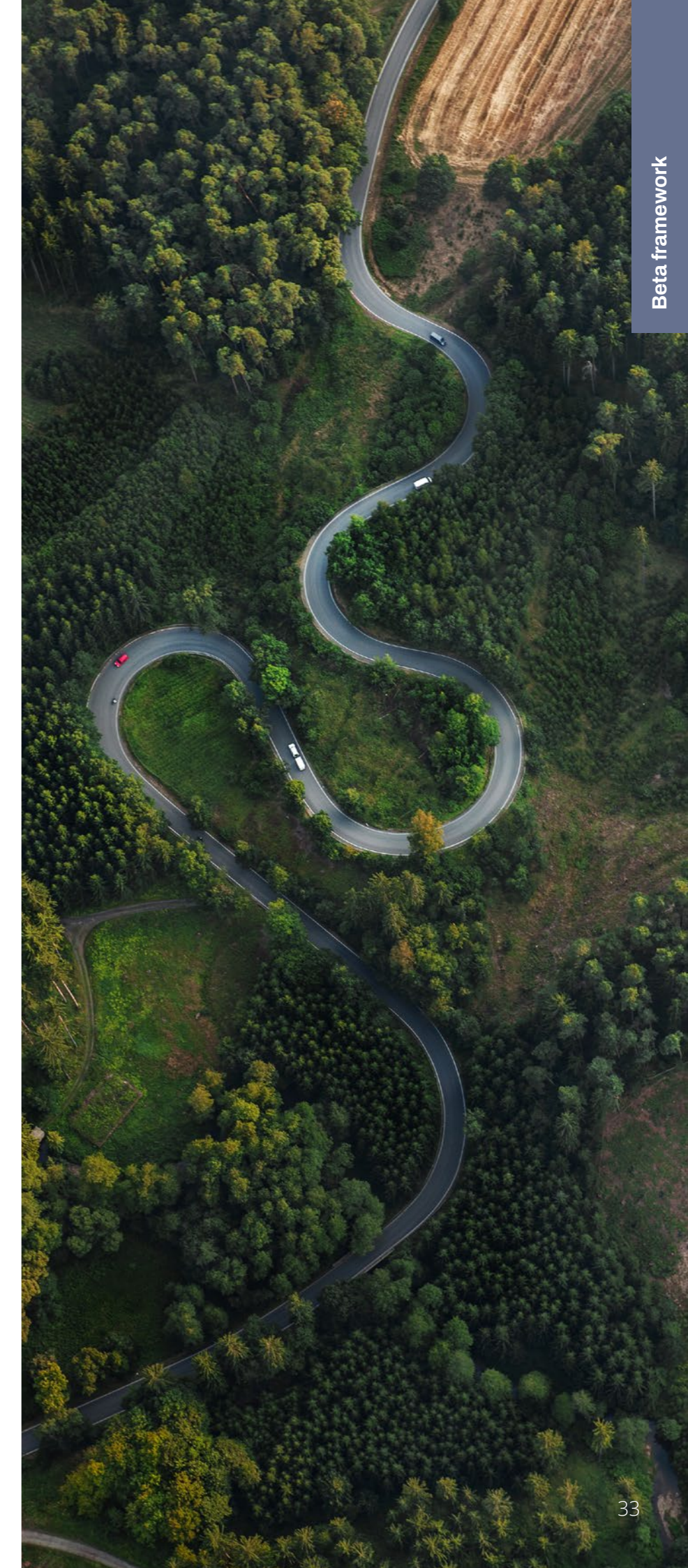
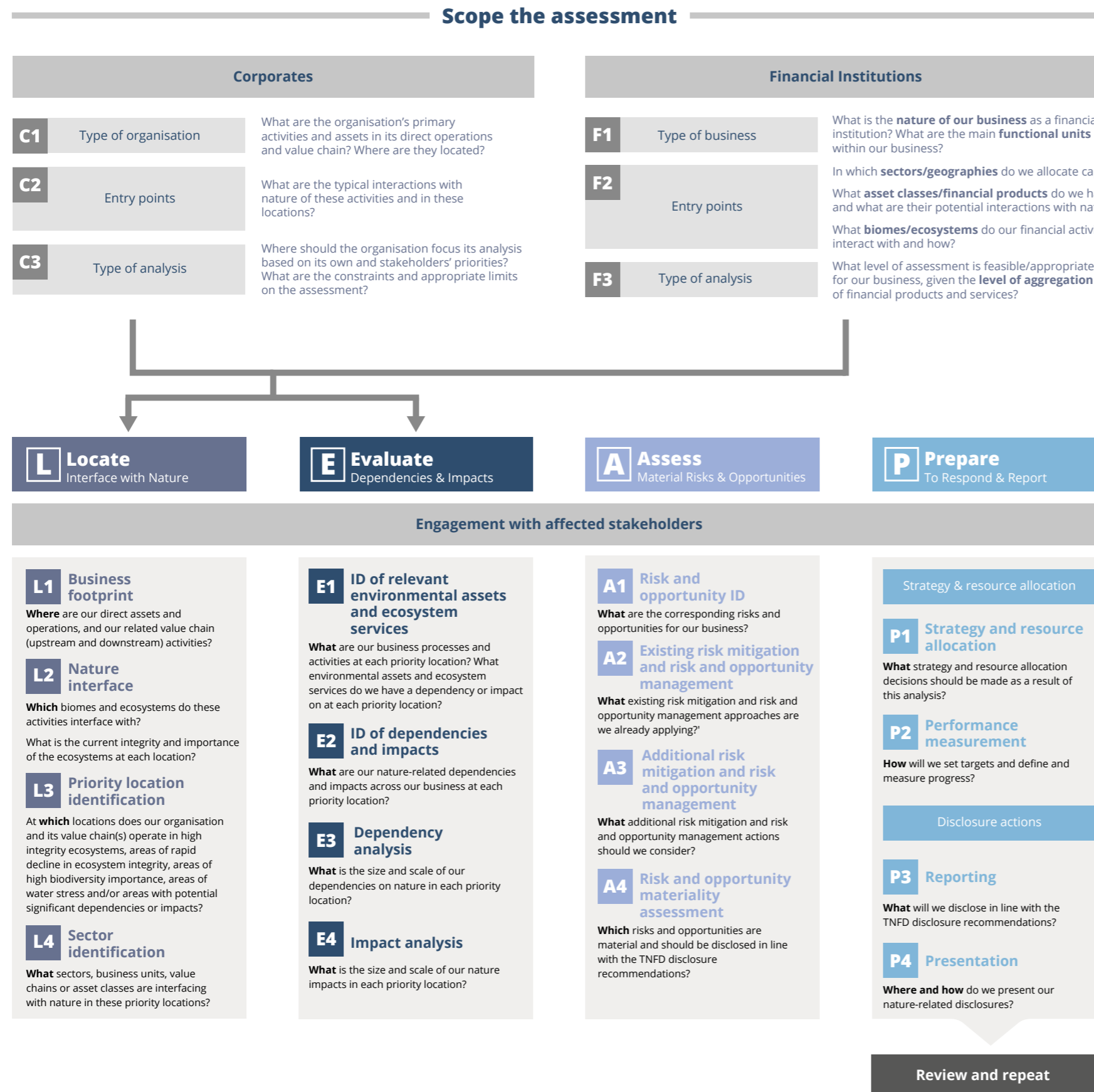
3.1 Overview of updates since the v0.3 release

This v0.4 release includes seven significant updates and additions to LEAP guidance in response to feedback received from market participants and pilot testers:

| Update/addition to LEAP in v0.4 | Detail |
|---|---|
| Guidance on scoping the assessment | This v0.4 draft includes updated scoping questions for corporates, following a similar structure to the scoping questions for financial institutions. This builds on v0.3 and reflects feedback from pilot testing organisations on the importance and utility of scoping a LEAP assessment for corporates as well as financial institutions. |
| Guidance on the Locate phase | The Taskforce has updated its guidance on the Locate phase of LEAP with a revised set of criteria for identifying priority locations. This is to help ensure that these criteria lead to the selection of locations that present the most significant nature-related issues. |
| Guidance on response metrics in the Prepare phase | <p>The TNFD has prepared new guidance on metrics to assess responses to nature-related dependencies, impacts, risks and opportunities. This relates to the Prepare phase of LEAP. It builds on previous guidance on assessment metrics for dependencies and impacts on nature released in v0.2, and on nature-related risks and opportunities released in v0.3.</p> <p>The TNFD response metrics released in v0.4 relate to:</p> <ul style="list-style-type: none"> • Governance; • Strategy; and • Dependency, impact, risk and opportunity management. <p>Further detail is provided in Section 5.2.</p> |
| New guidance on risk assessment methods | <p>The TNFD has prepared new guidance on three methods for assessing nature-related risks using the LEAP approach:</p> <ul style="list-style-type: none"> • Heatmapping; • Asset tagging; and • Scenario-based risk assessment method. <p>The guidance provides a step-by-step procedure to perform risk assessment using each method.</p> |

| Update/addition to LEAP in v0.4 | Detail |
|---|--|
| Guidance on engagement with affected stakeholders | <p>The TNFD has developed new guidance on engagement with affected stakeholders throughout the LEAP approach. To reflect the importance of engagement with affected stakeholders feeding into all phases and components of the LEAP approach, the visualisation of LEAP has been amended to put stakeholder engagement above, rather than below, the LEAP phases.</p> |
| Additional guidance by sector | <p>The initial set of additional guidance in the v0.4 beta release covers four sectors:</p> <ul style="list-style-type: none"> • Financial institutions; • Agriculture and food; • Mining and metals; and • Energy (covering two sub-sectors – oil and gas, and electric utilities and power generators). |
| Additional guidance by biome | <p>Additional guidance for four biomes to help companies who produce, operate or source in these biomes to interpret and apply the LEAP approach. The initial set of additional guidance in the v0.4 beta release covers four biomes:</p> <ul style="list-style-type: none"> • Tropical forests; • Rivers and streams; • Marine shelf; and • Intensive land use systems. |
| Visualisation of LEAP | Reflecting feedback received, the visualisation of LEAP has also been amended to reflect that the Locate and Evaluate phases are often undertaken iteratively to provide useful insights for both corporates and financial institutions. |

Figure 8: The TNFD's revised risk and opportunity assessment approach (LEAP) in v0.4 of the beta framework



3.2 Updated guidance on scoping the assessment (Scoping phase)

Corporates undertaking pilot testing of the beta framework have provided feedback that the scoping phase of the LEAP approach is just as important for them as it is for financial institutions. Corporates suggested it helps them identify initial areas of focus and provides a meaningful initial scope for assessment. The TNFD has therefore included a scoping phase in the LEAP approach for both financial institutions and corporates.

The TNFD has refined the scoping questions in this v0.4 beta framework following feedback on the questions in v0.3, aligning them more closely to those for financial institutions, as shown in Table 2.

Further guidance is provided for each of these [scoping questions on the online platform](#).

Table 2: Scoping questions for corporates in the LEAP approach (v0.4)

| Component of the Scoping phase of LEAP | Scoping questions in LEAP for corporates | Scoping questions in LEAP for financial institutions |
|--|--|--|
| Type of organisation (C1/F1) | <ul style="list-style-type: none"> What is the nature of the organisation? What are the primary functional units, products, activities and assets? Where are the direct operations? What activities and assets are in the organisation's value chain(s)? Where are these located, at a high level? How much spending or revenue is associated with each of these sites? | <ul style="list-style-type: none"> What is the nature of our business as a financial institution? What are the main functional units within our business? |
| Entry points (C2/F2) | <ul style="list-style-type: none"> Which sectors do the direct operations and value chain(s) cover? In which biomes are the activities and assets located? Are there any particular concentrations? Do any biomes host large numbers of suppliers or customers? Are any biomes associated with large amounts of spending or revenue? Do the answers to the questions point to any likely significant nature-related dependencies, impacts, risks or opportunities? | <ul style="list-style-type: none"> In which sectors/geographies do we allocate capital? What asset classes/financial products do we have and what are their potential interactions with nature? What biomes/ecosystems do our financial activities interact with and how? |

| Component of the Scoping phase of LEAP | Scoping questions in LEAP for corporates | Scoping questions in LEAP for financial institutions |
|--|---|---|
| Type of analysis (C3/F3) | <ul style="list-style-type: none"> What are the organisation's priorities for understanding its nature-related issues? What is the appropriate level for the analysis? Should it be by product, process, input, business unit or site? What are the baselines and time periods for the analysis? What are the organisation's materiality processes? What information is needed to drive internal decisions? Who are the key stakeholders for the disclosures, and what will they be interested in? What are the constraints on the assessment? For example, financial and human resources, data. Where is it appropriate to place the boundaries around the analysis? What are the relevant business activities, sectors, geographies and biomes? What level of assessment is feasible or appropriate given the complexity of the organisation's business activities and value chain(s)? | <ul style="list-style-type: none"> What level of assessment is feasible/appropriate given the level of aggregation of financial products and services? |

Additional scoping questions for consideration for specific sectors and biomes have been included in the first drafts of additional sector guidance in priority sectors and biomes. These will be further refined based on feedback.

3.3 Updated guidance on identifying priority locations (Locate phase)

Since the first beta version of the TNFD framework (v0.1), the LEAP approach has included a component (L3 – Priority Location Identification) which guides users to identify a set of priority locations for further analysis. Recommended disclosure Strategy D also asks organisations to report these locations.

The intention of this prioritisation component of LEAP is to help organisations – particularly large organisations with global and/or complex value chains across geographies, biomes and sectors – to focus their assessment on locations that are likely to present the most significant nature-related dependencies, impacts, risks and opportunities. This is in recognition that it will be impractical for large organisations with complex global value chains to assess all locations regularly to support decision-making, and on an annual reporting cycle basis for disclosure. It is also based on the premise that organisations are more likely to face material nature-related dependencies, impacts, risks and opportunities in locations with certain characteristics.

The Taskforce's intention is to make this prioritisation component of LEAP as robust as possible to identify the locations likely to present the most significant nature-related issues for an organisation.

The TNFD's original proposal was to focus assessment on locations with low ecosystem integrity, high biodiversity importance and/or water stress.

Feedback from pilot testers and other stakeholders confirmed the desire to include location prioritisation in the LEAP approach but also identified that the proposed criteria may not identify nature-related issues for an organisation operating in healthy, resilient ecosystems.

In response to this feedback, and with input from knowledge partners and scientific experts, the criteria for the L3 component of LEAP have been updated to reflect that:

- Areas of high ecosystem integrity and rapid decline in ecosystem integrity present greater risks than areas of low integrity; and
- Areas where an organisation has high dependencies and impacts on nature will present risks and opportunities to the organisation, regardless of whether they relate to the criteria on ecosystem integrity, biodiversity importance and water stress. These should also be identified as priority locations for the LEAP approach.

The changes in the criteria in the Locate guidance for component L3 of the LEAP approach are presented in Table 3. The inclusion of likely dependencies and impacts in this list also deepens the importance of an iterative approach between the Locate and Evaluate phases of LEAP, as reflected in the updated visualisation in v0.4 in Figure 9.

Table 3: Updated criteria in v0.4 for identifying priority locations in L3 of the LEAP approach

| Category | Criteria in previous beta framework | Updated criteria in v0.4 |
|------------------------------------|---------------------------------------|---|
| Ecosystem integrity | Areas of low ecosystem integrity | The location has high ecosystem integrity and/or is characterised by rapid decline in ecosystem integrity. The integrity of an ecosystem is the extent to which the composition, structure, and function of an ecosystem falls within its natural range of variation. |
| Biodiversity importance | Areas of high biodiversity importance | The area is of biodiversity importance, including, but not limited to, protected areas or otherwise internationally recognised areas. |
| Water stress | Areas of water stress | The location is an area experiencing water stress, where the quality and/or quantity of available water is deteriorating. |
| Dependencies and impacts on nature | Not covered | The organisation is likely to have significant dependencies and impacts in the location (based on a high-level evaluation of potential dependencies and impacts). |

The updated [guidance on location prioritisation \(L3 in LEAP\)](#) provides further guidance and definitions on these criteria, including lists of reference sources, datasets and tools. The TNFD welcomes further feedback on this draft guidance, particularly from pilot testers, to ensure it is practical to implement, as well as science-based.

The draft recommended disclosure Strategy D in v0.4 has also been updated to reflect these new criteria for identifying priority locations.

3.4 New guidance on risk assessment methods

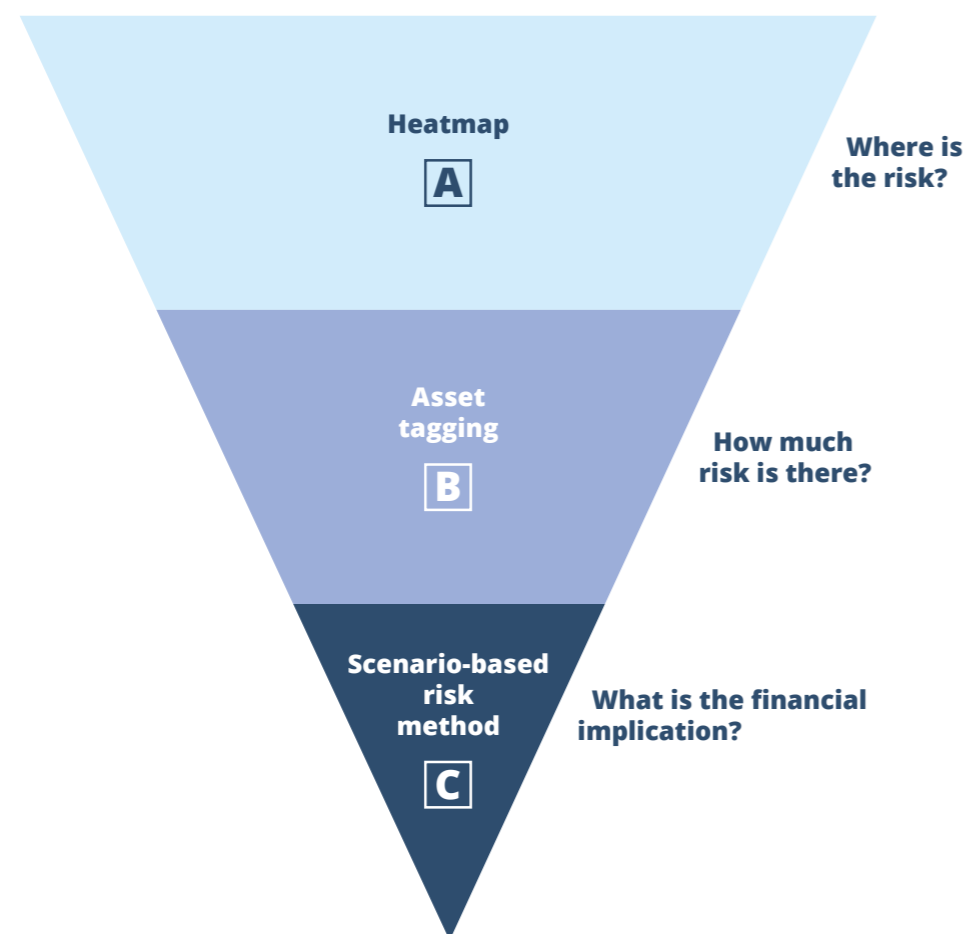
This v0.4 beta framework includes [additional guidance on three methods for assessing nature-related risks](#) when applying the LEAP approach, including step-by-step guidance and insights from pilot testing by asset owners.

The three methods have varying levels of complexity, from qualitative to quantitative, and are suited to specific use cases, particularly for financial institutions. They are:

- **Heatmaps:** Used to identify risks that may warrant a deep dive analysis, inform exclusion policies and/or constitute topics for engagement with portfolio companies. Analysis can be at the sector level or by categories of dependency and impact.
- **Asset tagging:** Can be used to focus on sectors, or dependencies or impacts on nature that a heatmap exercise has identified as potentially material. It can be used to inform portfolio composition, produce more granular qualitative or quantitative metrics and help prioritise individual portfolio companies for engagement.
- **Scenario-based risk assessment method:** Can be used to explore the financial implications of nature-related risks through scenario analysis and can feed into decisions about capital allocation, diversification and portfolio company engagement.

While the new draft guidance on these three risk assessment methods is primarily targeted at financial institutions, and has been informed by a series of pilots with seven asset owners, it is also relevant for corporates, particularly large corporates with complex value chains. Implications and specific guidance for corporates is included in the guidance where relevant.

Figure 9: Three risk assessment methods



3.5 New guidance on engagement with affected stakeholders

Societal dimensions of nature-related dependencies, impacts, risks and opportunities are central to the TNFD risk management and disclosure framework and delivering the TNFD's mission, because people are part of nature.

Building on the [discussion paper](#) published in November 2022, the Taskforce has prepared [draft guidance on engagement with affected stakeholders](#) for this v0.4 beta release.

The TNFD's focus remains on nature-related issues, and other initiatives are looking at developing more comprehensive societal-related assessment and disclosure requirements, including the proposed [Taskforce on Inequality-related Financial Disclosures \(TIFD\)](#).⁴ However, there are inherently societal and cultural dimensions to nature-related issues that need to be considered in assessment, management and disclosure. The TNFD recommends that market participants should ultimately seek to create integrated sustainability disclosures across climate, nature and societal considerations. Over time, the recommendations of the TCFD, TNFD and TIFD should provide market participants with guidance to do this.

The TNFD guidance outlines how a high quality and effective process for engaging affected stakeholders informs each of the key components of the LEAP approach. The guidance covers:

- The scope, expected outcomes and benefits of engagement with affected stakeholders;
- The application of existing environmental and human rights due diligence standards;
- The types of affected stakeholders for engagement, including Indigenous Peoples, Local Communities and those whose human rights might be affected by the organisation's impacts and dependencies on nature and its responses to nature-related risks and opportunities;
- The recommended modalities for engagement with affected stakeholders, aligned with international standards of best practice;
- The importance of Informed Consultation and Participation (ICP) and Free, Prior and Informed Consent (FPIC) of Indigenous Peoples and Local Communities as part of a full and effective engagement process;
- When and why these engagement processes may be appropriate, based on the types of nature-related issues involved and the needs and objectives of the organisation and its stakeholders; and
- Insights for incorporating stakeholder engagement and its results into organisational systems for action, feedback and monitoring and evaluation.

This guidance is a draft for feedback from market participants by 1 June 2023 and the Taskforce will revise and publish this guidance as part of the TNFD's recommendations in September 2023.

⁴ Note that the name is still under discussion and may be updated

3.6 Additional guidance by sector and biome

The v0.4 beta release includes an initial set of additional guidance by sector and biome, as described in Table 4.

Table 4: Scope of additional guidance by sector and biome in the v0.4 release

| Type of additional guidance | Scope of guidance | Included in v0.4 | Sub-sectors in scope |
|-----------------------------|---|---|---|
| Sector | Specific and additional considerations for organisations to take into account when applying the LEAP approach, across all phases. | Financial institutions (an update to previous draft guidance) The financial institution guidance also covers recommended disclosures. | <ul style="list-style-type: none"> • Banks • Insurance companies • Asset managers • Asset owners • Development finance institutions |
| | | Mining and metals | <ul style="list-style-type: none"> • Metals and mining • Iron and steel producers |
| | | Agriculture and food | <ul style="list-style-type: none"> • Agricultural products • Meat, poultry and dairy • Processed food • Food retailers and distributors • Restaurants |
| | | Energy (two sub-sectors: oil and gas, and electric utilities and power generators) | <p>Oil and gas</p> <ul style="list-style-type: none"> • Exploration and production • Midstream • Refining and marketing • Services <p>Electric utilities and power generation with the following value chain assets:</p> <ul style="list-style-type: none"> • Electricity generation • Power source in the scope: <ul style="list-style-type: none"> • Coal/fuel/gas • Nuclear energy • Wind energy (on-shore and off-shore) • Solar energy (photovoltaic) • Hydropower • Transmission and distribution electric lines |

| Type of additional guidance | Scope of guidance | Included in v0.4 | Sub-biomes in scope |
|-----------------------------|--|----------------------------|--|
| Biome | Guidance for companies that produce, operate or source in these biomes to assess nature-related risks and opportunities using the LEAP approach. It provides further details for each biome to enrich the understanding and level of detail for users of the TNFD framework. | Tropical forests | <ul style="list-style-type: none"> • Tropical subtropical lowland rainforests • Tropical subtropical dry forests • Tropical-subtropical montane rainforests • Tropical heath forests |
| | | Rivers and streams | <ul style="list-style-type: none"> • Permanent upland streams • Permanent lowland streams • Freeze-thaw rivers and streams • Seasonal upland streams • Seasonal lowland rivers • Episodic arid rivers • Large lowland rivers |
| | | Intensive land use systems | <ul style="list-style-type: none"> • Short-rotation croplands • Sown pastures and fields (including intensive livestock pastures) • Plantations • Derived semi-natural pastures and old fields <p>Note – the sub-biome of urban and industrial ecosystems is not covered.</p> |
| | | Marine shelf | <ul style="list-style-type: none"> • Seagrass meadows • Kelp forests • Photic coral reefs • Shellfish beds and reefs • Phot-limited marine animal forests • Subtidal rocky reefs • Subtidal sand beds • Subtidal mud plains • Upwelling zones • Rhodolith/Maërl beds |

This first set of draft sector and biome guidance has been developed through consultation with market participants in each sector and experts on each biome, including a number of organisational members of the TNFD Forum and TNFD knowledge partners.

The Taskforce welcomes further feedback on this draft additional guidance and will continue active consultation to improve and expand other sectors and biomes. This is already underway through the Taskforce for:

- Aquaculture;
- Chemicals and pharmaceuticals;
- Forestry;
- Infrastructure and real estate; and
- Textiles and apparel.

Users can access the additional sector and biome guidance on the TNFD's framework site using a new sector and biome dashboard filtering function. Users can now set sector and biome preferences to create a unique user dashboard that ensures each user sees cross-sector LEAP guidance, and any additional guidance for those sectors and biomes that are relevant to them.

Figure 10: The TNFD additional guidance dashboard functionality

The screenshot shows a web dashboard for the TNFD framework. At the top left, it indicates 'Version v0.4 Beta Release March 2023'. A navigation menu on the left includes 'Dashboard', 'Introduction to the Framework', 'Framework and guidance', 'Piloting the Framework', 'Framework tool kit and resources', and 'Provide Feedback'. The main content area is titled 'Dashboard' and 'Update your preferences'. It features two search sections: 'Sector(s)' with a search box containing 'e.g. retail' and a 'Show all sectors' button, and 'Biome(s)' with a search box containing 'e.g. forest' and a 'Show all biomes' button. Below these are radio buttons for 'Land' and 'Freshwater'. A section titled 'Are you a financial institution?' has a 'Yes' option. There are also fields for 'Preferences name' (containing 'With our Matty') and 'Select from your previous selections' (a dropdown menu). At the bottom, there are 'Save Preferences' and 'Reset' buttons. A footer contains links for 'TNFD Global Website', 'Acknowledgements', 'About TNFD', 'Privacy Policy', 'FAQs', and 'Update Password'.

The tailored dashboard format for this additional guidance is presented as a first prototype for testing by market participants, ahead of the final framework in v1.0. The Taskforce welcomes feedback from users on the utility of the additional guidance dashboard functionality, and suggestions for what is needed to ensure the guidance is practical, easily navigable and includes relevant, decision-useful information.

4. Core concepts and definitions

TNFD has updated and added new concepts and definitions in the [‘concept and definitions’ section of the online platform](#). These were informed by feedback from market participants and new material included in v0.4. The Taskforce has focused on adding and updating definitions that relate to new content in the v0.4 release, particularly disclosure metrics, and sector and biome guidance. [The TNFD glossary has been updated with these new and updated terms and definitions.](#)



5. The approach to metrics

The TNFD's approach to measurement has been developed with the objectives of supporting:

- Decision-useful information for report users;
- Practicality for report preparers to assemble, assess and report information at reasonable cost, on an annual report cycle basis and subject to limited assurance;
- Comparability across and within sectors by report users; and
- Alignment to global and national policy goals and targets, such as those in the Global Biodiversity Framework and other international treaties, as organisations are now aligning to the Paris Agreement and net zero targets with respect to their climate-related corporate reporting.

The TNFD recognises that the current state of nature-related data available to market participants⁵ means that it is challenging to achieve all of these objectives simultaneously. Nevertheless, rapid innovation in data, analytics and technology means that many of the constraints will ease in the near future. The Nature-related Data Catalyst initiative established by the TNFD is one effort to accelerate such solutions.

In light of this, the TNFD identified seven design features for its metrics approach:

1. **A distinction** between:
 - a. **Assessment metrics** used internally by report preparers to inform management decisions, and linked to the phases of the LEAP approach, and
 - b. **Disclosure metrics** to be published in disclosures for report users on a comply or explain basis.
2. **A distinction between cross-sector metrics and sector- and biome-specific metrics:** This is aligned with and builds on the approach of the TCFD, and standard-setting bodies such as the Global Reporting Initiative (GRI), the Carbon Disclosure Standards Board (CDSB) and Sustainability Accounting Standards Board (SASB) – now part of the International Sustainability Standards Board (ISSB), the European Financial Reporting Advisory Group (EFRAG) and CDP.
3. **Specification of a set of core disclosure metrics** to help comparability within and across sectors on areas of high priority. These are divided into:
 - a. Core global metrics, which cover all sectors; and
 - b. Core sector metrics, which are sector-specific.

There is a further set of additional disclosure metrics that are recommended, but not required.

⁵ Outlined in the [TNFD's Discussion Paper on Nature-related Data and Analytics](#), published in March 2022

4. **Inclusion of indicators and metrics that allow assessment of both positive and negative impacts** on nature.
5. **Alignment with the phases of the LEAP approach** to support end-to-end nature-related risk assessment, management and disclosure.
6. **A periodic review mechanism** to ensure the measurement architecture remains fit for purpose as knowledge and tools evolve.
7. **Alignment with emerging global and national policy priorities, standards and target setting frameworks**, such as the Global Biodiversity Framework (GBF); the standards under development by the ISSB and GRI; nature-related reporting regulations, such as the European Sustainability Reporting Standards (ESRS); and corporate target setting approaches, such as those being developed by the Science Based Targets Network (SBTN).

The TNFD's metrics architecture is outlined in the following table.

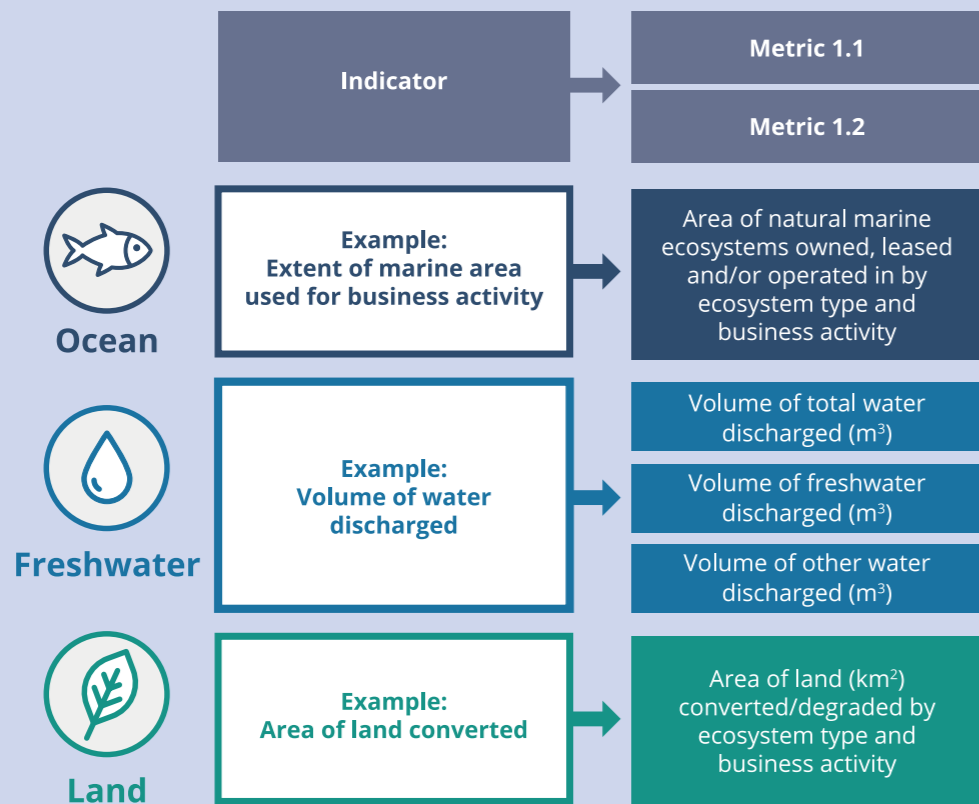
Figure 11: Types of metrics in the context of the LEAP approach

| | Disclosure Recommendation Pillars | | | | | | | |
|----------|-----------------------------------|--------------------------|------------------|--------------------------|----------------------|--------------------------|---------------------|--------------------------|
| | Governance | | Strategy | | Risk and Impact Mgmt | | Metrics and Targets | |
| | Metrics Category | Disclosure Metrics Annex | Metrics Category | Disclosure Metrics Annex | Metrics Category | Disclosure Metrics Annex | Metrics Category | Disclosure Metrics Annex |
| A | Response | Annex 3 | I&D R&O | Annex 2 Annex 1 | Response | Annex 3 | R&O | Annex 1 |
| B | Response | Annex 3 | R&O | Annex 1 | Response | Annex 3 | I&D | Annex 2 |
| C | | | N/A | N/A | N/A | N/A | N/A | N/A |
| D | | | N/A | N/A | Response | Annex 3 | | |

Box 5: Definitions of indicators and metrics

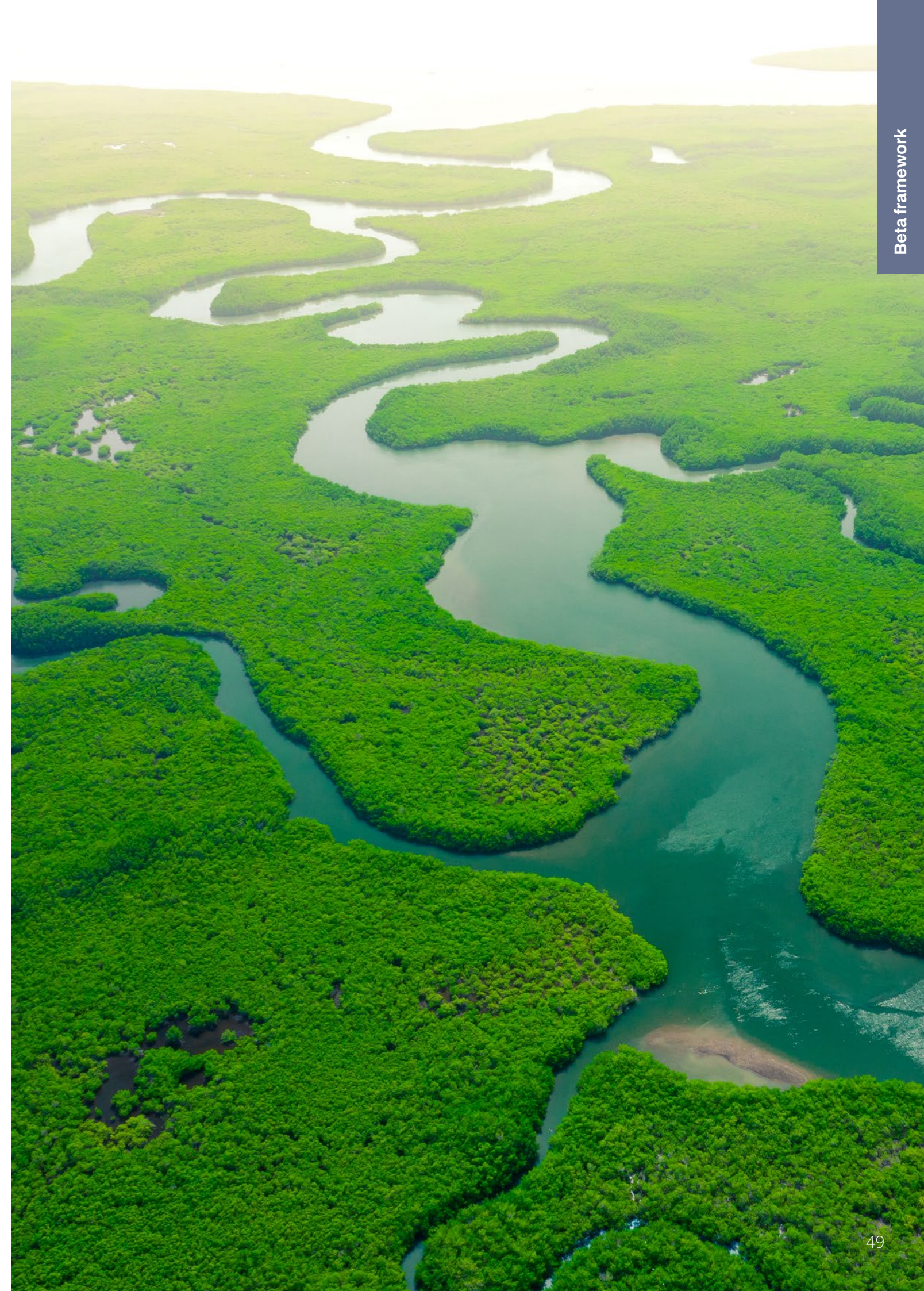
An **indicator** is a quantitative or qualitative factor or variable that provides a simple and reliable means to measure performance.⁶

A **metric** is a system or standard of measurement.⁷



Indicators and metrics may be at the level of: Direct operations (site, project or corporate level); Upstream; Downstream; and Financed (portfolio level).

Disclosure indicators and metrics should be measured using a set of metrics, including where possible: an absolute metric; the rate of change, intensity/efficiency and prevalence.



6 OECD/DAC. 2002. Glossary of Key Terms in Evaluation and Results Based Management Development Assistance Committee Available from: www.oecd.org/dac/evaluation/2754804.pdf

7 Biodiversity Indicators Partnership. 2011. Guidance for national biodiversity indicator development and use.

Table 5: Types of assessment and disclosure metrics

| LEAP phase and metric category | Sub-category | Description | Sources of support for organisations |
|--|----------------------------------|--|--|
| Locate: Location prioritisation | N/A | Metrics used to identify priority locations | TNFD guidance on location prioritisation published alongside v0.2 and updated with v0.4 |
| Evaluate: Dependencies and impacts on nature | Impact drivers | Amount of natural resources that are used as an input to production or non-product outputs of a business activity ⁸ | TNFD guidance and illustrative metrics published alongside v0.2. Draft metrics published alongside v0.4. |
| | State of nature | The condition ⁹ and extent of ecosystem assets, including positive or negative changes | |
| | Ecosystem services/ dependencies | The provision of ecosystem services, including those the business depends on | |
| Assess: Nature-related risks | Physical risks | Amount and extent of revenues, assets or business activities vulnerable to risk types | TNFD guidance and illustrative metrics published alongside v0.3. Draft metrics published alongside v0.4. |
| | Transition risks | | |
| | Systemic risks | | |
| Assess: Nature-related opportunities | N/A | Proportion of revenue, assets or other business activities aligned with nature-related opportunities | |

⁸ As included in the v0.1 beta framework, these impact drivers can be mapped to the IPBES main drivers of nature change.

⁹ Ecosystem condition / integrity: The quality of an ecosystem measured in terms of its abiotic and biotic characteristics. Condition is assessed with respect to an ecosystem's composition, structure and function which, in turn, underpin the ecological integrity of the ecosystem, and support its capacity to supply ecosystem services on an ongoing basis. Adapted from: UN SEEA. 2021. System of Environmental-Economic Accounting – Ecosystem Accounting: Final Draft.

| LEAP phase and metric category | Sub-category | Description | Sources of support for organisations |
|--------------------------------|---|---|--|
| Prepare: Response metrics | Governance | Related to the organisation's responses to identified nature-related dependencies, impacts, risks and opportunities, including the assessment and management of nature-related dependencies, impacts, risks and opportunities | TNFD guidance and illustrative metrics published alongside v0.4 |
| | Strategy | | |
| Prepare: Disclosure metrics | Assessment and management of nature-related dependencies, impacts, risks and opportunities | Metrics to be included in all TNFD disclosures on a comply or explain basis, split into: | Set of draft core global metrics for market feedback Set of draft core sector metrics for agriculture and food sector |
| | Core metrics | | |
| | Additional metrics (can include any assessment metrics) | | |
| | Additional metrics that a corporate or financial institution may choose to include in their disclosures | | Set of additional metrics for market feedback – cross-sector, and for one sector (agriculture and food) and one biome (tropical forests) |

5.1 Assessment Metrics

Versions 0.2 and 0.3 of the TNFD beta framework included guidance on assessment metrics for the Locate, Evaluate and Assess phases of LEAP. This draft of the beta framework completes the TNFD's measurement architecture with:

- A set of draft assessment metrics across all phases of LEAP;
- Updated guidance on metrics for the Locate phase of LEAP (location prioritisation metrics).



5.2 Response metrics

This v0.4 beta release includes new guidance on assessment metrics relating to the P1 component of the Prepare phase of LEAP (see Annex 4.7). These metrics are referred to as response metrics and cover organisations' actions, policies, commitments, plans and targets to manage nature-related dependencies, impacts, risks and opportunities. They should be:

- Directly linked to the dependency and impact assessment (the Evaluate phase of LEAP) and the risk and opportunity assessment (the Assess phase of LEAP), as illustrated in Table 6; and
- Used to inform target setting and measurement of progress against targets, where appropriate (component P2 on target setting and performance measurement) – see Section 6.1.

Risks and opportunities identified as the highest importance using the prioritisation criteria in the Assess phase of LEAP should be addressed as a priority when forming business responses.

When considering effective business responses to nature-related issues, organisations should take into account both:

- Financially material nature-related risks and opportunities identified, based on exposure to dependencies and impacts on nature. Risks and opportunities identified as the highest importance using the prioritisation criteria in the Assess phase of LEAP should be addressed as a priority; and
- Significant impacts on nature that do not directly result in a financial risk or opportunity for the organization (in line with internationally accepted principles for responsible business conduct).

The frequency of review of business responses to nature-related impacts, dependencies, risks and opportunities may vary by organisation and should be determined by:

1. the frequency of the process for which the response is designed (e.g. reducing water consumption in a daily manufacturing process should be reviewed more frequently than that for an annual agricultural harvest as it may take multiple cycles); and
2. the timeline set to implement the response (e.g. addressing a short-term target will require more frequent reviews than long-term targets, in order to track progress and enable adaption of response where needed).

TNFD recommend responses to nature-related issues should be reviewed annually at a minimum.

Table 6: Examples of response metrics and metrics in other phases of LEAP

| | Locate | Evaluate | Assess | Prepare |
|---|--|--|--|--|
| 1. Nature risk: water dependency | Organisation identifies that it is consuming water from an area experiencing water stress | Organisation identifies that its production depends on an ongoing supply of water, and that its use of water has an impact on that supply | Organisation assesses the risk and opportunities arising from its water use. This could be up to the full financial value of the product lines that depend on the water supply, and determines the risk level | Organisation assesses different response options and decides to increase water-efficiency, increase the amount of recycled and reused water and have all sites certified by ISO 14001 |
| Indicators/ metrics | <p>Location prioritisation:</p> <p>Area of direct and indirect influence that overlaps with potential or likely water-stressed areas (absolute and % change)</p> <p>Ha of direct assets/sites located in a water-stressed area (absolute and % change)</p> | <p>Exposure:</p> <p>Volume of water consumption by source, from water-stressed areas (absolute and % change)</p> <p>Volume of water recycled or reused (absolute and % change)</p> <p>Volume of water loss (absolute and % change)</p> <p>Measurement of the ecosystem condition, e.g. MSA (absolute and % change)</p> <p>Water depth in reservoirs (absolute and % change)</p> <p>Amount of secure water supply (absolute and % change)</p> | <p>Magnitude:</p> <p>Increased costs of water supply (absolute and % change)</p> <p>Reduction in revenue due to interruption of operations (absolute and % change)</p> <p>Costs of relocating operations</p> <p>Number of business lines exposed</p> <p>Value of assets/revenues dependent on the area</p> <p>Increased operational costs due to reduction in loyalty from stakeholders</p> | <p>Response:</p> <p>Performance against commitment to increase water efficiency by 40%, reduce water consumption by 30% and increase reused and recycled water by 80% (baseline y-1)</p> <p>% of sites certified by ISO 14001</p> <p>Number of meaningful engagements with affected stakeholders when assessing water-related dependencies and impacts, including understanding the impacts of loss of ecosystem services on local communities</p> <p>% of affected stakeholders meaningfully engaged on water-related issues</p> |
| 2. Nature risk: land use change impact | Organisation identifies that it is converting natural ecosystems for agricultural purposes in close proximity to a biodiversity hotspot | Organisation identifies that as a result of the land use change, there may be a reduction in the integrity of the biodiversity hotspot | Organisation assesses the risk and opportunities arising from the land use change, including the financial value of dependent product lines, and determines the risk level | Organisation assesses different response options and decides to set up a sustainable management programme in the area, create an area-specific biodiversity net gain target and monitor biodiversity levels in the area twice a year |
| Indicators/ metrics | <p>Location prioritisation:</p> <p>Area of direct and indirect influence that overlaps with areas of low integrity or high biodiversity importance (absolute and % change)</p> <p>Ha of direct assets/sites located in areas of low integrity or high biodiversity importance (absolute and % change)</p> | <p>Exposure:</p> <p>Extent of terrestrial ecosystems converted/ degraded by ecosystem type and business activity (absolute and % change)</p> <p>Measurement of the ecosystem condition, e.g. MSA, species richness (absolute and % change)</p> <p>Presence/density of trees/shrubs (absolute and % change)</p> <p>Vegetation index (absolute and % change)</p> <p>Altered level of livestock and or crops (e.g. reduced/avoided loss of livestock and/or crops) (absolute and % change)</p> | <p>Magnitude:</p> <p>Value of assets/revenues dependent on the area</p> <p>Increased operational costs due to reduction in loyalty from stakeholders</p> <p>Compliance costs</p> <p>Description and costs related to loss of operating areas</p> <p>Costs of relocating operations</p> | <p>Response:</p> <p>Commitment to no conversion of natural ecosystems</p> <p>Performance against commitment for biodiversity net gain (baseline y-1)</p> <p>Number of meaningful engagements with affected stakeholders, including rightsholders and local communities, when assessing biodiversity-related impacts</p> <p>% of affected stakeholders meaningfully engaged in area</p> <p>Extent, duration and monitoring frequency of ecosystem restoration projects</p> |

Use of the mitigation hierarchy

Organisations should adopt mitigation hierarchy principles when determining responses to identified nature-related issues. The TNFD aligns with SBTN's Action Framework for the mitigation hierarchy, AR³T.

Figure 12: SBTN's AR3T framework



This includes four types of actions that should be followed sequentially:

- *Avoid*: Prevent negative impacts from happening in the first place; eliminate negative impact entirely;
- *Reduce*: Minimise negative impacts that cannot be fully eliminated;
- *Restore*: Initiate or accelerate the recovery of an ecosystem with respect to its health, integrity and sustainability, with a focus on permanent changes in state; and
- *Regenerate*: Take actions designed within existing land/ocean/freshwater uses to increase the biophysical function and/or ecological productivity of an ecosystem or its components, often with a focus on a few specific ecosystem services.

It further includes transformative action, which covers the ways companies can contribute to needed systemic change inside and outside their value chains.

Examples of response metrics and their links to the mitigation hierarchy are outlined in Table 7.

Table 7: Examples of response metrics connected back to mitigation hierarchy categories

| Mitigation hierarchy component | Illustrative response metrics | Framework |
|--------------------------------|--|-----------|
| Avoid | Commitment to no conversion of natural ecosystems | TNFD |
| | Commitment to no negative impacts in areas of biodiversity importance | TNFD |
| | Processes and due diligence in place to prevent impact drivers | TNFD |
| | Actions to avoid negative impacts (investment and extent) | TNFD |
| Reduce | Nature management actions adopted to reduce impact driver (e.g. adopting regenerative agriculture) | TNFD |
| | Processes and due diligence in place to manage impact drivers | TNFD |
| | Actions to reduce negative impacts (investment and extent) | TNFD |
| Restore and regenerate | Restoration of negatively impacted ecosystems (investment and extent) by ecosystem/biome type and split into: <ul style="list-style-type: none"> • Required by regulation • Required by certifier • Voluntary | CDP |
| | Biodiversity offsets to compensate for residual impacts (as a last resort): <ul style="list-style-type: none"> • Total purchased biodiversity offsets by type • Total sold biodiversity offsets by type | ESRS-4 |
| | Quality criteria and standards for biodiversity offsets | TNFD |

| Mitigation hierarchy component | Illustrative response metrics | Framework |
|--------------------------------|---|-----------|
| Transform | Production, consumption and sourcing of raw materials from ecosystems that maintain or enhance conditions for nature (value of) | ESRS-4 |
| | Circular material use rate | CDP |
| | Number of sector-wide or multi-stakeholder initiatives supported | TNFD |
| | Number of knowledge products/research projects directed at sector-wide or regional change | TNFD |

5.3 Disclosure metrics

Report preparers should support their disclosure statements with qualitative and quantitative indicators and metrics. This will be most useful for report users' decision-making where it is comparable across and within sectors.

In this final draft (v0.4) of the beta framework, the Taskforce sets out draft disclosure indicators and metrics to support this comparability for market consultation. These are intended to:

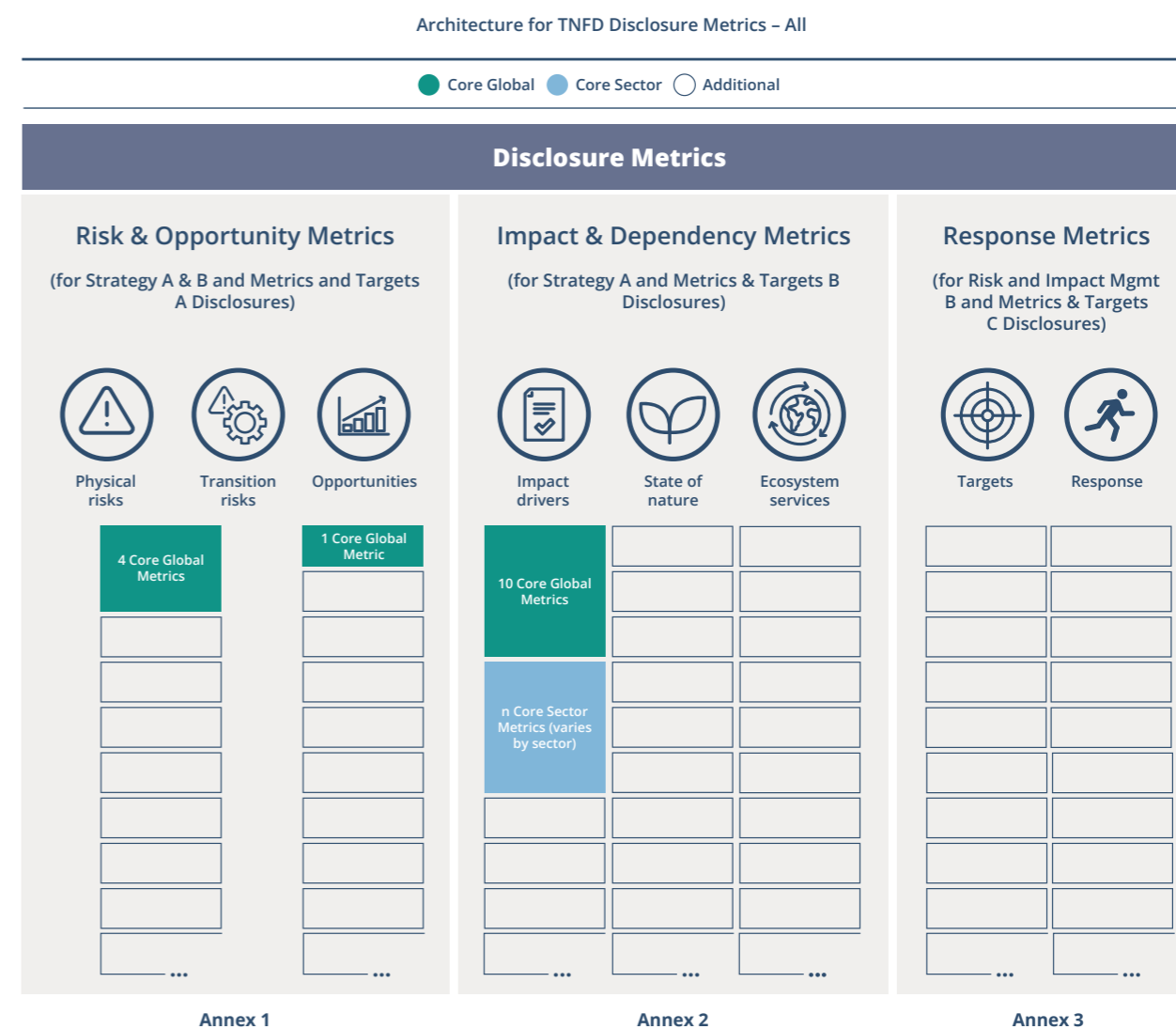
- Be **science-based** but also practical for report preparers on an annual corporate reporting cycle;
- Recognise that nature-related issues are **specific to the location, sector and biome** in which they are occurring;
- Reflect that nature-related issues take place **along value chain(s) and in activities financed**¹⁰ by financial institutions;
- Reflect **both negative and positive impacts** and both risks and opportunities to the organisation; and
- **Align with global policy goals**, including the Global Biodiversity Framework, while providing flexibility for the different materiality approaches of report preparers, capital providers and market regulators globally.

¹⁰ Adapting the concept of 'Scope 3' used for climate-related reporting.

The guidance proposes disclosure metrics for **all nature-related issues** – dependencies, impacts, risks and opportunities – and an organisation's responses to these, dividing these metrics into:

- **A small set of core disclosure metrics** covering dependencies and impacts, aligned with global policy priorities and targets, such as those in the Global Biodiversity Framework, and risks and opportunities, aligned with the TCFD and commonly used in climate reporting. These are divided into **core global metrics** that cover all sectors, and **core sector metrics** which are sector-specific.
- **Additional metrics** that can be used flexibly based on specific considerations for the business, sector, biome and/or location.

Figure 13: TNFD's approach to disclosure indicators and metrics



Box 3: Disclosure along value chains

Many important nature-related dependencies, impacts, risks and opportunities will occur upstream and downstream from an organisation's direct operations, and in its financed activities (in the case of financial institutions). An organisation's disclosures should reflect this.

Nevertheless, the TNFD recognises the practical challenges of tracing nature-related issues up and down complex global value chains. Organisations should aim to report their upstream, downstream and financed dependencies, impacts, risks and opportunities to the greatest extent possible now, rather than waiting for the perfect set of methodologies and tools to be available. This may mean compromising on how location-specific analysis might be (by adopting proxy data, for example) or the coverage across the value chain. Organisations should work to improve the detail and coverage of the reporting over time, supported by improvements in measurement, data and analytics methods and technologies. One of the ways the Taskforce is supporting the development of these tools is by signalling now what should be measured across value chains.

General requirement 2, accompanying the recommended disclosures, prompts report preparers to describe the scope of their disclosures. Providing qualifying statements in conjunction with quantitative metrics is particularly important to offer context for numbers and increase the confidence level of any assessments made by report users. This is emphasised throughout the TNFD's implementation guidance on disclosures.

The Taskforce will continue to assess how upstream, downstream and financed considerations can be incorporated into the TNFD framework ahead of publication of its complete recommendations in September 2023.

Disclosure metrics selection: Characteristics of decision-useful metrics

The TNFD has selected these lists of disclosure metrics based on the International Financial Reporting Standards (IFRS) characteristics of useful information, and additional criteria given the specificities of measuring nature-related issues (accessible and aligned):

- **Relevant/material** – Is the metric relevant to inform the decisions of report users?
- **Reliable** – Is there a demonstrated track record of the metric faithfully representing what it purports to represent?
- **Comparable and consistent** – Can this metric be compared across similar organisations?
- **Verifiable** – Can the metric and underlying data sources be verified and assessed and assured by auditors?
- **Timely** – Could this metric be provided to report users for decision-making deadlines, such as annual reporting?

- **Understandable** – Is this metric clear, concise and structured in a way that facilitates users' understanding?
- **Accessible** – Can report preparers collect the data (directly or through data providers) at reasonable cost and in a timely manner? (TNFD addition)
- **Aligned** – Is the metric aligned to best practice frameworks and standards already used within the market? Will they remain aligned over time? (TNFD addition)

These criteria were applied to a longlist of over 3,000 indicators identified in a landscape survey of nature-related metrics already in use in the market, including by existing corporate reporting standards bodies, other frameworks and government and scientific sources.

5.3.1 Overview of TNFD disclosure metrics

The guidance proposes disclosure metrics for **all nature-related issues** – dependencies, impacts, risks and opportunities – and an organisation's responses to these, dividing these metrics into:

- **A small set of core disclosure metrics** covering dependencies and impacts, aligned with global policy priorities and targets, such as those in the Global Biodiversity Framework, and risks and opportunities, aligned with the TCFD and commonly used in climate reporting. These are divided into **core global metrics** that cover all sectors, and **core sector metrics** which are sector-specific.
- **Additional metrics** that can be used flexibly based on specific considerations for the business, sector, biome and/or location.

1. Core global metrics

Table 8 summarises the TNFD's core global metrics. The TNFD strongly encourages organisations to report all core global metrics relevant to their business model, sector(s), biome(s) and priority locations on a comply or explain basis. This is to demonstrate their alignment with global policy goals such as the Global Biodiversity Framework and other international conventions and international policy commitments.

The TNFD strongly encourages organisations to include disclosures against all core global metrics of relevance to their business model, sector(s), biome(s) and priority locations.

Further detail is set out in the TNFD disclosure metrics annexes:

- Annex 1 – Table 1 – TNFD Core Global Risk and Opportunity Disclosure Metrics
- Annex 2 – Table 1 – TNFD Core Global Dependency and Impact Disclosure Metrics

The TNFD is proposing a set of 10 global core indicators for disclosure, relating to dependencies and impacts on nature (Metrics and Targets B and Strategy A). They relate to impact drivers within ecosystems on which the organisation has an impact or dependency. They have been selected based on two important criteria:

- Cross sector relevance: These indicators are considered likely to be relevant across the majority of sectors and biomes and commonly incorporated into general or cross-sector standards (e.g. Environmental Health and Safety Guidelines of the International Finance Corporation (IFC) and the European Sustainability Reporting Standards).
- Alignment with global policy priorities: As the reporting of green-house gas emissions helps organisations to demonstrate their alignment to the global policy goals of the Paris Agreement on climate change, reporting against these metrics will allow report preparers to demonstrate how they are aligned with, and contributing to, the achievement of key global priorities for halting and reversing nature loss by 2030 and living in harmony with nature by 2050. This includes, but is not limited to, the Global Biodiversity Framework agreed by over 190 countries in December 2022. All the core indicators are relevant to Target 15 of the Global Biodiversity Framework. Where indicators contribute to other GBF Targets, these have been noted. Transparency on contributions to other GBF targets is achieved through additional indicators (e.g. on agriculture and food). These indicators are of importance, not only to inform government policy making and market regulation, but also to inform decisions about company governance, strategy and risk management and capital allocation by investors, lenders and insurers.

Table 8: Summary of TNFD's core global metrics

| Core global metrics: Impacts and dependencies | |
|---|--|
| Climate change | Scope 1, 2 and 3 GHG emissions – refer to TCFD |
| Land/freshwater/ ocean-use change | Extent of land/freshwater/ocean use change, by type of ecosystem ¹¹ and business activity |
| | Extent of land/freshwater/ocean use change, by type of ecosystem ¹² and business activity, for prioritised ecosystems |
| Pollution/pollution removal | Total pollutants released to soil split by type |
| | Volume of water discharged and concentrations of key pollutants in the wastewater discharged by type |
| | Total amount of hazardous waste generated by type |
| | Total non-GHG air pollutants by type |
| Resource use/ replenishment | Total water withdrawal and consumption from areas of water stress |
| | Quantity of high-risk natural commodities sourced from land/ocean/freshwater split into types |
| | Quantity and share of natural commodities sourced from priority ecosystems split into types |

¹¹ When disclosing on ecosystem types, refer to the IUCN Global Ecosystem Typology: <https://global-ecosystems.org/>

¹² When disclosing on ecosystem types, refer to the IUCN Global Ecosystem Typology: <https://global-ecosystems.org/>

Core global metrics: Risks and opportunities

| | |
|------------------------------|---|
| Nature-related risks | Proportion and total annual revenue exposed to 1) physical risks and 2) transition risks |
| | Proportion and value of assets exposed to nature-related 1) physical risks and 2) transition risks |
| | Proportion and value of assets/total annual revenue exposed to risks by risk rating |
| | Proportion and total annual revenue/value of assets with substantial dependence on ecosystem services or with a high impact on nature |
| Nature-related opportunities | Value of capital allocated to nature-related opportunities, by type of opportunity, with reference to a jurisdictional green taxonomy |

2. Core sector disclosure metrics

Risks and opportunities facing organisations, including nature-related issues, are often common to other organisations in the same sector. Providers of capital have indicated that they typically make allocative decisions by comparing relative performance of organisations first and foremost within sectors.

The TNFD is therefore proposing a set of Core Sector Disclosure Metrics to underpin consistent and comparable disclosures for organisations in the same sector with similar business models and interfaces with nature.

The Core Sector Disclosure Metrics will be outlined in the TNFD additional guidance for each sector. In v0.4, an example is provided for the agriculture and food sector (Metrics Annex 4).

3. Additional disclosure metrics

There are significant differences in business models, across value chains and the interface with nature across and within sectors. For example, the farming of livestock involves different nature-related issues to the farming of grains, fruits and vegetables.

To reflect variation across and within sectors and across different biomes, the TNFD also proposes a list of additional disclosure metrics that report users should consider in order to provide a relevant, accurate and robust disclosure of their material nature-related issues.

These additional disclosure metrics include sector-specific metrics to support report users in making comparative analysis of risk and performance at a sector level.

The TNFD will provide sector- and biome-specific disclosure metrics in the additional guidance available on the TNFD framework site. Draft disclosure metrics for financial institutions and agriculture and food have been issued as part of this final (v0.4) draft of the TNFD beta framework. Draft disclosure metrics for further priority sectors will be released as they are developed by the Taskforce.

In choosing which additional metrics to disclose – or indeed other metrics – organisations should focus on those that:

- Help organisations understand nature-related dependencies, impacts, risks and opportunities, including financial effects and operational consequences;
- Are relevant to the organisation; and
- Show how the organisation manages nature-related issues as part of its governance, strategy and risk and impact management processes.

Organisations should not be limited by the additional disclosure metrics outlined by the TNFD and are encouraged to report other metrics that are material and relevant to their organisation, based on their business model, sector, relevant biomes, priority locations and regulatory reporting requirements in their jurisdiction.

Box 4: Sector and biome metrics relevant for agriculture and food

This final draft (v0.4) of the beta framework includes a set of proposed disclosure metrics for the agriculture and food sector and tropical forest biome to provide a worked example of how sector- and biome-specific disclosure metrics fit within the TNFD's approach to disclosure metrics. The agriculture and food sector metrics include 10 core sector disclosure metrics, which all relate to impact drivers. The tropical forest metrics are all additional.

The long list of additional metrics for the food and agriculture sector was developed drawing on current best practice standards of GRI 13, CDP, SASB sub-sector metrics and FAO metrics for the agri-business sector. The 10 core disclosure metrics for the agriculture and food sector were selected using two main selection filters:

- To align with the three main targets of the Global Biodiversity Framework related to food and agriculture (Targets 7, 10 and 16).
- To reflect five of the nine planetary boundaries, which have surpassed the safe operating space and to which the food and agricultural sector contributes significantly: novel entities, climate change, biosphere integrity, land-system change and biogeochemical flows (nitrogen and phosphorus).

Metrics annexes

This v0.4 beta release provides a full set of TNFD draft disclosure metrics in 'Disclosure Metrics Annexes' with quantitative disclosure indicators and metrics in tables. Table 10 shows where to find the different sets of metrics and how they relate to the TNFD recommended disclosures. The metrics annexes are available via the TNFD framework platform.

Table 9: Disclosure metrics annexes

| Where to find.... | Annex | Core/additional | Relevant recommended disclosure |
|--|-------|----------------------------|---|
| Risk and opportunity disclosure metrics | 1 | Core global and additional | Metrics and Targets A (and connected to Strategy A and B) |
| Dependency and impact disclosure metrics | 2 | Core global and additional | Metrics and Targets B (and connected to Strategy A) |
| Response metrics | 3 | Additional | Risk and Impact Management B |
| Sector-specific metrics: Example for the agriculture and food sector | 4 | Core global and additional | Metrics and Targets B (and connected to Strategy A) |
| Biome-specific metrics: Example for the tropical forest biome | 5 | Additional | Metrics and Targets B (and connected to Strategy A) |

The relevant annexes are referred to throughout the disclosure implementation guidance.

Figure 14: Disclosure guidance and metrics for sectors and biomes

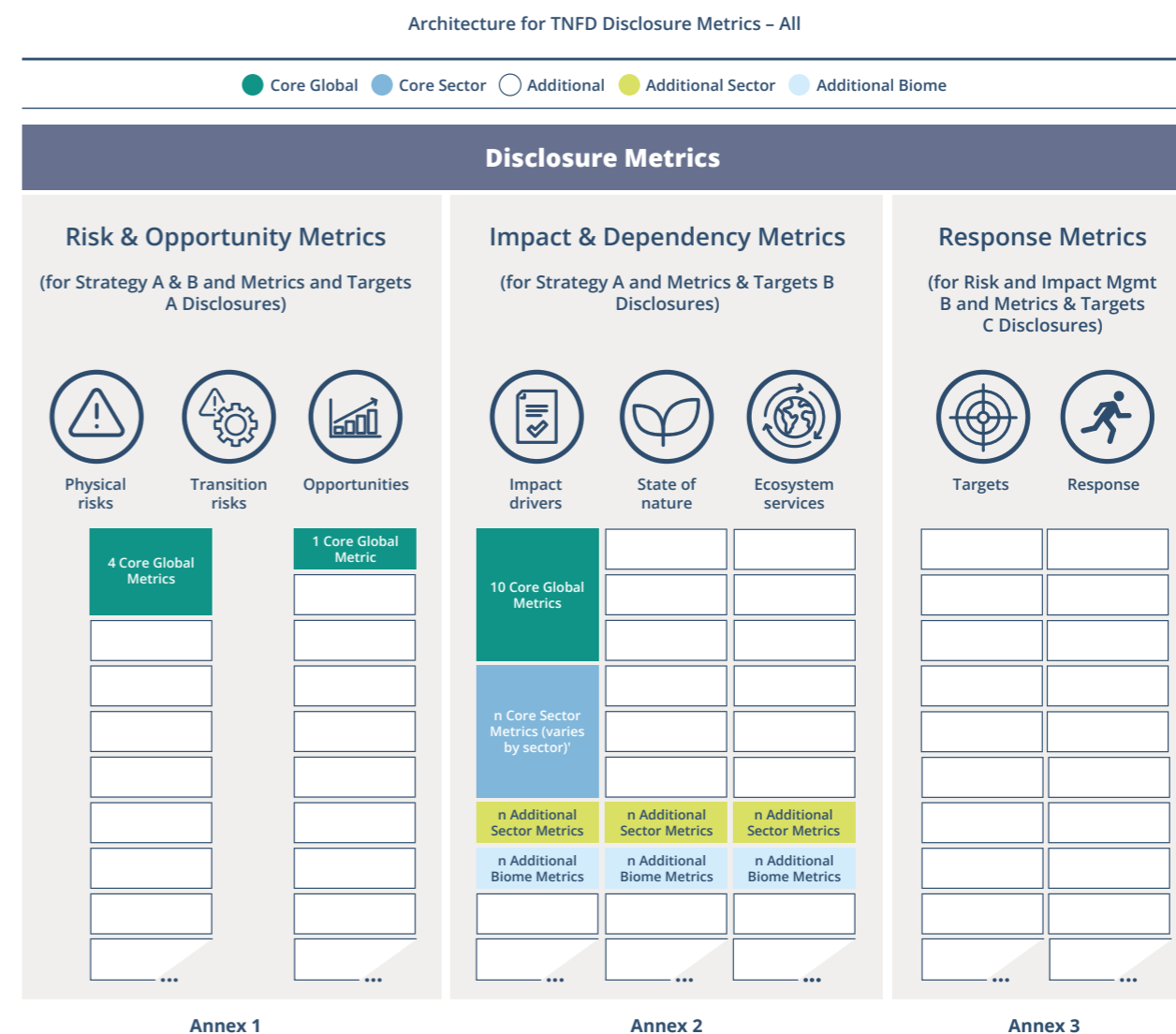


Table 10: Benefits of TNFD's proposed approach to disclosure metrics

| Design characteristic | Benefits of TNFD's approach |
|--|--|
| <p>A set of core disclosure metrics (global and sector-specific).</p> | <ul style="list-style-type: none"> • Enables organisations to demonstrate their alignment with global policy goals such as the Global Biodiversity Framework and other international conventions and international policy commitments. • Encourages organisational transition planning aligned to these goals and targets (similar to the approach now being taken on transition planning with respect to emission levels and pathways to net zero). |
| <p>Flexibility to align with the materiality choices and needs of individual report preparers.</p> <p>Following General Requirement 1, <i>'report preparers should provide a statement regarding the organisation's approach to materiality in preparing their disclosures, noting that the materiality assessment only applies to recommended disclosure Strategy A and Metrics and Targets A, B and C, except where otherwise specified'</i>.</p> | <ul style="list-style-type: none"> • Supports the reporting needs of all report preparers and report users globally, including their preferences and regulatory requirements regarding materiality. • Provides clarity and transparency for report users about the materiality approach being taken |
| <p>The proposed approach recognises best practice to disclose metrics separately for the organisation's direct operations from those upstream, downstream and financed (akin to Scope 1 and Scope 3 reporting of emissions) and those that are financed (in the case of financial institutions).</p> <p>In recognition of the practical challenges of tracing nature-related issues up and down complex global value chains, organisations should aim to report their upstream, downstream and financed dependencies, impacts, risks and opportunities to the greatest extent possible. This may mean compromising on how location-specific analysis might be (by adopting proxy data, for example) or the coverage across the value chain. Organisations should work to improve the detail and coverage of the reporting over time, supported by improvements in measurement, data and analytics methods and technologies.</p> <p>The TNFD expects that data improvements and technology innovations will make upstream, downstream and financed reporting of nature-related issues easier in future.</p> | <ul style="list-style-type: none"> • Enables progression of disclosures over time along value chains. |
| <p>Flexibility to increase disclosure ambition over time.</p> <p>Outlines what the Taskforce believes is required as an end-state for nature-related corporate reporting, rather than limited by what might be possible today, given recognised data accessibility, integrity and assurance challenges.</p> | <ul style="list-style-type: none"> • Helps report preparers start identification, assessment and, where relevant, disclosure of their nature-related issues as soon as possible. • Encourages increased disclosure over time. |

6. The approach to target setting and scenarios

6.1 New guidance on target setting

This release includes [new draft guidance on target setting](#) for organisations using the TNFD framework. This guidance aims to support organisations in undertaking component P2 of the LEAP approach, and recommended disclosure Metrics and Targets C.

This draft guidance document provides:

- A discussion of the considerations an organisation should take into account when setting targets for nature; and
- Target design features that can help ensure that targets best support an organisation's wider impact and risk management objectives.

The Taskforce recommends that when corporates applying the TNFD framework set targets for nature in relevant areas and measure performance against those targets, they set science-based targets for nature using the Science Based Targets Network (SBTN) framework. In setting targets, the Taskforce also encourages organisations to align with the TNFD disclosure metrics, the Global Biodiversity Framework's monitoring framework and other international treaties and global policy goals. The guidance provides illustrative examples of targets an organisation might set that would align with TNFD metrics and the Kunming-Montreal Global Biodiversity Framework (GBF).

The Taskforce and its knowledge partner the Science Based Targets Network (SBTN) published [joint guidance for corporates setting science-based targets for nature](#) in the beta v0.3. This will be updated later in 2023 based on the SBTN v1 publication, due in spring 2023.

6.2 New guidance on scenario analysis

Like the TCFD, the TNFD recognises the utility and importance of scenario analysis to help organisations develop and test the resilience of their organisation's strategy, given complex uncertainties. Scenario analysis allows organisations to explore the possible consequences of nature loss and climate change, the ways in which governments, markets and society might respond, and the implications of these uncertainties for business strategy and financial planning.

The Taskforce commissioned a market survey that reported that the majority of market participants found the application of scenario thinking to their climate-related risk management to be the most complex and challenging component of TCFD framework adoption.

Informed by this, the TNFD published a [discussion paper](#) in November 2022 outlining its proposed approach to scenario analysis. This v0.4 release includes new draft guidance, building on the feedback received from market participants.

Key insights from the Taskforce's early research on the use of scenarios and the experience with TCFD adoption are that:

- Most organisations do not have in-house capabilities to support the development and use of scenario thinking, and rely on the expertise and tools of other organisations; and
- Scenario considerations are necessarily different for corporates and financial institutions. Scenarios for financial institutions need to be grounded in central banks and regulators' macro-prudential models, given the significance of financial institutions for overall financial system stability and the use of stress testing by regulators.

In light of this, the TNFD's approach to scenario analysis has initially focused on guidance and tools for corporates. In parallel, the TNFD has explored possible scenario-based methods for approaches to risk quantification at a portfolio level for financial institutions.

The draft [scenarios guidance](#) published alongside v0.4 follows a toolbox approach, reflecting the need for flexibility and adaptability for different kinds of organisation. This includes a collection of user-oriented, practical tools, templates and techniques, in addition to general guidance.

The Taskforce welcomes further feedback and pilot testing of this draft guidance by 1 June 2023 to help ensure the guidance is practical and useful for market participants. The TNFD intends to extend and enhance the application of its scenarios approach to financial institutions in its final recommendations in September 2023 (v1.0), building on pilot testing and feedback from market participants.

7. Priority areas for final framework development

This v0.4 beta framework represents a full and final draft of the core elements of the TNFD framework. The Taskforce invites ongoing feedback from market participants and insights from pilot testing until 1 June 2023. It is on track to publish its final recommendations and v1.0 of the TNFD framework in September 2023.

The highest priorities for the Taskforce's work in the final phase of preparing its final recommendations for publication in September 2023 are:

- Further development of additional guidance by sector and biome, including the identification of core sector disclosure indicators and metrics;
- Continuing to collate, analyse and learn from feedback on the beta framework, including nearly 200 pilot tests;
- Development of case studies and use cases, including illustrative TNFD disclosures, to help users interpret and apply the framework by learning from practical examples;
- Refining the beta framework based on a review of audit and assurance considerations;
- Further development of the scenarios guidance and toolkit, to include financial institutions, based on insights from further pilot testing;
- Consideration of the need for TNFD guidance on transition plans, both for nature within net zero transition plans and transition plans to achieve nature positive goals and targets;
- Development of guidance on linkages between climate and nature, with a focus on how to practical insights for developing nature-related disclosures building from existing climate disclosures based on the TCFD framework.

8. Engage – Co-create the TNFD framework

The TNFD is grateful to all those who have provided feedback on the beta framework to date and invites market participants and other stakeholders to continue to provide feedback on this v0.4 beta version until **1 June 2023**. All feedback received before that deadline will be reviewed and evaluated to inform the final recommendations (v1.0) to be launched in September 2023.

The TNFD continues to invite market participants and other stakeholders to:

- **Explore the framework via the interactive portal:** The [TNFD framework site](#), which has been in place since March 2022, will continue to provide market participants with an interactive way to explore and engage with the beta framework and provide feedback through the portal.
- **Complete the feedback survey:** Explore the latest version of the beta framework on the TNFD online platform and complete the feedback survey at <https://framework.tnfd.global/provide-feedback/>
- **Participate in feedback focus groups:** The TNFD will convene focus group discussions with TNFD Forum members and pilot testers about key emerging themes of feedback, technical areas of the framework, and by geography and sector to engage further with feedback providers.
- **Provide formal comment letters:** The Taskforce is launching a formal consultation process from 30 March until 1 June 2023, through which organisations can submit written, published comment letters to the Taskforce. Comments received in this formal consultation will be made publicly available on the TNFD website, following the approach of international standards organisations. Market participants will have the option to disclose formal responses to the TNFD framework either as individuals or organisations. Feedback through the formal consultation can be provided here: <https://framework.tnfd.global/provide-feedback/public-consultation/>

Table 14: Timeline for releases and deadlines for feedback and the formal consultation process

| Release | Release date | Deadline for feedback on this release |
|--------------|----------------|--|
| v0.1 | March 2022 | - |
| v0.2 | June 2022 | - |
| v0.3 | November 2022 | - |
| v0.4 | 28 March 2023 | 1 June 2023 (deadline for both feedback surveys and formal comment letters) |
| v1.0 (final) | September 2023 | - |

9. Learn more

Explore the TNFD Knowledge Bank

The [TNFD Knowledge Bank](#) features a curated collection of the latest resources and insights on nature-related risks and opportunities from the market, governments, regulators and academia. Explore the Knowledge Bank to increase your understanding of why nature matters and how to integrate it into financial and corporate decision making. With this release, the reports and insights will also be available throughout the interactive TNFD framework site, allowing users to filter it by sector, geography and section of the TNFD framework. New content is added regularly and highlights are shared weekly via the TNFD's social media channels.

Join the TNFD Forum

The TNFD Forum is a global, multi-disciplinary consultative group of institutions aligned with the mission and principles of the TNFD. It currently has over 1000 members. Membership of the Forum is open to a broad range of institutional types including corporates, financial institutions, public sector institutions, regulators, pension funds and sovereign wealth funds, academic and research organisations, business associations, intergovernmental organisations, and conservation and civil society organisations. Institutions interested in joining the Forum should express their interest by completing [this form](#).

Organisations within the TNFD Forum are able to attend a series of webinars and clinics hosted by the TNFD Secretariat, in addition to participating in national and regional [TNFD Consultation Groups](#) and the [Nature-related Data Catalyst](#).

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