



**Taskforce on Nature-related
Financial Disclosures**

Beta framework

The TNFD Nature-related Risk and Opportunity Management and Disclosure Framework

Beta v0.3

November 2022

framework.tnfd.global

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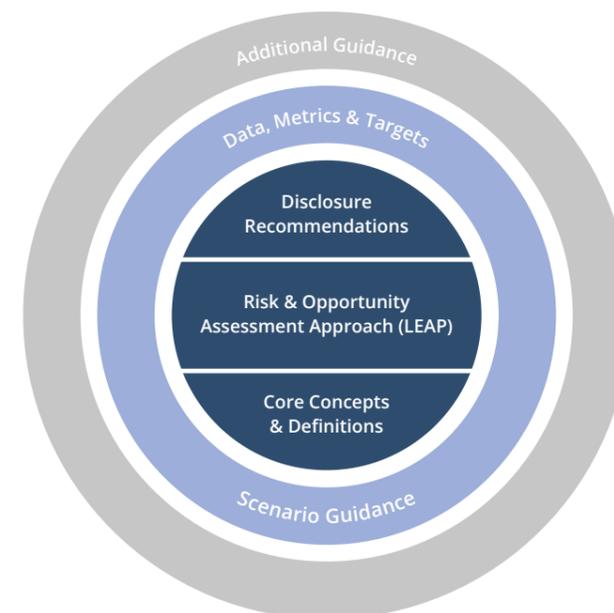
Summary

Version 0.3 of the TNFD beta framework for risk management and disclosure incorporates a number of important modifications and additions, based on continued design by the Taskforce and feedback on v0.2.

While remaining consistent with the approach, structure and language of the Task Force on Climate-related Financial Disclosures (TCFD), v0.3 of the TNFD beta framework:

- helps drive **alignment** with the emerging global reporting baseline under development by the ISSB and best practice standards and tools already in use by market participants today;
- provides **adaptability and flexibility** regarding the approach to materiality to accommodate the preferences and regulatory requirements of report preparers and report users from organisations of all sizes and across all jurisdictions;
- encourages early **action** by companies and financial institutions to begin reporting nature-related dependencies, impacts, risks and opportunities, given the urgent need to address both nature loss and climate change in an integrated approach; and
- provides a structured path to increase disclosure **ambition** over time, recognising that this area is new to many organisations, but a rapidly growing strategic imperative for sound governance, strategy, risk management and capital allocation.

This version 0.3 update to the beta framework incorporates a number of important modifications and additions aligned with these aims. The TNFD framework's core components remains unchanged and consistent with that of v0.2 of the beta framework and the Taskforce expects it to remain unchanged in future update releases.



The most substantial updates in v0.3 of the TNFD beta framework are the approach to disclosure and the usability of LEAP. Alongside the beta framework, the Taskforce publishes discussion papers on its approach to scenario analysis and the societal dimensions of nature-related risk management and disclosure.

Disclosure recommendations

As outlined in earlier versions of the beta framework, the Taskforce's approach to the design and development of the framework was to start by building on the disclosure approach and guidance already developed by the TCFD. Having identified those TCFD disclosures that need further adaptation to work for nature, the TNFD provided initial guidance on some of this adaptation in v0.2 and is now providing new guidance on other aspects of this adaptation in v0.3:

- a proposed adaptation of the TCFD Metrics & Targets B recommended disclosure. This expands coverage of dependencies and impacts on nature in the TNFD draft disclosure recommendations.
- a proposed addition of 'nature-related dependencies and impacts' alongside 'risks and opportunities' in a number of the other draft disclosure recommendations for coherence and consistency.
- three new proposed draft recommended disclosures, given the specific characteristics of nature-related dependencies, impacts, risks and opportunities: traceability, the quality of stakeholder, including rights-holder, engagement; and the alignment of climate and nature targets, given the growing importance of integrated transition planning to achieve both net zero and nature positive goals in tandem.

Approach to materiality

As the developer of a framework for practical application by market participants, the Taskforce is guided by a core design principle and goal that the TNFD framework should be applicable to, and used by, corporates and financial institutions of different sizes, across sectors and jurisdictions, irrespective of their preferred or required approach to materiality.

The modifications and additions included in this v0.3 update of the beta framework, including the new draft disclosures on dependencies and impacts on nature, are consistent with that approach. Together with the previously released draft disclosures on risks and opportunities aligned with the approach and language of TCFD, v0.3 of the TNFD beta framework now provides a full spectrum of recommended disclosures to support the reporting preferences and compliance requirements of report preparers everywhere.

The TNFD is developing a flexible approach to adoption of recommended disclosures that will likely distinguish between 'core' disclosures that constitute a baseline of TNFD adoption and additional disclosure recommendations that represent 'enhanced' disclosure.

The objectives of these revisions are to ensure the framework is relevant and usable to corporates and financial institutions everywhere, accommodates different preferred or required approaches to materiality and encourages increasing ambition in disclosure over time.

As part of v0.3 of the beta framework, the Taskforce also publishes additional disclosure guidance for financial institutions.

The LEAP approach to risk and opportunity assessment

Based on market feedback and ongoing pilot testing of the LEAP approach, v0.3 of the beta framework sets out a streamlined LEAP approach, with the ultimate objective that corporates and financial institutions will be able to incorporate LEAP into their existing enterprise or portfolio risk management systems.

In particular, the Taskforce has:

- streamlined the Assess phase on nature-related risk and opportunities
- published further guidance on the Assess phase, including relevant illustrative metrics
- published a hypothetical case study in the aquaculture sector that covers all phases of LEAP.

The Taskforce is also publishing additional guidance on setting science-based targets for nature, developed with the Science Based Targets Network (SBTN).

Discussion papers: scenario analysis and societal dimensions

Two discussion papers – on scenario analysis and societal considerations in nature-related risk management and disclosure – have also been included in this release to highlight the Taskforce's initial thinking on these aspects of framework development and to invite further feedback from market participants and other stakeholders.

Next steps: priority areas for v0.4

The Taskforce intends to release its final and complete v0.4 beta framework in March 2023. This will include: additional modifications to the draft disclosure recommendations; the proposed approach to disclosure metrics, draft guidance on scenarios; and draft additional guidance on priority sectors and biomes. It will also build on relevant aspects of the Global Biodiversity Framework to be agreed at the Convention on Biological Diversity (CBD) COP-15 meeting in Montreal in December 2022.

1. Introducing v0.3 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. 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.

To achieve these outcomes, the Taskforce resolved at its first meeting in October 2021 that the TNFD risk management and disclosure framework should be applicable to, and used by, business and financial institutions of different sizes, across sectors and jurisdictions, irrespective of their preferred or required approach to materiality. Halting and reversing nature loss, achieving nature-positive outcomes and mitigating and managing nature-related risks will only be possible if large and small businesses across supply chains and financial institutions of all types are collectively identifying, assessing, managing and disclosing nature-related dependencies, impacts, risks and opportunities.

The Taskforce is now half-way through its two-year phase of design of the TNFD framework. The TNFD's complete recommendations (v1.0) will be published in September 2023 for market adoption. As it continues to develop the framework with the support and input of a wide range of knowledge partners and stakeholders, the Taskforce aims to:

- Help drive **alignment** with the emerging global reporting baseline under development by the ISSB and best practice standards and tools already in use by market participants today;
- Provide **adaptability and flexibility** regarding the approach to materiality to accommodate the preferences and regulatory requirements of report preparers and report users from organisations of all sizes and across all jurisdictions;
- Encourage early **action** by companies and financial institutions to begin reporting nature-related dependencies, impacts, risks and opportunities, given the urgent need to address both nature loss and climate change in an integrated approach; and
- Provide a structured path to increase disclosure **ambition** over time, recognising that this area is new to many organisations, but a rapidly growing strategic imperative for sound governance, strategy, risk management and capital allocation.

The TNFD aims to build a risk management and disclosure framework that can be used by organisations of all sizes in all jurisdictions to identify, assess, manage and disclose nature-related dependencies, impacts, risks and opportunities.

The Taskforce is made up of [34 senior executives](#) drawn from corporates, financial institutions and market intermediaries around the world and led by the TNFD Co-Chairs, Elizabeth Mrema and David Craig. Collectively, the Taskforce Members represent institutions with over US\$19.4 trillion in assets under management and a footprint in over 180 countries. The Taskforce is supported by a larger institutional support base, [the TNFD Forum](#), consisting of over 700 organisations globally, and a network of [16 core knowledge partners](#), including leading global scientific, conservation and standards development bodies, which are actively contributing to the 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. This involves the release of a series of prototypes, called 'beta versions' of the TNFD framework, for feedback and pilot testing with market participants and other stakeholders (see Box 1). The TNFD beta framework has been viewed over 60,000 times by stakeholders in over 140 countries since the release of v0.1 in March 2022.

Following this release of v0.3 of the TNFD beta framework, the Taskforce will release v0.4 in March 2023, before the launch of the complete recommendations (v1.0) of the TNFD framework in September 2023 (see Figure 1 below).

The TNFD's open innovation approach has attracted the engagement and feedback of market participants and other stakeholders through a range of channels (see Box 1 for more details):

- The [online TNFD framework platform](#), including feedback forms and interactive rating functionalities;
- Over 130 pilot tests of the beta framework now underway;
- Dedicated engagement with different stakeholder groups, including with Indigenous Peoples and Local Communities (IPLCs) and ongoing dialogue with a range of civil society organisations;
- TNFD Consultation Groups established in nine countries and regions;
- The [Nature-related Data Catalyst](#), which now includes over 100 nature-related data providers; and
- Group meetings, presentations and webinars globally with a wide range of stakeholders, including policy makers, regulators, business and finance industry associations, other sustainable finance initiatives, and conservation groups.

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 and the forthcoming v0.4 beta version of the TNFD beta framework through the TNFD framework [online platform](#).

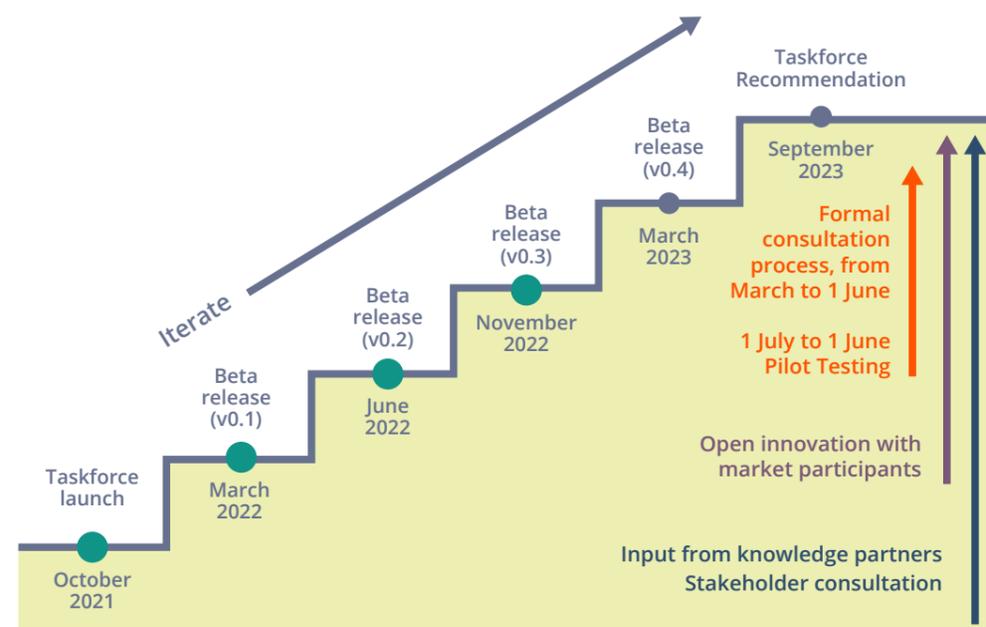
The TNFD will accept feedback on a rolling basis until 1 June 2023. However, for feedback on v0.3 of the beta framework to be evaluated ahead of the final v0.4 beta release in March 2023, feedback must be received by 14 February 2023. All feedback on all beta versions of the framework, irrespective of when it is provided, will be reviewed and evaluated before the Taskforce launches v1.0 of the TNFD framework in September 2023.

In March 2023, the TNFD will conclude its open innovation process with a 60-day formal consultation where organisations can submit responses to a full draft of the beta framework (v0.4). The Taskforce will consider all feedback received to inform its complete framework for publication in September 2023. Comment letters received in this formal consultation will be published on the TNFD website, following the approach of international standards organisations.

The TNFD beta framework is open for feedback until 1 June 2023, ahead of the Taskforce publishing its complete recommendations (v1.0) of the TNFD framework in September 2023. The deadline for providing feedback to inform the v0.4 release is 14 February 2023, and should be submitted via the feedback survey on the online platform.

In March 2023, TNFD will establish a 60-day formal consultation where organisations can submit responses to a full draft of the beta framework (v0.4).

Figure 1: TNFD timeline



BOX 1: Updates on the TNFD's consultation and engagement efforts

The TNFD continues to build its consultation and engagement efforts to collect feedback from market participants across a range of countries and sectors, and a variety of stakeholders and rights-holders.

Pilot testing

Approximately 130 organisations are currently designing, implementing or have completed a pilot test of the TNFD beta framework to explore its application in their organisational context. This includes 54 corporates, 72 financial institutions and 13 other organisations (including public sector and civil society organisations, and market service providers). In addition, a further 60 organisations have expressed interest in running a pilot. So far, 46 pilots have already provided the TNFD with feedback based on their experience. Organisations such as Kirin¹ and AXA² have also shared the findings from pilot tests publicly in external reports.

Overall, the pilots vary widely in terms of their type, scope and applied resources. In addition to independent pilot tests, organisations are pilot testing through the TNFD's pilot programme partners: Agence Française de Développement (AFD), Global Canopy, FSD Africa, via the African Natural Capital Finance Alliance (ANCA), the International Council on Mining and Metals (ICMM) the United Nations Environment Programme Finance Initiative (UNEP-FI) and the World Business Council on Sustainable Development (WBCSD).

Further information on the break-down of pilots by region, sector, realm, biome and organisation type is available on the framework online platform.

The TNFD is working actively to fill existing gaps in coverage of pilots: for financial institutions in North America, Island States and Central and Western Asia; for corporates in Central America and Africa; in priority sectors of fisheries and aquaculture, textiles and apparel, pharmaceuticals, industrials, marine transportation and chemicals; and in the ocean realm and blue economy.

Organisations interested in pilot testing the framework are invited to contact the TNFD Secretariat at pilots@tnfd.global. For TNFD Forum member institutions, monthly TNFD pilot testing clinics provide additional guidance and enable piloting organisations to share insights and lessons from their piloting experience. Over 900 individuals have engaged in the first two pilot testing clinics held in September and October 2022.

(box continued over page)

¹ Kirin (2022) Environmental report [Japanese]; Kirin (2022) Environmental report – executive summary [English]

² AXA. 2022. Climate and Biodiversity Report.

The [TNFD Piloting Guide](#) sets out more information on why and how to pilot test.

The Taskforce invites all piloting organisations to complete the [TNFD pilot classification form](#) to ensure the TNFD has a full view of the diversity of pilot tests and where piloting gaps still exist.

Engagement with Civil Society, Indigenous Peoples and Local Communities

To ensure the voices and perspectives of civil society organisations and Indigenous Peoples and Local Communities (IPLCs) are incorporated into the design and development of the TNFD framework, the TNFD is partnering with the International Union for Conservation of Nature (IUCN) to engage with a wide range of Indigenous Peoples and Local Communities through IUCN's global networks and relationships. The TNFD is meeting bi-monthly with IPLC leaders and organisations across five continents, as well as with a range of civil society organisations to gather feedback on the beta framework. These meetings have included, for example, a briefing to the caucus of the International Indigenous Forum on Biodiversity (IIFB) and bilateral sessions with organisations working on social dimensions of nature-related issues. The TNFD is also exploring additional initiatives to encourage pilot testing in biodiversity hotspots and emerging markets, and pilot tests with Indigenous community enterprises.

As part of this v0.3 beta release, the TNFD has published a discussion paper on 'Societal dimensions of nature-related risk management and disclosure – Considerations for the TNFD framework'. This reflects the feedback received by the Taskforce to date and seeks additional feedback from stakeholders, including rights-holders, as the Taskforce continues to evaluate the social dimensions of the framework under development.

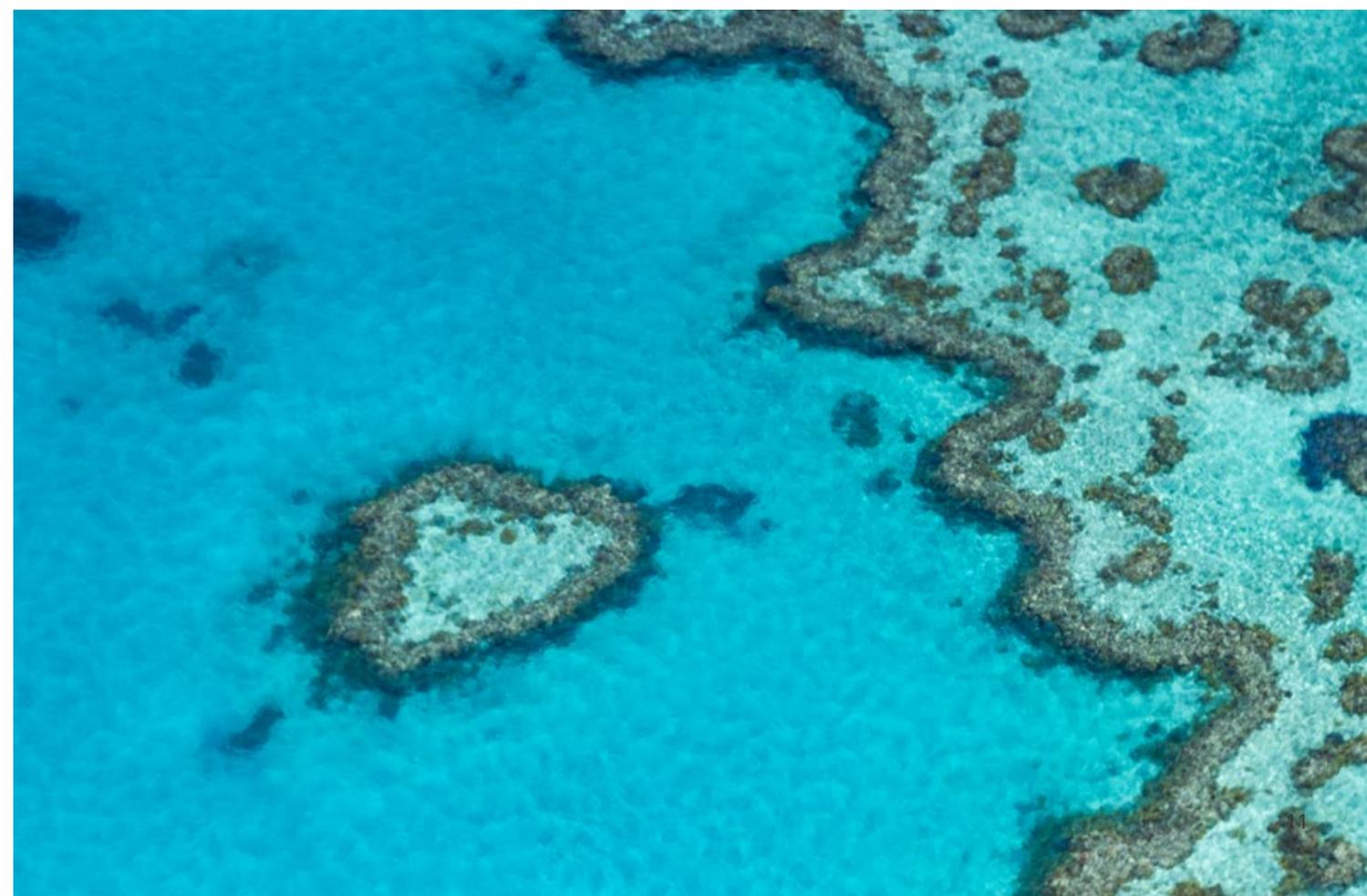
Regional and national Consultation Groups

To increase outreach and engagement in markets where there has been particularly strong interest, TNFD Consultation Groups have been established at a national or regional level. Participation in Consultation Groups is open to all institutional members of the TNFD Forum from that jurisdiction. An initial six Consultation Groups were established in May 2022 for Australia and New Zealand, India, Japan, the Netherlands, Switzerland and the United Kingdom.

Three additional Consultation Groups have subsequently been established in Brazil, Colombia and France. The Consultation Groups are designed to help amplify awareness of the TNFD framework in development and provide a platform for national and regional dialogue on its future adoption across business and finance.

Nature-related Data Catalyst

Building on the TNFD's [Nature-related Data and Analytics Discussion Paper](#) released 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 goal of the Data Catalyst is to address shortcomings in the current landscape of nature-related data, while also identifying and encouraging the development of – and access to – nature-related data, analytics and tools. The ultimate goal is to improve the ease, speed and scale of adoption of the TNFD framework, once the Taskforce launches its complete recommendations and framework in September 2023. The Nature-related Data Catalyst now has over 100 members.



1.2. Updates in v0.3 of the beta framework

This version 0.3 update to the beta framework incorporates a number of important modifications and additions aligned with these aims. The TNFD framework's core components are shown in Figure 2. This structure remains unchanged and consistent with that of v0.2 of the beta framework and the Taskforce expects it to remain unchanged in future update releases.

In v0.3, substantial revisions, enhancements and additions have been made to these components, as shown in Figure 2. These changes are based on ongoing research and development by the Taskforce through Working Groups and feedback from a range of market participants and other stakeholders. An overview of the most substantial updates to the beta framework – the approach to reporting and disclosure and the usability of LEAP – are summarised in this introductory section, alongside a summary of two new TNFD discussion papers, on the TNFD's approach to scenario analysis and the social dimensions of nature-related risk management and disclosures.

Figure 2: Updates to the TNFD beta framework in v0.3

Disclosure Recommendations

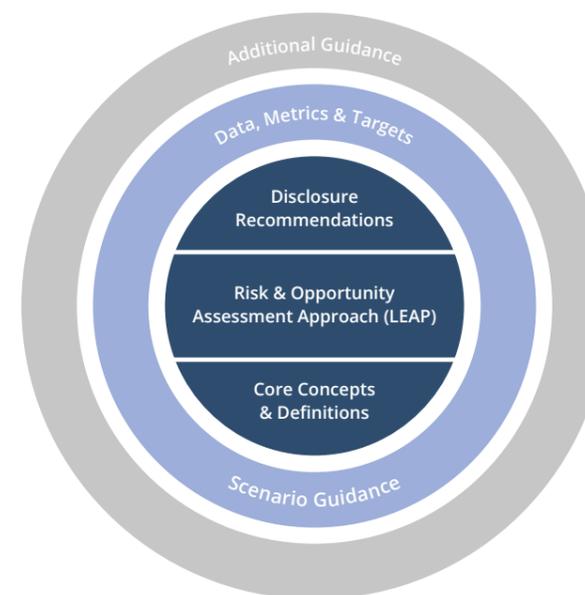
- ✓ Adaptation of Metrics & Targets B
- ✓ Inclusion of 'dependencies & impacts' alongside 'risks & opportunities' in several recommended disclosures
- ✓ Three new draft disclosures - on traceability, stakeholder, inc. rights-holder, engagement and alignment of climate and nature targets

LEAP Approach

- ✓ 'Scoping' preparation guidance for corporates
- ✓ Updated guidance for 'Evaluate' phase in impact mitigation & positive impacts
- ✓ Streamlined 'Assess' phase components and guidance
- ✓ Language change to recognise engagement with rights-holders

Core Concepts & Definitions, relating to:

- ✓ Nature-related risks
- ✓ Nature-related opportunities
- ✓ Targets
- ✓ New language in revised disclosure recommendations and LEAP



Additional Guidance

- ✓ Draft disclosure guidance for financial institutions
- ✓ Update on approach to sector and biome guidance
- 🔍 Discussion paper on societal dimensions of nature-related risk management and disclosure
- ✓ Hypothetical case study for aquaculture
- ✓ Tools Catalogue (online platform)
- ✓ Risk and opportunity registers
- ✓ Updated glossary and 'Understanding Nature' section (online platform)

Data, Metrics & Targets

- ✓ Guidance on science-based targets for nature (co-developed with SBTN)
- ✓ Illustrative risk and opportunity assessment metrics

Scenario Guidance

- 🔍 Discussion paper on the TNFD's proposed approach to scenario analysis
- ✓ Draft Guidance
- 🔍 Discussion Paper

Approach to disclosure

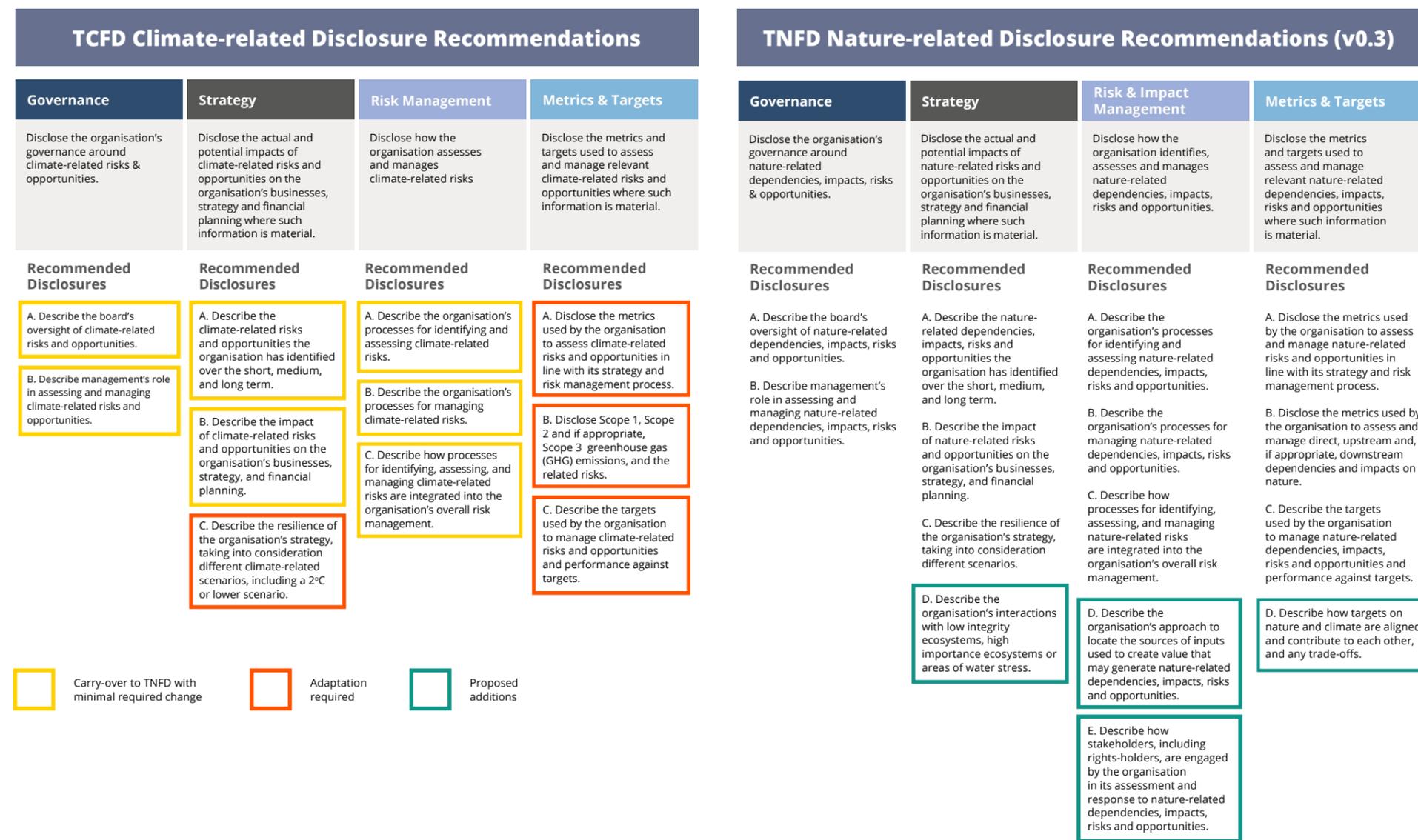
As outlined in earlier versions of the beta framework, the Taskforce’s approach to the design and development of the framework was to start by building on the disclosure approach and guidance already developed by the TCFD. Market participants have been clear in their feedback to the TNFD that consistency of approach and language is essential to support early market adoption of a risk management and disclosure framework for nature-related risks and to help move to integrated sustainability disclosures over time that cover both climate and nature.

As explained and reflected in v0.1 and v0.2 of the beta framework, the Taskforce has therefore worked ‘outwards’ from the TCFD guidance in a structured, sequential design and development approach with three guiding questions in mind:

1. 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 disclosures?
2. Which of the TCFD recommended disclosures remain relevant but need some *adaptation* to the nature context?
3. What *additional* disclosures might be warranted and should be considered by the TNFD, given the particular characteristics of nature-related impacts, dependencies, risks and opportunities?

As highlighted in v0.1 of the beta framework, the Taskforce determined that seven of the 11 TCFD disclosure recommendations should be carried over with minimal changes (yellow) and the remaining four required some level of reconsideration and adaptation from a climate to a nature context (orange) – see Figure 3.

Figure 3: TNFD alignment with TCFD disclosure recommendations



Having identified those TCFD disclosures that need further adaptation (in red), the TNFD provided initial guidance on some of this adaptation in v0.2 and is now providing new guidance on other aspects of this adaptation in v0.3. Notably, this includes the Taskforce's proposed adaptation of Metrics & Targets B to incorporate disclosure on 'impacts on nature', replacing the TCFD's focus on the equivalent 'impact on climate' disclosure (i.e. greenhouse gas emissions-related disclosure).

v0.3 of the beta framework also proposes three additional disclosures, beyond those in the TCFD guidance: one on traceability; one on the quality of stakeholder, including rights-holder, engagement; and a third on the alignment of the organisation's climate and nature targets (Alongside the new disclosure Strategy D introduced in v0.1, these three proposed new disclosures are highlighted in green). Crucially, the Taskforce believes these proposed additional disclosures are *additive* to those in the TCFD guidance, with a view to encouraging further movement towards integrated (TCFD+TNFD) sustainability disclosures by market participants as soon as possible.

These issues have been the focus of much of the feedback and interest received by the Taskforce over the past year (see Annex summarising feedback on v0.2).

Approach to materiality

The TNFD's approach to materiality has been a topic of significant ongoing interest among market participants and other stakeholders since the TNFD launched. The 'Nature in Scope' document published by the TNFD Informal Working Group prior to the formation of the Taskforce itself recommended that 'organisations should disclose not just how nature may (positively or negatively) impact the organisation's immediate financial performance ("outside in"), but also how the organisation (positively or negatively) impacts nature ("inside out").³ The draft disclosure recommendations outlined in the first two versions of the beta framework referred to 'risks and opportunities', reflecting the Taskforce's decisions to build from the approach and language of the TCFD. The Taskforce also indicated it would consider an appropriate adaptation of the TCFD Metrics & Target B disclosure, particularly given the need to identify 'impacts on nature' and the concept of 'scopes' in the nature context.

At the same time, there has been much ongoing debate among market participants, regulators and other stakeholders around the concept of materiality and its practical application in the context of sustainability standards and disclosure. Some of the most frequently cited materiality concepts under discussion are highlighted in Box 2. The TNFD is continuing to follow these debates closely.

Box 2: Materiality definitions

Debates on materiality continue to evolve with a number of related definitions:

- 'single materiality' focused only on risk to the enterprise value of a business;
- 'double materiality' or 'dual materiality', as advanced by European policy makers and regulators, incorporating a focus on impacts and risks to climate and nature as well as the enterprise;
- 'dynamic materiality', referenced by a number of the standards bodies now incorporated into the International Sustainability Standards Board (ISSB), the World Economic Forum and others, emphasising that material issues are dynamic and change over time; and
- 'societal materiality' used by the Science Based Targets Network (SBTN), emphasising an obligation to contribute to social outcomes beyond what might be required by regulation.

As the developer of a framework for practical application by market participants, the Taskforce is guided by a core design principle and goal that the TNFD framework should be applicable to, and used by, corporates and financial institutions of different sizes, across sectors and jurisdictions, irrespective of their preferred or required approach to materiality. The modifications and additions included in this v0.3 update of the beta framework, including the new draft disclosures on dependencies and impacts on nature, are consistent with that approach. Together with the previously released draft disclosures on risks and opportunities aligned with the approach and language of TCFD, v0.3 of the TNFD beta framework now provides a full spectrum of recommended disclosures to support the reporting preferences and compliance requirements of report users everywhere.

The Taskforce is guided by a core design principle and goal that the TNFD framework should be applicable to, and used by, business and financial institutions of different sizes, across sectors and jurisdictions, irrespective of their preferred or required approach to materiality.

As also set out in v0.1 and v0.2 of the beta framework, the TNFD framework is designed to be applicable to meet both the emerging global baseline being developed by the ISSB, and the approaches of specific jurisdictions and the ambitions of individual preparers, which may go beyond these requirements.

³ TNFD Informal Working Group, June 2021. TNFD Proposed Technical Scope – Recommendations for the TNFD.

The Taskforce is continuing to identify and shortlist the specific disclosure metrics to operationalise its draft disclosure recommendations and will release its proposed disclosure metrics in v0.4 of the framework in March 2023.

To facilitate the applicability and uptake of the complete set of TNFD disclosure recommendations when released for market adoption in September 2023, the Taskforce is working on a mechanism to encourage the flexible application of the TNFD disclosure recommendations, so that market participants can start disclosing as soon as v1.0 of the framework is released for market adoption, and increase their disclosure ambition over time.

To do this, the Taskforce is exploring an adaptable approach to the application of the framework that could be subject to independent audit. This will likely centre around distinguishing between:

1. use of a 'core' set of TNFD disclosure requirements that constitute a baseline of TNFD adoption; and
2. use of additional disclosure recommendations that would represent 'enhanced' disclosure, depending on the type and size of the disclosing organisation.

Over time, the TNFD would encourage all report preparers to increase disclosure ambition by moving from 'core' to 'enhanced' disclosures. Among other benefits, this adaptable approach would provide flexibility among organisations with differing reporting requirements and capabilities, such as a globally significant financial institution or major global corporation and a small or medium size forestry enterprise in an emerging market economy.

The Taskforce is continuing to evaluate an adaptable application approach to the use of its disclosure recommendations and will provide further details on the proposed approach in v0.4 of the beta framework in March 2023.

In short, the combination of a spectrum of recommended disclosures covering nature-related dependencies, impacts, risks and opportunities, and a flexible application approach, depending on the type and size of the disclosing organisation, will help to ensure the broad relevance and usability of the TNFD framework to corporates and financial institutions everywhere and accommodate their preferred or required approach to materiality.

Given the critical and urgent necessity for corporates and financial institutions to identify, assess, manage and disclose their nature-related dependencies, impacts, risks and opportunities, the TNFD is looking to enable rapid and broad voluntary adoption.

Usability of the LEAP approach to risk and opportunity assessment

Since the release of v0.2 of the beta framework, the Taskforce has received close to 500 feedback submissions and pilot testing the beta framework by a wide range of organisations has begun. The response from market participants has been strong, with over 130 pilot tests now planned, being scoped or underway, as outlined above. Much of the feedback and ongoing pilot testing is focused on the application of the LEAP approach. The feedback received to date has already provided input on how to streamline the LEAP approach and make it easier to use. The ultimate objective is that corporates and financial institutions will be able to incorporate LEAP into their existing enterprise or portfolio risk management systems.

To that end, in v0.3 of the beta framework, the Taskforce has streamlined the Assess phase on nature-related risk and opportunities, published further guidance on the Assess phase including relevant illustrative metrics, and published a hypothetical case study in the aquaculture sector that covers all phases of LEAP.

Approach to scenarios

Like the TCFD, the TNFD recognises the utility of scenario analysis to help organisations navigate a complex set of interconnected uncertainties. Scenario analysis allows organisations to explore the possible consequences of climate change and nature loss, the ways in which governments, markets and society might respond, and the implications of these uncertainties for business strategy and financial planning.

Nevertheless, a survey of TNFD Forum members confirmed that most market participants have either found the application of climate-related scenario analysis very difficult or have not yet attempted to use scenarios to inform their strategy, risk management and capital allocation decisions.

As a result, the Taskforce is also releasing, alongside v0.3 of the beta framework, a discussion paper on the TNFD's proposed approach to scenario analysis. In this discussion paper, the TNFD has set out its proposed approach to the use of scenarios and scenario analysis to support application of the TNFD framework. The TNFD seeks feedback on the discussion paper to help ensure that the approach in its complete framework and related guidance is practical and useful for market participants.

The TNFD defines a scenario as a story that describes a plausible future.⁴ It identifies some significant events, the main actors and their motivations, and how the world functions in this plausible future. Since the TNFD defines nature to include the atmosphere, and therefore the climate system, and is building on existing TCFD-aligned market practice and macro-prudential use of climate scenarios, the TNFD aims to work towards an approach to scenario analysis that fully integrates considerations of climate and nature.

⁴ TNFD's definition of a scenario builds on Shell's extensive work in scenarios with the private sector. Shell International BV. (2008) Scenarios: An Explorer's Guide.

The TNFD will use the approach outlined in its discussion paper as the basis for a set of pilot tests, focusing initially on use by corporates to improve decision-making. Drawing on insights from applying the proposed approach in practice in these pilot tests and feedback from market participants, the TNFD aims to develop draft scenarios guidance in v0.4 of the beta framework in March 2023 and further refine this guidance for the v1.0 framework in September 2023. As part of the next phase of work, the TNFD will develop and adapt its approach to scenario analysis for financial institutions.

The Taskforce looks forward to feedback from market participants on the proposed approach to scenario analysis and will undertake pilot testing and issue draft guidance on scenarios in the v0.4 beta release in March 2023.

Approach to societal dimensions of nature-related risk assessment and disclosure

Recognising that the impacts and dependencies on nature of an organisation are location-specific and inextricably linked to society and local communities, the Taskforce is also considering societal dimensions of nature-related risk management and disclosure. Following the release of v0.2 of the beta framework, the Taskforce commenced a process of engagement with a range of stakeholders, including leaders of Indigenous Peoples and Local Communities (IPLCs) and consultations with a range of civil society organisations (CSOs). These groups have provided valuable perspectives and considerable feedback to the Taskforce and this dialogue will continue throughout the remainder of the open innovation process through to June 2023.

Building on these early discussions and feedback, the Taskforce has made several modifications and additions to the LEAP approach and the draft disclosure recommendations, as outlined above and further detailed below. It also publishes a discussion paper on 'Societal dimensions of nature-related risk management and disclosure – Considerations for the TNFD framework' alongside this v0.3 of the beta framework.

The discussion paper outlines the specific points of feedback received to date and sets out a series of important and interrelated dimensions of relevance to the TNFD beta framework. The Taskforce looks forward to further input on these topics as it continues to assess how to incorporate societal considerations into the TNFD framework. Draft guidance on engagement with stakeholders, including rights-holders, is planned for the v0.4 release in March 2023.

2. Draft disclosure recommendations

As outlined in Section 1, the TNFD is developing two features that together enable adaptable application of the framework by report preparers that aligns at a minimum with the global reporting baseline under development by the ISSB and accommodates the materiality preferences or regulatory requirements of individual report preparers:

1. A full spectrum of dependency, impact, risk and opportunity recommended disclosures, aligned to the four TCFD reporting pillars of Governance, Strategy, Risk Management and Metrics & Targets; and
2. A flexible 'core/enhanced' approach (to be outlined in the v0.4 release in March 2023) to the application of the disclosure recommendations, encouraging early adoption and increasing disclosure ambition over time.

2.1. Revised draft disclosures

Building on the 12 draft disclosure recommendations set out in v0.2 beta framework, this v0.3 release includes the following modifications and additions:

Modification/addition to disclosure recommendations	TNFD priorities for future work
<p>Revised language for the third pillar of the TNFD disclosure recommendations to ‘Risk and Impact Management’ (changed from the initial TCFD language “Risk Management”).</p> <p>This revised language is being proposed by the TNFD to incorporate disclosure of nature-related impacts and dependencies, alongside the nature-related risks and opportunities that arise from those dependencies and impacts on nature.</p>	N/A
<p>A new recommended disclosure on traceability under the ‘Risk and Impact Management’ pillar, which recommends that organisations ‘describe the organisation’s approach to locate the sources of inputs used to create value that may generate nature-related dependencies, impacts, risks and opportunities.’ Traceability refers to having transparent, accurate and complete data for the organisation to understand critical sourcing locations along the value chain in order to trace and manage nature-related dependencies, impacts, risks and opportunities.</p>	<ul style="list-style-type: none"> • <i>Implementing guidance for this disclosure recommendation.</i> • <i>Further guidance on the Locate and Evaluate phases of LEAP along the value chain, including upstream and downstream.</i>
<p>A new recommended disclosure on stakeholder, including rights-holder, engagement under the ‘Risk and Impact Management’ pillar, which recommends that organisations ‘describe how stakeholders, including rights-holders, are engaged by the organisation in its assessment and response to nature-related dependencies, impacts, risks and opportunities.’</p>	<ul style="list-style-type: none"> • <i>Implementing guidance for this disclosure recommendation.</i> • <i>This will be informed by feedback on the social considerations discussion paper and ongoing dialogue with IPLCs and a range of stakeholders.</i>

Table continued

Modification/addition to disclosure recommendations	TNFD priorities for future work
<p>Adaptation of the TCFD Metrics and Targets B disclosure (on emissions) to reflect dependencies and impacts on nature, which recommends that organisations ‘describe the metrics used by the organisation to assess and manage direct, upstream and, if appropriate, downstream dependencies and impacts on nature.’</p>	<ul style="list-style-type: none"> • <i>A set of Disclosure Metrics related to dependencies and impacts on nature.</i> • <i>In the complete v1.0 TNFD disclosure recommendations, this will be referred to as ‘Annex 2 – recommended metrics for disclosure of dependencies and impacts on nature’. The Taskforce proposes this Disclosure Metrics Annex 2 is organised around impact drivers (both positive and negative), by the five drivers of nature change, and the four nature realms.</i> • <i>This will complement ‘Annex 1 – recommended metrics for nature-related risks and opportunities’ for the Metrics and Targets A disclosure.</i>
<p>A new recommended disclosure on the degree of alignment between an organisation’s climate and nature-related targets, under the ‘Metrics and Targets’ pillar, which recommends that organisations ‘describe how targets on nature and climate contribute to each other, and any tradeoffs.’</p> <p>This will help report users understand the robustness of an organisation’s integrated transition pathway and plan, aligned to both global net zero and nature positive goals.</p>	<ul style="list-style-type: none"> • <i>Implementing guidance for this disclosure recommendation.</i> • <i>This will be informed by the TNFD’s further work on target-setting.</i>

Figure 4: The TNFD's revised draft disclosure recommendations

Governance	Strategy	Risk & Impact Management	Metrics & Targets
<p>Disclose the organisation's governance around nature-related dependencies, impacts, risks & opportunities.</p>	<p>Disclose the actual and potential impacts of nature-related risks and opportunities on the organisation's businesses, strategy and financial planning where such information is material.</p>	<p>Disclose how the organisation identifies, assesses and manages 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>Recommended Disclosures</p>	<p>Recommended Disclosures</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>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 impact of nature-related risks and opportunities on the organisation's businesses, strategy, and financial planning.</p> <p>C. Describe the resilience of the organisation's strategy, taking into consideration different scenarios.</p> <p>D. Describe the organisation's interactions with low integrity ecosystems, high importance ecosystems or areas of water stress.</p>	<p>A. Describe the organisation's processes for identifying and assessing nature-related dependencies, impacts, risks and opportunities.</p> <p>B. Describe the organisation's processes for managing nature-related dependencies, impacts, risks and opportunities.</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 the organisation's approach to locate the sources of inputs used to create value that may generate nature-related dependencies, impacts, risks and opportunities.</p> <p>E. Describe how stakeholders, including rights-holders, are engaged by the organisation in its assessment and response to nature-related dependencies, impacts, risks and opportunities.</p>	<p>A. Disclose the metrics used by the organisation to assess and manage 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 direct, upstream and, if appropriate, downstream dependencies and impacts on nature.</p> <p>C. Describe the targets used by the organisation to manage nature-related dependencies, impacts, risks and opportunities and performance against targets.</p> <p>D. Describe how targets on nature and climate are aligned and contribute to each other, and any trade-offs.</p>

NOTE: The TNFD is developing an adaptable approach to adoption of recommended disclosures that will likely distinguish between 'core' disclosures that constitute a baseline of TNFD adoption and additional disclosure recommendations that represent 'enhanced' disclosure.

Disclosure Metrics

For v0.4 of the beta framework, the TNFD will develop two ‘Annexes’ on Disclosure Metrics for implementation of two disclosure recommendations:

- Metrics and Targets A: Annex 1 – relating to Disclosure Metrics for nature-related risks and opportunities; and
- Metrics Targets B: Annex 2 – relating to Disclosure Metrics for impacts and dependencies on nature.

The Taskforce proposes to centre Annex 2 on Disclosure Metrics for impact drivers, organised by:

- The TNFD five drivers of nature change, adapted from IPBES, to reflect drivers of both positive and negative impacts on nature: land/ocean/freshwater use change; climate change; resource use / replenishment; pollution / pollution removal; invasive alien species introduction / removal; and
- the TNFD four realms (ocean, freshwater, land and atmosphere).

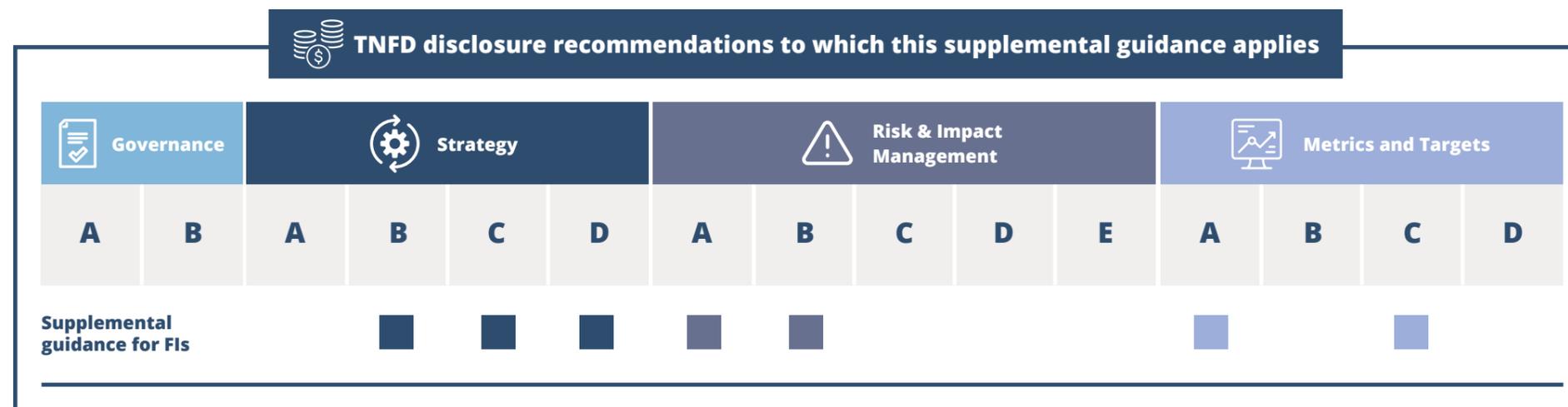
2.2. Additional disclosure guidance for financial institutions

In v0.3, the TNFD has developed additional guidance for financial institutions to apply the TNFD draft disclosure recommendations. The guidance is applicable to all financial services industries prioritised by the TNFD (as defined in the v0.2 beta release):

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

The draft guidance is provided in full in Annex 3.3.

Figure 5: Overview of TNFD’s additional disclosure guidance for financial institutions



The TNFD has also developed a set of illustrative Assessment and Disclosure Metrics for financial institutions, provided in Annex 3.4. The draft financial institution metrics are comprised of four types:

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

For each type, categories and subcategories are provided including illustrative metrics. Examples are provided for each subcategory, along with potential ways in which the metrics can be broken down (e.g. by sector, by ecosystem service, by country, by biome).

It is not expected that financial institutions will choose to use all subcategories of metrics nor use any given metric for their entire portfolio of exposures. The use of specific metrics should be guided by what is considered meaningful and material. It is recognised that for both qualitative and quantitative information, financial institutions have a reliance on disclosures from non-financial corporates and there may be limitations to what financial institutions can assess and disclose.

References to examples of publicly available disclosures are provided throughout the set of illustrative metrics for financial institutions to help illustrate what financial institutions may disclose. Additionally, overviews and links are provided to a range of further sources of methodology descriptions, tool providers and case studies.

This additional disclosure guidance for financial institutions will continue to evolve as the TNFD draft disclosure recommendations and approach to disclosure metrics evolves towards publication of the complete framework in September 2023.

3. The LEAP approach

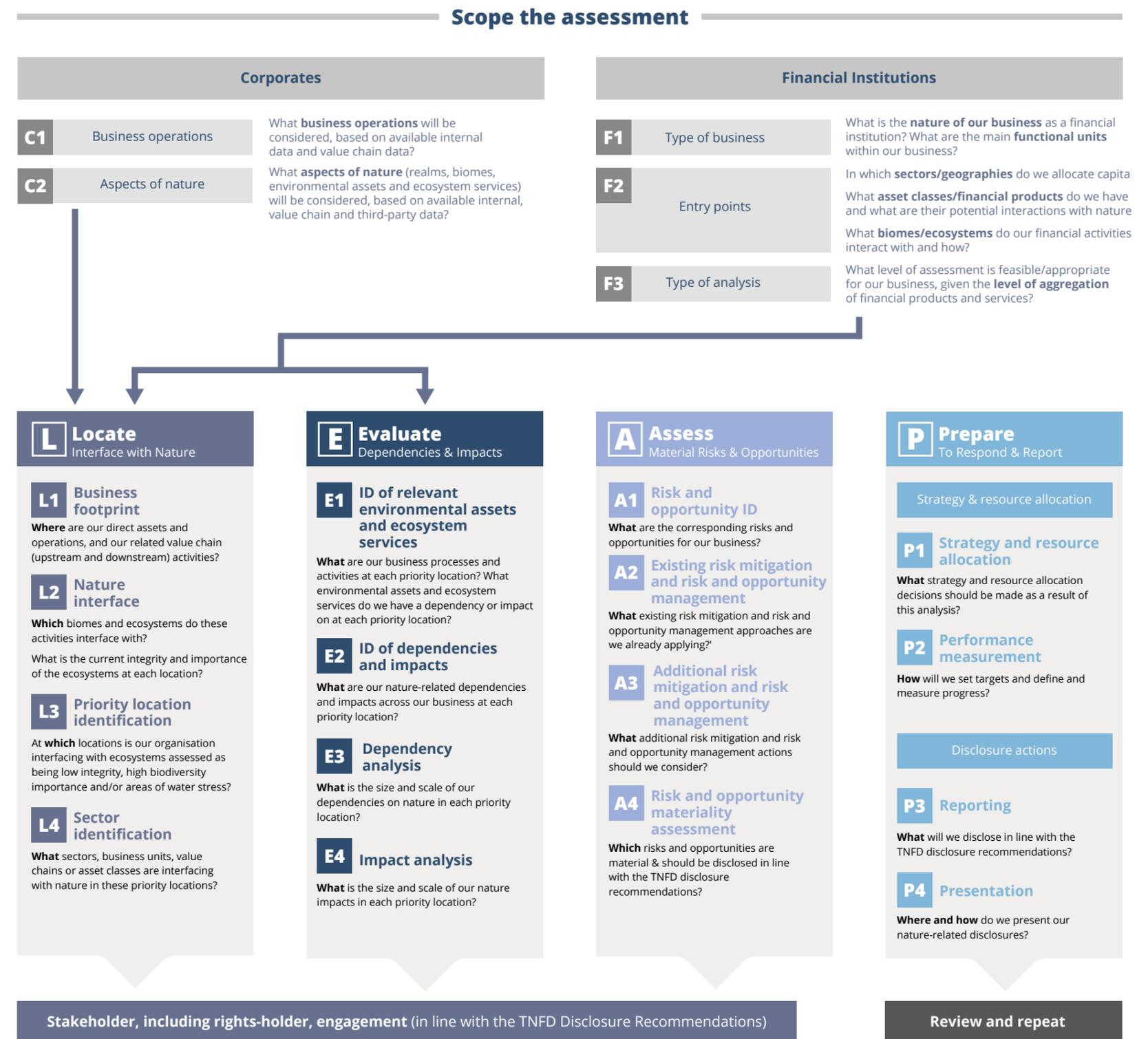
The LEAP approach is voluntary guidance intended to support internal, nature-related risk and opportunity assessments within corporates and financial institutions. LEAP is not a mandated process to adhere to the disclosure recommendations put forward by the TNFD. As such, not everything that is identified, assessed and evaluated using the LEAP approach is recommended by the TNFD to be disclosed.

3.1. Overview

In response to feedback through consultation and from initial pilot testers, the updated LEAP approach in this v0.3 release has four major revisions, illustrated in Figure 6:

- **Scoping the assessment:** Guidance on scoping the assessment, with scoping questions for corporates to reflect the importance of scoping an assessment before starting analysis using the LEAP phases. This has now been made clearer for corporates, alongside the previously released scoping guidance for financial institutions (referred to in v0.2 as LEAP-FI);
- **Evaluate phase:** New guidance on impact mitigation and positive impacts, anchored in an adaptation of the IPBES five drivers of change to enable organisations to identify, assess and manage both negative and positive impacts on nature.
- **Assess phase:**
 - **Consolidation of the five components of the Assess phase into four components** by incorporating opportunities alongside risks throughout the LEAP Assess phase and eliminating the previous stand-alone opportunities identification component of LEAP, 'A5'.
 - **New draft guidance on the Assess phase of LEAP** for assessment of nature-related risks and opportunities (see Annex 3.1);
- **Updated characterisation of the cross-cutting stakeholder engagement element:** To reflect the engagement approach and requirements that may be required with rights-holders, as distinct from other types of stakeholders, the language has been updated to 'stakeholder, including rights-holder engagement'.

Figure 6: The TNFD's revised risk and opportunity assessment approach (LEAP) in the v0.3 framework



3.2. Expanded guidance on scoping the assessment

The updated version of the LEAP approach gives increased prominence to the importance of adequate scoping of the LEAP approach by corporates and financial institutions. The visual representation in the previous v0.2 beta release only included scoping guidance for financial institutions (referred to as LEAP-FI) and a number of feedback providers have requested similar scoping guidance for corporates, particularly large corporates with complex supply chains.

The scoping component questions for corporates include:

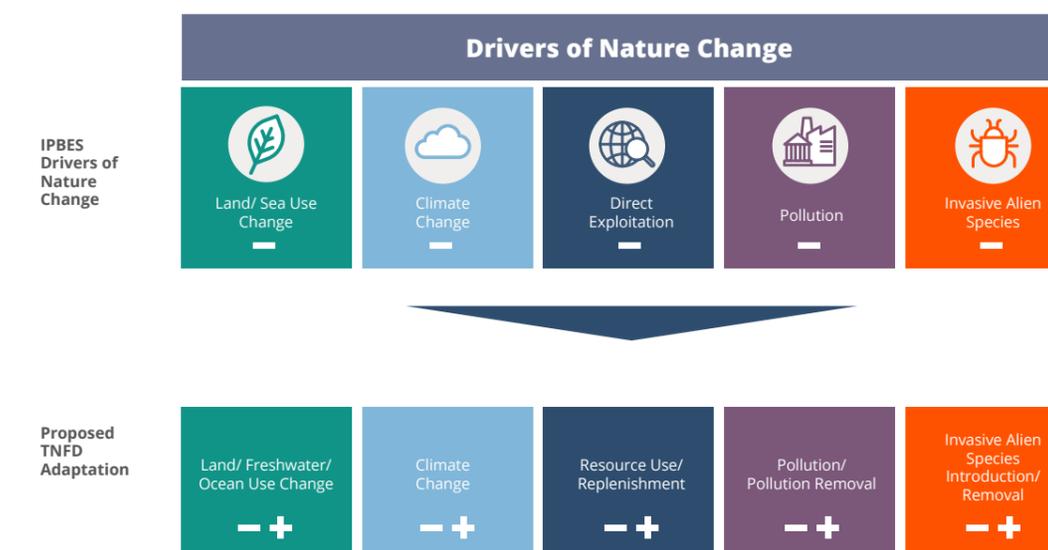
- **C1 – Business operations:** What business operations will be considered, based on available internal and value chain data?
- **C2 – Aspects of nature:** What aspects of nature (realms, biomes, environmental assets and ecosystem services) will be considered, based on available internal, value chain and third-party data?

3.3. Evaluate phase: New guidance on impact mitigation and positive impacts

The Evaluate phase of LEAP asks organisations to evaluate priority dependencies and impacts on nature. Recognising that reducing negative impacts on nature is not the same as having a positive impact on the state of nature and its long-term resilience, the Taskforce has reviewed the existing science on drivers of nature change to ensure that the framework incorporates and reflects the capacity of business to both mitigate negative impacts and have positive impacts on nature.

Assessments by the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) outline five drivers of nature change. The Taskforce has built upon these to reflect impact drivers that can have both a negative and positive impact. Taking this approach leads to an emerging taxonomy of business and nature-based solutions and business model innovations that can enable business and finance to create positive impacts on nature – including, for example, nature conservation and preservation, regenerative agriculture and the cultivation of biotic material such as in forestry and seaweed farming. In line with the overall aspiration of the TNFD, this helps capital providers shift the flow of capital both *away* from nature negative outcomes; and *towards* nature positive outcomes.

Figure 7: The TNFD’s proposed drivers of nature change



Box 3: The TNFD’s definitions of impact and impacts drivers

The TNFD has defined an impact on nature as a change in the state of nature, which may result in changes to the capacity of nature to provide value to business and society³⁹ and/or instrumental, relational and intrinsic value⁴⁰. The TNFD recognises that impacts on nature can be both negative and/or positive.

The TNFD has defined **impact drivers** as measurable quantities of a natural resource that are used as an input to production and measurable non-product outputs of a business activity that affect nature.

The TNFD’s proposed approach to evaluating dependencies and impacts on nature

As set out in v0.2 of the beta framework, the TNFD proposes that organisations evaluate their dependencies and impacts by considering:

- Impact drivers;
- Changes to the state of nature; and
- State of, and changes in, ecosystem services.

Building on the [Additional Draft Guidance on the Evaluate Phase of LEAP](#) released alongside v0.2 of the TNFD beta framework, this v0.3 of the beta framework includes more detailed guidance on impact mitigation and identification of potential positive impacts on nature.

Guidance on evaluating impact mitigation and positive impacts

Since the TNFD recognises that impacts on nature can be negative and/or positive, as part of evaluating their dependencies and impacts on nature, the TNFD proposes that organisations should evaluate their negative impacts, impact mitigation (reducing negative impacts on nature) and positive impacts. These should be assessed, measured and, if relevant, disclosed separately – not on a net basis.

The TNFD proposes the following non-exhaustive lists of potential categories of impact mitigation and positive impacts.

Example categories of impact mitigation (reducing negative impacts on nature)

- Circular economy measures that reduce, reuse, recycle and share materials (reducing pressure on nature from resource extraction);
- Waste prevention, pollution prevention and control, and manufacturing of products that reduce pollution harmful to nature (reducing pressure on nature from waste production);
- Use of spatial intelligence to avoid impacting low integrity ecosystems, ecosystems of high importance for biodiversity and water stressed areas.
- Transformation of business processes and operations to improve impact mitigation on a permanent basis over time;
- Technological innovations that increase the efficiency with which businesses transform services from nature for economic activity, such as innovations that substitute degradable waste for persistent pollutants, or efficiency in water use by considering the allocation of the total consumptive amount of available resources;
- Integrating sufficiency as a sustainability strategy aiming for (1) a decrease in absolute resource consumption on individual and societal levels, and (2) for the fair distribution of costs and benefits of resource use to meet every human's basic needs.

The TNFD acknowledges that reducing negative impacts on nature can help nature to regenerate and restore itself (and is thus connected to positive impacts).

Example categories of positive impact (conserving, regenerating and restoring nature and its services):

- Actions to increase the health, integrity, function and productivity of an ecosystem or its components;
- Sustainable production and operation practices that conserve, enhance and restore ecosystems and their biodiversity, including nature-based solutions; and
- Cultivation of biotic material that adds to the stock of environmental assets and/or improves the quality and provision of ecosystem services to business and society. Examples include forestry and seaweed farming, which can sequester carbon, contribute to the increasing stock of other environmental assets (other surrounding flora and fauna) and improve the quality of ecosystem services, such as enhanced water filtration and cleaning from the prevalence of seaweed or improved air quality from the presence of more trees).

As well as improving the state of nature, identification of positive impacts can enable businesses to mitigate their nature-related risks and build resilience, and also be the basis for the creation of new business models, products and services of future commercial value, as well as value to nature and society. See Annex 3.1 for additional guidance on assessing nature-related opportunities as part of the Assess phase of LEAP.

Mapping impact drivers to negative impacts, impact mitigation and positive impacts

Adapting the existing five drivers of nature change identified by IPBES, the Taskforce is continuing to explore with its knowledge partners how impact drivers map to negative impacts, impact mitigation and positive impacts. Table 1 provides examples of how organisations can identify negative impacts, reduce those impacts and identify positive impacts for each driver of nature change. This is an illustrative and not exhaustive list.

The Taskforce will continue its work to help organisations systematically identify, assess, manage and disclose both negative and positive impacts on nature, with guidance on the Evaluate phase of the LEAP approach. This will ensure that assessments following the TNFD framework and related disclosures can inform strategy, risk management and capital allocation decisions, including the identification and funding of nature-related opportunities and shifting of finance towards nature-positive outcomes.

Table 1: Illustrative examples of drivers of nature change mapped to negative impacts, mitigation of negative impacts and positive impacts

Drivers of nature change	Measurable impact driver	Realm	Negative impact	Impact mitigation	Positive impact
Land/freshwater/ocean use change	Terrestrial ecosystem use	Land	An agri-food company converts land from natural forest to pasture and grazing land, reducing natural habitat for pollinators and causing reduction in crop productivity	The agri-food company reduces its rate of conversion of natural habitat by deploying farming techniques that enable more efficient land use	The agri-food company sets aside part of the land for pollinator-keeping and restores the services provided to the natural habitat through the introduction of new regenerative farming practices
Resource use	Water use	Freshwater	A mining company uses groundwater resources of the community where it operates. The water resources become scarce due to heavy usage, compromising the future availability of water for the company, other businesses and the surrounding community	The mining company invests in new infrastructure for direct water capture, recycle and reuse thereby reducing the draw on new sources	The mining company adopts a waterless process and implements a groundwater restoration and management program, which helps to restore groundwater levels with a range assessed by scientists as suitable for the long-term resilience of the ecosystem
Climate change	GHG emissions	Air	A financial institution invests in an agri-forestry opportunity that is located on peatland. The exploitation of the peatland causes the release of significant quantities of GHG emissions	The financial institution exited its investment in agri-forestry that had degrading activities on peatland	The financial institution invests in peatland conservation and restoration, not only reducing the GHG emissions of their investment portfolio, but also providing other ecological, economic and cultural benefits
Pollution	Soil pollution	Land	A textile company dumps toxic waste into soil, including chemical and dye containers, harming soil biodiversity	The textile company revises its internal environmental risk management processes to ensure toxic-free waste discharge at the production plant	The textile company adopts a “zero production waste” garment production model and decontaminates the soil to reduce the toxic impact by bioremediation methods
Invasive species and other	Biological alterations	Land	An agri-food company introduces non-native honey-bees, which spread disease among the native-pollinators causing their decline, substantial nectar decrease and spread of invasive plants	The agri-food company reduces the presence of exotic beehives on their land and minimises pesticide use	The agri-food company introduces native bees and invests in native bee habitat restoration with self-sustaining and pollen rich native shrubs near to its agricultural areas

3.4. Assess phase: Revised components and additional guidance

Updates to the Assess phase

The Assess phase of the TNFD approach to risk and opportunity assessment (LEAP) has been updated in v0.3 of the beta framework, as shown in Figure 8. These changes have been made to streamline the LEAP approach and align with the TCFD's steps for integrating climate-related risks into risk management. The changes have been made based on feedback and insights from the TNFD's knowledge partners, market participants and pilot testing. There are two main revisions:

- Nature-related opportunities have been added throughout components A1 to A4.
- As a result, the previous component A5 of LEAP ('Opportunity identification and assessment') in previous beta versions of LEAP has been removed.

Figure 8: Revised Assess phase of TNFD's approach to risk and opportunity assessment (LEAP)



Additional guidance on the Assess phase

v0.3 includes additional guidance on the Assess phase of the LEAP approach includes:

- **Guidance on assessing material nature-related risks and opportunities**, following the components of the LEAP approach (Annex 3.1);
- **Nature-related risks and opportunity registers** (available on the online framework platform);
- **Illustrative indicators** for categories of nature-related risks and opportunities (Annex 3.2); and
- Guidance on selecting **metrics for nature-related risks and opportunities** (see Annex 3.1).

This is cross-sector guidance, rather than sector or biome guidance, which is still being developed by the TNFD.

Box 4: Considerations for the TNFD's draft guidance on the Assess phase of LEAP

In developing its draft guidance on assessment of nature-related risks and opportunities, the TNFD identified the need to:

- **Retain flexibility for organisations to integrate into their own risk and opportunity management processes:** Corporates and financial institutions use a wide range of practices and techniques to assess and manage their risks and opportunities and are best positioned to determine their overall approach.⁵ The TNFD's approach to assessment of nature-related risks and opportunities can be integrated into existing enterprise risk and opportunity management processes.
- **Build towards an integrated approach that considers other environmental and social risks and opportunities:** Consideration of environmental risks in existing risk management practice is currently largely focused on climate. The many connections between climate- and nature-related risks and opportunities⁶ necessitates an integrated approach that builds on emerging best practice with climate risk assessment and management.
- **Recognise connections between nature-related risks and opportunities and impacts on nature and society:** Nature provides ecosystem services upon which business and wider society relies, such as the provision of clean water, clean air and the absorption of carbon from the atmosphere. Business impacts on nature can have impacts on wider society, which can present transition risks, such as changes in consumer preferences and reputational and litigation risk, as well as systemic risks.⁷
- **Draw on existing frameworks and standards to create an integrated approach:** The TNFD can build upon coverage, albeit limited, of the assessment of nature-related risks and opportunities in existing disclosure frameworks and standards. Some cover nature or biodiversity in an integrated fashion, but many focus on one biome such as forests or one driver of nature change such as pollution.⁸
- **Recognise and fill gaps where aspects of nature-related risk assessment are underdeveloped:** A number of technical aspects of nature-related risk and opportunity assessment are underdeveloped and still emerging, including: 1) measurement of the exposure of corporates and portfolios to nature-related risks; 2) the assessment of financial implications on the balance sheets and profit and loss accounts of corporates and financial institutions; 3) metrics for risks related to degradation of specific ecosystem services or ecosystems; 4) links with scenario analysis;⁹ 5) risk metrics that account for potential ecosystem tipping points and thresholds; and 6) metrics for nature-related opportunities, which currently largely focus on the mitigation of risks as opposed to the strategic transformation of business models and transition plans for nature-positive outcomes.

⁵ Task Force on Climate-related Financial Disclosures (2020) Guidance on Risk Management Integration and Disclosure

⁶ For example, climate-related risks associated with increased droughts, floods or storms are increased by degradation of ecosystems that provide climate regulation and hazard risk mitigation services. Further detail on the climate-nature nexus is provided at: <https://framework.tnfd.global/priority-areas-for-further-development/>

⁷ WEF (2020); Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy

⁸ For example, CDSB Biodiversity Application Guidance, European Sustainability Reporting Standards, CDP Forests, and World Benchmarking Alliance (WBA) Biodiversity Benchmark.

⁹ The TNFD Scenarios Discussion Paper published as part of the v0.3 beta release provides further details on how scenario analysis can inform assessment of nature-related risks.

3.5. Stakeholder, including rights-holder, engagement

Engagement with stakeholders, including rights-holders, is an important component of the LEAP approach, which runs through all phases of LEAP. The language in LEAP in v0.3 has been updated to 'stakeholder, including rights-holder engagement' to reflect the engagement approach and requirements that may be required with rights-holders, as distinct from other types of stakeholders.

For v0.4 of the beta framework, the TNFD will develop further guidance on stakeholder, including rights-holder, engagement, drawing on the UN Guiding Principles on Business and Human Rights, OECD Guidelines for Multinational Enterprises and other best practice frameworks and principles. The TNFD discussion paper on 'Societal dimensions of nature-related risk management and disclosure – Considerations for the TNFD framework' has been released as part of v0.3. This paper aims to encourage further feedback to the Taskforce on these considerations as the TNFD continues its dialogue with a range of stakeholders and rights-holders, including knowledge partners, Indigenous Peoples and Local Communities (IPLCs) representatives and civil society organisations; and learns through the experience of pilots tests of the beta framework, including those led by Indigenous-led enterprises (see Box 1).

3.6. Data, analytics and tools for implementing the LEAP approach

To implement the LEAP approach in practice, organisations need access to high-quality, trusted, decision-useful data on nature-related risks and opportunities. While LEAP already builds on and integrates existing, high-quality tools and data sources, the TNFD has identified the following five priority areas where work is still needed on data, analytics and tools to implement the TNFD's LEAP approach. The priorities were identified through the first set of workshops with members of the [Nature-related Data Catalyst](#):

- **Data coverage:** Advancing comprehensive nature-data solutions is limited by the availability of data for particular realms (e.g. ocean), remote locations (e.g. locations away from where organisations have their operations), and across temporal scales.
 - Next steps: Further collaboration and investment is needed to ensure data are capable of meaningfully capturing the relevant variable/s, both static and dynamic. Standards will need to be clearly defined to enable the collection of data that is relevant and useful, and at required frequencies for corporates and financial institutions.
- **Data standardisation:** Data is often not attributed, collated or presented in a standardised way, which makes it challenging to ensure consistency in measurement between spatial locations or across a time series. Often, data is collected for specific research questions that are not always relevant for the purposes for which data are being used.
 - Next steps: Development of a data standard will increase trust in datasets being collected, collated and compared. A standardised set of principles may also channel additional funding into the collection of additional data where gaps are identified. It would also improve the auditability of data.
- **Transparency:** In order for data or models to be used by TNFD users or other data providers, the underlying data must be trusted and its limitations understood. There is a need for more transparency on models used and the limitations of assessment and data.
 - Next steps: Increase transparency over data gaps, such as self-assessment datasets, and highlight where there is spatial/temporal uncertainty.
- **Data accessibility:** Data accessibility is another limiting factor for the advancement of nature-related data, as there are often strict licensing restrictions in place, particularly for commercial use.
 - Next steps: Increase collaboration between private companies, governments and NGOs to make data publicly available
- **Relevance to decision making:** It is important for data providers and users to understand the TNFD definitions of nature-related impact, dependency, risk and opportunity to be able to assess what is required and relevant, and to be able to conduct analysis and decision-making aligned with the TNFD framework. There is also

a need for more context, understanding and definition of what is nature positive. This would enable corporations and financial institutions to make a commitment, have a point of benchmark, establish baselines and measure progress. This would help clarify what types of data are relevant.

- Next steps: Distinguish between data required for different nature-related risks and opportunities. Some pre-prioritisation and guidance developed by scientific and technical experts by sector, country, region and ecosystem of top impacts would be helpful. Transparency about how metrics and risks/opportunities were developed and identified will facilitate decision making.

Building on these insights from the Data Catalyst, the TNFD has created a beta version of an online searchable Tools Catalogue that provides an overview of tools that organisations can use to apply each phase of the LEAP approach. The Catalogue will continue to be updated over time.

4. Core concepts & definitions

Based on the adaptations and additions outlined above and feedback from market participants, the TNFD has updated and added new concepts, definitions and categories. These are all now up to date on the 'Understanding nature for market participants' section of the online platform for the TNFD framework and added in an updated glossary.

In summary, the main changes to key terms and definitions fit broadly within:

- **Updated definitions, categories and concepts** for nature-related risks and opportunities, building on the new material in the v0.3 Guidance for the Assess phase of the LEAP approach (see Annex 3.1), including a revised definition for '*nature-related opportunities*';
- **New definitions** relating to:
 - Stakeholder engagement, referenced in the LEAP approach and the draft disclosure recommendations, including '*rights-holder*' and '*stakeholder*';
 - Core concepts related to science-based targets, drawing on SBTN's draft glossary, including a new definition of '*science-based targets*', '*indicator*', '*issue areas*' and '*pressures*';
 - Scenarios, drawing on the TNFD discussion paper that outlines its proposed approach to scenarios, including new definitions of '*scenarios*', '*sensitivity analyses*' and '*stress-tests*'.

Table 2: Updated and new definitions in v0.3 of the TNFD beta framework

A complete overview of TNFD's definitions is available on TNFD's online framework platform.

Term	Definition	Logic for change if amendment
Metrics definitions		
Nature-related risks	Potential threats posed to an organisation linked to their and <i>wider society's</i> dependencies on nature and nature impacts. These can derive from physical, transition and systemic risks.	Updated to recognise that nature-related risks can affect other organisations, not only the organisation concerned, and that wider societal dependencies and impacts on nature are relevant.

Table 2: Updated and new definitions in v0.3 of the TNFD beta framework
(continued)

Term	Definition	Logic for change if amendment
Contagion (type of nature-related systemic risk)	Originates in the financial or real economy as a risk that financial difficulties at one or more financial institution spill over to the financial system as a whole.	Updated for improved clarity
Nature-related opportunities	Activities that create positive outcomes for organisations and nature <i>by creating positive impact on nature or mitigating negative impacts on nature.</i>	Updated to provide further emphasis on positive impacts on nature.
Disclosures definitions		
Stakeholders	Stakeholders are persons or groups who are directly or indirectly affected by a project, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively	New
Rights-holders	Under the Universal Declaration of Human Rights, all human beings are 'rights-holders.' However, not all individuals will have their human rights put at risk or impacted by a project or its associated activities. It is important to identify human rights risks related to project activities among stakeholders and recognise such stakeholders as 'rights-holders' in the context of engagement activities	New

Table 2: Updated and new definitions in v0.3 of the TNFD beta framework
(continued)

Term	Definition	Logic for change if amendment
Science-based targets definitions		
Science-based targets for nature (or SBT's)	Measurable, actionable and time-bound objectives based, on the best available science, that allow actors to align with Earth's limits and societal sustainability goals.	New
Target	Specific quantitative and time-bound objective, preferably with a defined means of measurement.	New
Indicator (for measuring performance against goals or targets)	A specific metric used to track performance or progress (positive or negative change) against a goal or target.	New
Scenarios definitions		
Scenarios	Scenarios explore a broader set of uncertainties, at least some of which represent discontinuities with existing planning models. Scenarios are also typically designed in part to identify risks that could emerge over the course of a longer time frame (e.g. multiple years), which typically take shape at the intersection of several seemingly unconnected uncertainties	New

Table 2: Updated and new definitions in v0.3 of the TNFD beta framework
(continued)

Term	Definition	Logic for change if amendment
Stress tests	Stress tests represent difficult 'edge cases' that are developed by putting extreme values of a relevant variable or small number of variables into existing planning models. The objective of stress testing is to assess how the results of those models change in response	New
Sensitivity analyses	Assess how a planning model's outputs change when important inputs vary within expected ranges (e.g. +10%, -10%)	New

The TNFD is engaging with key partners and stakeholders, including the Convention on Biological Diversity (CBD) Secretariat, the coalition of organisations behind the Global Goal for Nature, the IUCN and others on the evolving debate about defining the term 'nature positive'. Like others, the TNFD would welcome inclusion and definition of the term 'nature positive' in the Global Biodiversity Framework (GBF) being negotiated at COP-15 in December 2022.

The complete set of the TNFD's core concepts and definitions can be reviewed in full on the TNFD framework online platform.

5. The approach to metrics and targets

The approach to metrics and targets in this v0.3 of the TNFD beta framework builds on v0.2 of the beta framework (see Box 5) by providing additional guidance on:

- How to use metrics within the Assess phase of the LEAP Approach which covers Risk and Opportunity Assessment (A1 – A4);
- Setting science-based targets for impacts on nature (developed with SBTN).

As set out in Section 2, in v0.4 of the beta framework, the TNFD will develop two 'Annexes' on Disclosure Metrics for implementation of recommended disclosure Metrics and Targets A (Annex 1 – relating to Disclosure Metrics for nature-related risks and opportunities); and Metrics Targets B (Annex 2 – relating to Disclosure Metrics for impacts and dependencies on nature). The Taskforce proposes to centre Annex 2 on Disclosure Metrics for impact drivers, organised around the TNFD five drivers of nature change (adapted from IPBES to reflect drivers of both positive and negative impacts on nature – see Section 3.3) and the TNFD four nature realms.

Box 5: TNFD's approach to metrics and targets in the previous v0.2 release

In the v0.2 beta framework, the TNFD published:

- The TNFD [overall proposed approach to metrics and targets](#);
- [Guidance on metrics for the Evaluate phase of LEAP](#) on dependencies and impacts on nature and an illustrative set of indicators and metrics.
- [Additional draft guidance on the Locate phase of the TNFD LEAP approach – Priority Location Identification \(L3\)](#) including relevant metrics; and
- [Additional draft guidance for corporates on the Evaluate phase of the TNFD LEAP approach for Dependency and Impact Analysis \(E3 and E4\)](#): The TNFD prepared further guidance for dependency and impact analysis, drawing from relevant material in the Natural Capital Protocol.

Table 3: Timeline – development of TNFD’s approach to measurement and target-setting

TNFD cross-industry metrics categories				
Category	Sub-category	Description	TNFD release	Approach in v0.3
Assessment Metrics				
Dependencies and impacts on nature	Impact drivers	Amount of natural resources that are used as an input to production or product outputs of a business activity	v0.2	Guidance and illustrative metrics
	State of nature	The condition and extent of ecosystem assets, including positive or negative changes, and risk and abundance of species	v0.2	Guidance and illustrative metrics
	Ecosystem services/dependencies	The provision of ecosystem services, including those the business depends on	v0.2	Guidance and illustrative metrics
Nature-related risks	Physical risks	Exposure to nature-related risks based on dependency and impact metrics (v0.2) and magnitude of financial implications (v0.3)	v0.3	Guidance and illustrative metrics
	Transition risks		v0.3	Guidance and illustrative metrics
	Nature-related systemic risks	Relationship of systemic risks with other nature-related risks	v0.3	Guidance on relationship with other risk types
Nature-related opportunities	Business performance	Exposure to nature-related opportunities based on dependency and impact metrics (v0.2) and magnitude of financial implications (v0.3)	v0.3	Guidance and illustrative metrics
	Resource efficiency			
	Products and services			
	Markets			
	Capital flows and financing			
	Reputational capital			
	Sustainability performance			
	Ecosystem protection, restoration and regeneration			
Sustainable use of natural resources				
Response		To include management, governance, strategy and performance metrics, including progress against targets	v0.4	

TNFD cross-industry metrics categories		
Disclosure Metrics		
Core metrics	Core metrics to be included in all disclosures following the TNFD disclosure recommendations	v0.4
Additional metrics	Additional metrics that a corporate or financial institution may choose to include in their disclosure	v0.4

5.1 Metrics for the Assess phase of LEAP

In this v0.3 release, the Taskforce has given additional consideration to the approach to measurement required for the Assess phase of LEAP (see Annex 3.1). This approach introduces two types of assessment metrics:

1. **Exposure metrics**, based on nature-related dependencies and impacts identified in the Evaluate phase of LEAP (Evaluate priority dependencies and impacts);
2. **Magnitude metrics**, which can be used to assess the financial implications to the organisation of nature-related risks and opportunities. Magnitude metrics should be used as part of the criteria to prioritise nature-related risks and opportunities (as well as the other criteria outlined in Annex 3.1). As far as possible, magnitude metrics should quantify the financial value of nature-related risks and opportunities for the organisation.

Determining the financial implications of nature-related risks and opportunities generally involves an organisation assessing its:

1. potential for damages or benefits against identified risks and opportunities;
2. planned responses; and,
3. response effectiveness.

Figure 9: Criteria for prioritising nature-related risks and opportunities



The table below provides an illustration of exposure and magnitude metrics using the example of acute physical risks. Annexes 3.1 and 3.2 contains illustrative examples of metrics for all categories of nature-related risks and opportunities.

Type	Risk	Example	Exposure metrics	Magnitude metrics
Physical risk				
Acute risk	Changes in the state (condition and/or extent) of ecosystems on which the organisation is dependent or has an impact, resulting in changes to the flow of ecosystem services	<i>Degradation of freshwater habitat due to pollutants released by the organisation and other stakeholders</i>	<i>Quantity and concentration of pollutants emitted (impact driver)</i> <i>Change in mean species abundance in freshwater ecosystems (ecosystem condition)</i> <i>Concentration of pollutants in water (ecosystem condition)</i>	<i>Costs associated with the relocation of operations and suppliers</i> <i>Reduction in revenue due to interruption of operations/supply chain</i> <i>Increased costs due to interruption of operations/supply chain</i> <i>Restoration costs</i> <i>Value of assets/ revenue dependent on area</i> <i>Number of locations/business lines/facilities exposed</i>

5.2 Targets: Guidance for corporates on science-based targets for nature

Nature-related targets are an important component of the TNFD beta framework. They are the manifestation of corporate decisions and commitments made as a result of the identification and assessment of nature-related dependencies, impacts, risks and opportunities.

Target-setting is reflected in both the LEAP approach and the disclosure recommendations as follows:

TNFD beta framework component

TNFD draft disclosure recommendation 'Metrics and targets C'	Describe the targets used by organisations to manage nature-related dependencies, impacts, risks and opportunities and performance against targets.
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TNFD LEAP approach for nature-related risk and opportunity assessment, component P2: 'Target setting & performance management'	Describe how organisations set targets and define and measure progress.
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In v0.3 of the beta framework, the TNFD builds on its previous guidance from v0.2, which introduced a range of considerations for target-setting for nature. Consistent with the Taskforce's commitment to build on and incorporate best practice methods and frameworks already widely used or under development, v0.3 includes guidance on methods under development by the Science-Based Targets Network (SBTN). The 'Additional draft guidance for corporates on science-based targets for nature' published as part of this v0.3 release, incorporates the five-step approach to setting science-based targets for nature developed by the SBTN. The TNFD beta framework provides an overview of relevant SBTN guidance and signposts to SBTN documentation for further details. The TNFD's guidance on target-setting will be updated as SBTN releases further updates to their methods and guidance.

When corporates applying the TNFD framework set targets for nature and measure performance against those targets, the TNFD recommends that they set science-based targets for nature following SBTN guidance.

The Taskforce recognises that some organisations may choose another process for setting targets on nature, particularly while the SBTN methods are still in development. If organisations choose to follow another approach to target setting, the TNFD strongly recommends that target-setting follow the basic principles of science-based targets used by SBTN. This means that the targets set should be measurable, actionable and time-bound and based on the best-available science on nature and societal needs.

SBTN is a core knowledge partner of the TNFD and has worked with the TNFD to develop the 'Additional draft guidance for corporates on science-based targets for nature.' The TNFD and SBTN are working to align further to make it easier and more efficient for corporates to apply both frameworks.

SBTN target-setting methods generate data and analytical outputs that help corporates apply parts of the TNFD's LEAP approach for nature-related risk and opportunity assessment. Conversely, applying the LEAP approach can help corporates generate data needed to set science-based targets (SBTs) for nature.

6. Additional guidance

To assist organisations operating across different sectors, realms and biomes to implement the TNFD's LEAP approach and disclosure recommendations in practice, the TNFD is continuing to build upon the approach to additional guidance from v0.2 of the beta framework, using the following structure:

- **Sector guidance:** Guidance tailored to the economic sector in which organisations conduct business; and
- **Realm and biome guidance:** Additional guidance linked to the nature realms defined by the TNFD (ocean, freshwater, land, and atmosphere) and with details on the biomes most relevant to, and impacted by, business activity outlined in the TNFD's fundamental concepts for understanding nature.

Throughout additional guidance for sectors and realms/biomes, the TNFD will draw out nature-related issues – covering dependencies, impacts, risks, and opportunities – that are relevant for that sector and biome, across the phases of the LEAP approach.

In addition to the Draft Additional Guidance for Financial Institutions released in this v0.3 release (see Annex 3.3), further additional guidance is currently under development on the following topic areas with knowledge partners and input from relevant industry experts, other scientific experts and Forum members:

- Agriculture and food;
- Fishing and aquaculture;
- Forestry, paper and pulp;
- Mining and metals;
- Energy (oil and gas, and renewable energy); and
- The tropical forest biome.

This will be released by the Taskforce for comment as part of the v0.4 release and potentially earlier in tranches to give market participants time to review and provide feedback to the Taskforce.

The TNFD will continue to develop further guidance on how to implement LEAP and the TNFD disclosure recommendations across priority sectors and biomes, for publication at regular intervals prior to the launch of v1.0 of the complete TNFD framework in September 2023.

7. Priority areas for further framework development

The TNFD will continue to revise the beta framework based on ongoing feedback from market participants and insights from pilot testing until v1.0 of the TNFD framework launches in September 2023. The Taskforce aims for v0.4 of the beta framework in March 2023, the final prototype of the beta framework that will be released, to be a complete and coherent representation of the framework to allow market participants to provide feedback before the deadline for feedback and the conclusion of pilot testing on 1 June 2023.

The highest priorities for the Taskforce's work in the next phase of framework development before the v0.4 release in March 2023 are:

- Additional guidance on metrics and targets, specifically on the Taskforce's proposed Disclosure Metrics, as well as additional details on Assessment Metrics;
- Further guidance on target-setting developed with the SBTN and others;
- Release of draft additional guidance by sector and realm and biome;
- Draft guidance on scenarios, developed in collaboration with a range of knowledge partners, including the Network for Greening the Financial System (NGFS), and with the benefit of feedback from the scenarios discussion paper issued as part of this v0.3 release;
- Draft guidance on stakeholder, including rights-holder engagement, developed with the benefit of feedback on the social considerations discussion paper issued as part of this v0.3 release; and
- Publication of a set of illustrative use cases, case studies and examples of the TNFD framework, across non-financial and financial sectors, including illustrative disclosures.

8. Engage – Co-create the TNFD framework

The TNFD's open consultation period will continue until 1 June 2023. The TNFD invites market participants and other stakeholders to:

- **Review and provide feedback:** Explore the latest version of the beta framework on the TNFD online platform and complete the feedback form.
- **Pilot test the beta framework:** Corporates and financial institutions that want to explore how the TNFD framework would apply in their organisational context can pilot test the framework independently and, in some cases, through collaborative industry efforts. The TNFD piloting guide, released alongside v0.2 of the beta framework, provides detailed information for organisations interested in piloting the framework.
- **Participate in consultation discussions:** Based on the feedback provided by market participants, the TNFD will convene focus group discussions about key emerging themes, technical areas of the framework or by geography or sector to engage further with feedback providers.

The TNFD's open consultation period will continue until 1 June 2023.

While the TNFD will accept feedback on a rolling basis, feedback for each iterative release of the beta framework will be evaluated according to the schedule outlined below (Table 4). All feedback, irrespective of when it is provided, will be reviewed and evaluated before the complete recommendations are published in September 2023.

In March 2023, the TNFD will conclude its open innovation process with a 60-day formal consultation where organisations can submit responses to a full draft of the beta framework (v0.4). The Taskforce will consider all feedback received to inform its complete framework for publication in September 2023. Comment letters received in this formal consultation will be published on the TNFD website, following the approach of international standards organisations.

Table 4: Timeline for releases and deadlines for feedback prior to each release

Release	Release date	Deadline for feedback on this release
v0.1	15 March 2022	
v0.2	28 June 2022	
v0.3	November 2022	14 February 2023
v0.4	March 2023	1 June 2023
v1.0 (final)	September 2023	

9. Learn more

Explore the TNFD Knowledge Bank

The [TNFD Knowledge Bank](#) features a curated collection of the latest external resources and market insights on nature-related risks and opportunities. The Knowledge Bank is designed to support market participants to grow their understanding of why and how to integrate nature into decision making. New content is added weekly.

Join the TNFD Forum

The [TNFD Forum](#) is a global, multi-disciplinary consultative group of institutions with over 700 Forum members. Membership of the Forum is open to a broad range of institutional types including corporates, financial institutions, public sector institutions including 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](#).

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