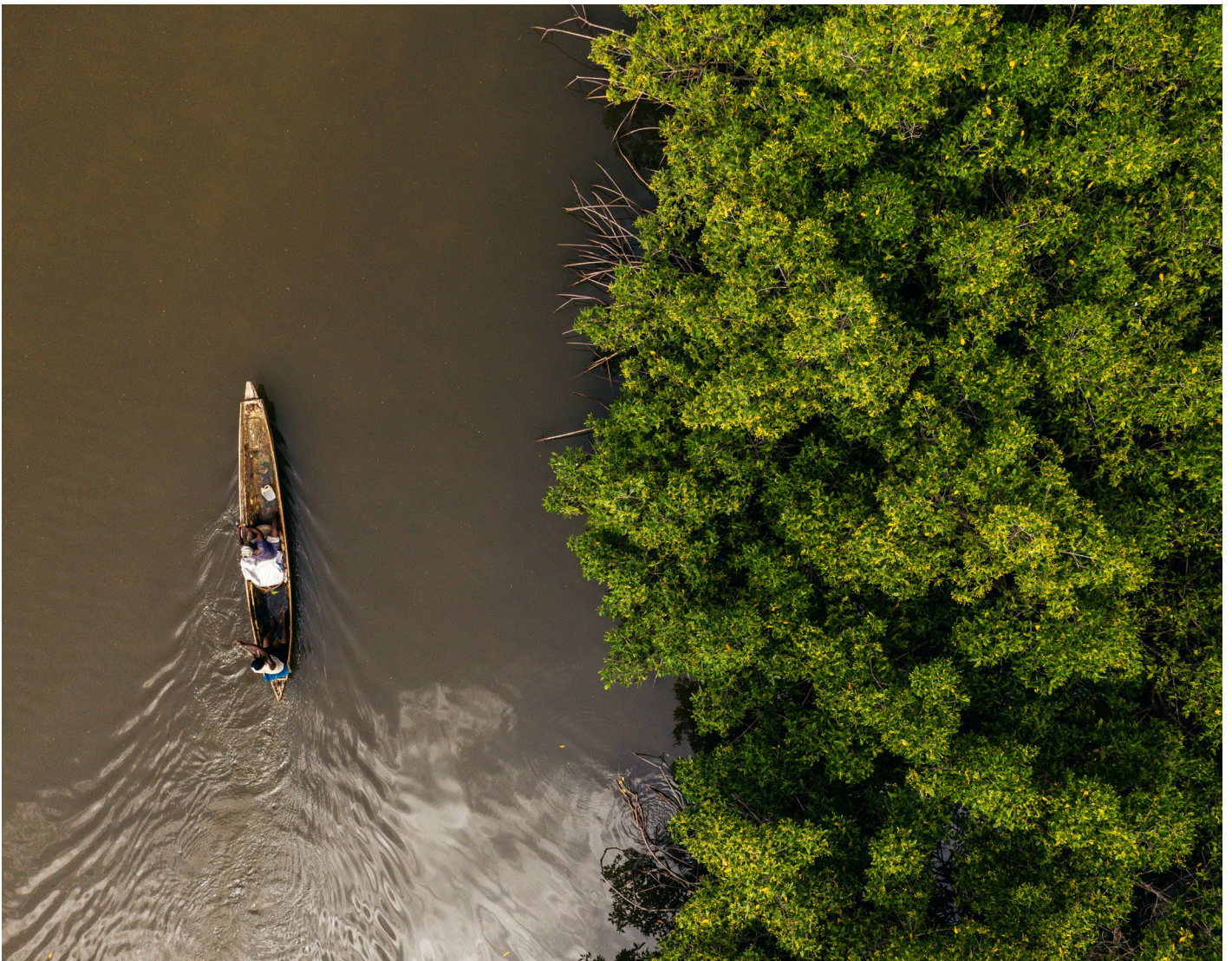


Piloting the TNFD beta framework in the palm oil sector



Lessons learned & Recommendations



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Executive Summary

In order to halt and reverse the erosion of nature globally, organisations need to shift their investments and operations away from nature-negative outcomes towards nature-positive ones. To achieve this, organisations must first understand and account for their impacts and dependencies on nature. In June 2021, a Task Force on Nature-related Financial Disclosures (TNFD) launched (after an initial preparatory phase), with the aim to develop and deliver a risk management and disclosure framework for organisations to report and act on evolving nature-related risks and opportunities. To ensure the final framework is fit for purpose, the TNFD is following an open innovation approach whereby beta versions of the framework are released and iterated based on feedback received from the market. As part of the TNFD's feedback process, piloting - testing beta versions of the framework - will be carried out across different jurisdictions and sectors to explore the implications of the framework in specific organisational contexts. As an official TNFD piloting partner, Global Canopy is supporting TNFD by testing the current and forthcoming beta versions of the TNFD framework with companies and financial institutions.

From February to June 2022, Global Canopy led a TNFD-supported palm oil pilot, co-convened by the Monetary Authority of Singapore (MAS), and funded by the UK Foreign, Commonwealth & Development Office and United Nations Development Programme. The main aim of the pilot was to gather early insights into current practices used in the assessment, measurement and disclosure of nature-related risks and opportunities related to palm oil, as well as common barriers and challenges experienced during the process. The palm oil sector was selected for piloting due to its high nature-related risk exposure and expected high levels of maturity in relation to sustainability and risk reporting; both of which would provide valuable insights to feed into the development of the TNFD framework.

Ten organisations who either operated within, or provided finance to, palm supply chains participated in the pilot - six financial institutions and four corporations. The organisations included Olam Agri, Musim Mas, Golden Agri-Resources, Wilmar, Rabobank, ING, Schroders, OCBC Bank, United Overseas Bank and MUFG Bank. RSPO also contributed valuable technical input during the piloting process. Participants focused on a desktop review of the three main components of the TNFD framework beta v0.1 (released March 2022).

1. **Fundamentals for understanding nature:** an outline of fundamental concepts and definitions for nature.
2. **TNFD's Draft Disclosure Recommendations:** disclosure recommendations for nature-related risks and opportunities which follow four core pillars; and
3. **The LEAP Process for Nature-related Risk & Opportunity Assessment:** A voluntary assessment process which highlights the different components necessary for a robust assessment of an organisation's nature-related risks and opportunities.

To support the participants in providing feedback, the pilot team (Global Canopy) provided capacity building, helping participants to interpret the different components of the framework. The main avenue for gathering feedback was through a questionnaire, which was shared with participants. Questions aimed to gain insight into the coherence of different TNFD concepts, definitions and recommendations, as well as the readiness of participants to conduct robust nature-related risk and opportunity assessments in line with the TNFD.

Alongside participant testing the TNFD-Supported palm oil pilot also commissioned three bespoke pieces of research to explore research gaps that were identified in an earlier pilot focused on soy supply chains. The bespoke research pieces all focused on palm oil and included:

4. **A report by the Forest People's Programme** to provide recommendations on how TNFD could integrate social and human rights considerations into the framework;

A report by Hindsight Consultancy to highlight potential transition pathways for nature-related financial risks and opportunities;
A report by CDP to provide insights into the alignment between current reporting practices and the TNFD framework beta v0.1.

Key takeaways from participant testing included:

Additional clarity is required for select definitions and it should be recognised that what constitutes nature can vary between sectors and industries. The scope of nature in the TNFD is generally clear and well understood but the TNFD should be conscious to better highlight the distinction and/or relationship between the terms 'biodiversity' and 'nature' as organisations usually refer to 'biodiversity' rather than 'nature' (i.e. biodiversity policy). The TNFD should provide more examples to accompany definitions, aiding interpretation for different stakeholders across various contexts. This will also have the added benefit of helping increase the uptake of the TNFD. One example provided was for the TNFD to recognise nuanced definitions (e.g. High Conservation Value forests, primary/secondary forests etc.) for different sectors, which have been established over many years and represent current best practice.

Roadmaps for scoping the assessment would aid interpretation and understanding. Multiple participants highlighted that there was a lack of clarity in the TNFD framework beta v0.1 for defining assessment boundaries. Use cases and roadmaps for initial and subsequent assessments, highlighting a staged approach to disclosures, were suggested as useful additional guidance to help participating organisations better interpret the TNFD's recommendations.

Significant work to assess, measure and disclose nature-related risks and opportunities has already started to take place in the palm oil sector. Over recent decades, significant work has already taken place in the palm oil sector to determine organisational nature-related risks and opportunities, for example through HCV-HCS assessments and other reporting practices (i.e. GRI/CDP). Greater clarity is needed as to how such existing assessment practices would help organisations in the assessment, measurement and disclosure process, and avoid any concerns around 'reinventing the wheel'.

Location-based assessments are challenging. Regulatory barriers and challenges around traceability can make it difficult for organisations to determine the exact location of assets, especially when considering their wider value chain. Such instances of non-disclosure of asset level information for financial institutions can impact the determination of aggregated nature-related risks and opportunities. Wider recognition of data gaps is required and further guidance on how to respond to these gaps - by providing proxies, as well as recommended data sources for use carrying out assessments - would help organisations conduct nature-related risk and opportunity assessments.

Key takeaways from the additional three bespoke research pieces, which were carried out independently from participant testing, included:

Human rights considerations should be incorporated into the LEAP process and draft disclosure recommendations. The Forest Peoples Programme suggests that the responsibilities of corporations and financial institutions to respect human rights should be explicitly incorporated into each step of the LEAP approach to understand and respond to risks and impacts. In addition, it is important to include human rights reporting in the draft disclosure recommendations, as it is already expected from corporations and financial institutions as part of their human rights due diligence and set out, for example, in the UNGP Reporting Framework and the Accountability Framework reporting and disclosure guidance.

Further work is required to support the development and harmonisation of tools & data. Hindsight consultancy highlights that while there has been considerable work - and a number of tools developed - to assist with the valuation of natural capital, tools and data for the quantification and financial valuation of company risk exposure are currently quite limited. For upstream companies, where there are clearly defined assets and where revenues and costs are entirely palm oil-related, such quantification is more straightforward, but for downstream and more diversified companies, assessing financial exposure is complicated.

Scenario analysis is vital to assess nature-related risks and opportunities. Hindsight consultancy also highlights that while there has been some

good work on scenario analysis at a global scale for biodiversity, this has yet to be translated into specific impacts on forest risk commodities, and the possible financial implications of these impacts. This work is now being done for climate scenarios and there will likely be overlaps with nature-related scenarios to fully understand the changes ahead. Collaboration between climate and biodiversity scenario analysis would be an invaluable development for the full understanding of risks and possible mitigation actions.

There is substantial overlap between CDP forests questionnaire and components of the LEAP process. There are a wide range of questions within the CDP forests questionnaire relevant to the different components laid out in the voluntary TNFD LEAP process. As such companies completing the CDP forests questionnaire may have a significant head start in completing a LEAP assessment, whilst companies completing a LEAP assessment will have a broader understanding of how they interact with their environment than is available from the CDP forests questionnaire.

CDP data reiterated a number of challenges. Disclosure on palm oil is increasing and improving every year and companies disclosing on palm oil are performing better than companies reporting on other commodities. Yet companies are still not achieving the KPIs required to eradicate deforestation from supply chains, let alone the wider range of nature-related impacts and risks. Perceptions of risk also still remain focused on risks to reputation and customer preference rather than serious physical risks to supply chain sustainability or systemic ecosystem collapse.

The pilot has provided a plethora of feedback relevant to the TNFD and nature-related risk and opportunity assessment more generally. The feedback has highlighted that there are still key areas for further development ahead of the release of the final TNFD recommendations in September 2023. However, some of the key action points and considerations listed in this report have already started to be addressed in the second version of the TNFD framework beta v0.2. Going forward, it will be essential to gather feedback from a wide range of pilots across different sectors, jurisdictions and regions to gain deeper insights into the vast array of challenges and opportunities posed to organisations aligning with the TNFD.



Background

TNFD and its framework for nature-related risks & opportunities

The Taskforce on Nature-related Financial Disclosures (TNFD) launched in June 2021 with the aim of developing a risk management and disclosure framework for organisations to report and act on evolving nature-related risks, and ultimately shift financial flows away from nature-negative outcomes towards nature-positive outcomes. To ensure the final framework delivered by the Taskforce in September 2023 is fit for purpose, the TNFD is releasing beta versions for wider testing, and iterating the framework based on feedback received by market participants and other relevant stakeholders. The first beta version of the TNFD framework (v0.1) was released in March 2022, with a second beta v0.2 released in June 2022 (Figure 1).

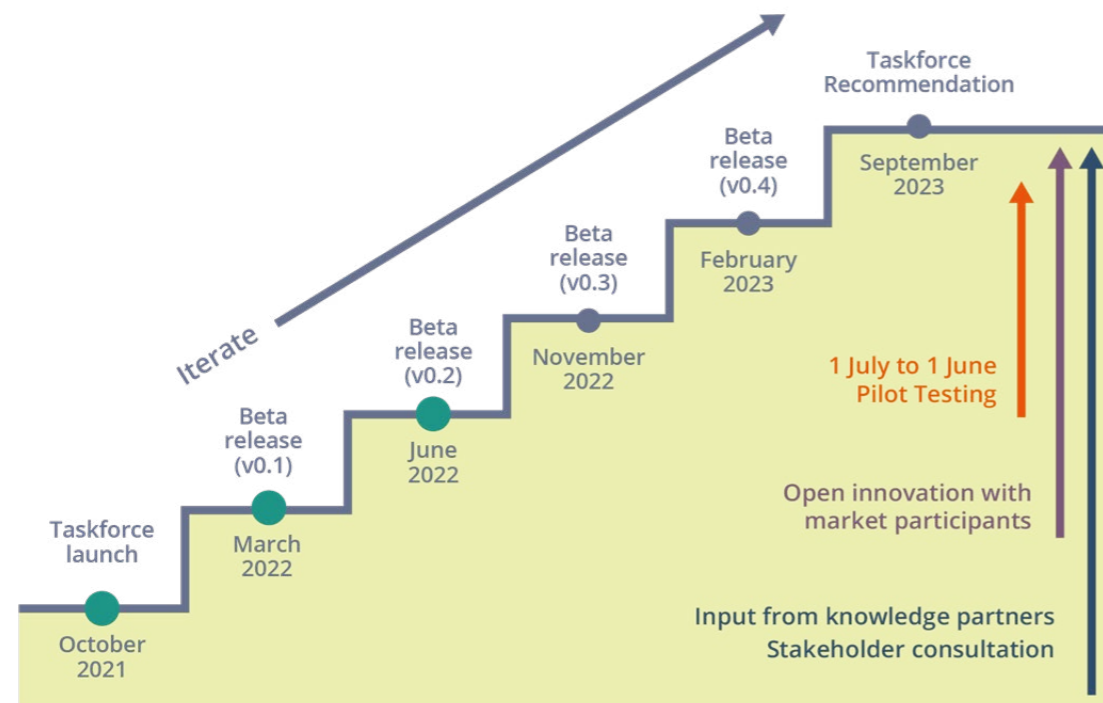


Figure 1: Open innovation timeline for developing the TNFD framework. Source: The TNFD Nature-related Risk & Opportunity Management and Disclosure Framework – Beta v0.2 Release

The Taskforce aspires to see a broad and diverse mix of pilot tests being conducted by corporates and financial institutions across a variety of different contexts. Pilot testing beta versions of the framework provides an opportunity for market participants to explore the implications of the TNFD's proposed approach in their specific organisational context. Sharing insights gathered during piloting with the TNFD will also help inform the development of future iterations of the TNFD framework.



TNFD-supported palm oil pilot

Introduction

Global Canopy is an official TNFD piloting partner, alongside United Nations Environment Programme Finance Initiative (UNEP-FI), World Business Council for Sustainable Development (WBCSD), Financial Sector Deepening Africa (FSD Africa), Agence Française de Développement (AFD) and International Council on Mining and Metals (ICMM). As an official piloting partner Global Canopy is leading its first TNFD-Supported pilot, with support from the Monetary Authority of Singapore (MAS), convening organisations that operate within, or provide finance to, palm oil supply chains. The majority of funding for the pilot was provided by the UK Foreign, Commonwealth & Development Office, with additional funding support from the United Nations Development Programme.

The palm oil sector was selected as a priority pilot due to its significant nature-related dependencies and impacts, and thereby high nature-related risk exposure. It is also a relatively mature sector in its sustainability reporting, and key stakeholders' experience on nature-related risks and opportunities is highly valuable; stakeholders can thus utilise their knowledge to provide key insights and feed these back into the development of the TNFD framework.

The TNFD-supported palm oil pilot follows on from an earlier stage pilot that engaged selected organisations operating within, or providing finance to, soy supply chains. The pilot engaged participants to conduct a desktop review of an exploratory nature-related risk management and disclosure framework. Lessons learned during the soy pilot helped inform the development of the TNFD framework beta v0.1.

Overarching aims and objectives of participant testing

The TNFD-supported palm oil pilot aimed to gather early insights into current practices used in the assessment, measurement and disclosure of nature-related risks and opportunities related to palm oil, as well as common barriers and challenges experienced during the process. Due to the limited timeframe and the early stage of the TNFD framework, testing with participants focused on a desktop review of the TNFD framework beta v0.1.

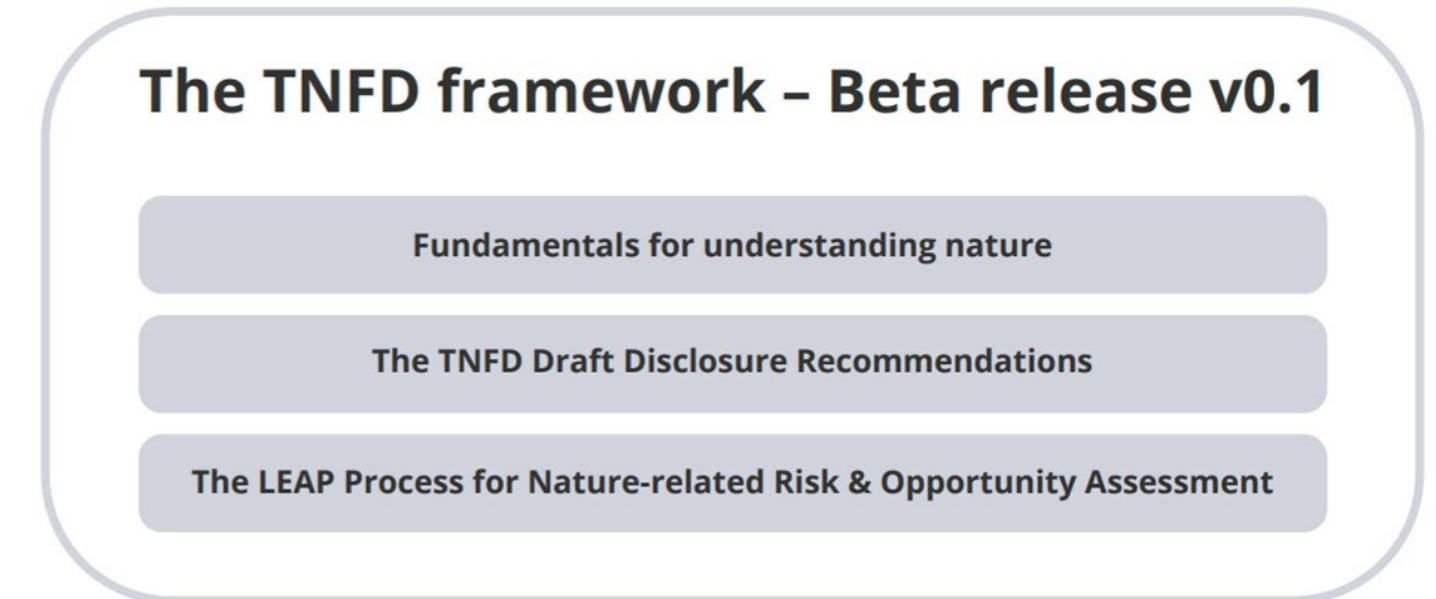


Figure 2: The three core components of the first beta version of the TNFD framework v0.1

The first beta version of the TNFD framework v0.1 consists of three core components [Figure 2]. The components include:

1. **Fundamentals for understanding nature:** an outline of fundamental concepts and definitions which draw on the most authoritative existing science- and consensus-based definitions for nature. The TNFD recommends that market participants use these definitions and concepts when assessing and disclosing their nature-related risks and opportunities;
2. **TNFD's Draft Disclosure Recommendations:** disclosure recommendations for nature-related risks and opportunities which follow TCFD's four core pillars; and

3. The LEAP Process for Nature-related Risk & Opportunity Assessment:

A voluntary assessment process which highlights the different components necessary for corporates and financial institutions to undertake a robust assessment of their nature-related risks and opportunities [Figure 3].

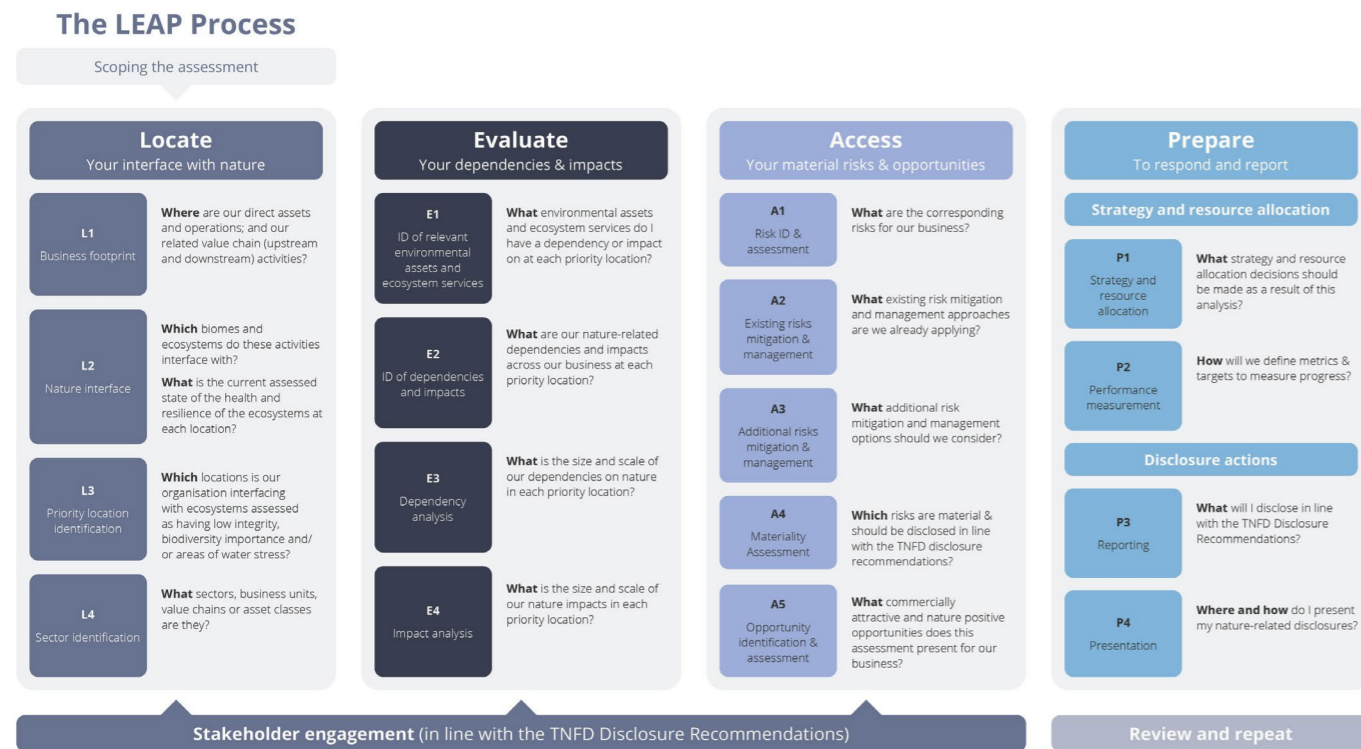


Figure 3: The voluntary TNFD LEAP process for nature-related risk and opportunity assessments Source: The TNFD Nature-related Risk & Opportunity Management and Disclosure Framework - Beta v0.1 Release

To support the participants in providing feedback, the pilot team (Global Canopy) provided some capacity building, helping participants interpret the different components. This was based on feedback from the previous pilot focused on soy supply chains, which indicated that without additional guidance it was at times difficult for participating organisations to interpret overarching TNFD concepts and how these may translate to their individual contexts.

Complementary bespoke research

In addition to participant testing, the TNFD-supported palm oil pilot also commissioned three bespoke pieces of research. The research aimed to provide additional insights into areas for further development that had been identified during the soy pilot, as well as in the TNFD framework

beta v0.1. The full findings from each bespoke research project will be available in August 2022.

These bespoke pieces of research all focused predominantly on palm oil and included:

- A report by the **Forest People's Programme** to provide recommendations on how the TNFD could integrate social and human rights considerations into the framework;
- A report by **Hindsight Consultancy** to highlight potential transition pathways for nature-related financial risks and opportunities;
- A report by **CDP** to provide insight into the alignment between current reporting practices and the TNFD framework beta v0.1.

A short summary of findings from each research piece is also presented in this report.



Methodology

Phase 1

November 2021 to March 2022

Technical guidance design

Global Canopy, alongside an external technical expert on palm oil supply chains, designed accompanying technical guidance which elaborated on the voluntary TNFD LEAP process presented in the TNFD framework beta v0.1 by highlighting potentially relevant metrics, examples and data sources which could be used in the assessment, measurement and disclosure of nature-related risks and opportunities for palm oil. The technical guidance aimed to provide an indication of the type of information that might be required during the assessment process.

Through close engagement with the TNFD, the pilot team was able to circulate the technical guidance to participants shortly following the launch of the first beta version of the TNFD framework in March 2022.

Recruitment

MAS engaged relevant financial institutions and corporates via their network to provide feedback throughout the testing process. Ten organisations were recruited who either operated within or provided finance to palm oil supply chains - six financial institutions and four palm oil traders [Table 1].

To provide additional technical expertise, multiple FIs and corporates recommended that the pilot also engage the Roundtable on Sustainable Palm Oil (RSPO) to gather further relevant feedback, providing greater insights into what is currently being reported by organisations within the

palm oil sector, common challenges in the assessment, measurement and disclosure of nature-related risks and opportunities and key recommendations for development of the TNFD framework. RSPO were posed similar questions to those answered by corporate participants.

The six financial institutions, including a mix of banks and asset managers, have provided significant finance to the palm oil sector in the last decade.

Corporations	Financial institutions
Olam Agri / Musim Mas / Wilmar / Golden Agri-Resources	Rabobank / ING / Schroders / OCBC Bank / United Overseas Bank / MUFG Bank
Additional technical expertise	
Roundtable on Sustainable Palm Oil (RSPO)	

Table 1: Participating organisations in the TNFD-supported palm oil pilot

The four corporations involved are all integrated palm oil traders that together handle a significant proportion of global palm oil, and operate predominantly in South-east Asia. Insights gathered from these organisations therefore represent a limited view of the wider palm oil industry. To ensure a diverse range of views is collated on the ability to assess, measure and disclose nature-related risks and opportunities in line with the TNFD, insights from palm oil corporations across wider geographies and stages of the supply chain will be required in future pilots.

Phase 2

February to June 2022

Engagement

Participants were engaged via 1-to-1 meetings and workshops to discuss the framework and feedback process. An initial workshop was held in March with participants to present the TNFD framework beta v0.1 and technical guidance, followed by four optional drop-in sessions throughout

April on each of the four stages of the voluntary TNFD LEAP process (Locate, Evaluate, Assess, Prepare)².

Questionnaires

Written feedback from participating organisations was collected using two questionnaires. An initial short maturity questionnaire shared with participating organisations consisted of five questions aimed to assess the level of maturity of the participants in relation to sustainability and risk assessment and reporting. The purpose of this questionnaire was to serve as a baseline against which to interpret feedback received when testing the TNFD framework beta v0.1 and accompanying technical guidance. The pilot team recognised the importance of understanding whether, when a particular aspect of the TNFD was listed as challenging or achievable, it was a response from an organisation with significant or limited experience and knowledge of relevant topic areas.

This questionnaire was accompanied by a testing phase questionnaire, the main feedback mechanism, which included sixteen questions aimed at gathering feedback on:

- The coherence of TNFD concepts, definitions, recommendations;
- The readiness of participants to conduct robust assessments of their nature-related risks and opportunities, in line with the components listed in the voluntary LEAP process³, and the possible challenges and opportunities that they may face;
- The data, commonly used metrics, and tools that may be useful in assessing, measuring and disclosing nature-related risks and opportunities in the palm oil sector.

The questionnaire aimed to gather high-level feedback on all three major components of the first version of the TNFD framework beta v0.1.

Analysis

The pilot team analysed feedback received from participating organisations using both qualitative and quantitative research approaches [Table 2]. Preliminary findings were shared with the TNFD Secretariat ahead of the release of the second version of the TNFD framework beta v0.2 and the full findings can be seen in this report.

Qualitative approach	Quantitative approach
Collected and analysed individual narrative responses for each of the 16 questions and statements in the questionnaire	Assessed the percentage of organisations that answered “Strongly disagree, Disagree, Neither agree or disagree, Agree, Strongly agree” or “Did not respond” to individual statements
Collated content by organisation type - financial institution or corporate (where relevant)	
Collected recommendations for improvements that could be made to the TNFD framework	

Table 2: Qualitative and quantitative research approaches used to analyse feedback

2. An additional optional session was held on the ENCORE tool which can be used by organisations to identify their nature-related impacts and dependencies.

3. It should be noted that although the LEAP process is voluntary, and organisations may wish to use an alternative process, it presents the components the TNFD believes are necessary for a robust assessment of an organisation's nature-related risks and opportunities.

Lessons Learned and Recommendations

Participant maturity

The maturity questionnaire highlighted that the organisations participating in the palm oil pilot represent some of the more advanced companies in terms of their commitments and actions on sustainable palm oil. All of the participating corporations have full (or nearly full) visibility of the palm oil mills linked to their supply chain, but hugely varying degrees of visibility of their sourcing plantations (between 8-99% Traceability to Plantations [TTP]). While 4 of 6 financial institutions have some asset level information for their investee clients, the degree of detail varies considerably from sourcing countries to individual assets (processing facilities and mills).

All of the participating organisations have at least one commitment to address their impacts in relation to deforestation, biodiversity, or water, while close to two-thirds have commitments covering all three dimensions. Furthermore, all participating organisations have reported on their climate-related impacts within the last three years, with most organisations publishing this information in line with the recommendations from the Task Force on Climate-related Financial Disclosures (TCFD) or through the CDP Climate Questionnaire. In addition, all but one of the participating organisations are aligning their sustainability reporting with internationally recognised standards such as GRI and SASB.

Fundamentals for understanding nature

The TNFD provides a number of core definitions it recommends market participants use to understand, assess and report on nature-related risks and opportunities. Participants were asked to respond and explain their answers to two statements related to the fundamentals for understanding nature component of the TNFD [Figure 4].

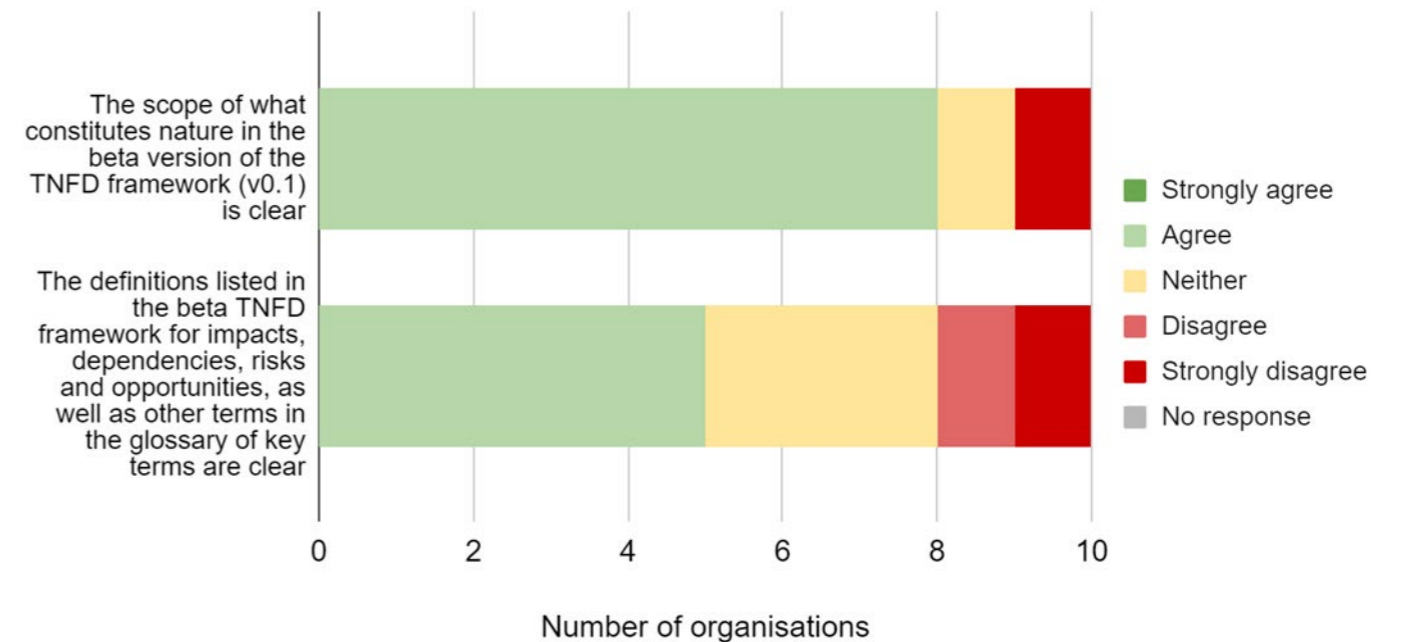


Figure 4: The level of agreement from participants in relation to statements on TNFD fundamentals

Of the eight participants who agreed that the scope of nature within the TNFD framework beta v0.1 is clear, four were FIs and four were corporates. That said, only one corporate participant agreed with the second statement, that the glossary of key terms is clear, whilst three corporate participants either disagreed or responded neutrally. It should be noted that the same corporate participant strongly disagreed with both statements. Qualitative responses for both statements have been provided in Table 3 below.

Key	Financial Institution	Corporate	Both
Lessons learned			
Scope of nature	<ul style="list-style-type: none"> • Concept of nature generally clear and well understood 		
	<ul style="list-style-type: none"> • Concerns over the scope of nature being too broad • What constitutes nature can differ between different sectors • Significant work has taken place over past decades in the palm oil industry to define thinking around nature e.g. high carbon stock forests, high conservation value forests. 		
	<ul style="list-style-type: none"> • Suggestion that it would make more sense to start from the concept of 'biodiversity' rather than 'nature' as this aligns more closely with organisational thinking and other external initiatives (e.g. CBD, NGFS studies, EUT) 		

Glossary of key terms

- Confusion with a number of terms in the TNFD framework beta v0.1:
 - environmental vs ecosystem assets
 - 'dependency' and 'impact' pathways
 - 'indirect' and 'direct' impacts/dependencies
 - 'low integrity' and 'high importance ecosystems'
 - materiality
- Lots of ambiguity/room for interpretation

Table 3: A summary of qualitative responses from **financial institutions and corporates to statements** on the TNFD's scope of nature and definitions

Recommendations for the TNFD

- Better highlight the distinction or link between the concepts of 'nature' and 'biodiversity' as many FIs refer to the concept of 'biodiversity' in their policies rather than 'nature'.
- Additional guidance which tailors generic TNFD definitions to different sectors/industries (e.g. palm oil) is needed to increase relevance and uptake of the TNFD. For example, terms such as High Carbon Stock forests, Primary/Secondary Forests and High Conservation Value forests are terms often used in the palm oil industry.
- Overall feedback on the need to provide more examples to accompany definitions and highlight relevance to different stakeholders (corporates/financial institutions), notably:
 - Provide more nuance and examples for 'dependency' and 'impact' pathways
 - Illustrate materiality with more examples
 - Enhance natural capital definition to include biota/minerals when referencing soil
 - Elaborate on TNFD's table of biomes, environmental assets and ecosystem services, and provide linkages between concepts
- Further highlight the importance of nature and how its destruction can have catastrophic impacts. To help increase the uptake of the framework more relevant examples should highlight how different organisations impact and depend on nature.

Draft disclosure recommendations

The draft disclosure recommendations for nature-related risks and opportunities in the TNFD framework beta v0.1 follow the TCFD's four pillars of governance, strategy, risk management, and metrics and targets:

1. **Governance:** the ways in which the organisation's oversight and decision-making functions take nature-related risk and opportunities into account.
2. **Strategy:** the integration of actual and potential effects of nature-related risks and opportunities in the organisation's business model, strategy and financial planning.
3. **Risk management:** how the organisation integrates nature-related risks into its overall risk management approach.
4. **Metrics and targets:** quantitative and qualitative performance indicators and aims related to nature-related risk and opportunities, based on nature dependencies and impacts.

Participants were asked to respond and explain their answers to two statements related to the draft disclosure recommendations of the TNFD [Figure 5].

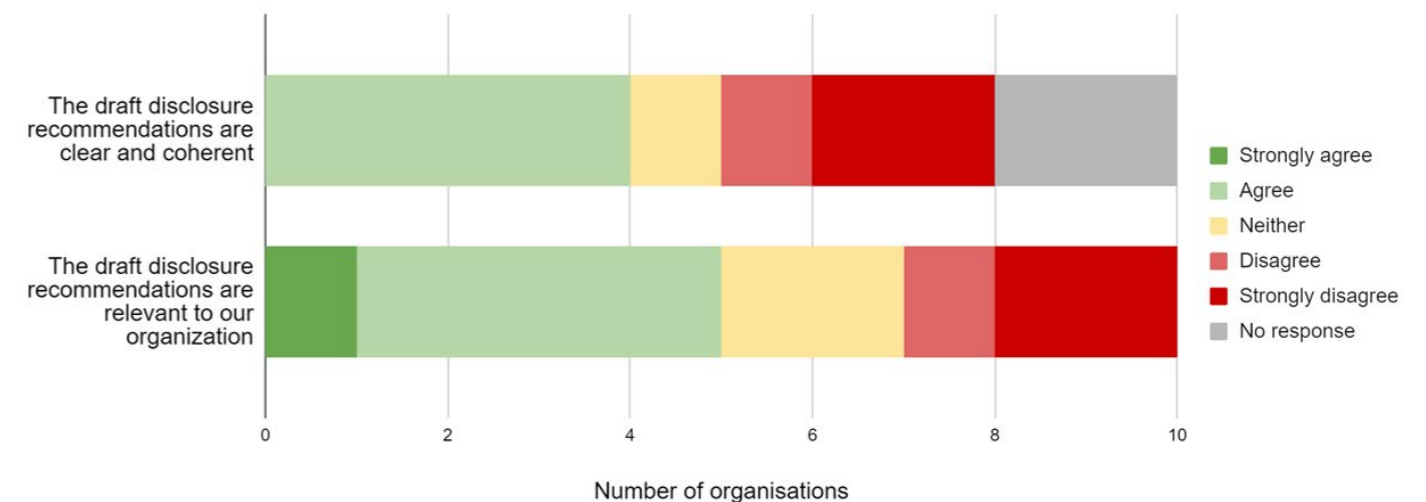


Figure 5: Responses highlighting the level of agreement from participants in relation to statements on TNFD draft disclosure recommendations

Key	Financial Institution	Corporate	Both
Clarity & Coherence	<ul style="list-style-type: none"> Alignment with TCFD disclosures is appreciated. However only when it makes sense, e.g. TCFD-like metrics not useful due to the wide range of potential nature-related risks and opportunities Clarity on nature-related metrics still required (including output vs. impact-related metrics) Clarification on scope of reporting: is it about the risk that clients might impact nature or about the risk that nature decline poses to their business and the financial risks following from that? 	<ul style="list-style-type: none"> Disclosures are logical and integrate nature-related risks well. However, they do not align with current reporting practices (will take time to align with these) Lack of quantitative link between nature-related impacts and risks & opportunities currently makes it difficult to use the TNFD from a credit risk perspective Considerations for rewarding positive impact financing (vs. current risk focused approach) 	
	<ul style="list-style-type: none"> Missing recommendations on frameworks for materiality assessment, minimum requirements for scenario analysis, and evaluating systemic risks missing Missing thresholds to define low integrity and high importance areas missing Clarity on nature-related metrics still required 	<ul style="list-style-type: none"> Provide recommendations on frameworks and tools for nature-related financial impact analysis 	

Table 4: A summary of qualitative responses from participants to statements around TNFD draft disclosure recommendations

The level of agreement on the draft disclosure recommendations varied by organisation type. Notably all three organisations who disagreed with both statements were corporate participants. However, interestingly the remaining corporate participant involved agreed with both statements. Qualitative responses for both statements have been provided in Table 4 above.

Recommendations for the TNFD

- Some recommendations relevant for draft disclosures are reflected in individual steps of the voluntary LEAP process (next page).

LEAP approach for risk & opportunity assessment

Scoping the assessment and LEAP FI

Prior to conducting an assessment of their organisations nature-related risks and opportunities, the TNFD encourages organisations to consider some key scoping questions. For corporations this includes asking questions such as “what business operations can reasonably be considered?” and “which aspects of nature should be considered?”. The answers to these questions will ultimately depend on available resources, knowledge and access to relevant data. For financial institutions, the TNFD presents LEAP FI [Figure 6] which could be considered before embarking on the LEAP approach and consists of four components (F1-F4).

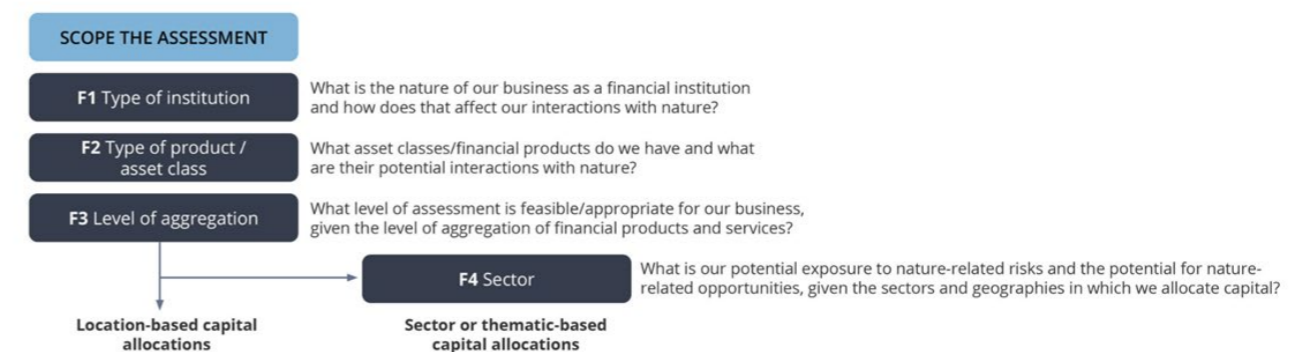


Figure 6: The preceding set of four guiding questions that financial institutions should consider before conducting the voluntary LEAP process.

Qualitative responses related to scoping the assessment within the TNFD have been provided in Table 5 below.

	Lessons learned
SCOPING THE ASSESSMENT	<ul style="list-style-type: none"> Lack of clarity on when to proceed with the Locate or Evaluate phase Confusion on the application of criteria to define assessment scope: e.g. using organisational-level criteria vs. priority landscape-based criteria (Locate phase) Lack of clarity on how to define initial scope of assessment and subsequent roadmap for expanding assessment scope LEAP approach seems more relevant to organisations at early stages of reporting as opposed to more mature organisations, so need to be conscious of current assessment and reporting practices used in mature sectors that have been in place for numerous years

F1: Type of institution	<ul style="list-style-type: none"> See below (F3)
F2: Type of product/asset class	<ul style="list-style-type: none"> Unclear how to proceed through LEAP process for different asset classes Level of financing (holding level or operational subsidiary) and type of loans (e.g. general loans vs. asset-based loans) influences ability to assess nature-related risks
F3: Level of aggregation	<ul style="list-style-type: none"> Level of aggregation could use further clarification It is very difficult for FIs to aggregate by product, service and location because these three are often intertwined. For example, FIs may have all depository, lending, underwriting and advisory, under each of these activities, there are a multitude of products Location-based data can be very patchy depending on geography, which can make aggregation difficult or inaccurate
F4: Sector	<ul style="list-style-type: none"> Financial institutions often do not have asset-level data for non-project related/asset-level financing, making it challenging to conduct location-based assessments

Table 5: A summary of qualitative responses from **financial institutions and corporates** to statements around TNFDs guidance for scoping assessments for corporates and in the LEAP FI process

Recommendations for the TNFD

Scoping the assessment

- Further clarification/simplification of scoping criteria
- Define potential roadmaps for scope of initial and subsequent assessments
- Consider initial focus on impacts rather than dependencies due to current knowledge gaps

LEAP FI

- Provide clarity on when to proceed with location-based assessments for different asset classes or types of financial institutions (F2)
- Consider distinction for short- vs. long-term loans (F2)
- Follow TCFD's model to specify processes for different types of FIs, e.g. banks, asset owners, asset managers and insurers (F3)
- One FI suggested to allow for aggregation based on NAICS industry

- code level (F3)
- Consider having a stronger emphasis for sector-level assessments for FIs given the challenges with obtaining location-based data (F4)
- Clarity on which portfolio-level to apply the disclosure recommendations on (FI)

Locate

The Locate phase of the LEAP Process recognises that organisations interact with nature in specific areas, geographies and regions, and therefore nature-related risks are often location-specific. The Locate phase presents four components (L1-L4) for organisations to consider when conducting their own nature-related risk and opportunity assessment.

Participants were asked to respond and explain their answers to two statements related to the Locate phase of the TNFD LEAP process [Figure 7].

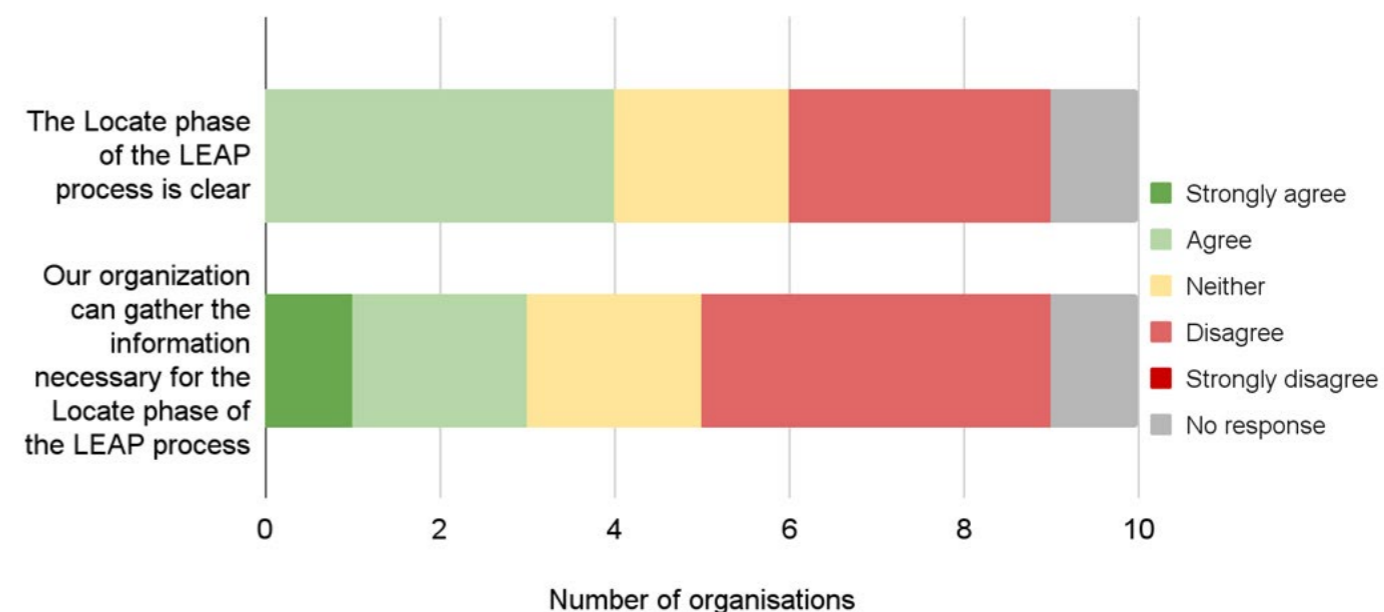


Figure 7: Responses highlighting the level of agreement from participants in relation to statements on TNFD's Locate phase

The level of agreement expressed by financial institutions and corporations on the Locate statements varies. In terms of clarity, only one corporate participant agreed that the phase was clear in comparison to three financial institutions. In terms of organisations ability to gather information, one corporate participant agreed with the statement and two financial

institutions either agreed or strongly agreed. Qualitative responses for both statements have been provided in Table 6 below.

Key	Financial Institution	Corporate	Both
	Clarity & Coherence		Readiness
LOCATE PHASE	<ul style="list-style-type: none"> See below for more details 		<ul style="list-style-type: none"> Mixed feedback from FIs, but consistent recognition that location-based assessments are mostly feasible for asset/project-level financing Current data platforms are insufficient to complete comprehensive assessments at scale
	<ul style="list-style-type: none"> Less relevant for the palm oil sector which has been carrying out assessments on nature-related impacts through more established frameworks/certification/assessments such as HCS/HCV (Corporates) 		<ul style="list-style-type: none"> A stronger consideration of advanced reporting of palm oil industry is required Stakeholders in the palm oil industry have moved to focus efforts on conservation areas and hence a landscape jurisdiction approach, which aims to redirect efforts especially where there is overlap with the need for partnership and collaboration to tackle issues
L1: Business footprint	<ul style="list-style-type: none"> Difficult to get asset-level data for indirect business activities (e.g. value chain) 		<ul style="list-style-type: none"> Most palm oil companies do not have full traceability to plantation level (majority of data available at mill level) Assessment is feasible for asset/project financing but challenging for other financial instruments
	<ul style="list-style-type: none"> Some asset-level information (e.g. concession map) cannot be disclosed due to government regulations Disclosure only feasible for direct operations 		<ul style="list-style-type: none"> Difficult to get location-based data beyond mills for volumes sourced from third-party suppliers Not all asset-level data can be publicly disclosed

L2: Nature interface	<ul style="list-style-type: none"> Unclear what data sources to use Quantifying interactions with nature relies on client disclosures 	<ul style="list-style-type: none"> Can collect using publicly available sources, but many FIs do not have sufficient in-house expertise Challenges with standardisation, analysis, and comparability of impacts/interface-related data
	<ul style="list-style-type: none"> Mapping of business and value chain activities to each habitat is not helpful for the palm sector 	<ul style="list-style-type: none"> Multiple third-party data sources available to monitor supply chain risks (e.g. Palmoil.io, GFW, CRR) HCV-HCS assessments are a common risk assessment methodology in the palm oil sector
L3: Priority location identification	<ul style="list-style-type: none"> Unclear what tools to use for assessments 	<ul style="list-style-type: none"> As above, can collect using publicly available sources, but many do not have sufficient in-house expertise
	<ul style="list-style-type: none"> No comments provided 	<ul style="list-style-type: none"> No comments provided
	<ul style="list-style-type: none"> Lack of clarity on how to define low integrity and/or high importance ecosystems 	<ul style="list-style-type: none"> No comments provided
L4: Sector identification	<ul style="list-style-type: none"> Step is redundant 	<ul style="list-style-type: none"> Some information may infringe on client confidentiality. Specific clients cannot be disclosed
	<ul style="list-style-type: none"> No comments provided 	<ul style="list-style-type: none"> No comments provided

Table 6: A summary of qualitative responses from **financial institutions and corporates** to statements around TNFDs Locate phase

Recommendations for the TNFD

- Provide guidance on expectations for verifying data integrity (e.g. FI responsibility vs. clients)
- Consideration of different reporting expectations for RSPO certified vs. non-certified palm oil
- Further clarification from TNFD on how palm oil-specific tools/frameworks (e.g. HCV-HCS) support TNFD assessments/disclosures

- Stronger acknowledgement of challenges with obtaining location-based data
- Provide additional clarification in the guidance when referring to operational impacts (e.g. office buildings) vs. impacts through investments
- Provide clarity on data disclosure expectations in different regulatory contexts for corporates and in instances of non-disclosure of asset level information for FI's. For example, jurisdictions where concession data cannot be disclosed.
- Additional clarity required on scope, scale and extent of the value chain that should be assessed
- Provide list of reputable sources for determining nature interface to ensure consistent reporting and list of recommended/endorsed tools for assessing different nature-related themes
- Suggest to exclude more complex finance instruments (FIs)
- Consider removing step L4 and integrating into L1-L3 when looking at value chain activities and interface with nature
- Consider defining thresholds for priority ecosystems and mapping 'low integrity' and 'high importance ecosystems' to different standards (e.g. HCV, HCSA, certification standards) would help with interpretation

Evaluate

The Evaluate phase of the LEAP approach enables organisations to assess their nature-related dependencies and impacts at the priority locations identified in the Locate phase of the process. This phase consists of four components (E1 - E4) that organisations should consider.

Participants were asked to respond and explain their answers to two statements related to the evaluate phase of the TNFD LEAP process [Figure 8].

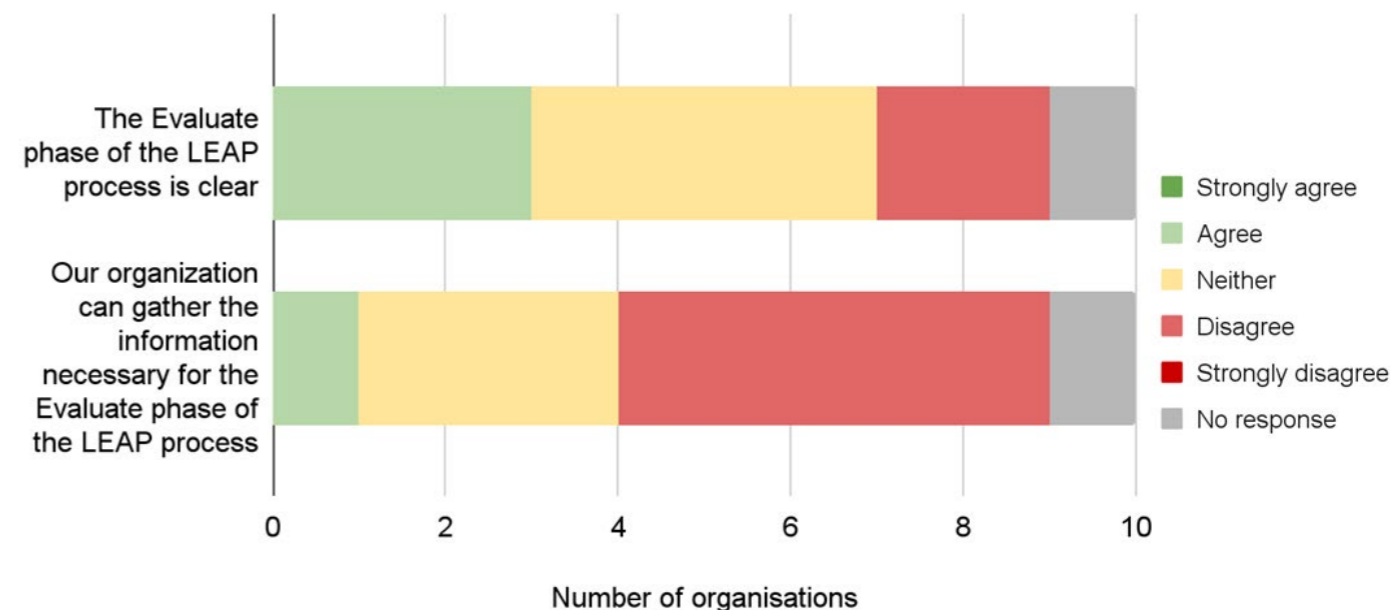


Figure 8: Responses highlighting the level of agreement from participants in relation to statements on TNFD's Evaluate phase

Of the nine participants who provided an answer (one participant did not respond), three financial institutions agreed with the statement that the Evaluate phase of the LEAP approach is clear, while a majority of respondents - three financial institutions and one corporate - responded that they neither agreed nor disagreed, and two corporations disagreed. Meanwhile, only one financial institution agreed with the statement regarding readiness to provide necessary information, while four financial institutions and one corporate disagreed with the statement (two corporates and one financial institution neither agreed nor disagreed). Qualitative responses for both statements have been provided in Table 7 below.

Key	Financial Institution	Corporate	Both
	Clarity & Coherence		Readiness
EVALUATE PHASE	<ul style="list-style-type: none"> • Lack of clarity on when to proceed with location- vs. sector-based assessments • Lack of detail on steps for financial institutions 		<ul style="list-style-type: none"> • More challenging doing assessments at a regional and/or biome level (compared to sector-level) • Ability to complete assessments requires adequate disclosures by companies

	<ul style="list-style-type: none"> Lack of clarity on scope of social considerations that needs to be considered by organisations Industry is focused on prevention (e.g. avoiding deforestation), raising the question of value vs. effort of LEAP process 	<ul style="list-style-type: none"> HCV-HCS assessments and other requirements (e.g. RSPO) cover most of the Evaluate phase Lack of understanding of what data should be collected from suppliers Data collection and analysis can also be time consuming and difficult to manage.
E1: ID of relevant environmental assets and ecosystem services	<ul style="list-style-type: none"> Confusion on the difference between 'environmental assets' and 'ecosystem assets' and the linkages between ecosystem services and environmental assets/ realms 	<ul style="list-style-type: none"> As above
	<ul style="list-style-type: none"> No comments provided 	<ul style="list-style-type: none"> As above. Some of this information could be collected from HCV-HCS assessments
E2: ID of dependencies and impacts	<ul style="list-style-type: none"> Examples of nature-related dependencies and impacts for FIs missing 	<ul style="list-style-type: none"> Low knowledge of nature-related risks Very limited understanding of dependencies
	<ul style="list-style-type: none"> Lack of understanding of how to define dependency/ impact pathways Assessment of the full scale and scope of dependencies and impacts requires ecosystem evaluation studies at a landscape level which go beyond the specific location, and are not within the capacity and jurisdiction of companies. There is limited value in evaluating dependencies and impact if no action can be taken 	<ul style="list-style-type: none"> Qualitative identification of impacts and dependencies is challenging due to primary data availability (direct and indirect suppliers)

E3: Dependency analysis E4: Impact analysis	<ul style="list-style-type: none"> Lack of standardised metrics makes it difficult to aggregate data and compare performance across organisations 	<ul style="list-style-type: none"> No systematic data collection or reporting Due diligence processes rely on self-reported data by clients (e.g. policies, track record) Quantifying impacts & dependencies is challenging given knowledge gaps/lack of availability of tools Lack of in-house capacity and expertise
	<ul style="list-style-type: none"> No comments provided 	<ul style="list-style-type: none"> As above. Some of this information could be collected from HCV-HCS assessments and other tools used in the industry to mitigate nature-related risks due to deforestation, biodiversity and water
	<ul style="list-style-type: none"> Lack of clarity on how to ascertain 'size' and 'scale' on dependencies and impacts 	<ul style="list-style-type: none"> No comments provided

Table 7: A summary of qualitative responses from **financial institutions and corporates** to statements around TNFD Evaluate phase

Recommendations for the TNFD

- Provide clarity on instances when location- vs. sector-level assessments should be conducted (FIs)
- Provide greater clarity on how existing assessments/reporting frameworks feed into the TNFD (rather than creating an additional process)
- Clarity on what data to collect from suppliers (Corporates)
- Clarification of suitable proxies/secondary data sources when location data/primary data not available or collection not possible (both)
- Add examples to future FI guidance (FIs)
- Increased capacity building/availability of tools to assess risks & impacts and endorse specific tools (e.g. ENCORE) to improve credibility of outputs (FIs)
- Provide more detailed guidance/examples of impact & dependency pathways

- Further consideration of the roles and responsibilities of companies (corporates)
- Further guidance to assess size and scale of dependencies and impacts and materiality and provide sample outputs (both)
- Additional guidance required on the metrics which can be used in the evaluation process

Assess

The Assess phase of the LEAP approach enables organisations to identify how impacts identified in the Evaluate phase of the LEAP process translate into risks for the organisation. This phase consists of five components (A1 - A5) that organisations should consider.

Participants were asked to respond and explain their answers to two statements related to the Assess phase of the TNFD LEAP process [Figure 9].



Figure 9: Responses highlighting the level of agreement from participants in relation to statements on TNFD's Assess phase

Of the eight participants who provided a response (two participants did not respond), four financial institutions agreed that the Assess phase is clear, while one financial institution and one corporate disagreed (and two corporates neither agreed nor disagreed). Meanwhile, in relation to the second statement, only one financial institution agreed with their readiness

to provide information, while four financial institutions and one corporate disagreed and two corporates neither agreed nor disagreed with this statement. Qualitative responses for both statements have been provided in Table 8 below.

	Clarity & Coherence	Readiness
ASSESS PHASE	<ul style="list-style-type: none"> • The relationship with NCP or CDSB is unclear 	<ul style="list-style-type: none"> • Risk management and awareness is traditionally well-developed within financial institutions • High granularity is not expected given data challenges/limitations from clients • Lack of in-house knowledge, expertise, and internal assessment methodologies
	<ul style="list-style-type: none"> • See other columns 	<ul style="list-style-type: none"> • Lack of clarity on what data to collect for this phase • Integrated HCV-HCS assessment is a powerful tool for mitigating nature-related risks that link to deforestation, biodiversity and water resource • If the data is already being collected then is the process asking the right questions or should the focus be on additional guidance on specificity of the data that should be collected

Key	Financial Institution	Corporate	Both
A1: Risk ID & assessment	<ul style="list-style-type: none"> Lack of information on scenario analysis Banks face a lot of indirect risks 	<ul style="list-style-type: none"> Challenging for organisations to define scenarios Risk assessments currently rely heavily on self-reported data by clients (often qualitative rather than quantitative) which has limitations for location-based assessments required under the TNFD Stressing financial drivers and metrics with natural factors is a difficult task, requiring assumptions that will decrease credibility of outputs. 	
	<ul style="list-style-type: none"> Lack of information on scenario analysis Lack of understanding of frameworks for qualitative/quantitative assessment of risks and opportunities (including financial impact analysis) Not all nature-related risks can be translated to monetary value 	<ul style="list-style-type: none"> External consultants are likely required for the assessment of physical and transition risks in various scenarios, and financial impact analysis of risks and opportunities. 	
A2: Existing risk mitigation and management	<ul style="list-style-type: none"> Lack of examples of best-in-class management actions 	<ul style="list-style-type: none"> No comments provided 	<ul style="list-style-type: none"> No comments provided
	<ul style="list-style-type: none"> No comments provided 	<ul style="list-style-type: none"> No comments provided 	<ul style="list-style-type: none"> For established palm oil companies, nature-related risks and opportunities are embedded into risk management systems.
A3: Additional risk mitigation and management	<ul style="list-style-type: none"> Lack of examples of best-in-class management actions 	<ul style="list-style-type: none"> No comments provided 	<ul style="list-style-type: none"> No comments provided
	<ul style="list-style-type: none"> No comments provided 	<ul style="list-style-type: none"> No comments provided 	<ul style="list-style-type: none"> No comments provided

A4: Materiality assessment	<ul style="list-style-type: none"> Thresholds for determining materiality are subjective Neither NCP nor CDSB explain how to move from natural capital assessment or impact/dependency analysis to financial risk assessment 	<ul style="list-style-type: none"> Lack of expertise/tools available to determine materiality
	<ul style="list-style-type: none"> Lack of understanding of frameworks for materiality assessment 	<ul style="list-style-type: none"> See other columns
A5: Opportunity identification and assessment	<ul style="list-style-type: none"> See other columns 	<ul style="list-style-type: none"> Reporting on commercial opportunities is not ideal given commercial sensitivities
	<ul style="list-style-type: none"> Lack of understanding of frameworks for qualitative/quantitative assessment of risks and opportunities 	<ul style="list-style-type: none"> See other columns

Table 8: A summary of qualitative responses from **financial institutions and corporates** to statements around TNFD Assess phase

Recommendations for the TNFD

- Provide recommendations/frameworks for scenario analysis, including alignment with climate scenarios
- Provide recommendations/frameworks for qualitative/quantitative assessment of risks and opportunities (including financial impact analysis) (both)
- More guidance on determining materiality (both)
- Clarification on:
 - Whether qualitative assessments can support assessment of risks & opportunities (FIs)
 - How to treat direct and indirect risks (e.g. are FIs responsible for client's risks?)
- Provide standardised risk definitions/scenarios/cases
- Extensive studies may be required to quantify and identify financial risk hotspots (Corporates)
- Develop registry of nature-related risks by location (FIs)

- The LEAP approach to risk identification does not add further value beyond existing risk management systems. Stronger considerations on how to leverage existing assessments (Corporates)
- Provide examples of best-in-class management actions seen in other organisations
- Address gaps in NCP and CDSB frameworks/ provide recommendations on how to proceed given current limitations (FIs)
- Align with existing risk assessment methodologies (e.g. HCV-HCS assessments, RSPO P&C, etc.)

Prepare to respond and report

Following completion of the three stages of the LEAP process, organisations should be ready to provide an integrated assessment of material nature-related risks and opportunities to company executives, which includes advice about the market disclosure of nature-related risks in accordance with the TNFD draft disclosure recommendations. The Prepare to respond and report phase comprises four components (P1 - P4) that organisations should consider.

Participants were asked to respond and explain their answers to two statements related to the Prepare phase of the TNFD LEAP process [Figure 10].

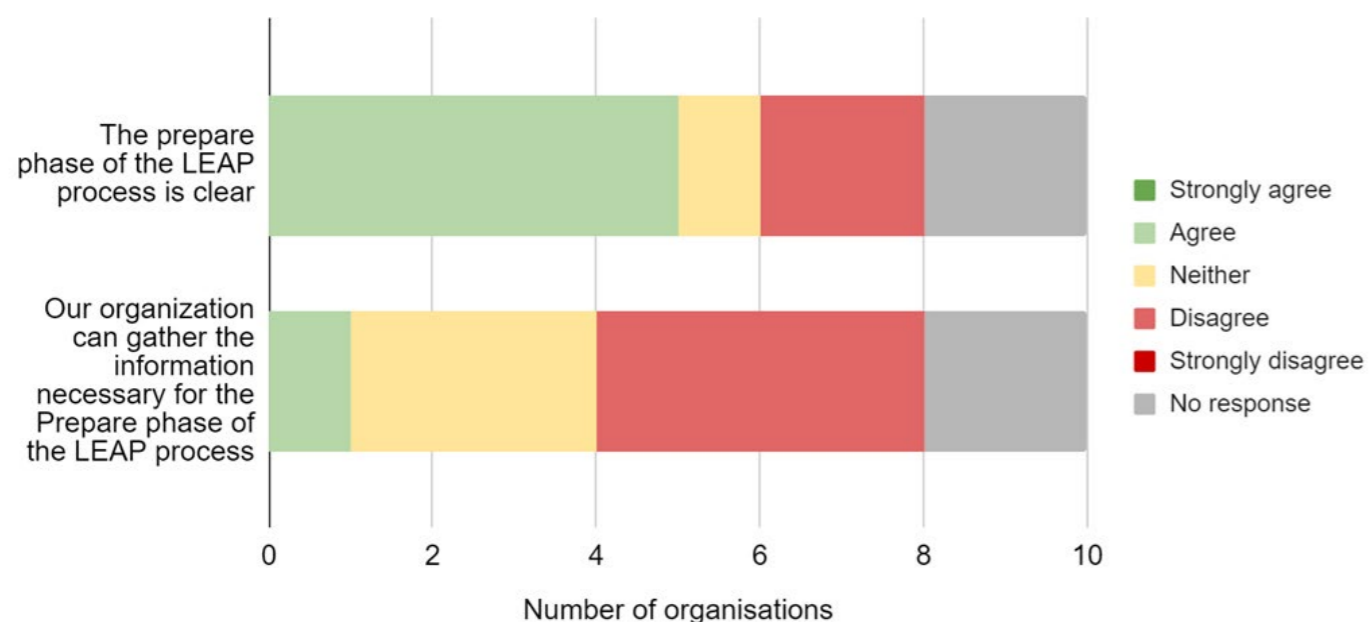


Figure 10: Responses highlighting the level of agreement from participants in relation to statements on TNFD's Prepare phase

Of the eight organisations who provided a response (two participants did not respond), a majority of participants - four financial institutions and one corporate - agreed that the Prepare phase within the TNFD framework beta v0.1 is clear, whilst one financial institution and one corporate disagreed with the statement. With regards to readiness to provide information necessary for this phase of the process, only one financial institution agreed, in comparison to three financial institutions and one corporate who disagreed with the statement. Qualitative responses for both statements have been provided in Table 9 below.

Key	Financial Institution	Corporate	Both
	Clarity & Coherence		Readiness
PREPARE PHASE	<ul style="list-style-type: none"> • Appreciation for alignment with TCFD 		<ul style="list-style-type: none"> • Lack of standardisation and data gaps present significant challenges for quantitative reporting • RSPO members align with some expectations in the LEAP process; however, collating and aggregating data from clients is still not feasible
	<ul style="list-style-type: none"> • TNFD and LEAP lack practicality in reporting for established palm oil companies 		<ul style="list-style-type: none"> • Consultancy support likely required to gather information for all stages of the LEAP process
P1: Strategy and resources allocation	<ul style="list-style-type: none"> • The description with respect to strategy and performance is clear yet challenging to execute • Lack of clarity on definition of short, medium, and long-term risks 		<ul style="list-style-type: none"> • No comments provided
	<ul style="list-style-type: none"> • No comments provided 		<ul style="list-style-type: none"> • No comments provided
P2: Performance measurement	<ul style="list-style-type: none"> • Lack of clarity on which metrics/targets to disclose and whether baselines are required for targets 		<ul style="list-style-type: none"> • Metrics and targets associated with nature/biodiversity-related risks and opportunities is quite new for financial institutions, requiring a lot of time and resources to facilitate organisational learning

	<ul style="list-style-type: none"> Lack of clarity on which metrics/targets to disclose 	<ul style="list-style-type: none"> Palm oil companies are already participating in several sustainability reporting and ratings/assessments
P3: Reporting	<ul style="list-style-type: none"> The disclosure steps require further guidance and a gradual process for implementation Unclear how to report on impacts, dependencies, risks & opportunities → e.g. data requirements; also unclear how these tie with disclosure recommendations (as well as whether the focus is impacts from companies to nature OR impacts from nature-related risks to companies) 	<ul style="list-style-type: none"> No comments provided
	<ul style="list-style-type: none"> No comments provided 	<ul style="list-style-type: none"> No comments provided

Table 9: A summary of qualitative responses from **financial institutions and corporates** to statements around TNFD Prepare phase

Recommendations for the TNFD

- Provide further guidance on :
 - How to deal with data gaps, including considerations for scope of reporting and metrics & targets
 - How to integrate TCFD and TNFD reporting
 - Time horizons for risks and requiring companies to disclose these (FIs)
 - Sector-level guidance for metrics and targets that may be used for different clients in different sectors, given that the material nature-related risks and opportunities may be different for each sector (both)
 - Disclosing opportunities, considering anti-competitive concerns
- Provide examples of different options that organisations could take – for example portfolio reallocation, engaging with the underlying companies, potential hedging of risks (FIs)
- Define minimum disclosure requirements for companies to start with (FIs) and different expectations for companies based on level

- of maturity (Corporates)
- Identify useful and measurable metrics already being disclosed by different sectors (including palm oil)

Feedback and recommendations provided by RSPO

Fundamentals for nature

RSPO recognises that there are varying levels of nature depending on the context in which an organisation operates. In a palm oil context, the definition of nature can oftentimes be more nuanced: e.g. primary (virgin) vs secondary (degraded) jungle, high-carbon storage ecosystems like peatlands, land conversion from other crops. Suggesting the TNFD framework should consider providing additional guidance on the varying levels of 'nature' within palm oil in order to be more in line with sustainability reporting norms in the palm oil industry.

RSPO also recognises that the vocabulary in the TNFD is generic because it is required to be cross-cutting, but suggests there should be some level of alignment and mapping to existing industry-specific terms to enable ease of reporting and also not alienate palm oil-related organisations that do not have the full organisational, operational or financial ability for sustainability reporting.

Draft disclosure recommendations

Overall, RSPO recognises that the draft disclosure recommendations are aligned with their requirements and standards on a directional level, highlighting a focus on certain recommendations compared to others.

The section on metrics and targets touches on aspects that the RSPO are currently working on, and RSPO is interested in additional guidance on metrics and targets from the TNFD framework to explore opportunities for alignment.

LEAP

The LEAP process will be useful and applicable for RSPO members, but its application/applicability may differ across members depending on various factors including their scale of operations, financial ability, technical knowledge, etc.

- Collection and reporting of related information may only be limited to their palm oil-related operations and may be more focused on direct operations for producer members and upstream operations of downstream companies.
- Smallholder farmer groups may not have the ability or knowledge to follow the LEAP process; at least not without some financial, technical or language support.
- The LEAP approach that allows for flexibility regarding the scope of assessment will work well for most companies.
- Palm oil estates may not always be monocultures in certain regions (e.g. intercropping), requiring additional guidance on how to allocate risks to other agri-commodities in such systems.

Provide some example scenarios or sector-specific guidance for actors from the palm oil industry on how the LEAP approach can be applied using existing standards or requirements within the industry (e.g. mapping requirements against HCV-HCS assessments, RSPO P&C, etc.)

Additional feedback

- Seek additional input from corporates and financial institutions that have a presence in West Africa and Latin America where the environmental risk profiles may be significantly different from those in Asia
- Work out how the TNFD can be a vehicle for harmonisation between commodity initiatives - RSPO - RTRS - Are they asking the same questions, how can they align
- TNFD resources should also consider translation into Bahasa Indonesia, Thai, Spanish, French and Portuguese when finalised to cover the major producing regions



Transition pathways, human rights and CDP disclosures

The following section provides short summaries of each individual piece of bespoke research that was commissioned as part of the TNFD-Supported palm oil pilot. It should be noted that these reports were conducted separately to the participant testing process. In addition, the reports were developed by external contractors and therefore do not necessarily represent the views of either Global Canopy or MAS.

Risk and opportunity transition pathways in the palm oil sector

Hindsight Consultancy (HC) was commissioned to develop a report to highlight potential transition pathways for nature-related financial risks and opportunities for the palm oil industry. The report highlighted that nature-related risks and opportunities are already impacting the profitability of the palm oil sector, in some cases materially. Some risks, such as pests, diseases and sea-level rise (e.g. large-scale crop destruction), have the potential to cause significant impacts to the entire sector, but these have not yet manifested at scale.

The report highlighted that while there are many tools and data-sets available for companies to assess nature-related risks and opportunities, there are not yet sufficient tools and data to translate these into financial risks and opportunities. While some financial impacts, such as those from water stress and declining yields, are relatively straightforward for producers to calculate, others - such as those from systemic risks - are

much harder to quantify, and downstream companies face difficulties in calculating their financial exposure to upstream risks.

Key recommendations from the report are summarised below, including suggestions for the TNFD to strengthen the TNFD framework beta v0.1 and create supporting guidance to better enable companies to assess nature-related financial impacts and opportunities. For more information including a detailed overview of financial impacts and opportunities in the palm oil sector, refer to: Hindsight Consultancy. 2022. Identifying nature-related financial risks and opportunities in palm oil supply chains.

RECOMMENDATION 1:

Supporting the development and harmonisation of tools & data

While there has been considerable work - and a number of tools developed - to assist with the valuation of natural capital, tools and data for the quantification and financial valuation of company risk exposure are currently quite limited. For upstream companies, where there are clearly defined assets and where revenues and costs are entirely palm oil-related, such quantification is more straightforward, but for downstream and more diversified companies, assessing financial exposure is complicated.

The case studies detailed in the report mostly focused on physical and transition risks rather than systemic risks, which tend to play out over longer time-scales and for which it is harder to quantify a direct financial impact on companies. In terms of tools and data, there is very little to help companies translate systemic risks from nature loss into financial impacts, especially in terms of probability. The IPCC report contains useful probability analysis and something similar for biodiversity impacts would be helpful to assess risks.

RECOMMENDATION 2:

More research into physical risks is needed

More research and spatial modelling is urgently needed on physical risks such as water stress, disease and temperature impacts to yields - and, particularly, the potential losses to viable productive land area resulting from climate change and the costs of mitigation, where applicable.

Existing models are limited but already suggest serious implications across the globe, including for the new development geographies of Africa and Latin America. Further research will better enable businesses and financial institutions to prepare for the costs of mitigation, make informed choices about geographical diversification, and calculate more accurate valuations of landbanks.

Coordination between climate modelling and nature-related modelling would also help to integrate risk management and provide clarity on some of the overlaps between climate and biodiversity scenarios.

RECOMMENDATION 3:

Scenario analysis is vital to assess nature-related impacts & opportunities

While there has been some good work on scenario analysis at a global scale for biodiversity, this has yet to be translated into specific impacts on forest risk commodities, and the possible financial implications of these impacts. This work is now being done for climate scenarios and there will likely be overlaps with nature-related scenarios to fully understand the changes ahead.

Collaboration between climate and biodiversity scenario analysis would be an invaluable development for the full understanding of risks and possible mitigation actions. In particular, a scientific assessment of probabilities of key events (and combinations of events) would be helpful for the assessment of risk exposure. Finally, more work on scenario analysis for systemic risks would help companies and finance providers to understand their exposure and to diversify where possible. It would also help policymakers to prioritise key actions to minimise these systemic risks going forward. Table 10 below highlights some potential key scenarios that could be explored for the palm oil industry.

Global biodiversity trends and implications for local ecosystems	What key trends are likely to impact palm oil plantations across the globe What is the likelihood and potential significance of such impacts?
Tipping points and irreversible changes the environment	Which tipping points might be materially significant to palm oil cultivation, e.g. changes in weather systems, and what might their impacts be? Is there a mitigation strategy?
Likelihood and possible impacts of pollinator disruption	Given that palm oil is dependent on a single pollinator, what alternative artificial forms of pollination are available? What other strategies are there to mitigate risks?
Likelihood and possible impacts of catastrophic oil palm loss from disease	What are the chances of diseases wiping out entire crops across regions, as happened with Dutch Elm disease, for example? What can be done to mitigate such risks?
Impacts of sea-level rise and possible disruption to plantation locations	What proportion of palm oil plantations are situated in areas which are predicted to be vulnerable to sea-level rise and what are the probabilities and expected timings of sea-level rise? What is the forecast for frequency and intensity of tsunamis in Asia?
Impacts of water stress scenarios on oil palm productivity	What proportion of palm oil plantations are in water-stressed areas and what might that proportion look like in 30 years? What are the impacts on yields likely to be? What mitigation strategies are feasible?

Table 10: Some examples of potential scenarios to consider when assessing nature-related risks and opportunities for the palm oil industry

Human rights impacts of palm oil

Forest Peoples Programme (FPP) were commissioned to develop a report to understand how the TNFD may be able to better integrate social and human rights considerations into the framework.

The report highlighted that while the TNFD aims for the framework to “better align economic activities with the Sustainable Development Goals (SDGs) and help to ensure respect for internationally-recognised human rights – including the rights of indigenous peoples and local communities that play a key role in safeguarding nature”, there is still minimal elaboration in the TNFD framework beta v0.1 on how human rights impacts regularly coincide, and often link, with nature-related impacts in supply chains and investment portfolios. It is additionally unclear exactly how the TNFD will align with the SDGs and international human rights law.

The report suggests that to fully achieve its aims, the TNFD must contribute to the social dimension of sustainability and assist companies and financial institutions to address their human rights impacts by fulfilling their internationally-recognised responsibilities to uphold human rights, including those outlined in the Universal Declaration of Human Rights. Failing to take an integrated approach to sustainability, and to environmental and social risks and impacts, would be a missed opportunity by the initiative, which already has extensive support, reach and credibility among financial market actors. It is therefore highly recommended that future elaborations of the TNFD framework go beyond marginal references to 'social dimensions' and 'human wellbeing' by adopting a human rights-based approach at its core.

As a result, FPP provided a number of key recommendations for the TNFD to consider. For more information including a detailed overview of human rights impacts of oil palm development, refer to: FPP, 2022. Identifying the Human Rights Impacts of Palm Oil: Guidance for Financial Institutions and Downstream Companies

RECOMMENDATION 1:

Re-framing TNFD in the context of human rights

The TNFD should shift from the current conceptualisation of business risks and impact, which takes the financial health of companies and financial institutions as a starting point and an end goal, to one that first and foremost concerns, and aims to eliminate, the risks and impacts to people and communities that experience these risks and impacts. This includes re-defining the concepts of 'risks' and 'impacts', as follows:

- The definition of risks must include an evaluation of the risk to people and communities from companies' and financial institutions' operations, supply chains and portfolios, not solely risks to the corporate actors.
- The definition of impacts must similarly concern the impacts that companies' and financial institutions' operations, supply chains and portfolios have on the human rights of people and communities.

RECOMMENDATION 2:

Incorporating human rights considerations into the LEAP process

The responsibilities of companies and financial institutions to respect human rights should be explicitly incorporated into each step of the LEAP approach to understand and respond to risks and impacts. This would entail integrating the organisations' human rights due diligence processes into the LEAP process by ensuring that organisations:

- **LOCATE** their interface with communities as well as with nature. For example, organisations must identify rights holders in their operations and value chains.
- **EVALUATE** the risks and impacts for rights holders, as well as for nature, from their operations and value chains.
- **ASSESS** existing and identified additional efforts to mitigate risks to and impacts on rights holders in addition to their own organisation.
- **PREPARE** to address the identified impacts on rights holders and disclose steps taken towards this goal.

Human Rights Impact Assessments (HRIAs) are integral components to support businesses in this process. HRIAs aim to identify actual and potential human rights impacts of a business project or set of activities, as well as recommended measures for preventing, mitigating, and otherwise addressing those identified impacts. Indigenous communities and local communities also play an important role in assisting organisations to evaluate their impacts both on nature and human rights.

RECOMMENDATION 3:

Incorporating human rights considerations into TNFD draft disclosure recommendations

Since the TNFD seeks to respond to calls from market participants of a need for "a globally consistent baseline of sustainability disclosure requirements", it is important to include human rights reporting, which is already expected from companies and financial businesses as part of their human rights due diligence (e.g. in the United Nations Guiding Principles on Business and Human Rights [UNGPs]), and set out, for example, in the UNGP Reporting Framework and the Accountability Framework reporting

and disclosure guidance. Some initial considerations for how to integrate human rights in TNFD's four pillar disclosure framework include:

- **Governance:** Organisations should disclose their operational policies and procedures for HRIsAs and where the responsibilities lie within the organisation. This can include policies for non-compliance action protocols, setting out what a company or financier will do in practice on detecting non-compliance in their supply chain or portfolio.
- **Strategy:** Organisations should disclose the potential and actual human rights impacts identified in its operations and value chains.
- **Risk management:** Organisations should disclose what actions they are taking to manage (e.g. prevent, mitigate, and ensure remedy for victims thereof) the identified potential and actual human rights violations and report on the level of progress on the ground. This could include disclosure of engagement with suppliers/investees to address human rights impacts.
- **Metrics and targets:** Organisations should disclose how they have measured potential and actual human rights impacts, including supporting the integration of qualitative methodologies in metrics/measurement (see below).

Considerations for metrics and targets

A future reorientation of the TNFD towards a human rights-based approach will require that data and indicators used by organisations to measure and report on their risks and impacts are equipped to measure impacts on human rights. This means it will be important for the TNFD to balance the need for overall methodological integrity against the need for flexibility in the use of indicators and metrics.

While indicators can be valuable to highlight problem areas and set priorities, more in-depth qualitative approaches are more effective. Moreover, there are fundamental conceptual, ethical, and practical problems in applying metrics to many aspects of human rights outcomes, including:

- While some aspects of rights impacts can be quantified and 'measured' against international standards, there is broad consensus that others

cannot. Human rights impacts are not amenable to the same kind of standardisation and quantification.

- Summing up rights impacts across individuals and groups, and across different types of rights contravenes the basic principles of international human rights law: that rights are indivisible and interdependent (they are all equally important and they cannot be separated) and that they are inalienable (they cannot be taken away). The latter means that every rightsholder who has suffered abuse of a right has the right to remedy, regardless of whether they receive other types of benefits and independently of whether other rights holders have also been affected, positively or negatively. The rights of one person cannot be offset against the rights of another and therefore it is difficult to justify quantifying rights outcomes and summing them.

To address this problem, several sets of criteria for indicators have been developed as alternatives to the standard SMART criteria, which does not easily apply to qualitative indicators because of the inclusion of a criterion for measurability. The alternatives include the OHCHR's RIGHTS criteria⁴; CREAM criteria, which were developed for monitoring and evaluation of performance outcomes⁵; and SPICED criteria⁶. Where indicators are used for human rights, these alternative criteria are more appropriate than the standard SMART criteria and the most appropriate approach depends partly on the nature, scope and priorities of the exercise

Therefore, the TNFD will need to take a flexible approach to incorporating information on human rights outcomes into its methodology.

RECOMMENDATION 4: Ensure effective participation of indigenous peoples and local communities

It is key that the TNFD respects, includes and listens to the voices and priorities of these rights holders who, as seen in this report, frequently face negative impacts in commodity production and value chains. Particular attention must be paid to the security risks of human rights defenders, both in their ongoing defence of rights and nature on the

4. OHCHR (2012) Human rights indicators: a guide to measurement and implementation. HR/PUB/12/5. https://www.ohchr.org/Documents/Publications/Human_rights_indicators_en.pdf
5. Schiavo-Campo, S (1999) Performance in public sector. Asian Journal of Political Science 7(2): 75-87. DOI: 10.1080/02185379908434148
6. Roche, C (1999) Impact assessment for development agencies: learning to value change. Oxfam Development Guidelines, Oxfam. <https://policy-practice.oxfam.org/resources/impact-assessment-for-development-agencies-learning-to-value-change-122808/>

ground and through their potential participation in international fora like the TNFD.

In relation to this recommendation, it should be noted that the TNFD is now partnering with the International Union for Conservation of Nature (IUCN) to engage with Indigenous Peoples and Local Communities (IPLCs). Leveraging IUCN's networks and relationships for an inclusive and participatory consultation process will help ensure the voices and perspectives of IPLCs from around the globe are incorporated into the design and development phase of the TNFD Framework.

CDP Forests and the TNFD LEAP process

As the TNFD aims to be integrated into and enhance existing disclosures and other standards, CDP was commissioned to develop a report to understand how disclosure through the CDP forests questionnaire aligns with the voluntary TNFD LEAP process, noting where information is or is not already being collected, any elements organisations find challenging, and what opportunities there may be going forward.

To align with the wider TNFD-Supported palm oil pilot, CDP extracted 2021 Forests data and filtered for companies disclosing information on palm oil production, trade or consumption. In total 233 companies disclosed information in the CDP Forests questionnaire for palm oil. Nature-related responses were then identified (actions or events directly linked to ecosystems) and analysed, then mapped to individual LEAP components. The aim was to highlight:

- Relevant data collected in the CDP Forests questionnaire;
- How these companies respond to specific questions; and
- How this relates to the components of the voluntary LEAP process

Some insights from the report have been highlighted below. For more information, refer to: CDP, 2022. Using CDP data for nature-related risk and opportunity assessments: A review of the overlap between existing disclosure on palm oil to CDP and the likely requirements of the TNFD LEAP approach.

Locate

The CDP forests questionnaire asks for some information relevant to the Locate phase of the LEAP process. Six questions in the 2021 questionnaire were identified as relevant, with two additional relevant questions noted as being introduced in 2022. Most of these relate to the locations of assets held, or ability to trace origins of commodities; however, there are also two questions which provide the opportunity for companies to highlight information on the environmental state at identified locations.

In terms of responses, companies are used to reporting on land controlled or managed, or the existence of traceability systems, but only to a certain level of granularity. Land holding companies, for instance, report on area and type of land but do not currently have to report exact locations of their assets - although they could if they wanted, and were able to, disclose such information. However, traceability results showed just 14% of reporting companies could trace at least half of their palm oil supplies to the plantation level. Finally, whilst data on environmental conditions was collected peripherally, there is no comprehensive requirement to assess environmental integrity at site locations.

CDP Forest questions partially cover the Locate phase but analysed data highlighted potential challenges in determining granular information for the location of relevant assets and operational sites. Companies are relatively used to disclosing the location of their assets or sourcing to a certain level (L1 - Business footprint), but robust assessments of nature-related risks and opportunities in line with the LEAP process would benefit from increased granularity. Any CDP location data would then have to be complemented by fairly comprehensive information on the surrounding environmental condition and importance of these sites (L2 - Nature interface). Such information is not assessed comprehensively within CDPs forest questionnaire and organisations may need to rely on external sources in order to follow prioritisation steps L3 (Priority location identification) and L4 (Sector identification).

Evaluate

The Evaluate phase of the LEAP process focuses on an organisation's nature-related impacts and dependencies. In the CDP forests questionnaire, companies are asked to provide comprehensive details on the levels of production and consumption across five questions, with a sixth due for introduction in 2022. These include the degree to which such volumes can be verified as deforestation and/or conversion-free. This information could help assess relative levels of an organisation's likely nature-related impacts and dependencies. Questions on risk assessment and policy development in the questionnaire also cover the degree to which impacts and dependencies have been assessed but not in detail.

Companies respond to the questions on consumption and production relatively comprehensively, with over 70% able to estimate financial dependence on palm oil. Over half of these companies also reported sourcing from areas with high deforestation risk. However, a significant proportion did report that they had production and consumption data but were unwilling to disclose such information, primarily for commercial reasons. When questioned about considering environmental impacts and dependencies, over half of companies indicated they had considered such elements in their risk assessments and over half included responses to address them in their policies.

The CDP forests questionnaire covers limited aspects of the LEAP Evaluate phase. Questions around impacts tend to focus on impacts of environmental risk on the company, and less on impacts of the company on the environment. Nevertheless, companies do report comprehensively on their volumes of palm oil use, which are important indicators when assessing relative nature-related impacts and dependencies for E2 (ID of dependencies and impacts) and E3/E4 (Dependency/impact analysis) components. Over half of companies disclosing indicated that they conduct such impact and dependency analyses as part of their risk analysis.

Assess

The CDP Forest questionnaire asks for a wide variety of information relevant to the Assess phase of the LEAP Process, with thirteen questions of relevance identified, most focused on the risk and opportunity analysis the companies carry out related to deforestation.

The responses show that few companies currently perceive forest-related impacts as occurring now, with just 12% reporting these as an issue, most (74%) of which were reported as transitional risks, not physical risks. However, most companies (78%) are conducting some form of forest-related risk assessment for the future. The scope and depth of these varies, but most (71%) reported finding risks with a substantive financial or strategic impact on their business. These risks were still largely (60%) perceived as being transitional risks, but 22% did identify physical risks as being significant. Two thirds of respondents were also identifying potential opportunities, including increased brand value and rising demand for certified materials.

For the TNFD LEAP process, there are multiple relevant questions in the CDP Forest questionnaire when considering palm oil company disclosures for components A1(Risk ID & Assessment) and A2 (Existing risks mitigation & management). For A3 (Additional risks mitigation & management), additional risk mitigation is not directly covered, but the questionnaire does ask for responses corresponding to each risk reported. Questions regarding likelihood and magnitude for each risk would also help identify which risks are material in line with component A4 (Materiality assessment). Finally, the CDP Forest questionnaire asks multiple questions about opportunities in line with A5 (Opportunity identification and assessment).

However, the results also highlighted a possible underestimation of risks. Just 29% of risk assessments from disclosures on palm oil were found to be sufficiently comprehensive to meet the required KPI CDP sets for risk assessments. In addition, where risks were identified they tended to focus on transitional risks, such as reputation or stakeholder preferences. At

present there appears to be very little recognition of physical or systemic risks within disclosures. The more comprehensive framework provided by LEAP may help facilitate the recognition and management of such risks.

Prepare

Prior alignment with TCFD has resulted in multiple questions relevant to the four core disclosure pillars and Prepare phase of the TNFD LEAP process. Questions include for example what board-level oversight the organisation has on forest-related issues, whether forest-related risks are integrated into the organisation's long-term strategic business plan and what targets and commitments the organisation has on forest-related issues.

Out of the organisations who responded, 72% highlighted that their organisation had board level oversight of forest-related issues, 70% highlighted that forest-related issues were integrated into their long-term strategic business plan and 75% of companies reported that they have time bound and quantifiable targets for increasing sustainable production/consumption of palm oil.

In relation to the LEAP process, multiple questions in the CDP Forests questionnaire, notably the Governance and Business Strategy modules, are relevant for P1 (Strategy and resource allocation) in the Prepare phase. For P2 (Performance measurement) multiple questions are posed in the questionnaire which gather insights into targets and progress towards meeting such targets.

Key takeaways

- There is significant alignment between what CDP has been asking companies for over a decade and what the LEAP process is advising companies to do in future. Much of the data disclosed through the CDP forests questionnaire could also be used in a LEAP assessment.
- However, a robust assessment of nature-related risks and opportunities in line with the voluntary LEAP process may require increased granularity and depth than some of the data currently captured or available in the CDP forest questionnaire, particularly in respect to assessing the state

of the environment and assessing company impacts and dependencies. Completing a LEAP assessment may well therefore require significantly more time and resource than completing the CDP forests questionnaire. TNFD will need to carefully manage the balance between gathering sufficient information to understand and manage environmental data with the burden of reporting to the market.

- Whilst there is significant overlap, the CDP forests questionnaire and the LEAP process provide very different views of a company. The CDP questionnaire provides specific information on company progress towards the eradication of deforestation from its supply chains. The LEAP process will ultimately provide a far more comprehensive overview of all the ways a company interacts with its environment, the degree to which these relationships are being managed and how to report these data to the market.
- In the future, CDP expects to expand its disclosure platform to better capture a wider range of nature-related risks and opportunities in a more integrated way and expects to use the TNFD LEAP approach as a structure.
- Disclosures on palm oil are actually some of the most advanced compared to other forest-risk commodities, but even here the same patterns are being exhibited as were summarised across sectors in CDP's annual forest disclosure report [Link]: action is happening in all areas required, but only a minority of companies are able to show they are taking sufficient action across the board.
- CDP data also suggest that palm oil companies have a way to go before they recognise the levels of risks and opportunities being recognised by others, particularly with regard to the importance of physical and systemic risks to the business, rather than the more commonly understood transitional risks. The TNFD approach should help companies achieve this, but the lack of perceived concern may also be a barrier to implementing it in the first place.

Process lessons

Global Canopy’s early-stage pilots have provided valuable lessons not only for the development of the TNFD framework but also for the implementation of pilots. Building from the soy pilot, the TNFD-supported palm oil pilot has highlighted a number of lessons for those organisations considering the implementation of their own TNFD-supported pilots [Table 11].

Lessons Learned	Description
Determine maturity and interests of participants early to ensure pilot scope is as valuable as possible	The pilot highlighted that very early engagement of participants around their current level of maturity and interests in regards to nature-related risk and opportunity assessment, measurement and reporting is essential in determining the most valuable pilot scope possible. The overarching nature of the first version of the TNFD framework, for example, suggests a desktop review of current practices and alignment that may not provide substantively new insights to organisations who have been reporting on sustainability and associated risks for many years. For such mature organisations, a deeper dive into particular elements of interest (e.g. nature-related dependencies, opportunities, scenario testing etc.) would ensure the pilot is valuable and the highest possible level of engagement is achieved.
Capacity building takes time	Both the soy and palm oil pilot highlighted that it can take significant time for participants to interpret requirements laid out in the first version of the beta framework. The development of additional technical guidance specific to those industries has helped expedite this process. However, workshops, 1-to-1 meetings and webinars were also utilised for capacity building purposes. Future pilots would do well to start capacity building early and frequently to ensure deep valuable insights can be gathered by the culmination of the pilot. Furthermore, participants highlighted that additional time should be spent going through the framework at the start of the pilot. It was also highlighted that separate sessions for corporates and financial institutions may be useful so that different aspects can be discussed and addressed.

Much more in-depth testing is required going forward

To aid participating organisations in the feedback process, more examples and use cases will be essential moving forward. It is still difficult for organisations to interpret overarching requirements without additional examples of organisational journeys through the LEAP process and example disclosures.

More detailed guidance is expected in the second iteration of the beta version of the TNFD (v0.2) which will be necessary to help organisations conduct such testing. Future pilots should also recognise that many elements of the framework still require further thinking and development. Pilots can serve as a platform to initiate the development of guidance, tools and examples for these elements. One such example might be nature-related systemic risks, which are not currently commonly assessed and measured. Mature front-runner organisations can help support the TNFD by leading pilots in such unfamiliar areas, working through what guidance may look like and what would be practically useful to other organisations.

Table 11: Key process lessons learned during the implementation of the TNFD-supported palm oil pilot



Conclusion

The overarching aim of the TNFD-Supported palm oil pilot was to help inform the development of a TNFD framework that is fit for purpose and market ready. Through conducting a desktop review of the TNFD framework beta v0.1 alongside accompanying technical guidance relevant to palm oil, the pilot was able to collate feedback on the clarity and coherence of different concepts as well as the readiness of participants to undertake their own nature-related risk and opportunity assessments in line with the TNFD. The feedback provided by participants varied in respect to the different statements and questions posed, however there were some common points raised for each key component of the TNFD framework beta v0.1.

Participants highlighted that for the fundamentals for nature, the scope of nature was generally clear and well understood but the TNFD should be conscious to better highlight the distinction and/or relationship between the terms 'biodiversity' and 'nature' and provide greater clarity for several different terms in the glossary of key terms (e.g. low integrity ecosystems). One example given was the suggestion for more detailed definitions for TNFDs table of biomes (e.g. subterranean freshwater ecosystems), ecosystem services and environmental assets. In addition, concerns were raised by multiple corporate participants around the high-level concepts and the broad scope of nature. These corporate participants highlighted that there are often nuanced definitions of nature used in different sectors and industries which have typically been developed over multiple years and reflect current best practice. For the palm oil sector, such definitions include, for example, high carbon stock forests, high conservation value forests, primary/secondary forests etc.

Regarding the draft disclosure recommendations, alignment with the TCFD was generally appreciated by financial institutions and

recommendations were deemed to be logical and integrate nature-related risks well. However, there was recognition that it would take time to align current reporting practices and would require further guidance on which portfolio-level to apply the disclosure recommendations. The corporations involved raised concerns over the lack of guidance for materiality assessment, minimum requirements for scenario analysis, and evaluating systemic risks.

When considering scoping the assessment for nature-related risks and opportunities, participants highlighted a lack of clarity for defining assessment boundaries (e.g. how much of the value chain to assess), especially concerning different types of companies. Some also pointed to the lack of clarity with regards to criteria that could be used to define scope, for example whether to use organisational level or priority landscape-level criteria. Suggestions were made to provide greater clarity on requirements at this stage, including clearer scoping criteria, as well as providing roadmaps to follow for initial and subsequent assessments. For FIs specifically, more guidance on how to proceed through LEAP for different asset classes (e.g. how to proceed with location-based assessments for different asset classes) was requested.

For the Locate phase of the LEAP approach there was recognition that location-based assessments can often be challenging and many FIs do not have asset-level data for non-project or asset-level financing. Moreover, accessing asset-level data for indirect business is challenging and their ability to gather data depends on their clients' ability to disclose. However, corporates, in turn, highlighted the fact that they cannot disclose asset-level information (eg. concession maps) due to government regulations and struggle to get location-based data beyond mills for volumes sourced from third-party suppliers. As a result it would prove useful if TNFD was to provide greater guidance as to how to proceed in instances of non-disclosure of asset-level information, as well as consider defining thresholds for priority ecosystems.

For the Evaluate phase of the LEAP approach, participants suggested that the provision of more examples for nature-related dependencies and impacts would support them in their own assessments. Both financial

institutions and corporates were confused about how to determine the 'size' and 'scale' of dependencies and impacts in line with the TNFD framework beta v0.1, which highlighted a need for more detailed guidance. Specifically, concerns were raised around the lack of data and understanding of dependencies. Further recommendations included endorsing certain tools to improve the credibility of outputs, providing prescriptive metrics (and associated measure units) as per the TCFD, and providing greater clarity around practical alignment and harmonisation with existing frameworks and reporting practices.

From multiple corporations involved there was also recognition that for palm oil relevant environmental assets, ecosystem services, related dependencies and impacts are well understood within their own operational area, however assessment of the full scale and scope of dependencies and impacts would require ecosystem evaluation studies at a landscape level, which goes beyond specific location. This raised concerns around whether this was in the capacity and jurisdiction of corporations, and the value of evaluating dependencies and impacts if ultimately no action can be taken to protect the biomes.

Whilst a majority of participants agreed that the Assess phase of the LEAP approach was clear, some financial institutions stated the need to illustrate best-in-class mitigation strategies. Moreover, multiple financial institutions highlighted their limited expertise and knowledge to determine materiality requiring further guidance on this component. Both FIs and corporates raised concerns over the lack of information and understanding in relation to both frameworks for qualitative/quantitative assessment of risks and opportunities and scenario analysis, as well as associated challenges in defining the latter.

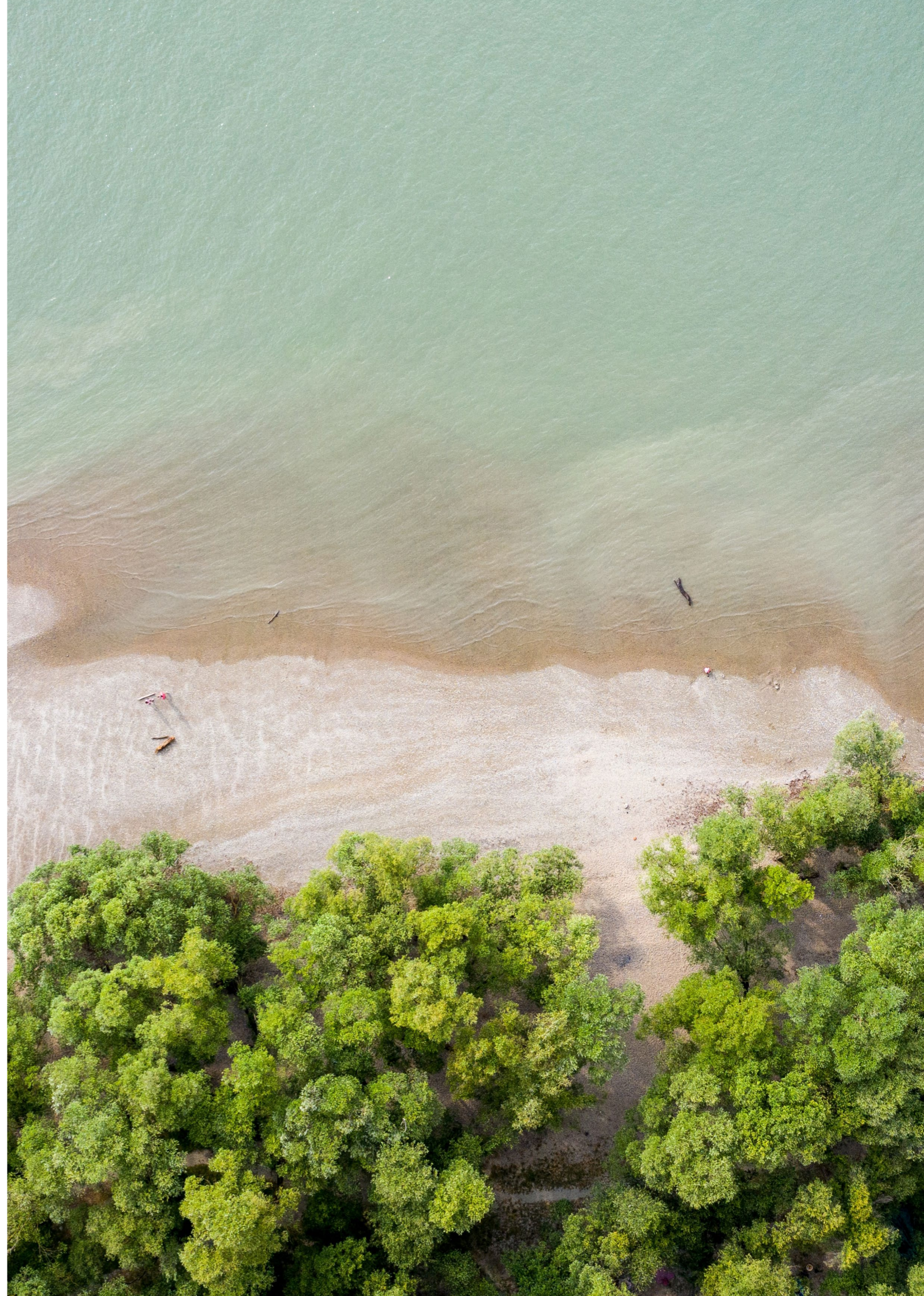
Multiple corporations also highlighted that integrated HCV-HCS assessments are powerful tools for mitigating nature-related risks that link to deforestation, biodiversity and water resources and therefore questioned whether the LEAP approach to risk identification currently added any further value to their organisations.

Most participants also agreed in the questionnaire that the Prepare phase of the LEAP approach was clear; however, the overarching narrative feedback highlighted the lack of clarity provided on metrics and targets. Feedback notably pointed to the need to develop sector-level guidance for metrics and targets that may be used for different clients in different sectors, given that the material nature-related risks and opportunities may be different for each sector. At the same time, there is a need to take into consideration different levels of organisational maturity and adapt expectations accordingly.

In combination with participant feedback, the three bespoke pieces of research highlight some important considerations for the TNFD ahead of the next iteration of the TNFD framework beta (v0.3) expected later this year. This research should also start to address concerns raised by participants during the testing process. Harmonisation and alignment with current practices was a recurring question from participants during the piloting process. CDP's report shows how much of what organisations are already doing can be used in the assessment, measurement and disclosure of nature-related risks and opportunities in line with the TNFD. Additional use cases and examples were identified as important to enable organisations to interpret the TNFD's recommendations: Hindsight Consultancy's report provides more examples of the types of transition pathways that could lead to nature-related risks and opportunities for the palm oil sector. Finally, social considerations and their link to nature and how these are incorporated in the framework is currently in development: FPPs report on social impacts and human rights within the palm oil sector helps provide some recommendations for the TNFD on how such elements could be incorporated.

The pilot has provided a plethora of feedback relevant to the TNFD and nature-related risk and opportunity assessment more generally. The findings have proved extremely valuable and much of the feedback has already started to be addressed in the second version of the TNFD framework beta v0.2 which was released in June 2022. For example the second TNFD framework beta v0.2 has additional information on metrics and targets, more detail on the LEAP FI approach, as well as further clarity

on particular key terms e.g. biodiversity importance and ecosystem integrity. This additional guidance will help organisations conduct more in-depth TNFD pilots going forward, an exercise that will provide valuable internal capacity building to piloting organisations and deeper insights for the TNFD. This is essential as many more pilots across different sectors, jurisdictions and regions are already planned over the coming year and will be required to ensure the final TNFD recommendations are both fit for purpose and globally inclusive.



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