

TNFD 101 I SEPTEMBER 2023

An illustrated guide to the future of nature reporting

Summary

The authors	03
Introduction - Recognising the connections we have with nature	04
Part 1 - 6 essential questions about the TNFD	05
1. What is the purpose of the framework?	06
2. Is the framework mandatory?	07
3. What kind of analysis can be conducted using the framework?	08
4. How much time and resources are required to use the framework?	10
5. What are the main limitations of this framework?	11
6. What are the main outcomes of this framework?	12
Conclusion - Taking the first step: initiating action on nature	13
Part 2 - The LEAP methodology: an illustrated guide	14
1st step: Locate	15
2nd step: Evaluate	20
3rd step: Assess	23
4th step: Prepare	25
Conclusion	26

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Recognising the connections we have with nature

Recent findings from the World Economic Forum revealed that approximately **US\$44 trillion**, equivalent to nearly half of the world's GDP [1], is moderately or highly dependent on nature. Yet, recognising the larger and profound connections that our economy has with nature is a true challenge for any financial institution and corporation.

It is, therefore, crucial for every economic player to gain a comprehensive understanding of how their interactions with nature can be effectively measured and managed. This understanding is vital not only to reduce the impact their activities have on nature and mitigate the potential physical and transitional risks, but also to envision the first steps towards creating positive impacts within their ecosystems.

Today, by leveraging new frameworks, such as the **Taskforce on Nature-related Financial Disclosures (TNFD) [2]**organisations of all sizes and jurisdictions

can effectively gain vital insights, identify, assess, manage, and disclose nature-related dependencies, impacts, risks, and opportunities.

Unfortunately, navigating the extensive documentation of this nature-related risk and opportunity management and disclosure framework can be timeconsuming. At AXA Climate, we have developed thoughtfully designed resources to facilitate the initial steps of the TNFD framework for any financial institution corporation. resources have been created to assist stakeholders to easily navigate through the hundreds of pages of the framework and engage efficiently with its tools and methodologies.

These include (i) the answers to the most frequently asked questions and (ii) an illustrated guide on the methodology proposed by the TNFD to study nature.



TNFD 101 | PART 1

6 essential questions about the TNFD

1. What is the purpose of the framework?

Numerous reports and studies highlight the alarming decline of nature and biodiversity. For instance, the 2022 global Living Planet Index shows an average of 69% decrease in monitored wildlife populations between 1970 and 2018 [3].

The Taskforce on Nature-related Financial Disclosures (TNFD) was established in 2021 to address the pressing need to incorporate nature into **financial and business decision-making**.

Given the urgency of the situation, it is crucial to account for all the interactions organisations and financial institutions have with nature. The TNFD offers three key entry points to achieve this:

1. Establishing a shared foundation: The TNFD aims to create a common understanding of concepts and definitions, ensuring that all economic players possess a minimum level of knowledge and can exchange information on nature-related topics.

- 2. Promoting transparency through disclosure: The TNFD provides recommendations for disclosing information, ensuring transparency and enabling consistent reporting of organisations' interactions with nature.
- 3. Adopting a comprehensive assessment approach: The TNFD introduces the LEAP (Risk, Impact, and Opportunity Assessment) methodology, which offers a unified and accurate framework for studying nature's role across sectors and companies.

By incorporating these entry points, the TNFD aims to align with global reporting baselines, accommodate different approaches to materiality, encourage early action, and provide a pathway for increasing disclosure ambition over time.

2. Is the framework mandatory?

The TNFD is a market-led initiative, which means that the framework is driven by the forces and participants within the market rather than being imposed by regulatory or governmental authorities. It is developed and guided stakeholders various from sectors, including businesses, financial institutions, investors, and other market participants.

The primary goal of the TNFD is to meet the market's needs and demands by promoting **voluntary adoption and integration** of nature-related disclosures and risk management practices into organisations' operations. This initiative aims to assist private actors in understanding and disclosing their interactions with nature and biodiversity.

While TNFD reporting is currently not mandatory, it is important to highlight that it follows the footsteps of the **Taskforce on Climate-Related Financial Disclosures** (TCFD). The TCFD has become a globally recognised standard for climate-related extra-financial reporting

and some countries such as the United Kingdom or Japan have even adopted TCFD-aligned reporting requirements. The TNFD aspires to achieve a similar level of recognition and adoption within the market.

Additionally, the emergence of new regulations, such as the Sustainable Finance Disclosure Regulation (SFDR) **Corporate Sustainability** Reporting Directive (CSRD), as well as frameworks like the triple capital accounting framework bν International Sustainability Standards Board (ISSB), is increasing the pressure on financial institutions and corporations to their activities disclose concerning environmental and social matters.

The TNFD efforts to promote more transparency are crucial in mitigating risk exposure to natural assets, reducing negative impacts on nature, and fostering a nature-positive approach.

3. What kind of analysis can be conducted using the framework?

The 2023 global risks report by the World Economic identified Forum has "biodiversity loss and ecosystem collapse" as one of the deteriorating global risks in the coming decade [4]. As our society's intricate connection with nature is undeniable, it is vital to understand the complex dynamics of this relationship. The TNFD offers a structured methodology to do so and risks, study impacts opportunities due to these interactions.

This relationship and the materiality of this risk on specific sectors can be illustrated through the example of food production. According to Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), animal pollination contributes significantly to global crop production, estimated to be worth between US\$235 billion and US\$577 billion annually [5]. However, this crucial process is at risk due to the decline of pollinators.

Similarly, in the energy production sector,

nature plays a vital role, as demonstrated by the Binga hydroelectric facility in the Philippines.

Extensive deforestation in the Agno River basin has led to siltation of the river and reservoir, causing the 100-megawatt facility to operate intermittently [6].

These examples highlight the interdependence between nature and various sectors of our economy, underscoring the urgent need to address the risks associated with biodiversity loss and ecosystem collapse.



The TNFD framework, and its integrated assessment process called LEAP, enable organisations to analyse various risks and opportunities associated with nature. This approach, in particular, is intended for adoption by diverse corporates and financial institutions, through four main steps:

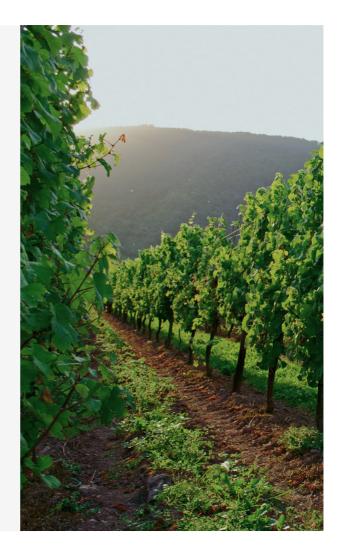
- 1. **Locate:** Map the company's interface with nature to define a priority list of assets.
- 2. **Evaluate:** Identify the dependencies and impacts on natural assets and ecosystem services.
- 3. **Assess:** Transform the dependency and impact results into a risk and opportunity study.
- 4. **Prepare:** Develop strategies and actions to manage risks and capitalise on opportunities.

Even though the LEAP approach allows for the fulfillment of only certain aspects of the TNFD disclosure recommendations. By following it, companies gain a structured understanding of their interactions with nature, which truly help in decisionmaking processes. The methodology's robustness and usefulness also extend beyond the company's internal processes and can provide valuable inputs for other reporting frameworks and regulations, such as the Global Reporting Initiative (GRI) or the Do Not Significantly Harm (DNSH) part of the European Taxonomy.

As an illustration, let's consider a company in the agribusiness, specifically the wine sector, which we will explore in the second part of this article.

Viticulture is connected to various ecosystem services

Such services include provisioning (e.g., clean water, energy), regulating climate. soil health. (e.g., biodiversity), and cultural services (e.g., supporting identities, promoting goodwill). However, vine growing, like any monoculture system, is highly vulnerable to vine diseases, pests, biodiversity loss, wildlife habitat degradation, and soil degradation. By assessing vine cultivation as well as its supply chain, valuable insights can be gained into the company's dependencies, impacts, and potential action plans to effectively manage and mitigate risks.



4. How much time and resources are required to use the framework?

We believe that streamlining the initial analysis can be achieved through automation, but it is essential to gather key information beforehand, such as the precise location of the company's activities and existing environmental studies. By starting with available data and information, it becomes easier to identify areas where additional internal or external metrics may be required.

To save time, we recommend leveraging the expertise of teams involved in previous work related to climate, water, and waste management within the company. The knowledge and research accumulated in these areas can prove valuable for conducting the nature and biodiversity analysis.

To effectively progress to the risk analysis phase and develop mitigation roadmaps, it is crucial to engage in a collaborative co-construction process. This requires close collaboration and input from both your corporate responsibility and risk management teams to ensure that the

metrics used align appropriately with your specific activities. Allocating sufficient time and resources for this coconstruction process is essential to ensure that the resulting analysis and roadmaps accurately reflect your company's risks, impacts, and opportunities related to nature and biodiversity.

Overall, conducting the nature and biodiversity review shouldn't require a significant investment of time and resources. However, building a mitigation and adaptation roadmap requires long-term commitment from the company, along with dedicated resources.



5. What are the main limitations of this framework?

The first limitation lies in data and metrics. Collecting data on nature poses challenges, requiring both geospatial treatment capabilities and expertise in data cleaning processes. Additionally, while some indicators are currently defined, the complete set of metrics for studying nature is still a work in progress. Therefore, future adaptations may be necessary. Nonetheless, with the existing elements, initial analyses and actions can be implemented effectively. Furthermore, addressing supply chain analysis remains challenging, often necessitating the use of proxies due to limited knowledge in this area.

The second limitation is scenario analysis. As nature and biodiversity are relatively new subjects in extra-financial studies, there is currently no established, nor widely recognised methodology for stress-testing current activities against potential future conditions. Consequently, completing a Nature Value-at-Risk assessment remains a highly challenging task.

The third limitation concerns targetsetting. It is not surprising, as this is not the primary focus of the TNFD, while initiatives such as Science Based Targets Network (SBTN) are specifically dedicated to addressing this aspect.



6. What are the main outcomes of this framework?

This framework offers economic actors the opportunity to go beyond mere reporting on nature, and leverage the insights gained to drive meaningful change within their organisations. By using this framework, they can (i) gain a comprehensive understanding of their interactions with nature through mapping, (ii) precisely identify their

dependencies on and impacts to nature, and (iii) obtain **detailed facts and analyses that serve as a foundation** for internal advocacy, emphasising the urgency to **develop a nature strategy** and initiate concrete actions.



Taking the first step: initiating action on nature

Companies need to start acting on nature now.

Although our understanding of nature and biodiversity may not be as precise as our understanding of climate change, this should not be used as a reason to delay on recognising the significance of addressing these issues with the same level of importance. Delaying action on nature is no longer an option if corporates and financial institutions are committed to achieving a transition towards a sustainable economy and leveraging potential opportunities that align with sustainable practices.

The TNFD is the first step of a long process.

A crucial first step that many companies can take, is to embark on the TNFD framework. By starting with the "Locate" phase of the analysis, and thus mapping the organisation's assets, processes, value chains, and products to specific ecosystems. This enables starting the evaluation of nature-related

dependencies, impacts, risks, and opportunities for the organisation, investors, and creditors. This initial action sets the foundation for comprehensive assessments, and should encompass the organisation's interface with nature across owned assets, operations, value chains, locations, and business units.

Market or societal attitudes towards nature can evolve rapidly, potentially surpassing regulatory timelines, requiring companies to promptly adapt.

Given the complexity of the topic, it is crucial for companies to prioritise and address nature-related risks early on. Moreover, by initiating a collective movement among companies and diligently evaluating their dependencies and impacts on nature, there is a strong belief that other economic actors will be inspired to join the cause. Through this collective effort, there is immense potential to drive substantial and transformative changes.



TNFD 101 | PART 2

The LEAP methodology: an illustrated guide

1st step: Locate

Guidelines

To start the TNFD-LEAP analysis, companies must begin with the "Locate" phase, which serves as the starting point.

The primary objective of this phase is to map and comprehend the company's interface with nature, specifically understanding the nature risk profile associated with the locations where the company or its value chain operates.

Key inputs required for this phase include the precise locations of company activities (even at macro evel) and

geospatial data to assess the condition of nature in proximity to these locations. It is advisable to use datasets that provide information on nearby ecosystems, nature integrity, and the importance of the area for biodiversity.

The outputs obtained at the conclusion of this phase encompass a value-chain mapping (covering upstream and downstream operations), a comprehensive nature interface profile of individual assets and the entire portfolio, and a prioritised list of areas of interest.

Example

Once the company has identified the locations it operates in (even approximately), we can retrieve data to study the risk profile of nature nearby. As biodiversity can be defined as the diversity of living organisms, which is assessed by considering the diversity of species, the diversity of genes within each species, and the organisation and distribution of ecosystems, it is important to study these different components.

To do that, we can collect data identifying (i) the biomes and ecosystems nearby, (ii) the integrity of these ecosystems, (iii) the threat level of the spec-

species living in that location, (iv) the existence of important areas for biodiversity and (v) the functioning of these ecosystems using water scarcity as a first proxy. All these elements are then modelled into risk indicators to rank the locations.

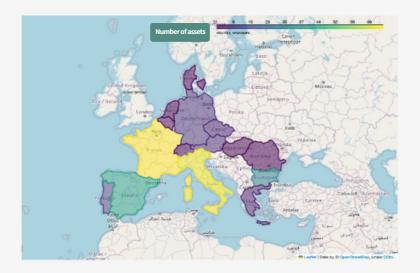
As the nature-related risks faced by an asset are directly linked to the integrity and resilience of the ecosystems on which they rely, it is key to understand what these ecosystems are, what their extents are, and in which conditions they are.

To do so, a funnel approach can be used. The nature profile will be first viewed on a large scale, before zooming in on the sites of interest.

Firstly, it is important to have a view on the geographical exposure of our portfolio.

Figure 1

Map showing the geographical exposure of the studied portfolio. Here most of the assets and the valuable assets were in France and Italy. [7]



This exposure is then used to understand globally with which biomes, ecoregions, and ecosystems the portfolio is interfacing. Then, a zoom can be performed for each site to understand more precisely their interface with nature.

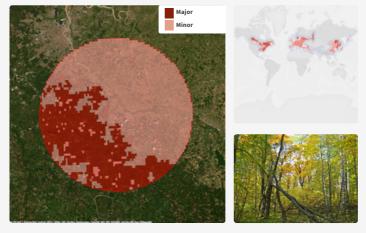
Maps showing part of the nature profile (interface with biomes and ecoregions on the left, and zoom on the site to understand the interface with ecosystems on the right of one asset of the portfolio. [8][9]



Wine estate A - Biome (temperate broadleaf and mixed forests)

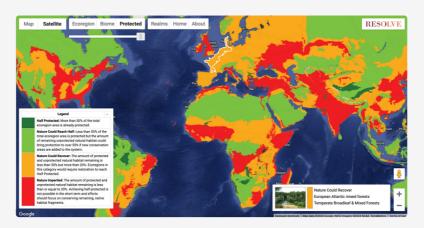


Wine estate A - Ecoregion (European Atlantic mixed forests)



Wine estate A - Ecosystem type: Temperate-boreal forests and woodlands Surface Major 26.07 % (0.8 % worldwide) Surface Minor 50.7 % (1.88 % worldwide) [10]

Ecoregion map of the world with protection status by region [11]



By assessing the integrity of ecosystems and determining the threat level to species, companies can identify areas where their operations may have a significant impact on biodiversity and where conservation efforts may be needed.

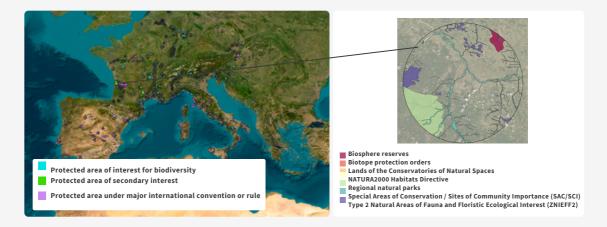
Then, scores on the integrity of the ecosystem, the biodiversity importance (based on protected areas and threatened species) of the location, and the water scarcity of the area are computed to build a prioritisation score to move to the next step of the LEAP methodology.

Figure 4

Maps showing the computation of the indicators of all the assets to build a prioritisation score. [12]



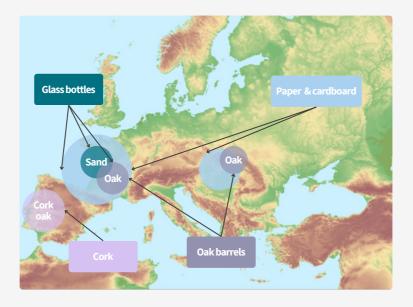
Zoom on one asset for one component on the biodiversity importance indicator. Here the locations of protected areas near the asset. [13]



To enhance the analysis in cases where precise information about the supply chain is lacking, an alternative approach is to conduct a similar analysis at the macro level by aggregating indicators for the main production basin. This allows for a comprehensive assessment of the supply chain's nature-related risks and opportunities, especially when the analysis focuses on the commodities with the highest impacts on nature.

Figure 6

Map showing the main production basin for key products of the supply chain of the assets studied. [14]



2nd step: Evaluate

Guidelines

The analysis can progress to the "Evaluate" phase. **The primary objective of this phase** is to identify dependencies and impacts on natural assets and ecosystem services at each prioritised location identified during the "Locate" phase.

Key inputs required for this phase include information about business activities (sector, subsector, environmental impact studies, life cycle analyses, etc.) and access to models that establish links between these activities and natural assets and ecosystem services.

The output at the end of the "Evaluate" phase includes a comprehensive mapping of potential dependencies and impacts, providing an initial understanding of their magnitude.

Understanding dependencies on ecosystem services involves recognising the extent to which an organisation relies on these services (clean air, clean water, pollination, climate regulation, etc.) for its operations, productivity, and overall wellbeing.

Example

For example, in the case of our wine industry company with vineyards across Europe, using the **ENCORE methodology** and propriety analyses allows for mapping dependencies and impacts at each location based on business activity information. This analysis considers factors such as the availability, quality, and accessibility of ecosystem services, as well as the potential risks or vulnerabilities associated with their availability.

Synthesis of the dependencies on ecosystem services based on the sector of the assets.



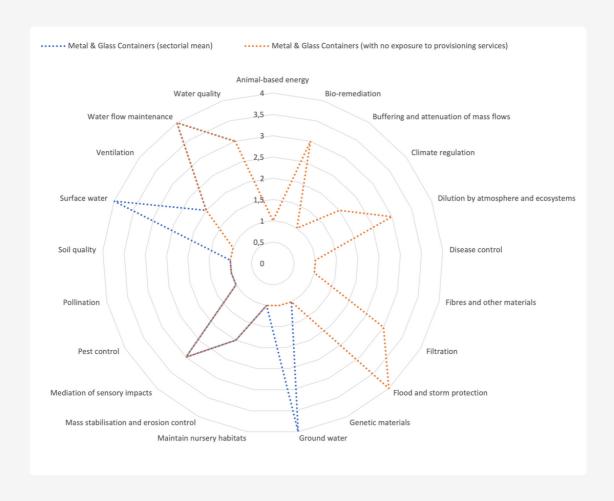
These assessments can be ranked according to the magnitude of potential impacts of these dependencies on business. The objective of this more detailed analysis is to move from a sectoral materiality analysis to a more granular, asset-centric, materiality analysis.

Figure 8

Table presenting the methodology to improve the granularity of the sectoral materiality analysis using a "what if..." scenario approach.

Materiality			
	What if	Impact on the priority location	Relative level of magnitude
Climate Regulation	Climate regulation changes radically to the point where it is no longer possible to grow grape varieties nor to produce the sweet wines.	Questioning the agricultural model. Redefining product and brand positioning.	VERY HIGH The activity is jeopardised by the degradation of the ecosystem service and should at least be adapted or even radically transformed
Disease control	Disease control provided by the ecosystem is no longer efficient and undesired disease incidences increase over time, affecting the crop yield and quality. Botrytis cinerea is not developing as steadily as in the past, which affects the crop yield and quality.	Direct impact on yield and quality. Could price adjustment maintain the economic model?	MEDIUM The activity is affected by the loss of the ecosystem service and should either be adapted or pass on the impact on the market
Pest control	Pest control provided by the ecosystem is no longer efficient and undesired pest incidences increase over time, affecting the crop yield and quality.	Direct impact on yield and quality. Could price adjustment maintain the economic model?	MEDIUM The activity is affected by the loss of the ecosystem service and should either be adapted or pass on the impact on the market

Spider chart highlighting the difference between sectoral dependencies and specific adjustment considering the specificities of the assets. [15]



3rd step: Assess

Guidelines

The primary objective of this phase of the "Assess" phase is to play a crucial role in transforming the dependency and impact results into a comprehensive risk and opportunity study through materiality analysis.

Key inputs required for this phase include the mitigation or adaptation measures already implemented by the company, in conjunction with establishing a robust risk study methodology to identify significant risks. The aim is to assess the company's strengths and areas that may need improvement, while also

exploring opportunities to enhance resilience, minimise vulnerabilities, and maximise positive impacts on nature.

The ultimate outcome of this phase is the generation of a comprehensive list of pertinent risks and opportunities that demand proactive measures from the company. These identified risks and opportunities possess the potential to affect the company's financial standing, performance, and reputation, making them of significant interest to investors and stakeholders.

Example

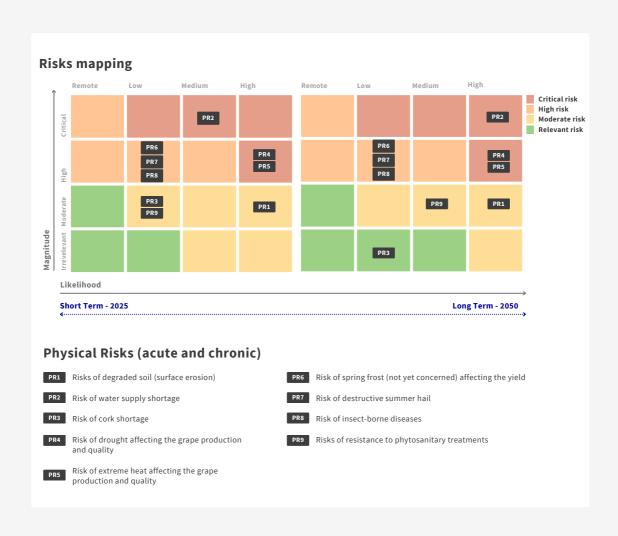
A risk can be understood as a mix of a peril, an exposure, and a vulnerability. All these three components should be studied in the "Assess" phase to convert an impact or a dependence into a risk.

To avoid presenting generic risk levels, the decomposition of the risks into peril, exposure and vulnerability can be performed at the site level for physical risks (mainly driven by dependencies on ecosystem services) and transition risks (mainly driven by the impacts of one's activities on nature).

When evaluating the risk posed by a dependency, one can assess the exposure to risk by considering the extent of the ecosystem supporting a particular ecosystem service. The vulnerability of the system can be assessed by examining both the biological (biotic) and non-living (abiotic) characteristics of this ecosystem. This localised information helps to understand the trajectory linked to the ecosystem's condition, identifying primary stressors influencing it, determining whether it's fragmented, among other things. These insights contribute to a more accurate assessment of the risk associated with ecosystem services.

Figure 10

Risk mapping of the main nature-related physical risks identified during the analysis. It appears that water topics are key for these assets.



4th step: Prepare

Guidelines

Finally, the recommended analysis concludes with the "Prepare" phase. **The primary objective of this phase** is to focus on defining the company's reporting strategy and planning the necessary actions to mitigate nature-related impacts and manage risks effectively.

Key inputs required for this phase include the results obtained from the previous steps, assess its existing reporting strategy, and explore potential mitigation solutions through benchmarking exercises.

The outputs of this phase encompass the development of a comprehensive report that aligns with **TNFD** recommendations anticipates and forthcoming regulations pertaining to nature and biodiversity extra-financial analysis. Additionally, the company can identify specific measures to address its main dependencies and impacts, mitigate risks, and embark on a nature-positive trajectory.

Example

In the case of our wine industry company, examples include exploring pesticide reduction strategies, implementing water conservation measures, considering the introduction of indigenous species for biodiversity enhancement, and establishing relevant key performance indicators and targets.

By undertaking these actions, the company aims to enhance its environmental performance, adhere to emerging regulatory requirements, and contribute positively to nature conservation.

Conclusion

Even if a very granular nature-related risks and opportunities assessment can require a significant number of inputs, a lot of the information can already be found. It is thus important to rely on existing internal works and external expertise or datasets to start your journey on nature and biodiversity to save time to focus on the most impactful topics.

A first, no-regret move for many companies could thus be to follow the LEAP framework to identify its main impacts and dependencies. We truly believe that understanding one's impacts and dependencies on nature can trigger an internal dynamic to pursue a biodiversity journey with high ambitions and encourage other actors to do the same.





TNFD 101 I SEPTEMBER 2023

An illustrated guide to the future of nature reporting

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