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REPORTING ON NATURE-RELATED RISKS, IMPACTS AND DEPENDENCIES

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1. THE BUSINESS CASE FOR NATURE-POSITIVE MARKET ACTION





OVERVIEW

Natural capital can be defined as the world's stocks of natural assets which include mineral deposits, soil, air, water and all living things. It is from this natural capital that humans derive a wide range of services, often called ecosystem services, which make human life possible. Over half of the world's GDP is moderately or highly dependent on nature (World Economic Forum, 2020¹). The world's economy depends on a steady flow of ecosystem services, such as provision of resources for consumption, pollination of crops², water filtration, waste decomposition, carbon sequestration and climate regulation worth around USD \$125 trillion annually. These dependencies have been well studied and documented^{3, 4, 5, 6}.

Changes in the stock and condition of natural capital can alter its ability to provide the goods and services upon which the economy depends in the medium-term and undermine key planetary systems (e.g. climate regulation) which support long-term economic stability and well-being. 4 out of 10 global risks of most concern to corporate leaders are nature-relevant, and their drivers are a critical threat to the world: climate action failure, biodiversity loss, human environmental damage and extreme weather events.⁷ All of them have material impacts on companies' operational costs, reputation, risk and profitability, and potentially serious implications for financial stability at the macro-level. If current trends of use of natural capital and services persist, the risks of significant impacts on societies and economies will grow. The impacts of COVID-19 are a stark reminder of the scale of impacts that a nature-caused crisis may have at the global level. There is growing recognition in the finance and business sector of the need to move beyond climate considerations and address nature-related concerns, which is evidenced by two inter-connected trends:

1. GROWING COMMITMENT BY MARKETS TO CREATE NEXT GENERATION OF NATURE-POSITIVE INSTRUMENTS:

- [Financial institutions](#) and the [corporate sector](#) are increasingly looking for new instruments and solutions to battle complex risk from nature loss and climate change. Numerous consortia have been created to revisit risks and impacts that define future prosperity. One example is the [Finance for Biodiversity Pledge](#), an investor alliance of 55 financial institutions, representing over €9 trillion in assets, across 15 countries, which committed to considering biodiversity restoration in their investing strategies.⁸ Another example is a multi-trillion dollar investor coalitions which has called on companies to cut climate and deforestation-related risks in global [soybean supply chains](#) and asked fast-food giants to reduce the greenhouse gas emissions and water usage of their [meat and dairy suppliers](#). BlackRock, the world's biggest asset manager, committed to make natural capital one of its 2021 engagement priorities⁹, seeking to ensure that companies are “managing natural capital dependencies and impacts through sustainable business practices”. The Church Commissioners for England became the first investor to join Science Based Targets Network's (SBTN) Corporate Engagement Programme¹⁰, while Principles for Responsible Banking's forthcoming biodiversity target setting guidance for its 230+ Signatories is co-published with the SBTN.
- Around 1,000 companies have already committed to cutting greenhouse gas emissions in line with the science-based targets. The same group has launched the development of nature-related science-based targets and guidance to define how companies can assess, prioritize, measure, address and track their impacts and dependencies on natural ecosystems.¹¹ Over 50 international and national partners and a diverse group of businesses from all sectors, sizes and geographies have come together to support the work of [Business for Nature](#), to amplify business voice on nature calling for governments to adopt policies to reverse nature loss in this decade. Further action is augmented by the One Planet Business for Biodiversity (OP2B) coalition of 27 leading companies, from Google to Unilever and Walmart focused on scaling up regenerative agricultural practices, boosting biodiversity in product-development portfolios; and eliminating deforestation through management, restoration and protection of high-value natural ecosystems.¹²
- An important change in accounting for nature's contribution to the economy has come from the United Nations Statistical Commission, which adopted the [System of Environmental-Economic Accounting—Ecosystem Accounting \(SEEA EA\)](#) as an international statistical standard valuation of ecosystem services and assets.¹³ The World Benchmarking Alliance is working on developing a benchmark tool covering companies with the biggest impact on nature¹⁴. The benchmark is expected to cover between 500 and 1,000 companies and will focus on the forestry, agricultural and tourism industries.

2. INCREASING DEMAND FOR NATURE-RELATED RISK REPORTING BY INVESTORS AND REGULATORS:

- The majority (9 out of 10) retail investors currently do not trust corporate disclosures and find it difficult to judge companies' environmental and social performance, according to a poll by Workiva covering the UK, US, Germany and France. 62% of respondents said they found it difficult to judge whether companies were doing the right thing for the environment and society. Nonetheless, 70% of respondents believed companies had a responsibility to display ESG data, and respondents called for more harmonized approaches including on nature.¹⁵
- The investor community has indicated strong demand for a reporting framework on nature-related risks. In 2019, following the devastating Amazon fires, 251 investors with \$17.7 trillion in assets under management called on exposed companies to take urgent action on deforestation¹⁶ – an action which assumes tracing of deforestation activities and reporting on them across value chains. In 2020, pension funds and other investors managing \$6.5 trillion in assets publicly called for a “framework to measure biodiversity impacts”¹⁷ arguing that *“both positive and negative impacts should be captured by metrics, allowing investors to identify beneficial and harmful investments”*.
- Financial institutions themselves have started to fund biodiversity data tailored to their investment needs: early last year, AXA Investment Management, BNP Paribas Asset Management, Mirova and Sycomore formed a consortium to spur on thinking around nature-based data and metrics. This partnership will develop a (non-public) tool to allow investors to measure how their investments impact biodiversity¹⁸.
- [The Network for Greening the Financial System](#) (NGFS), a coalition of 90 central banks and financial supervisors¹⁹, reported that the global financial sector is exposed to significant unaccounted risks from business activities that either cause or are affected by unabated air and water pollution, land fertility loss and contamination, and biodiversity decline (Dasgupta Review 2021). NGFS has established a working group to address nature-related risks and financial stability²⁰. In December 2020 the [International Financial Reporting Standards Foundation \(IFRS\) acknowledged](#) that corporate accounting for and reporting on nature-related risks is the second biggest priority after climate change.
- In the Netherlands, research in 2020 found that Dutch banks, insurance companies and pension funds have around € 510 billion invested in companies around the world with a high or very high dependency on one or more ecosystem services, facing high reputational and transition risk. The study recommended adoption of reporting standards that would allow companies to be transparent about how global biodiversity loss may affect their business models.²¹ The Bank of England and Banque de France have also been reviewing their approaches to disclosure and consideration of nature-related risks²².
- In 2021, [Indian regulator SEBI adopted mandatory sustainability reporting for listed firms](#). These disclosures will underpin a new Indian index of sustainable corporate leaders. Demand for biodiversity reporting has also come from France's Central Bank²³, and US: since 2020, the US SEC has been updating its reporting requirements requesting issuers to “provide investors “with the material, comparable, consistent information on ESG factors needed to make investment and voting decisions.”²⁴
- IMF strongly supported the need for a nature-risk disclosure framework²⁵.
- The need for a nature-risk reporting framework has been voiced by leading rating agencies such as MSCI²⁶ and S&P²⁷.

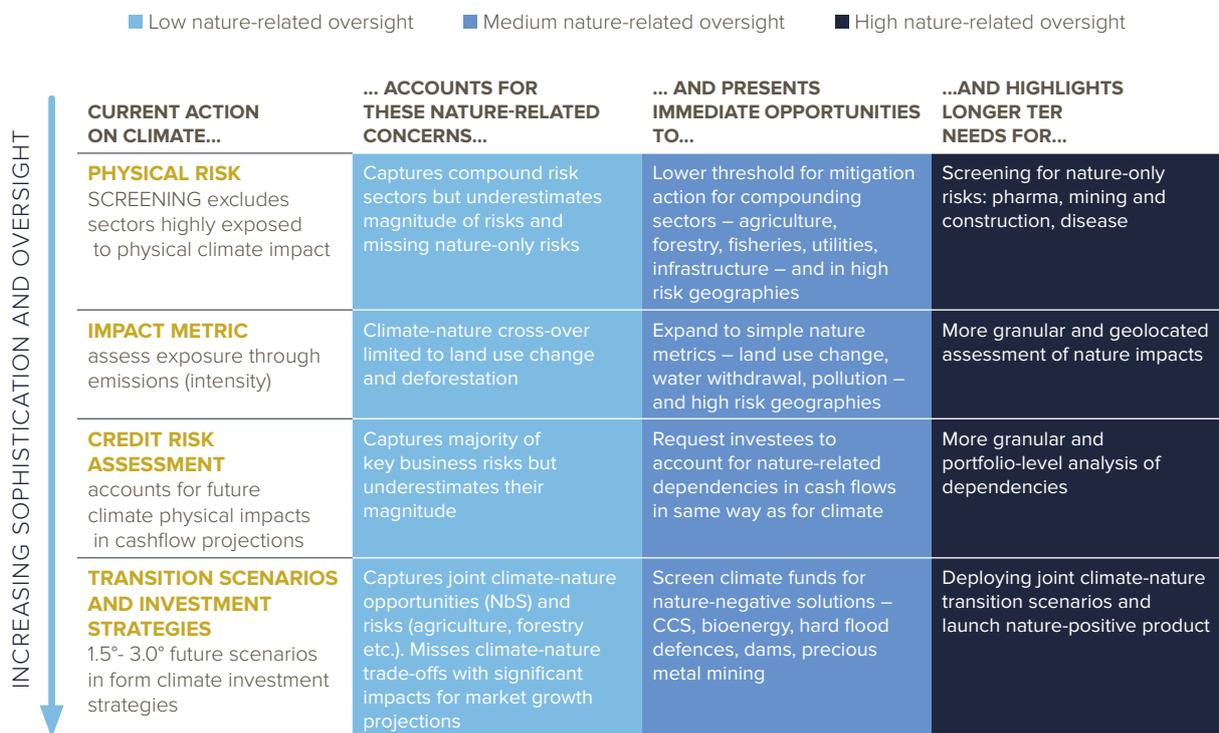
THE CHALLENGE

The materiality of nature-related risks is often invisible because the realized or potential costs, associated with nature degradation or loss, are transferred onto consumers, citizens, society at large or other third-parties, rather than built into the balance sheets and income statements of companies. Such costs are considered externalities to the economy under the current regulatory and fiscal systems. Improved understanding of the financial materiality, whilst defining standards, data and metrics to measure nature-related dependencies and risks is necessary to address this challenge.

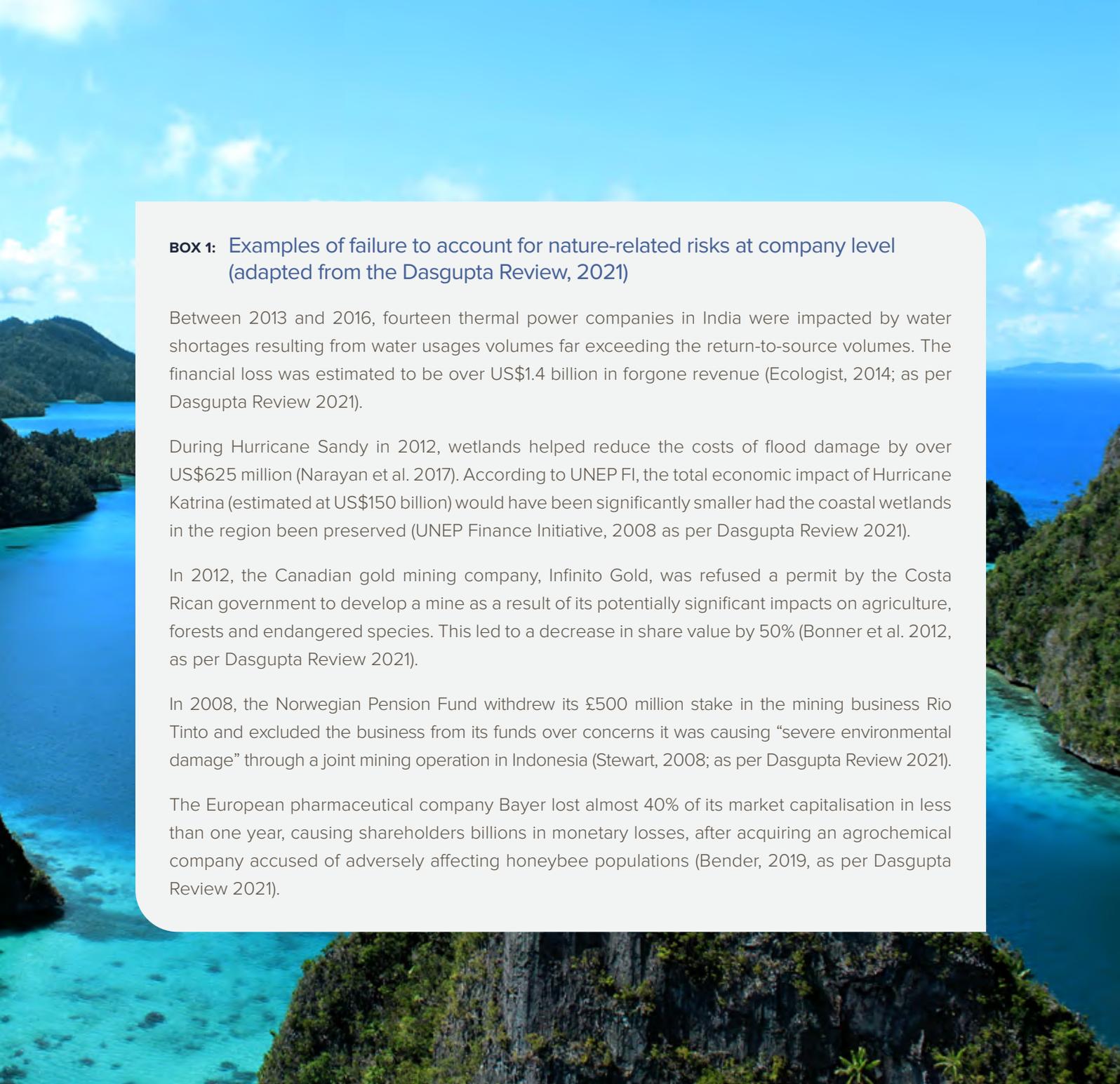
Despite growing momentum for investments in sustainable finance, only a fraction of the worldwide supply chains and invested assets of banks, multinational enterprises, pension funds and insurers, have aligned their business models with sustainability principles, where nature is accounted for. ‘Gray’ finance, including private sector investments and government subsidies, [outpace investment in sustainable forest management](#) by a factor of more than 100:1.

While progress has been made on climate-related disclosures, financial institutions are yet to start building capacity for nature-related oversight (Fig.1).

FIGURE 1. Current climate frameworks can be adapted to capture nature risks and opportunities, but there remain significant gaps



Source: Vivid Economics for Finance for Biodiversity Initiative (May 2021). [The Climate-Nature Nexus: Implications for the Finance Sector](#)



**BOX 1: Examples of failure to account for nature-related risks at company level
(adapted from the Dasgupta Review, 2021)**

Between 2013 and 2016, fourteen thermal power companies in India were impacted by water shortages resulting from water usages volumes far exceeding the return-to-source volumes. The financial loss was estimated to be over US\$1.4 billion in forgone revenue (Ecologist, 2014; as per Dasgupta Review 2021).

During Hurricane Sandy in 2012, wetlands helped reduce the costs of flood damage by over US\$625 million (Narayan et al. 2017). According to UNEP FI, the total economic impact of Hurricane Katrina (estimated at US\$150 billion) would have been significantly smaller had the coastal wetlands in the region been preserved (UNEP Finance Initiative, 2008 as per Dasgupta Review 2021).

In 2012, the Canadian gold mining company, Infinito Gold, was refused a permit by the Costa Rican government to develop a mine as a result of its potentially significant impacts on agriculture, forests and endangered species. This led to a decrease in share value by 50% (Bonner et al. 2012, as per Dasgupta Review 2021).

In 2008, the Norwegian Pension Fund withdrew its £500 million stake in the mining business Rio Tinto and excluded the business from its funds over concerns it was causing “severe environmental damage” through a joint mining operation in Indonesia (Stewart, 2008; as per Dasgupta Review 2021).

The European pharmaceutical company Bayer lost almost 40% of its market capitalisation in less than one year, causing shareholders billions in monetary losses, after acquiring an agrochemical company accused of adversely affecting honeybee populations (Bender, 2019, as per Dasgupta Review 2021).

Deeply-rooted underpricing of nature-related risks by companies when forecasting returns on investment, due to “short-termism” (when the time horizon assigned to a risk is mis-aligned with the actual duration of the underlying activity), and inability to clarify uncertainties associated with nature, is predicted by NGFS to trigger substantial material losses in the long term. The scientifically established existence of ecosystems’ points-of-no return, i.e. tipping points²⁸, implies that the decline in quantity and quality of nature’s resources and services can be abrupt and long-lasting, affecting multiple inter-dependent sectors of the global economy (WEF 2020; Dasgupta Review 2021). Insufficient awareness and acknowledgement of nature-related risks by investors in turn impairs G20 regulators’ ability to secure the stability of the entire international financial system, interacting with and exacerbating climate risks.

THE OPPORTUNITY

Long-term financial stability seeks to minimize investment in high-risk projects. To enable this, nature-related risks need to be described, systemically classified under a single framework, and embedded in companies' decision-making and reporting. Disclosure of nature-related risks by businesses, based on a reliable framework, could be foundational for correction of the price of capital, in all asset classes. In particular, it would help correct the market price of sovereign debt for countries whose economic registrants invest in high nature-related risk projects or whose Governments allow outside registrants to develop high nature-risk projects on their territory, especially in economies with high dependence on rapidly depleting natural assets and services (e.g. in agriculture). Should capital market price correction be slow to come, G20 economies would be able to compensate through policy interventions, at national, regional, or global levels. Such interventions could be needed in the face of potentially devastating tipping points (e.g. in the case of loss of ecosystems such as Amazon forests). Furthermore, better awareness of nature impacts and dependencies can be an important element enabling revision by central banks of the duration of the monetary policy and financial stability planning horizons, their extension over the current standard 2-3 year planning perspective, prioritizing investment with a positive long-term NPV and substantial reduction of long-term financial risks.

There is growing demand for ESG (environment, social, governance screened or themed) investments globally. According to the IMF, from 2010 to 2019, the number of ESG-tagged funds has risen from 913 to 1,931, with assets growing from \$352 billion to \$856 billion: a 143% increase ([UNCTAD](#)). 74% of investors plan to increase investment in ESG instruments from 2021 onwards (Global Investor, 2020). Yet, tagging investment as "green" remains arbitrary for some asset classes, and nature-related risks are not routinely accounted for under the "Environment" or "Sustainability" tag, which is a major gap. This is confirmed by [KPMG's 2020 report](#) which showed that less than 25% of major companies have reported on impacts or dependencies on nature in their sustainability reporting. The Climate Disclosures Standards Board's (CDSB) research similarly shows that nature-related corporate reporting is nascent: biodiversity and forest-related disclosures were addressed by 46% and 22% of Europe's 50 largest listed companies, whereas climate was addressed by 100%. Clear-cut universally accepted criteria and metrics for defining nature-related risks and dependencies of a business operation or investment are yet to be defined and agreed upon, whereas these are now well established for climate.

BOX 2: Soy sector as an example of deficiencies in current nature-related disclosure

In recent years, soy has been the third largest contributor to deforestation, after palm oil and beef²⁹. In 2021 UNDP analyzed the latest disclosure reports of 20 leading soy trading companies. The study confirmed that companies have been using a variety of metrics to report "sustainable soy trading", most of which are self-declarations unverified by third parties. A metric such as volumes of independently certified sustainably grown soy is one of the least used. The [CDP Forest analysis report](#) states that companies disclosing on soy still tend to lack comprehensive risk assessments (only 17% have it), and only 3% of soy volume globally is reported to be certified as "no-deforestation".

2. CORE ISSUES FOR CONSIDERATION





A. NATURE

WHAT ASPECTS OF NATURE SHOULD BE COVERED BY REPORTING? WHAT IS THE SCIENTIFIC EVIDENCE SUPPORTING THE SCOPE OF REPORTING?

“Nature” is a broad and complex subject often lacking unified definitions. Based on extensive research and consultations in the process of setting up of the Taskforce on Nature-related Financial Disclosures, TNFD (see Appendix I for further details), business community, Governments, international community and conservation organizations have agreed that company reporting should cover the following aspects:

- i. **Living (biotic) nature:** Living aspects of nature and all services they provide to economy and society are in scope, covering habitats, species and genetic resources, from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems. This scope aligns closely with the definition of biodiversity used by CBD which includes diversity within species, between species and of ecosystems. In reference to the SBTN framework³¹, this refers to a (living) subset of the three realms (land, freshwater and ocean) and considers changes in all three states of nature (species, ecosystems and nature’s contribution to people³²).
- ii. **Water, soil and air:** Consideration of an organization’s impacts on water (including groundwater aquifers), soil and air are in scope.
- iii. **Mineral depletion as it relates to other aspects of nature:** An examination of the impact of a reduced supply of quality minerals (including oil and gas) on the health and vitality of living nature, water, soil and air is in scope. This should consider the ability of other aspects of nature to maintain sufficient high-quality provision of ecosystems services necessary to support businesses and society, but should not consider the depletion of minerals either in a general sense or from the perspective of their market value. This broadest scope is generally considered to align with the definition of Natural Capital under the Natural Capital Protocol, however it does not seek to duplicate the work of mineral reserve accounting standards and mandatory disclosure norms for listed extraction companies.



B. NATURE-RELATED RISKS, OPPORTUNITIES AND IMPACTS

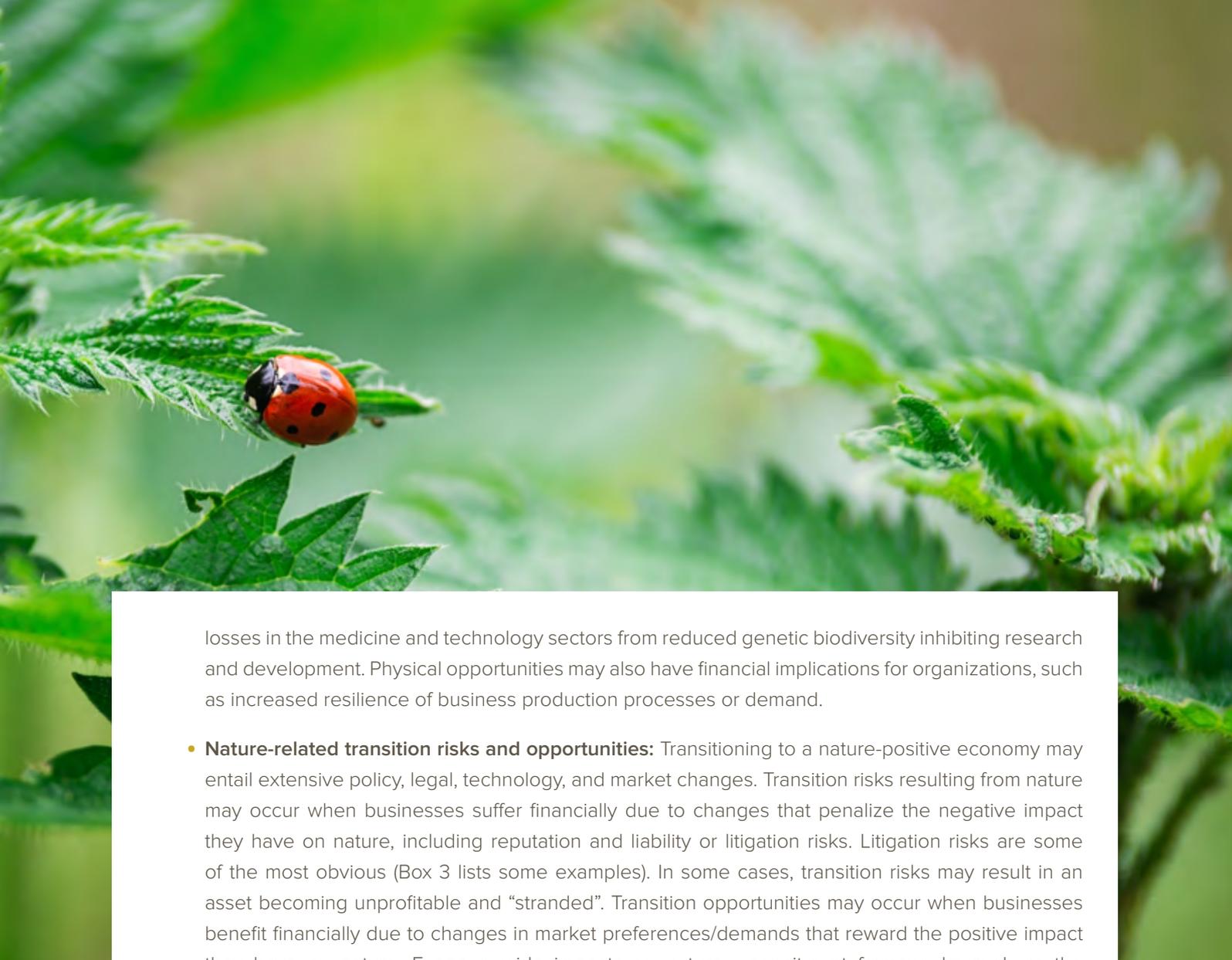
WHAT TYPES OF IMPACTS, DEPENDENCIES, RISKS AND OPPORTUNITIES SHOULD BE THE SUBJECT OF COMPANY DISCLOSURE?

The term “**nature-related risks and opportunities**” broadly refers to an organization’s impacts on nature, dependencies on nature, as well as the financial risks and opportunities resulting from these impacts and dependencies. Precise definitions as defined by the Science-Based Target Network (SBTN):

- **Impacts:** are “positive or negative contributions of a company or other actor toward the state of nature, including pollution of air, water, soil; fragmentation or disruption of ecosystems³³ and habitats for [human and] non-human species; alteration of ecosystem regimes.”³⁴
- **Dependencies:** are “aspects of nature’s contributions to people³⁵ [ecosystem services] that a person or organization relies on to function, including water flow and quality regulation; regulation of hazards like fires and floods; pollination; carbon sequestration.”³⁶

Nature-related financial risks and opportunities: All financial risks and opportunities to the organization as a result of impacts and/or dependencies on nature:³⁷

- **Nature-related physical risks and opportunities:** Physical risks resulting from nature loss can be categorized as event driven (acute), or longer-term shifts (chronic) in the way in which natural ecosystems function – or cease to function. Physical risks may have financial implications for organizations, such as direct damage to assets, the loss of (local and regional) ecosystem services crucial to production processes or employee well-being, and indirect impacts from supply chain disruption. These risks may also have financial and non-financial implications for other parties, such as the loss of global ecosystem services crucial to well-being. Examples include local and regional financial losses in the agricultural sector from reduced pollination from insects and global financial



losses in the medicine and technology sectors from reduced genetic biodiversity inhibiting research and development. Physical opportunities may also have financial implications for organizations, such as increased resilience of business production processes or demand.

- **Nature-related transition risks and opportunities:** Transitioning to a nature-positive economy may entail extensive policy, legal, technology, and market changes. Transition risks resulting from nature may occur when businesses suffer financially due to changes that penalize the negative impact they have on nature, including reputation and liability or litigation risks. Litigation risks are some of the most obvious (Box 3 lists some examples). In some cases, transition risks may result in an asset becoming unprofitable and “stranded”. Transition opportunities may occur when businesses benefit financially due to changes in market preferences/demands that reward the positive impact they have on nature. Economy-wide impacts on nature, commitment frameworks such as the Science-based Target Network (SBTN), and international frameworks such as the CBD’s Post-2020 Global Biodiversity Framework will all inform credible future nature-related goals. In turn, these goals will define the changes that may need to be made and hence, the drivers of transition risk. In this way, impacts on nature can evolve to create material financial risks in the future, even if they are not financially material today. Digitalization has also accelerated citizen engagement in financial decision-making by providing citizens both access to the impact of their investments as well as a platform to voice their demands. If this trend continues, citizen (and hence consumer and employee) responses to an organization’s impact on nature may become more pronounced and immediate, becoming an important driver of transition risk and opportunity.
- **Nature-related systemic risks:** In addition to the financial risks to the organization itself, impacts and dependencies across the economy can create risks at macro-economic level. Potential nature-related risks to system-wide financial stability are of particular importance for macroprudential authorities, as such risks may bring about significant impacts across all industries simultaneously or provoke tipping points.³⁸ Some of the information, conveyed by the reporting entities through frameworks such as TNFD may be used by regulators when assessing risks to system-wide financial stability.

BOX 3: Example of physical and transition risks vis-à-vis nature-based opportunities

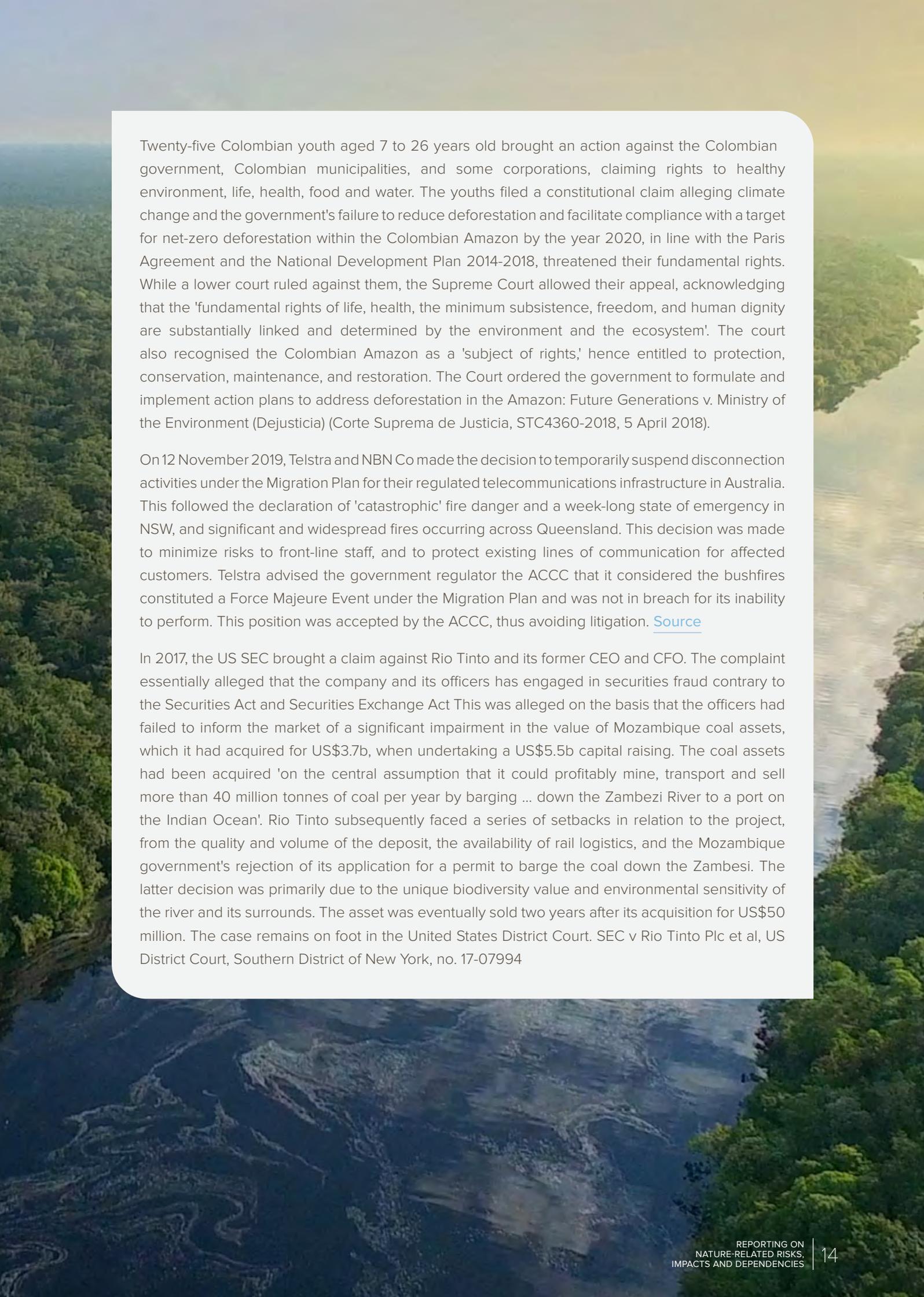
IPBES [puts](#) the economic cost (realized + foregone income) of land degradation alone at over 10% of world's GDP. The human-caused declines in ocean health are projected to cost the global economy \$428 billion per year by 2050. On the other hand, the World Economic Forum [assesses](#) that a transition to nature-positive economy could generate \$10 trillion of new investment and create nearly 400 million jobs.

IPBES [assesses](#) the cost of COVID-19 at \$8-16 trillion globally as of July 2020. The causes of the pandemic, according to IPBES are expansion and intensification of agriculture, unsustainable trade, production and consumption which disrupt nature and increase contact between wildlife, livestock, pathogens and people. The experts estimate the cost of reducing risks to prevent pandemics (through expanded and strengthened protected areas, and reduction of unsustainable exploitation of high biodiversity regions) to be 100 times less than the cost of responding to such pandemics.

Litigation/liability risks³⁹

A retired shrimper Diane Wilson sued Formosa, alleging that its Port Comfort plant had illegally discharged thousands of plastic pellets and other pollutants into Lavaca Bay and other nearby waterways in Texas. The lawsuit was settled in December 2019 for US\$50 million, the largest amount in US history involving a private citizen's lawsuit against an industrial polluter under US federal clean air and water laws. Under the settlement, Formosa also agreed to comply with 'zero discharge' of all plastics in the future, and to clean up existing pollution. Additional violations by Formosa will result in more money being paid into the settlement fund: San Antonio Bay Estuarine Waterkeeper v Formosa Plastics Corp., Texas, Case 6:17-cv-47).

The Canadian government sued Canadian Forest Products Ltd for costs of restoration and loss after a fire swept through the Stone Creek area in the interior of British Columbia damaging 1491 hectares of government-held forest in a region where tenure holders are licensed to log. The parties did not dispute the fact that the fire was largely the fault of the defendant, a major licensee on the property. The plaintiff claimed damages against the defendant for three categories of loss: (1) expenditures for suppression of the fire and restoration of the burned-over areas; (2) loss of stumpage revenue from trees that would have been harvested in the ordinary course (harvestable trees); and (3) loss of trees set aside for various environmental reasons (non-harvestable or protected trees) in sensitive areas as established by government of British Columbia. The trial judge awarded \$3,575,000, which was upheld on final appeal to the Supreme Court: British Columbia v. Canadian Forest Products Ltd. [2004] 2 SCR 74.



Twenty-five Colombian youth aged 7 to 26 years old brought an action against the Colombian government, Colombian municipalities, and some corporations, claiming rights to healthy environment, life, health, food and water. The youths filed a constitutional claim alleging climate change and the government's failure to reduce deforestation and facilitate compliance with a target for net-zero deforestation within the Colombian Amazon by the year 2020, in line with the Paris Agreement and the National Development Plan 2014-2018, threatened their fundamental rights. While a lower court ruled against them, the Supreme Court allowed their appeal, acknowledging that the 'fundamental rights of life, health, the minimum subsistence, freedom, and human dignity are substantially linked and determined by the environment and the ecosystem'. The court also recognised the Colombian Amazon as a 'subject of rights,' hence entitled to protection, conservation, maintenance, and restoration. The Court ordered the government to formulate and implement action plans to address deforestation in the Amazon: *Future Generations v. Ministry of the Environment (Dejusticia)* (Corte Suprema de Justicia, STC4360-2018, 5 April 2018).

On 12 November 2019, Telstra and NBN Co made the decision to temporarily suspend disconnection activities under the Migration Plan for their regulated telecommunications infrastructure in Australia. This followed the declaration of 'catastrophic' fire danger and a week-long state of emergency in NSW, and significant and widespread fires occurring across Queensland. This decision was made to minimize risks to front-line staff, and to protect existing lines of communication for affected customers. Telstra advised the government regulator the ACCC that it considered the bushfires constituted a Force Majeure Event under the Migration Plan and was not in breach for its inability to perform. This position was accepted by the ACCC, thus avoiding litigation. [Source](#)

In 2017, the US SEC brought a claim against Rio Tinto and its former CEO and CFO. The complaint essentially alleged that the company and its officers has engaged in securities fraud contrary to the Securities Act and Securities Exchange Act This was alleged on the basis that the officers had failed to inform the market of a significant impairment in the value of Mozambique coal assets, which it had acquired for US\$3.7b, when undertaking a US\$5.5b capital raising. The coal assets had been acquired 'on the central assumption that it could profitably mine, transport and sell more than 40 million tonnes of coal per year by barging ... down the Zambezi River to a port on the Indian Ocean'. Rio Tinto subsequently faced a series of setbacks in relation to the project, from the quality and volume of the deposit, the availability of rail logistics, and the Mozambique government's rejection of its application for a permit to barge the coal down the Zambesi. The latter decision was primarily due to the unique biodiversity value and environmental sensitivity of the river and its surrounds. The asset was eventually sold two years after its acquisition for US\$50 million. The case remains on foot in the United States District Court. *SEC v Rio Tinto Plc et al*, US District Court, Southern District of New York, no. 17-07994

C. CLIMATE

HOW CAN REPORTING ENTITIES ADDRESS THE INTERACTION BETWEEN NATURE- AND CLIMATE-RELATED RISK?

Synergies between nature and climate arise when interventions address both the nature and climate crises. Nature-positive interventions can have a positive impact on climate change mitigation, in particular through avoidance of GHG emissions arising from land use conversion.⁴⁰ Transforming the land sector and deploying measures in agriculture, forestry, wetlands and bioenergy could feasibly and sustainably contribute to the reduction of about 30%, or 15 billion tons of carbon dioxide equivalent (GtCO₂e) per year, of the global mitigation needed in 2050 to deliver on the 1.5 °C target.⁴¹ Key contributors to climate change mitigation include forests,⁴² oceans, and wetlands (in particular peatlands and mangroves).⁴³

Nature-positive interventions can also have a positive impact on climate change adaptation, helping offset some of the effects of a warmer world.⁴⁴ In particular, healthy ecosystems can limit flood risks and droughts and help maintain good quality of topsoil for improved agricultural productivity.^{e.44}

At the same time, transition to climate-friendly technologies can have an impact on ecosystems. Solar panels require land for placement and minerals such as aluminum, cadmium, and zinc: extraction of those minerals usually requires fragmenting forests⁴⁵, and disposing / recycling of the solar panels has been a recognized environmental problem⁴⁶. There are reports of wind-turbines contributing to migratory bird kills⁴⁷. Biofuel is argued by several researchers to result in global land clearing and associated emissions higher than the emission savings achieved by replacing gasoline by these biofuels in a 30-year perspective⁴⁸.

This demonstrates the significant opportunity to leverage synergies between climate change and nature protection and restoration when collating data and reporting on risks. Reporting on nature-related impacts, risks and dependencies should adequately account for the impacts of climate change on nature as well as the impacts of nature loss on climate change. This will require an explicit consideration of the interaction between nature- and climate-related risks and opportunities and an understanding of the degree to which current climate and land use risk management and strategy approaches address the nature crisis. This also implies the joint consideration of future nature and climate policy pathways when considering scenarios. This will have important implications for both nature- and climate-related transition risks and opportunities. Reporting should also adequately account for the synergies between solutions to the nature and climate crises. In particular, it should adequately capture the joint benefits of nature-based solutions (that meet nature-positive standards such as, for example, the IUCN Global NBS Standard⁴⁹) to climate change. Work in this area should draw from existing efforts to identify and standardize these synergies such as under the biodiversity track of the EU Sustainable Finance Platform (including the EU Taxonomy), the Green Belt and Road Initiative (BRI) Development Guidance, and the IUCN Global Nature-based Solution Standard.

Many of the strategies developed to incorporate climate and ESG criteria into financial decision making could be easily adapted to apply for nature-related risk reporting, but few institutions have integrated nature-related risks into their ESG or climate investment analysis so far. Financial institutions that embrace such joint analysis can leverage progress they have made on climate to incorporate nature rapidly and efficiently. Institutions that delay not only leave themselves exposed to the risks associated with nature loss and tightening global nature policy, but also could undermine their climate strategy through accusations of greenwashing. Embracing joint thinking early provides room to learn from experiences with climate and embed robust and efficient organizational and decision-making processes from the outset.⁵⁰ The TNFD will continue discussions with the TCFD, and relevant standard-setting bodies to identify how best to operationalize synergies between climate and nature-related risk reporting and accounting.

D. METRICS AND DATA

WHAT ARE THE CONSIDERATIONS FOR IMPROVING DATA AVAILABILITY, QUALITY AND DISCLOSURE OF NATURE-RELEVANT DATA USED BY BUSINESSES AND FINANCIAL INSTITUTIONS?

Data on the status of nature, its dynamics and flows globally is available for many countries and regions. There are plenty of indicators and variables for measuring biodiversity⁵¹, which have been adopted by numerous national and international nature monitoring organizations and data providers, including the key global provider of nature-related biodiversity data and information – IPBES⁵². Reporting is available on nature status under nearly 100 different indicators under the Aichi Targets of the Convention on Biological Diversity (CBD)⁵³. Nature-related data is reported under IUCN Red List Index⁵⁴, the Living Plant Index⁵⁵, Essential Biodiversity Variables⁵⁶, the Biodiversity Intactness Index⁵⁷, the Global Biomass Census⁵⁸. Nature monitoring data has been used by many countries in their regular national updates on the state of natural capital, such as the report commission by the Government of Italy⁵⁹. While substantial data is available, it has been recognized that our knowledge of ecosystems, our understanding of species is far from complete. For example, we do not have a definitive list of species that exist on Earth because efforts to quantify and record species have been limited⁶⁰, or there is no Living Plant Index for UK. Yet, continuing development of remote sensing, big data and modelling are all contributing to a rapidly developing field of biological data collection⁶¹, quickly addressing the data gaps.

Research suggests that a handful of well-chosen purposeful indicators can tell us quite a lot with respect to economic-decision making, but *“the trick is to pin down what it is about the systems that we want to understand, at what resolution and at what intervals, and then choose indicators and variables appropriately”*⁶². While considerable nature-relevant data exists, its current use by companies and financial institution is typically piecemeal and inconsistent. For nature-relevant data to be effectively and consistently used by companies in reporting, it needs to be converted into “reporting metrics”. Several such metrics are available, most of which have been developed by the conservation community with limited engagement from the business sector. [The Biodiversity Measurement Approaches](#)⁶³ paper lists Global Biodiversity Score⁶⁴, Biodiversity Impact Metric⁶⁵, Biodiversity Indicators for Extractives⁶⁶, and about 10 more amongst those currently used. [The Natural Capital Protocol’s Biodiversity Supplement](#) (the protocol promoted by [World Business Council on Sustainable Development](#)), shows “examples” of nature measurements that may be undertaken by companies, such as “direct measurement of species richness”, but does not discuss application of this approach in concrete business models.

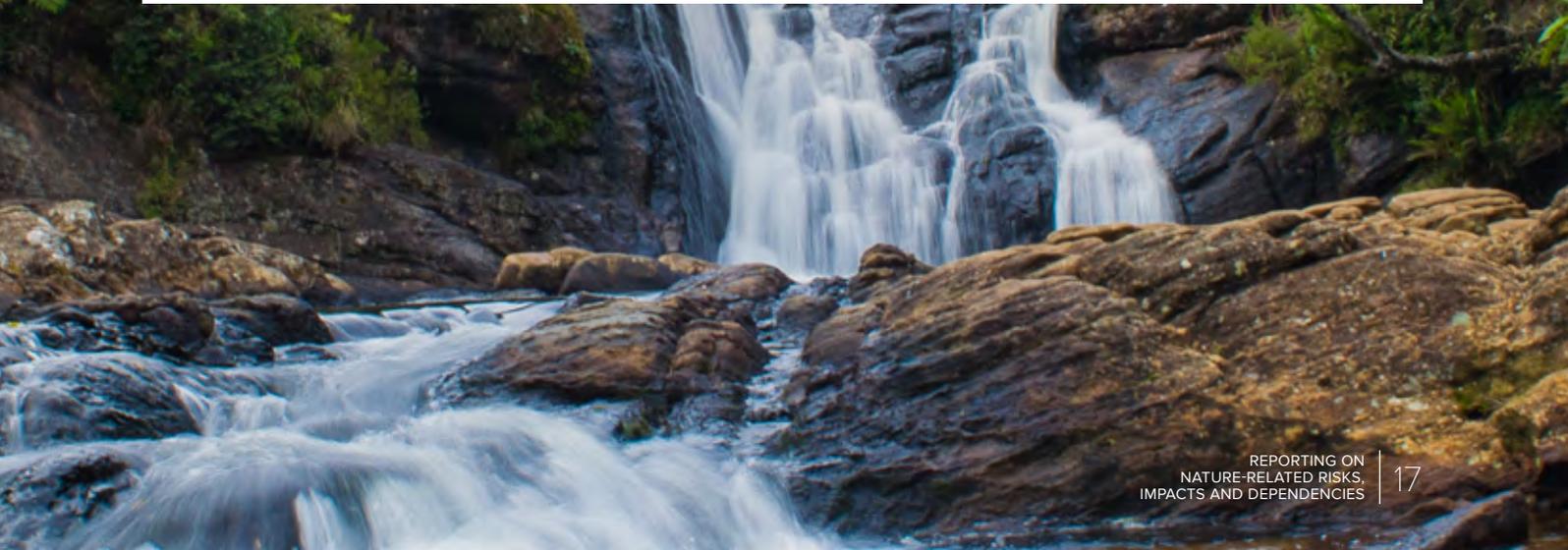
The Little Book of Investing in Nature⁶⁷ concludes that there are just few cases of use of nature metrics used by businesses, in most cases project specific. None of these metrics have been widely integrated into companies’ accountability and disclosure reports so far. UNDP internal analysis has determined that most of the existing frameworks seem to be: (1) overly complex to be comprehended by company management or investors, (2) too expensive to be deployed as they in most cases require extensive field counts or procurement of aerial surveys on constant basis, (3) missing a link to key international policy frameworks (SDGs, conventions); (4) too cumbersome when it comes to their collation, comparison, aggregation and presentation (e.g. by rating agencies or regulators) in a user-friendly way. Most of the current approaches seem to be measuring the “post-factum status/picture of a certain site”, rather than measuring company actions that lead to biodiversity declines or restoration.

UNDP analyzed what nature-related metrics have been applied by rating agencies when requesting disclosure of nature-related risks from companies. Three nature-related metrics seem to have been applied so far: (1) volume of sustainably certified produce or land under cultivation for key agricultural commodities, (2) water volumes and pollution degree, and (3) involvement of companies in severe biodiversity controversies⁶⁸. (Based on desk analysis of [MSCI](#) ESG scoring methodology by UNDP). While these metrics are addressing some of the key nature risks, they are far from having comprehensive coverage of nature-related risks.

Flipping the weakness of the current biodiversity measurement approaches, it would be necessary to come up with that would (1) be understandable for company management and investors, (2) be easy (upon the initial investment and training) to integrated into companies' corporate accounting/reporting systems (3) be clearly linked to key international policy frameworks, (4) would allow for relatively easy collation, comparison, aggregation and presentation (including by equity rating companies) across industries, countries and globally, (5) be measuring company's actions in handling biodiversity risks (as opposed to, or in addition to, taking a snapshot of the state of nature in a particular jurisdiction) thus inherently serving either an incentive for the company to improve.

The following 8 dimensions of the quality of reporting metrics need to be observed: relevance, resolution (spatial and non-spatial), temporality (time series data), frequency of update, geographic coverage, accessibility, comparability, thematic coverage and authoritativeness including traceability. A universal reporting framework, such as TNFD, will need to ensure that its metrics adhere to these principles.

TNFD suggests that information that reporting entities will be required to report will be organized in "data stacks". Data stacks will be compiled and maintained by the TNFD. Data in the stacks will be easily convertible into "reporting metrics" for all key sectors of economy, all types of institutions and asset classes. The reporting entities will have access to this information and will able to pick what is relevant for them for their reporting purposes. The first component of each stack will comprise data on physical impacts (e.g. emissions, water pollution etc.) and physical dependencies (e.g. water use, abstraction rates etc.). Subsequent components of the stack will provide the contextual information used to estimate the implications of this impact or dependency, such as asset or project geolocation, the current and future state of natural resources, industrial process, and organization management response (e.g. the availability of water and water recharge rates etc.). For example, the TNFD will define a generic metric/data stack with generic contextual components, as well as a set of more specific stacks for high priority sectors and/or pressures on nature loss. This will draw from an assessment of what data is most useful for decision making within financial institutions. This will draw heavily from existing initiatives, frameworks and metrics in the space, as TNFD does not intend to develop new standards, but rather collate and process the universe of existing standards and metrics making them usable for the businesses.





Data and metrics and relevant to the state of nature, pressure on nature, and response to nature address the need to not only take a snapshot of the state of nature in a certain jurisdiction (where the reporting entity operates), but also reflect on the company's own efforts in tackling nature-related risks. TNFD metrics therefore will cover:

- **State of nature:** Data relevant to the state of nature include species and habitats, the availability and quality of natural capital assets, ecosystem distribution and threat status, site importance and protection status, and conservation priority. These types of data would form (at least some of) the contextual components of the data on risks and opportunities discussed above. Risk and opportunity determined by the status of nature alone will treat all investments in the same way, regardless of pressure (determined by industrial process) and response (organization management efforts), which could potentially result in a mismatch (under- or overestimation) of actual impact and dependency. TNFD will draw from the existing frameworks and guidance to standardize units for geolocation (longitude and latitude) and define scales of spatial resolution. This will help ensure easy management and verification of data as well as comparability of reporting.
- **Pressure on nature:** Data relevant to pressures on nature include the industrial process or corporate activity in question and the relevant impacts or dependencies (adjusted for expected climate effects) this process has on nature.
- **Response to nature:** Data relevant to the response to nature include reporting on mitigation measures and biodiversity performance in response to identified state and pressures on nature. Note these types of data would form (at least some of) the contextual components of the data stack discussed above. Data on organizations' responses (behavior to mitigate negative impact) will enable differentiation on mitigating measures, as well as negative and positive impacts and dependencies, and location indicators.

It is key for influential ecosystem players to work together to fill the gap related to universally accepted metrics for reporting on nature impacts and dependencies. For example, TNFD welcomes the opportunity to work closely with major corporate reporting system providers, such as the International Integrated Reporting Council (IIRC), the Sustainability Accounting Standards Board (SASB), IFRS Foundation and Board, the International Organization of Securities Commissions (IOSCO), and European Financial Reporting Advisory Group (EFRAG). Initial consultations with some of the regulators have been under-way in the course of TNFD establishment. With 'integration' and 'adaptability' as key principles, the TNFD Framework will be designed with a view to be easily integrated into any of the mentioned established corporate reporting systems, as well as to be used effectively on its own.

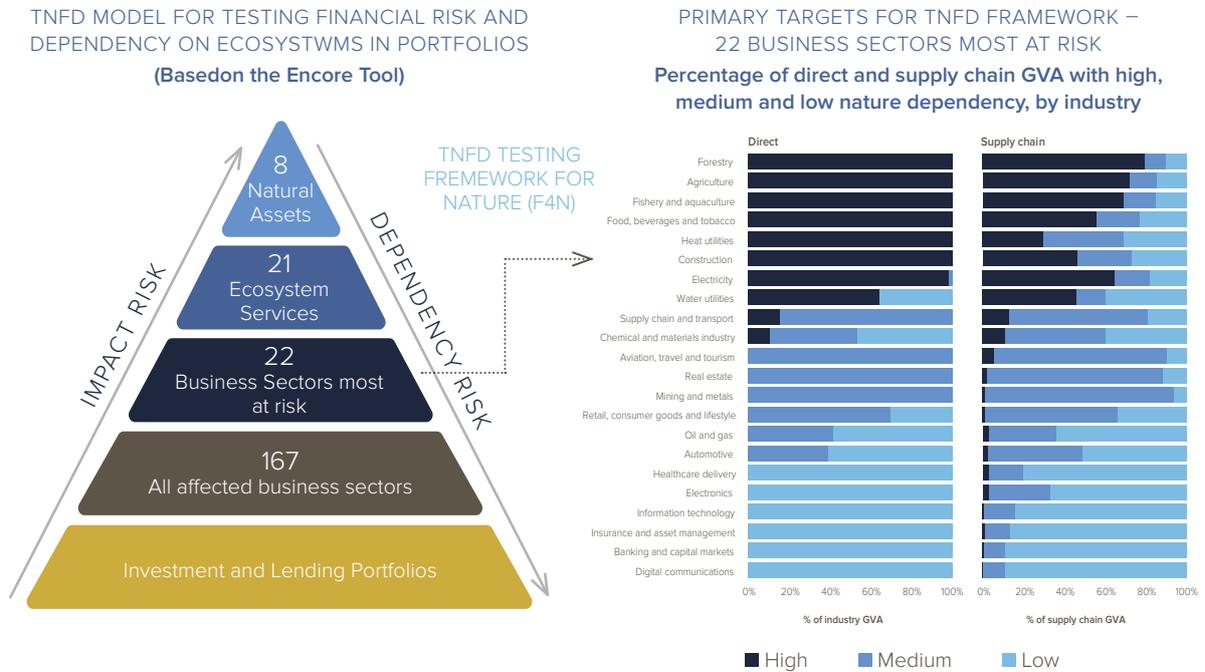


E. PRIORITIZING SECTOR-SPECIFIC IMPACT, DEPENDENCY AND RISK

I. **SECTORS:** WHICH SECTORS AND SUB-SECTORS SHOULD BE PRIORITIZED?

Attempting to report nature-related risks for all sectors/activities/asset classes may be an over-whelming undertaking for reporting entities, many of whom will have limited resources to do so. In order to maximize the effectiveness, it will be necessary for reporting entities to start by prioritizing certain sectors and sub-sectors which are most relevant to nature-related risks. Industries with the most significant impacts and dependencies on nature should be prioritized. This criterion is relevant to non-financial companies with operations across multiple industries and financial institutions providing finance to multiple industries. To identify which industries should be highest priority, it is valuable to assess the existing body of work that compares impacts and dependencies across industries and commission additional analysis if necessary. There is a body of research on which sectors have highest nature-related risks. These include, but are not limited to, the Natural Capital Finance Alliance’s “Beyond ‘Business as Usual’” report (using the ENCORE tool),⁶⁹ the SBTN sector-level materiality assessment,⁷⁰ the SASB materiality map,⁷¹ the Trucost and Natural Capital Coalition’s Natural Capital Impact Ranking,⁷² the Allianz Natural Capital Risk Analysis,⁷³ the WEF Nature Risk Rising report,⁷⁴ the EU Business@Biodiversity program,⁷⁵ the Align and Transparent initiatives,⁷⁶ and the OECD Due Diligence Guidance for Responsible Business Conduct.⁷⁷ Within priority industries, reporting entities should prioritize disclosure for the most significant types of nature-related risks and opportunities and those for which data of a sufficient quality are readily available. Figure 2 on page 20 presents the overview of key sectors, as per World Economic Forum, which are proposed to be the key priority sectors for consideration by the TNFD.

FIGURE 2. An example of businesses sectors facing high levels of nature-related physical risk, impacts and dependencies



Source: NCFCA

Source: PwC

Source: Adapted from the WEF 2020 Report: [Nature Risk Rising- Why the Crisis Engulfing Nature Matters for Business & the Economy](#), p.14

The “impacts and dependencies” approach is coherent with the materiality principle: Nature assets or services on which a business “depends” have quantity and quality, which – if degraded in an unaccounted way – undermine inputs needed for profitable production of the business itself. The “impacts” that a business has (or may have) on natural assets and services, in case negatively affecting the condition of other parties (e.g. causing health effects and thus increasing the costs of medical care, affecting water quality or quantity of businesses downstream, causing deforestation and bringing about loss of home of indigenous communities) strongly correlate with material litigation and reputation risks, as reflected in the previous chapter.

The impacts and dependencies will differ both across sectors and within sectors. For example, within agriculture, the impact of the production of dairy on nature is very different from the production of non-dairy milk, such as soy or almond milk. Reporting on nature risks a relatively new concept, when compared to reporting on climate risks, and putting a place a coherent common reporting framework for all sectors of economy may be overwhelming. Therefore, it is practical to concentrate initially on a few sub-sectors of highest impact and/or dependency in the first few years.

TNFD, for example, is planning to select no more than 10 sub-sectors which are a mixture of high-impact, high-dependency, and high-risk. For example, high impact sectors include soybean farming, dairy cattle and milk production, beef cattle ranching and farming including feedlots, and pesticide, fertilizer and other agricultural chemical manufacturing. High dependency sectors include cotton farming and sugarcane farming. The insights from one commodity will help to produce insights for other sensitive soft commodities to give a more holistic perspective.

II. FINANCE: WHAT TYPE OF FINANCIAL FLOWS SHOULD BE SUBJECT TO DISCLOSURE, AND WHICH SHOULD BE PRIORITIZED?

In 2020 investors requested that the scope of corporate biodiversity reporting be as broad as possible, “to ensure that investors are able to apply these indicators across large portfolios”⁷⁸. Companies obtain funding from equity, debt, insurance payments, Government budget, charities. Any flow of capital therefore can be invested into a high nature risk business and should be subject to disclosure. A universal disclosure framework should, therefore, ideally cover all types of financial institutions such as banks, insurers and reinsurers, asset managers and asset owners, as well as all recipients of financial flows including publicly listed companies, non-listed companies, and small-to-medium enterprises (SMEs). It should cover private market investments into real estate and infrastructure which are not listed on stock exchanges or classified as project finance, as well as insurers’ underwriting portfolios. All asset classes should be subject to disclosure, including corporate loans, SME loans, rural loans, project finance, publicly listed equity, corporate bonds, private equity.

TNFD analysis concluded that the most effective way is for financial institutions to start with specific debt and equity investments: This includes listed debt instruments, listed equities, unlisted project finance and project-related corporate loans. Such reporting could be aligned with existing work on impacts on nature by the Equator Principles and IFC Performance Standard 6.⁷⁹ This recommendation allows reporting entities to start from where assessments are likely to be easiest to undertake but does not imply that the debt and equity instruments are the only classes to be reported.

There are several forms of public finance that are directly linked with private finance and hence should be subject to disclosure, as it is difficult to consider all aspects of private finance without considering these forms of public finance. The two clearest examples are:

- **Blended finance** refers to financial instruments that combine private finance with (typically concessional) public finance. This is considered a vital source of funding for projects and activities that generate nature-positive impacts.
- **Development finance** refers to the portfolios of development finance institutions, also viewed as important sources of nature-related finance.

The financial flows that should be prioritized first are those which invest in countries where biodiversity is highly vulnerable.

The above principles are in line with the approach of TNFD.



III. STAGING: WHAT APPROACH CAN BE ADOPTED TO PROGRESSIVELY ENHANCE NATURE-RELATED REPORTING WITHOUT GENERATING DISPROPORTIONATE REPORTING BURDEN? WHAT AREAS WOULD NEED TO BE FURTHER EXPLORED TO IMPROVE NATURE-RELATED REPORTING?

A flexible, staged approach for reporting entities to progressively increase the amount and detail of reporting on nature-related risks, like the sequence below being considered by the TNFD, is deemed to be most effective:

FIRST STAGE: BASIC	SECOND STAGE: INTERMEDIARY	THIRD STAGE: COMPREHENSIVE
Defines a core assessment of nature-related risks (and geospatially explicit wherever possible) that should be considered robust but with significant room for improvement in terms of coverage and accuracy	Defines a midway path, providing a more complete assessment of nature-related risks and opportunities though with limiting simplifications	Defines full alignment with the complete range of metrics and a complete assessment of nature-related risks and opportunities relevant for full value chain in the given industry/sector.

The stages provide a flexible approach for reporting entities, self-selecting a starting stage in accordance with their exposure to nature-related risks and opportunities (both dependencies and impacts) and their ability to evaluate and disclose nature-related risks. A staged approach allows for flexibility in implementation given the wide range of organizational size, capacity, data quality and so on across reporting entities. Organizations do not need to adhere to one stage across all of their operations and/or investments. For example, an organization may choose to align with the comprehensive stage for some industries but with the basic stage for others. This allows for prioritization, as laid out above. The stages represent increasingly sophisticated reporting approaches, but not necessarily improved performance. That is, the higher stages imply greater transparency concerning exposure to and management of nature-related risks, but do not necessarily imply lower exposure to or more effective management of these risks. Different elements under each of the three stages will have different uses and will be relevant to different reporting entities and end-users. The staged framework implies a progression over time.

In the TNFD’s case, for example, it is proposed that Governments consider an incentive mechanism to encourage reporting entities to advance to higher stages across more of their reporting over time. The Taskforce when launched will assess what type of incentive mechanism is appropriate and will provide advice to Governments on this subject. Possibilities include official recognition of reporting entities’ stages across their portfolio and peer group comparison tools. The Taskforce will need to consider whether and how reporting entities should make commitments to improve reporting over time and the appropriate timelines to do so given the wide diversity of reporting entities. There is an ambition to reach the “comprehensive” stage across all reporting as this enhanced transparency improves the likelihood of achieving the goal of the TNFD.

3. RECOMMENDATIONS





A. Support further development of natural capital monitoring, reporting and valuation approaches and systems and their adoption by national organizations (i.e. ministries of statistics or environmental authorities) to collect and collate essential data that businesses can use for reporting

A good example of such monitoring systems is the framework developed under the auspices of the Group on Earth Observations Biodiversity Observation Network (GEO BON), known as the “Essential Biodiversity Variables” (EBVs) that could form the basis of monitoring program worldwide. EBVs are designed to help prioritize indicators by seeking to define a minimum set of essential measurements that capture major dimensions of biodiversity change⁸⁰. This system, in combination with SEEA⁸¹, could form the basis for valuation of natural capital, and this data can be useful for the businesses in their reporting.

B. Make Ministries of Finance and Central Banks aware of the benefits and importance of reporting on nature-related impacts, risks and dependencies for national regulators, given strong market demand for effective and consistent reporting metrics. The G20 is sought to support relevant national and international activities that aim to help companies to:

- Improve understanding of how material nature-related risks can best be quantified and measured; how the quantified nature risk information can be used by markets; how nature-related risks affect the cost of capital.
- Analyze and agree on common nature-reporting metrics, including on metrics which all registrants should ideally report as well as sector (industry)-specific metrics; whether and how disclosures depend on the size and/or type of registrant.
- Set up and maintain corporate systems and tools that help registrants internally to evaluate or project nature risks (ideally across full value chains), agree and decide on which information should be disclosed to investors to inform investment and voting decisions.
- Encourage “comply or explain” approach to nature-related disclosures, that would permit registrants to either comply with, or if they do not comply, explain why they have not complied with the disclosure rules.
- Be aware of best practices in internal corporate governance and oversight of nature-related risks and disclosure; be advised on advantages and disadvantages of the connection between executive or employee compensation and nature-related risks and impacts.
- Be advised on having disclosures subject to audit or another form of assurance and how third-party verification can influence costs, share price or credit rating.

C. Relevant government agencies might facilitate reporting on nature-related risks as a first step in acting to achieve zero-net or positive impact on nature:

Wide disclosure of nature-related impacts and dependencies is an important first step to transition to zero-net or positive impact on nature. Ministries of finance could consider policy and regulatory incentive mechanisms to encourage companies within their jurisdiction to disclose nature-related risks. This may include, among other things, assistance from Governments to companies in accessing data relevant for corporate reporting.

D. Address the need for nature-related risk scenarios when analyzing the prospects of the insurance and banking sectors:

As the practice of corporate reporting on nature-risks expands, the disclosed corporate data, when brought together, collated and analyzed, could be instrumental in building scenarios (considering nature and climate jointly). This may be particularly relevant to the insurance sector. Aggravation of physical risks and rise in their unpredictability, highly probably under the business-as-usual nature use scenario, may lead to increased premiums or complete cessation of insurance for certain businesses. This might trigger a drop in collateral value of physical assets of uninsured companies and expose their lenders to elevated default risks. Construction of scenarios under TNFD framework will enable understanding of possible trends in insurance premiums and coverage, spillover of risks to the banking sector; for regulators it will enable better understanding of behavior of economic actors under catastrophic events, and macroeconomic risks such as rising price of sovereign capital, migration and loss of political stability. In this regard, TNFD can work with the Secretariat of the [Sustainable Insurance Forum \(SIF\)](#), which recently commissioned [a scoping study on the nature-related risks in the insurance sector](#).⁸²

E. Consider using (elements of) nature-risk reporting (such as TNFD Framework) for global dialogue on financial stability:

As nature-risk corporate reporting data becomes available, it will enable more effective consideration of systemic risks. The TNFD, for example, will be in a position to reflect how individual financial institution-level impacts, dependencies and financial risks aggregate across financial institutions at the geographic and sector level and lead to risks to financial stability. Information can be compiled in a manner deemed useful for macroprudential authorities, cognizant of the degree and nature of the correlation between different financial institution-level risks. This can be useful to macroprudential authorities in their analysis of system-wide stress stemming from nature-related risks and developing nature-related scenarios that could help guide macro-economic decision-making across more than one country and more than one asset class.

The latter could range from simply handing over relevant data to working closely on joint analysis. For example, TNFD can be instrumental for initiatives such as collaboration between NGFS and INSPIRE on [research](#) on biodiversity and financial stability, launched in April 2021. By proposing a comprehensive coverage of nature-related risks, TNFD framework can also complement the [climate-focused agenda](#) of the Financial Stability Board.



4. APPENDIX I

An aerial photograph of a river with clear, turquoise water flowing through a lush green forest. The river is the central focus, with a sandy bank visible on the left side. The surrounding trees are dense and vibrant green, creating a natural frame for the water.

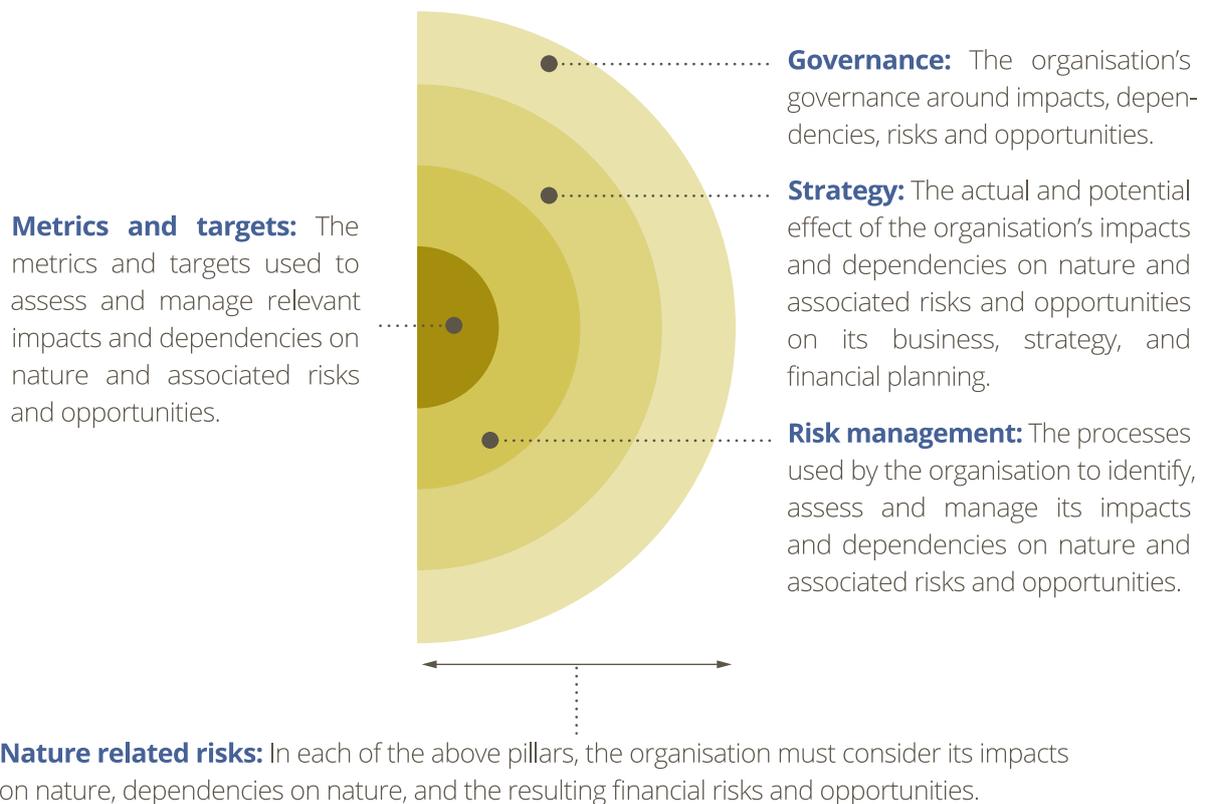
TNFD AT A GLANCE

In September 2020, an international market-led Informal Working Group (IWG) was established to plan and support the establishment of a Taskforce on Nature-related Financial Disclosures ([TNFD](#)). The IWG comprises of [representatives from 74](#) financial institutions, corporates, governments, regulators, supervisory bodies, think tanks and consortia. It was brought together to define a recommendation for the [technical scope](#) and [operating model](#) of the TNFD and its launch on 4 June 2021 ([Bloomberg](#)). The work of the IWG is led by three co-chairs from Banorte, BNP Paribas and the Green Finance Institute, and catalyzed by founding partners: UNDP, UNEP FI, Global Canopy and WWF. The [newly announced TNFD Co-Chairs](#) are Refinitiv's David Craig and CBD's Elizabeth Mrema.

The informal technical expert group (ITEG) was also established to provide technical recommendations on the scope of the TNFD to the IWG. A substantial part of the analysis in this paper is drawn from the deep expertise, consultations and resulting recommendations of the [proposed Technical Scope for the TNFD](#).

The TNFD, once launched, will provide a framework for organizations (financial institutions and non-financial corporates) to report and act on evolving nature-related risks, in order to support a shift in global financial flows away from nature-negative outcomes and towards nature-positive outcomes. The investor community has indicated strong demand for a reporting framework on nature-related risks. As an example, in 2020, pension funds and other investors managing \$6.5 trillion in assets publicly called for a “framework to measure biodiversity impacts”⁸³ arguing that “*both positive and negative impacts should be captured by metrics, allowing investors to identify beneficial and harmful investments*”⁸⁴. The need for a nature-risk reporting framework has been voiced by numerous commercial banks in the Netherlands, England, and France (as outlined in Chapter 1 of this paper), central bank coalitions such as NGFS, standard-setters such as IFRS⁸⁵, leading rating agencies such as MSCI⁸⁶ and S&P⁸⁷. IMF strongly supported the need for a nature-risk disclosure framework⁸⁸. The TNFD is established to develop recommendations for effective nature-related disclosures that could promote more informed investment, credit, and insurance underwriting decisions and, in turn, enable stakeholders to understand impacts and dependencies of companies and the financial system's exposures to nature-related risks. Impacts on nature will in the long-run pose risks to businesses and financial institutions. This Framework will aid in the appraisal of nature-related financial risks and opportunities, both at the organization and system-wide level. It will serve as a mechanism to coordinate disclosure and help organizations understand and manage the financial risks and opportunities associated with the deteriorating state of nature and a transition to an economy consistent with meeting future nature-related international agreements.

FIGURE 3. Core elements of recommended nature-related financial disclosures



Source: IWG TNFD's Informal Technical Expert Group, drawing from TCFD (2017): Recommendations of the Task Force on Climate-related Financial Disclosures.

The TNFD framework will adopt a five-pillar approach: governance, strategy, risk management, data, metrics and targets, and nature-related risks (see Figure 3). This is similar to the set-up used by the framework of the Taskforce on Climate-related Financial Disclosures (TCFD). The framework will be supported by guidance on how financial institutions and non-financial corporates can align their business practices and financing respectively to manage their impacts and dependencies on nature. The TNFD is committed to market transparency and stability. Believing that better information will allow companies to incorporate nature-related risks and opportunities into their risk management and strategic planning processes including the development of new sustainable finance products. As this occurs, corporates' and investors' understanding of the financial implications associated with nature, biodiversity, and ecosystems services will grow, empowering the markets to channel financial flows towards sustainable and resilient solutions, opportunities, and business models. The TNFD does not intend to develop a standard (either for disclosure or broader activities) itself. The TNFD intends for its outputs to be integrated into existing frameworks and standards in the space, such as those published by GRI, SASB, CDSB and the forthcoming IFRS Sustainability Board (this list is illustrative only). When compiling TNFD-aligned reporting material, financial institutions will be able to use data from both corporate disclosure and from third party data sources.

The 7 proposed principles that serve as a compass for TNFD are:

- 1. Market Usability:** Develop frameworks directly useful and valuable to market reporters and users, notably corporations and financial institutions, as well as policy and other actors.
- 2. Science-based:** Follow a scientifically anchored approach, incorporate well established and emerging scientific evidence and aims to incorporate other existing science-based initiatives.
- 3. Nature-related Risks:** Address nature-related risks that include immediate, material financial risks as well as nature dependencies and impacts and related organizational and societal risks.
- 4. Purpose-driven:** Be purpose driven and actively target reducing risks and increasing nature-positive action by using the minimum required level of granularity to ensure achievement of the TNFD goal.
- 5. Integrated & Adaptive:** Build effective measurement and reporting frameworks that can be integrated into and enhance existing disclosures and standards. Account for and be adaptive to changes in national and international policy commitments, standards and market conditions.
- 6. Climate-Nature Nexus:** Employ an integrated approach to climate- and nature-related risks, scaling up finance for nature-based solutions.
- 7. Globally Inclusive:** Ensure the framework and approach is relevant, just, valuable, accessible and affordable worldwide, including emerging and developed markets.

Highlights: Who benefits from the TNFD's work?

- **Investors** can make informed and robust capital allocation decisions based on clarity, confidence and trust in natural capital and environmental opportunities and risks disclosed by a company, alongside climate change.
- **Analysts** can be better equipped to utilise environmental and natural capital-related information in determining impacts on future cash flow and ultimately company valuations, alongside climate change.
- **Companies** can use the TNFD Framework to incorporate environmental and natural capital-related information in mainstream financial reports alongside data on climate, assisting companies in achieving a holistic view of how climate change and natural capital can affect their performance and the necessary actions they could take to address the risks and opportunities.
- **Regulators** can benefit from standards-ready material and a framework that can be immediately adopted or referenced as a method of compliance in regulation/guidance, informing business decision-making related to the use of natural resources, land and sustainable behaviour.
- **Stock exchanges** can consider new voluntary and mandatory listing requirements linked to material environmental and natural capital-related risks and opportunities alongside climate change.
- **Accounting firms** can provide more comprehensive assurance of companies reporting on environmental and natural capital-related performance.

5. END NOTES



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33. The term "ecosystem" refers to a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. [CBD \(2020\): Use of Terms](#).
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35. [IPBES](#) defines "nature's contribution to people" (NCP) as "all the contributions, both positive and negative, of living nature (i.e. diversity of organisms, ecosystems, and their associated ecological and evolutionary processes) to the quality of life for people. Beneficial contributions from nature include such things as food provision, water purification, flood control, and artistic inspiration, whereas detrimental contributions include disease transmission and predation that damages people or their assets. Many NCP may be perceived as benefits or detriments depending on the cultural, temporal or spatial context."
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