



HOW CAN FINANCE HELP ADDRESS OUR DUAL CLIMATE AND NATURE CRISES?

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ABOUT FSEG

The Finance Sector Expert Group for Race to Zero and Race to Resilience (“FSEG”) was established in 2021 by the UN High-Level Champions for Climate Action (the “Champions”) to advise them on consistent, fair, and rigorous interpretation guidelines of the Race to Zero and Race to Resilience criteria for the finance sector.

Where appropriate and in consultation with partners, the FSEG will produce guidance to support finance actors participating in Race to Zero and Race to Resilience, support the Expert Peer Review Group (EPRG) deliver its review and advisory functions for finance actor-related networks and initiatives, and support the creation and maintenance of a community of practice for finance actors participating in Race to Zero and Race to Resilience.

FSEG comprises experts and practitioners with relevant experience, including representatives from Race to Zero and Race to Resilience Partners. FSEG members serve in their individual capacity, not as representatives of their organisations, and are not compensated or remunerated for their time. The FSEG full Terms of Reference can be accessed [here](#)¹.

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¹ <https://unfccc.int/sites/default/files/resource/Finance%20Sector%20Expert%20Group%20for%20RtZ%20and%20RtR%20-%20Terms%20of%20Reference%20-%202001.01.2021.pdf>

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Disclaimer

The views expressed in this paper represent those of the authors and do not necessarily represent those of the Finance Sector Expert Group for Race to Zero and Race to Resilience, UN High-Level Champions for Climate Action, or other institutions or funders. The paper is intended to promote discussion and to provide public access to results emerging from our work.

EXECUTIVE SUMMARY

We are facing an interrelated set of crises in climate, nature, and the global economy. Just as we have seen an acceleration in climate impacts, we are also losing biodiversity at an alarming rate, with more than a two-thirds reduction in average species size over the last 50 years², and roughly a million species at risk of extinction³. Climate change and nature loss are mutually reinforcing with human driven causes. Increased concentrations of greenhouse gases result in effects including higher temperatures, more frequent natural disasters, changing precipitation patterns and oxygen depletion, all with significant impacts on the stock of natural assets. Similarly, changes in biodiversity affect carbon, nitrogen, and water cycles, negatively impacting the climate system. The level of biodiversity loss we are causing undermines the capacity of nature to help us limit rising temperatures and makes us less resilient to the physical impacts of climate change. The recommendation from the joint workshop⁴ of the relevant UN science bodies on the climate and nature crises is clear: **solve both or solve neither**.

We are also facing the health and economic ravages of a global pandemic, with the injustice of inequality laid bare, against the back-drop of an increase in the number of zoonotic diseases and spillover events⁵ over the last half century. Climate change, biodiversity loss, and the rise in pandemic probability share a key driver: habitat loss and degradation. Land conversion for agriculture in particular has caused 70% of terrestrial biodiversity loss and half of freshwater biodiversity loss while also contributing to a warming climate and increasing the probability of spillover of zoonotic diseases like COVID-19.

The way we feed, fuel, and transport ourselves is at the heart of these interrelated crises, and finance can and must catalyse change. Policy signalling including an agreed clear global goal for nature⁶, and regulations that integrate nature with climate can help support financial sector alignment with a carbon net zero and nature positive economy. Financial institutions and those who regulate them must act for change, and given the scale of the challenge and pace of change needed, cooperation and collaboration is essential.

² R. E. A. Almond, M. Grooten, and T. Petersen, eds., *Living Planet Report: Bending the Curve of Biodiversity Loss* (Gland, Switzerland: WWF, 2020), <https://www.worldwildlife.org/publications/living-planet-report-2020>.

³ IPBES, *Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*, ed. S. Díaz et al., Global Assessment Summary for Policymakers (Bonn, Germany: IPBES Secretariat, 2019)

⁴ H.O. Pörtner et al., "IPBES-IPCC Co-Sponsored Workshop Biodiversity and Climate Change," vol. 115, 2018, <https://doi.org/10.5281/zenodo.4782538>.

⁵ Wijnand de Wit, Arianna Freschi, and Emily Trench, "COVID 19 : Urgent Call to Protect People and Nature," 2020, https://cdn2.hubspot.net/hubfs/4783129/WWF_COVID19_URGENT_CALL_TO_PROTECT_PEOPLE_AND_NATURE.pdf.

⁶ Nature Positive, "Nature Positive," accessed November 1, 2021, <https://www.naturepositive.org/>.

KEY RECOMMENDATIONS

- 1 Financial institutions need to assess, disclose, manage, and act on nature-related risks**, recognizing that nature is integral to sustainable development and financial and economic stability, and strengthen understanding of the opportunities and risks arising from dependencies and impacts on nature.
- 2 Financial institutions – both public and private – need to align their portfolios and practice with nature.** In order for financial institutions to deliver net zero climate commitments consistent with the target of the Paris Agreement, they need to also transform their practices to incorporate nature because climate and nature-related risks are inter-related and must therefore be tackled together.
- 3 Financial institutions can drive change through the real economy.** The financial sector can use its financing, investment, and insurance products along with active engagement to encourage businesses to be more sustainable and reduce their nature-related risks.

INTRODUCTION

The Finance Sector Expert Group for Race to Zero and Race to Resilience (“FSEG”) was established in 2021 by the UN High-Level Champions for Climate Action (the “Champions”) to advise them on consistent, fair, and rigorous interpretation guidelines of the Race to Zero and Race to Resilience criteria for the finance sector.

This discussion paper explores the importance of nature in addressing climate change and the role of finance in supporting a nature positive and net zero economy. This is a critical issue to ensure finance can make a meaningful and proportional contribution to supporting the Paris Agreement. Nature is vital for its capacity to capture and store carbon and thereby help limit warming, and it also plays a critical role in helping adapt to the impacts of climate change. Aligning finance to reduce the risks that come from business dependencies and impacts on nature can also contribute to the natural resilience of the environment as well as communities that are already impacted by a warming climate. Finance is starting to understand nature-related risks and their relationship to climate, and is just beginning to realize the need to invest in nature for mitigation and adaptation. As these efforts scale, it will be important to ensure rigour in order for the impact to match the ambition.

Section 1 discusses the relationship between climate and nature, including the need to align finance with the 1.5°C target of the Paris Agreement and global nature positive goal. It discusses the physical and transition risks of nature loss, and the opportunity to invest in nature for climate mitigation and adaptation. It further presents examples of green financial instruments that can be scaled for greater investment and impact, and posits that we need much more attention and support to grow nature markets. Section 2 presents conclusions and detailed recommendations for action for financial institutions public and private and for those who regulate them, including highlighting their central role in getting the real economy to align to a net zero nature positive world.

This discussion paper, which is open for feedback until the 1st July 2022, is a way for FSEG to receive feedback on emerging ideas from different stakeholder groups as we develop our views on this topic.

THE ROLE OF FINANCE

Our societies and economies are fully dependent on nature⁷, which is essential to rights⁸, and about half of the world's GDP is moderately or highly dependent on nature⁹. Understanding the interdependencies between natural, social, economic and financial systems is key to address the current climate and nature crises and prevent future economic crises.

Biodiversity loss and climate change are two sides of the same coin¹⁰ and highly interconnected in a negative feedback loop. Increased temperatures and shifts in precipitation are key drivers of biodiversity loss¹¹, impacting the functions of ecosystems and driving species migration. At the same time, we need healthy ecosystems to capture and store carbon¹². A healthy ocean, a natural forest, nutrient-rich soil all absorb and store more carbon than their degraded forms. Nature also helps protect against the physical impacts of climate change like droughts, flooding, and storm surge.

Complex feedback loops and tipping points can result in abrupt, long-lasting, cumulative and irreversible shocks, heightening risks to businesses and entire economies¹³, and increasing global financial market volatility. The finance sector needs to understand the risks emerging from dependencies and impacts on nature in order to manage and mitigate those risks and better seize emerging opportunities. And, as a result of the complex interactions between nature and climate, only by becoming nature positive^{14, 15}, by incorporating nature in investment and financing decisions, can financial institutions deliver commitments to be net zero by 2050 or sooner in line with global efforts to limit warming to 1.5°C.

⁷ Partha Dasgupta, *Economics of Biodiversity : The Dasgupta Review : Headline Messages*. (United Kingdom, 2021).

⁸ P. Pacheco et al., "Deforestation Fronts: Drivers and Responses in a Changing World" (Gland, Switzerland, 2021).

⁹ Celine Herweijer et al., "Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy," *New Nature Economy*, 2020, http://www3.weforum.org/docs/WEF_New_Nature_Economy_Report_2020.pdf.

¹⁰ UN, "COVID-19 Recovery, Planetary Repair 'Two Sides of Same Coin', Secretary-General Says in University Address, Warning More Viruses Could Jump from Animals to Humans," 2020, <https://www.un.org/press/en/2020/sgsm20467.doc.htm>.

¹¹ IPBES, "Models of Drivers of Biodiversity and Ecosystem Change," accessed November 1, 2021, <https://ipbes.net/models-drivers-biodiversity-ecosystem-change>.

¹² Stephen Cornelius et al., "Climate, Nature and Our 1.5 ° C Future: A Synthesis of IPCC and IPBES Reports," 2019.

¹³ Justin Andrew Johnson et al., "The Economic Case for Nature: A Global Earth-Economy Model to Assess Development Policy Pathways," *The Economic Case for Nature*, 2021, <https://doi.org/10.1596/35882>.

¹⁴ Harvey Locke et al., "A Nature-Positive World: The Global Goal for Nature," 2020.

¹⁵ Nature-positive refers to the need to halt and reverse nature loss measured from a baseline of 2020, through increasing the health, abundance, diversity and resilience of species, populations and ecosystems so that by 2030 nature is visibly and measurably on the path of recovery such that there is more nature in 2030 than there was in 2020.

ALIGNMENT

Both public and private finance need to centre around nature positive¹⁶, net zero commitments¹⁷ and Science Based Targets¹⁸ on a 1.5°C pathway. With respect to climate change, many financial institutions have already committed to transition their investment /lending /underwriting portfolios to have net zero greenhouse gas emissions by 2050 or sooner, in line with global efforts to limit warming to 1.5°C. To meet such commitments, they must also lay out a concrete time-bound pathway to achieve them.

Understanding that nature and climate are inter-related, financial institutions must plan actions to achieve both goals of net zero emissions and protecting, restoring, and sustainably managing natural resources. For example, measures that focus too narrowly on climate change should be re-evaluated in terms of their overall benefits and risks¹⁹, including potentially negative impacts on nature, such as surges of mining activity or requirements for large amounts of land, or dams and sea walls that interfere with migratory species and cause habitat fragmentation. Likewise, financial institutions must shift their finance, investment, and insurance decision-making to emphasize sustainable business practices to encourage changes in production patterns that avoid and reduce the negative impacts of current practices both in terms of pollution and waste as well as reduced extraction of natural resources.

While climate-related alignment tools and methodologies²⁰ are widely available and in increasing use, nature alignment is relatively nascent. A few methodologies and tools²¹ are available to align finance to nature goals, and more are in development. Work is also underway to agree metrics including efforts from the Science Based Targets Network²², the EU sustainable finance taxonomy²³, and the UK's greening finance roadmap²⁴. The work of the Taskforce on Nature-related Financial Disclosures (TNFD)²⁵ to develop a nature-related risk disclosure framework should also accelerate technical tools to enable such alignment and increase uptake of disclosure and target-setting.

The work to align portfolios to nature and climate goals includes not only understanding and reducing nature-related risks; it also requires increased investment in renewable energy and energy efficiency and increased investment in nature and the services it provides. It is estimated

¹⁶ Convention on Biological Diversity et al., "Financial Sector Guide for the Convention on Biological Diversity: Key Actions for Nature," 2021, <https://www.unepfi.org/publications/new-nature-positive-finance-guidance/>.

¹⁷ GFANZ, "COP26 and The Glasgow Financial Alliance for Net Zero (GFANZ)," 2021.

¹⁸ SBTi, "How It Works - Science Based Targets," 2021, <https://sciencebasedtargets.org/how-it-works>.

¹⁹ Pörtner et al., "IPBES-IPCC Co-Sponsored Workshop Biodiversity and Climate Change."

²⁰ TCFDhub, "Resources - TCFD Knowledge Hub," accessed November 1, 2021, https://www.tcfhub.org/resource/?order=ASC&orderby=title&search_keyword=alignment.

²¹ Sam Hilton and Joanne Lee, "Assessing Portfolio Impacts: Tools To Measure Biodiversity and SDG Footprints of Financial Portfolios," 2021.

²² Science Based Targets Network, "Science Based Targets Network," accessed November 1, 2021, <https://sciencebasedtargetsnetwork.org/>.

²³ European Commission, "EU Taxonomy for Sustainable Activities," accessed November 1, 2021, https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en.

²⁴ HM Treasury, Department for Works & Pensions, and Department for Business Energy & Industrial Strategy, "Greening Finance: A Roadmap to Sustainable Investing," 2021, <https://www.gov.uk/government/publications/greening-finance-a-roadmap-to-sustainable-investing>.

²⁵ TNFD, "Taskforce on Nature-Related Financial Disclosures," accessed November 1, 2021, <https://tnfd.global/>.

that somewhere between US\$722 billion and US\$972 billion in investment is required to protect the natural environment compared to a current expenditure of between US\$124 and US\$143 billion²⁶. In addition, 86% of the money going into nature-based solutions – one type of nature positive investment – is public money²⁷, but public and philanthropic investment alone will not be able to meet this target. Scaling of private finance is thus essential to close this more than US\$700 billion shortfall.

Scaling of private finance also needs supportive public policy. As summarized in the Dasgupta Review²⁸, “...recent estimates suggest that governments globally spend around US\$500 billion per year on support that is potentially harmful to biodiversity²⁹.” More broadly, combined public and private financial flows estimated to be harmful to natural assets significantly dwarf those flows devoted to enhancing these assets, according to multiple reports and studies^{30, 31, 32}. When set against the biodiversity financing gap of roughly US\$700 billion, almost US\$500 billion in public funds that are harmful to nature is particularly stark.

Public finance can set a strong example with a near-term deadline and ambitious goal to transition away from harmful subsidies (e.g. fossil fuel and harmful agricultural, fisheries and water subsidies) and direct public support to encourage sustainable practices in key sectors, particularly those that are less damaging to – and more efficient in their use of – natural capital, and those that invest in nature restoration and conservation in ways that build our societies’ and economies’ overall resilience.

RISK

Just as climate risks are increasingly integrated in financial decision-making, risks related to the loss of biodiversity and nature must also be incorporated. The degradation of natural ecosystems can result in significant risks for financial institutions. The Network for Greening the Financial System (NGFS)³³ categorises these risks into two types: physical and transition risks³⁴. Physical risk is the potential for financial institutions to be exposed to losses resulting from a reduction in the quality or quantity of services that depend on biodiversity. These risks can be chronic (e.g., a gradual decline in fish stocks resulting from rising temperatures and increased acidity) or acute (e.g., droughts or invasive species impacting commodity yields). These risks are material and

²⁶ Paulson Institute, “Financing Nature: Closing the Global Biodiversity Financing Gap,” accessed November 1, 2021, <https://www.paulsoninstitute.org/key-initiatives/financing-nature-report/>.

²⁷ Ivo Mulder et al., State of Finance for Nature: Tripling Investments in Nature-Based Solutions by 2030 (Nairobi: United Nations Environment Programme, 2021), file:///C:/Users/john/AppData/Local/Temp/SFN.pdf.

²⁸ Partha Dasgupta, The Economics of Biodiversity: The Dasgupta Review, Journal of Political Economy, vol. 28 (London: HM Treasury, 2021), <https://doi.org/10.2458/jpe.2289>.

²⁹ OECD, “A Comprehensive Overview of Global Biodiversity Finance,” 2020.

³⁰ Paulson Institute, “Financing Nature: Closing the Global Biodiversity Financing Gap.”

³¹ OECD, “A Comprehensive Overview of Global Biodiversity Finance.”

³² Andrew Seidl et al., “Finance for Nature: A Global Estimate of Public Biodiversity Investments,” Ecosystem Services, Ecosystem Services, 46, no. C (2020), <https://doi.org/DOI: 10.1016/j.ecoser.2020.101>.

³³ Network for Greening the Financial System, “Network for Greening the Financial System,” accessed November 1, 2021, <https://www.ngfs.net/en>.

³⁴ Yunwen Bai et al., “Biodiversity and Financial Stability: Exploring the Case for Action,” 2021.

have important implications for stock prices, real estate prices, and bank defaults³⁵. For example, a recent report from Planet Tracker identified 91% of Japanese seafood producers' debt is due in 2030 and beyond³⁶, while visibility on the stability of fish stocks and therefore profit generation in the next decade is limited.

The second risk, transition risk, arises from, for example, policy measures, changing consumer preferences, and technological developments that occur to combat damage to – and restore and conserve – biodiversity and ecosystems. Businesses and industries that are not prepared for such changes will be exposed to potential transition risk, and such transition risks are likely to be material particularly for those industries with large impacts on ecosystems such as forestry, agriculture, energy, mining, and fishing. The UN Principles for Responsible Investment's Inevitable Policy Response contends that, given that adverse effects of climate change are becoming increasingly apparent, governments will be forced to act decisively and abruptly if measures to reach commitments remain insufficient, resulting in a significant impact on banking portfolios from the increased risk of asset stranding³⁷. This will be particularly true if investee companies are exposed to high-risk businesses that depend heavily on nature, such as those that have not eradicated deforestation and habitat conversion or illegal, unreported, and unregulated fishing practices from their supply chains.

In addition to physical and transition risks, the loss of biodiversity reduces the ability of nature to mitigate climate change, thereby necessitating faster sector transition in other economic sectors like energy and transportation to reach the 1.5°C target. Due to these complex systems interactions, considering nature and climate risks in isolation leads to an underestimation of climate risks and an incomplete view of systemic risks.

As a result, it is crucial for regulators and financial institutions to conduct comprehensive stress tests and for risk models to include not only climate-related risks but also the interconnected nature-related risks. Examples exist already³⁸, including analyses done in the Netherlands³⁹, France⁴⁰, and Brazil⁴¹. More such examples are needed to increase the capacity of financial regulators to understand and assess the impact of climate and nature-related risks on macroeconomic and financial stability.

³⁵ Alexander Bassen et al., "Nature Risks Equal Financial Risks: A Systematic Literature Review," 2019.

³⁶ Planet Tracker, "Japan's Thriving Seafood Sector May Not Be as Healthy as It Appears, Says New Planet Tracker Report," 2021, <https://planet-tracker.org/japans-thriving-seafood-sector-not-as-healthy-as-it-appears/>.

³⁷ Principles for Responsible Investment, "What Is the Inevitable Policy Response? | Thought Leadership," accessed November 1, 2021, <https://www.unpri.org/inevitable-policy-response/what-is-the-inevitable-policy-response/4787.article>.

³⁸ Network for Greening the Financial System, "Overview of Environmental Risk Analysis by Financial Institutions," *Network for Greening the Financial System Technical Document*, 2020.

³⁹ De Nederlandsche Bank, "Indebted to Nature," 2020, <https://www.dnb.nl/en/actueel/dnb/dnbulletin-2020/indebted-to-nature/>.

⁴⁰ Svartzman Romain et al., "A 'Silent Spring' for the Financial System? Exploring Biodiversity-Related Financial Risks in France," Banque de France, 2021, <https://publications.banque-france.fr/en/silent-spring-financial-system-exploring-biodiversity-related-financial-risks-france>.

⁴¹ Pietro Calice, Federico Diaz Kalan, and Faruk Miguel, "Nature-Related Financial Risks in Brazil," Policy Research Working Papers (World Bank, Washington, DC, August 25, 2021), <https://doi.org/10.1596/1813-9450-9759>.

OPPORTUNITY

Nature is a productive asset and biodiversity is a characteristic of natural assets that makes them more productive and resilient. Strengthening the natural capital base therefore strengthens the economy, subsequently impacting sovereign risk⁴², debt profiles⁴³, and credit markets, and helps to meet policy objectives such as the Sustainable Development Goals. For example, there are an estimated 1.2 billion jobs in sectors such as farming, fisheries, forestry and tourism⁴⁴, that are all dependent on the effective management and sustainability of healthy ecosystems. Nature-based solutions to climate, for example, can provide job opportunities that support economic and environmental goals⁴⁵.

While previous efforts and policies have focused on addressing climate change and nature loss independently, there is a clear opportunity to capitalise on sustainable solutions that can help address both issues. Nature-based solutions, for example, address societal challenges and include things such as conserving and restoring mangroves and restorative agriculture practices ranging from restoring soil carbon to agroforestry and improved livestock management⁴⁶. They deliver measurable positive climate adaptation and/or mitigation benefits with economic, social, and biodiversity and nature co-benefits, and could feasibly and sustainably contribute around 30% of the global mitigation required to deliver on the 1.5°C target⁴⁷.

The Coalition for Climate Resilience Investment⁴⁸ has come together to identify investment opportunity that more efficiently and effectively incorporates the physical risks of climate change, helping to develop investment opportunity from better risk management through expansion of financial instruments such as catastrophe bonds and resilience bonds. Investment in nature itself can also pay dividends in terms of climate resilience. Retaining intact natural forests can help prevent future pandemics⁴⁹, and the Global Commission on Adaptation has estimated that healthy mangrove forests could provide US\$1 trillion in net benefits to 2030 including the economic benefits of recreation and protecting coastal communities from storm surge⁵⁰.

More generally, nature positive investing, once perceived as the remit of philanthropy, is increasingly attractive to mainstream financial institutions. There are innovative new

⁴² David Patterson et al., "Climate & Nature Sovereign Index: Introducing a Framework for a Clear Assessment of Environmental Risk," 2020, <https://wwf-sight.org/climate-and-nature-sovereign-index-cnsi/>.

⁴³ Finance for Biodiversity, "Greening Sovereign Debt," F4B Projects, accessed November 1, 2021, <https://www.f4b-initiative.net/sovereigndebt>.

⁴⁴ Maikel Lieuw-Kie-Song et al., "Nature Hires: How Nature-Based Solutions Can Power a Green Jobs Recovery," 2020, https://wwf.panda.org/wwf_news/?943816/Nature-based-solutions-jobs-report.

⁴⁵ World Wildlife Fund, "Nature-Based Solutions," accessed November 1, 2021, https://wwf.panda.org/discover/our_focus/climate_and_energy_practice/what_we_do/nature_based_solutions_for_climate/.

⁴⁶ International Union for Conservation of Nature, "Nature-Based Solutions," accessed November 1, 2021, <https://www.iucn.org/theme/nature-based-solutions>.

⁴⁷ Stephanie Roe et al., "Contribution of the Land Sector to a 1.5 °C World," *Nature Climate Change* 9, no. 11 (2019): 817–28, <https://doi.org/10.1038/s41558-019-0591-9>.

⁴⁸ CCRI, "Coalition for Climate Resilient Investment," accessed November 1, 2021, <http://resilientinvestment.org/>.

⁴⁹ Jeff Tollefson, "Why Deforestation and Extinctions Make Pandemics More Likely," *Nature* 584, no. 7820 (August 1, 2020): 175–76, <https://doi.org/10.1038/D41586-020-02341-1>.

⁵⁰ Barney Dickson Manish Bapna, Carter Brandon, Christina Chan, Anad Patwardhan, "Adapt Now: A Global Call for Leadership on Climate Resilience," *Adapt Now: A Global Call for Leadership on Climate Resilience*, 2019, <https://doi.org/10.1596/32362>.

partnerships^{51, 52} that include blended finance, which is now used in almost half (48%) of nature-based solutions transactions⁵³, mitigating some risks by leveraging public finance and increasing the financial attractiveness of projects. Examples also abound of nature positive projects that operate on commercial terms⁵⁴.

GREEN FINANCIAL INSTRUMENTS

A variety of financial solutions exist to support the shift away from unsustainable practices towards sustainable investments with environmental benefits, incorporating both nature and climate risks and opportunities. For example:

- Green bonds can raise finance for green investment, including the recent emergence of nature-linked bonds issued by emerging market nations⁵⁵. Market interest in such instruments is growing apace, with more than US\$200 billion in green bond issuance worldwide in the first eight months of 2021 financial times⁵⁶.
- Debt for Nature Swaps⁵⁷, a financial instrument that explicitly links debt forgiveness to spending on environmental protection, have come back into focus as tools to address the combined nature and climate crises⁵⁸ as well as the significant debt crisis in poorer countries that has been exacerbated by COVID-19⁵⁹.
- Financial institutions can also use instruments like sustainability-linked loans to incentivise sustainability across the corporations they finance and invest in by applying higher risk premia or lower interest rates linked to environmental performance⁶⁰.
- Innovative insurance products are also emerging enabling sustainable agriculture and aquaculture practices and resilient land management. For example, the African Risk Capacity Insurance Company has worked to pool risk for 33 countries in Africa, helping them to establish more effective disaster reduction and management plans⁶¹.

⁵¹ DFCD, "Dutch Fund for Climate and Development – Investing for Climate-Resilient Economic Growth," accessed November 1, 2021, <https://thedfcd.com/>.

⁵² PND, "HSBC Launches \$100 Million Climate Solutions Partnership with WRI, WWF," accessed November 1, 2021, <https://philanthropynewsdigest.org/news/hsbc-launches-100-million-climate-solutions-partnership-with-wri-wwf>.

⁵³ Finance Earth, "A Market Review of Nature-Based Solutions: An Emerging Institutional Asset Class," 2021.

⁵⁴ Finance Earth.

⁵⁵ Todd Gillespie and Greg Ritchie, "First Sovereign Nature Bonds Get Lift from World Bank-Backed Hub," Bloomberg Green, 2021, <https://www.bloomberg.com/news/articles/2021-02-25/first-sovereign-nature-bonds-get-lift-from-world-bank-backed-hub>.

⁵⁶ Financial Times, "Green Bonds: Record Sales Push Sustainable Investment Forward," 2021, <https://www.ft.com/content/d3b8a679-18ea-4cba-b99e-1c0b066246ac>.

⁵⁷ Convention on Biological Diversity, "Debt-for-Nature Swaps - Mobilizing Funding for Biodiversity Conservation: A User-Friendly Training Guide," 2001, https://www.cbd.int/doc/nbsap/finance/Guide_Debt_Nov2001.pdf.

⁵⁸ Wijnand De Wit, Arianna Freschi, and George-Costin Dobrin, "Debt-for-Nature Swaps: A Possible Solution to a 'Green and Just Recovery' from Covid-19," Dalberg, 2020, <https://dalberg.com/our-ideas/debt-for-nature-swaps-a-possible-solution-to-a-green-and-just-recovery-from-covid-19/>.

⁵⁹ Andrea Shalal, "Exclusive: World Bank, IMF Eye Ways to Link Debt Relief to Climate Change Spending," Reuters, 2021, <https://www.reuters.com/article/us-imf-world-bank-climate-change-debt-ex/exclusive-world-bank-imf-eye-ways-to-link-debt-relief-to-climate-change-spending-idUSKBN2BU3FO>.

⁶⁰ "Companies Are Tying Their Loans to Measures of Do-Goodery," The Economist, 2020, <https://www.economist.com/finance-and-economics/2020/02/15/companies-are-tying-their-loans-to-measures-of-do-goodery>.

⁶¹ "African Risk Capacity," accessed November 1, 2021, <https://www.africanriskcapacity.org/>.

NATURE MARKETS

While green financial instruments need more attention, support and scale, nature suffers from a fundamental mismatch between its value and the way our economies incorporate the benefits and costs of using natural capital and the services it provides to people. Our economic model has effectively treated ecosystem services such as carbon storage and natural water filtration as though they were infinite and unconnected. Scientific analysis shows we have outgrown several planetary boundaries⁶² and that disruption of one planetary boundary can disrupt others. As summarized in the Dasgupta Review⁶³, “...our unsustainable engagement with Nature is endangering the prosperity of current and future generations.”

One way to address these fundamental market, policy, and institutional failures is to develop and encourage nature markets⁶⁴, facilitating a market for products, services and attributes relating to nature and biodiversity and its sustainable use as a way to better reflect the value of such services in financial decision making. While it is not possible to put a monetary value on many of the values of nature including intrinsic and spiritual values, nature markets⁶⁵ defined as “...all exchanges in which biodiversity is implicitly or explicitly priced and known to at least one of the transacting parties...” - for example a land transaction where the value of its regenerative capacity is known and incorporated into the transaction – could be valued in the trillions of dollars.

Conservation enterprises that connect community-based natural resource management and entrepreneurs⁶⁶, initiatives to connect conservation and social enterprises^{67, 68}, and payments for ecosystems services⁶⁹ have existed for decades. While they can achieve strong impacts in a community, such efforts struggle to scale, impact investors have been slow to turn their attention to environmental investment theses, and without scale, they fail to attract commercial investors.

However, as the movement to commit to net zero finance picks up speed⁷⁰ and interest in nature positive investment grows⁷¹, there are trillions of dollars of assets under management that will be looking for carbon net zero, nature positive investment. At the same time, green financial instruments are also growing quickly. Nature markets, therefore, are poised to finally grow as conservation entrepreneurship experience on the ground combines with increasing interest

⁶² Stockholm Resiliency Centre, “Planetary Boundaries,” accessed November 1, 2021, <https://www.stockholmresilience.org/research/planetary-boundaries.html>.

⁶³ Dasgupta, *The Economics of Biodiversity: The Dasgupta Review*.

⁶⁴ Finance for Biodiversity, “Catalyzing Nature Markets,” 2021, www.f4b-initiative.net.

⁶⁵ Simon Zadek et al., “Aligning Markets with Biodiversity” (Stockholm, Sweden, 2021).

⁶⁶ Joanna Elliott and Daudi Sumba, “Conservation Enterprise: What Works, Where and for Whom?” (London, 2011).

⁶⁷ Quddus Mforcha Njang, “The Community Conservation Social Enterprise Development Initiative,” accessed November 1, 2021, <https://panorama.solutions/en/solution/community-conservation-social-enterprise-developmentcocosed-initiative>.

⁶⁸ Noah Walker, “Nature Pays: Accelerating Community Enterprises to Promote Livelihoods and Land / Seascape and River Basin Conservation,” 2020, https://wwfint.awsassets.panda.org/downloads/nature_pays___wwf_community_enterprise_practitioners_guide.pdf.

⁶⁹ International Institute for Environment and Development, “Markets and Payments for Environmental Services,” accessed November 1, 2021, <https://www.iied.org/markets-payments-for-environmental-services>.

⁷⁰ United Nations, “Biggest Financial Players Back Net Zero,” accessed November 1, 2021, <https://www.un.org/en/climatechange/biggest-financial-players-back-net-zero>.

⁷¹ Dominic Kailash and Nath Waughray, “Why Being ‘nature Positive’ Is the Key to Our Future,” GreenBiz, 2021, <https://www.greenbiz.com/article/why-being-nature-positive-key-our-future>.

CONCLUSION AND RECOMMENDATIONS

There has been important progress in public and private efforts to improve consistency and coverage of decision-relevant climate and nature information, to improve understanding and measurement of climate and nature-related risk, to align finance to climate and nature goals, to reduce investment in harmful economic activities, and to increase financial support for net zero, nature positive investment. There are also a number of important regional and global initiatives that offer opportunities for collaboration and engagement around land restoration and nature-based solutions, such as the African Forest Landscape Restoration Initiative (AFR100)⁷³, Initiative 20x20 (Latin America and the Caribbean)⁷⁴, Natural Climate Solutions Alliance⁷⁵, Ocean Risk and Resilience Action Alliance (ORRAA)⁷⁶, and the Sustainable Blue Economy Finance Initiative⁷⁷.

There is now a clear need for financial institutions to take concrete actions to ensure that finance supports delivery of the goals of the UN Conventions on Climate and Biodiversity, as well as the Sustainable Development Goals. Policymakers can support these actions by ensuring a strong, agreed global goal for nature⁷⁸ to halt and reverse the loss of nature and catalyse public and private financial flows to align to that goal, building this into national biodiversity plans, targets and baselines. Nature should likewise be integrated into Nationally Determined Contributions (NDC) that align with the Paris Agreement objective of limiting global warming to 1.5°C, recognizing the critical role that nature plays in storing carbon and reducing the impacts of and helping us adapt to a warming climate, thereby sending a strong directional signal to the finance sector.

1) Assess and disclose nature-related risks

Understanding opportunities and risks emerging from dependencies and impacts on nature is integral to sustainable development and financial and economic stability. Such risks are starting to be identified, measured, and assessed. Accelerating the inclusion of nature-related risks in decision-making through the TNFD framework⁷⁹ is a key step in this direction. Financial institutions need to:

- Identify key sectors and companies that are materially dependent on and impact nature;
- Assess and quantify exposure to nature-related risks and related financial risks including market, physical, regulatory, legal, and reputational risks, including by using forward-

⁷² The Economist, "An Eco-Wakening: Measuring Global Awareness, Engagement and Action for Nature," 2021.

⁷³ AFR100, "African Forest Landscape Restoration Initiative," accessed November 1, 2021, <https://afr100.org/>.

⁷⁴ Initiative 20x20, "Initiative 20x20," accessed November 1, 2021, <https://initiative20x20.org/>.

⁷⁵ World Economic Forum, "Natural Climate Solutions Alliance," accessed November 1, 2021, <https://www.weforum.org/natural-climate-solutions-alliance>.

⁷⁶ Ocean Risk and Resilience Action Alliance, "Ocean Risk and Resilience Action Alliance," accessed November 1, 2021, <https://www.oceanriskalliance.org/>.

⁷⁷ United Nations Environment Programme, "Sustainable Blue Economy Finance Initiative," accessed November 1, 2021, <https://www.unepfi.org/blue-finance/join-us/>.

⁷⁸ Locke et al., "A Nature-Positive World: The Global Goal for Nature."

⁷⁹ TNFD, "Taskforce on Nature-Related Financial Disclosures."

looking scenario analyses (e.g. Water Risk Scenarios⁸⁰; Climate Risk Toolkit⁸¹; Value at Risk in the blue economy⁸²);

- Conduct comprehensive stress tests that include nature-related risks in risk models;
- Adopt appropriate safeguards and screening practices for sectors, investments, and operations that contribute to loss of biodiversity⁸³, and any activities near or in sensitive locations⁸⁴. This could include due diligence frameworks (e.g. Equator Principles⁸⁵, World Heritage Protection commitments⁸⁶) and incorporation of environmental crimes in anti-money laundering activities⁸⁷; and
- Assess dependencies on nature as well as impacts of investment and operation on nature at the portfolio level, using various emerging tools and methodologies to measure biodiversity footprints of financial portfolios⁸⁸.

2) Align investment with nature

In order for financial institutions - both public and private - to deliver net zero climate commitments, they need to align their portfolios with the Paris Agreement and transform their investments/financing and engagement practices to incorporate nature, including aligning their portfolios to the forthcoming targets of the Convention on Biological Diversity post-2020 Global Biodiversity Framework. One way to start the alignment journey is by becoming a signatory of the Finance for Biodiversity Pledge to collaborate, engage with investee companies, measure impacts, set targets, and report progress⁸⁹.

To align investment with nature, financial institutions need to mainstream nature impacts and dependencies throughout their institutions, adjusting both policy and action.

Financial institutions need to transform their policies related to investing, financing, underwriting, and lending by:

- Pioneering the creation and disclosure of nature recovery plans, in a way that is analogous to emerging new requirements for companies, asset managers, and asset owners to prepare credible net zero transition plans⁹⁰;

⁸⁰ Ariane Laporte-Bisquit, Rafael Camargo, and Alexis Morgan, "Water Risk Scenarios: TCFD-Aligned Scenarios to Help Companies and Investors Turn Risk into Resilience," 2020, https://wwfeu.awsassets.panda.org/downloads/wwf_wrf_brief_scenarios_hr.pdf%0Afiles/194/wwf_wrf_brief_scenarios_hr.pdf.

⁸¹ Vivid Economics, "Climate Risk Toolkit," accessed November 1, 2021, <https://www.vivideconomics.com/net-zero-toolkit/>.

⁸² World Wildlife Fund, "Navigating Ocean Risk: Shaping the Transition to a Sustainable Blue Economy," accessed November 1, 2021, <https://value-at-risk.panda.org/#intro>.

⁸³ IPBES, "Models of Drivers of Biodiversity and Ecosystem Change."

⁸⁴ Key Biodiversity Areas, "Key Biodiversity Areas: Keep Nature Thriving," accessed November 1, 2021, <http://www.keybiodiversityareas.org/>.

⁸⁵ Equator Principles, "The Equator Principles," accessed November 1, 2021, <https://equator-principles.com/about/>.

⁸⁶ UNEP et al., "Protecting Our World Heritage: The Insurance Industry's Commitment to Protect World Heritage Sites," 2019, <https://www.unepfi.org/psi/wp-content/uploads/2018/06/Protecting-our-world-heritage.pdf>.

⁸⁷ FATF, "Money Laundering from Environmental Crime" (Paris, France, 2021), <https://www.fatf-gafi.org/publications/methodsandtrends/documents/money-laundering-environmental-crime.html>.

⁸⁸ Hilton and Lee, "Assessing Portfolio Impacts: Tools To Measure Biodiversity and SDG Footprints of Financial Portfolios."

⁸⁹ Finance for Biodiversity, "About the Pledge," accessed November 1, 2021, <https://www.financeforbiodiversity.org/about-the-pledge/>.

⁹⁰ HM Treasury, "Chancellor: UK Will Be the World's First Net Zero Financial Centre," 2021, <https://www.gov.uk/government/news/chancellor-uk-will-be-the-worlds-first-net-zero-financial-centre>.

- Applying a No Significant Harm⁹¹ approach to evaluating any investment options, considering climate change and impacts on nature together;
- Establishing a firm, time-bound no deforestation and no habitat conversion policy in their financing or investment pipeline and portfolio;
- Committing to exclude: wildlife trade; introduction or increased competitiveness of invasive species; procurement or use of pesticides and chemicals specified as Persistent Organic Pollutants under the Stockholm Convention; and
- Incorporating environmental crimes into Know Your Customer and Anti-Money Laundering due diligence and prevention practices.

Financial institutions also need to take concrete actions to help align investment with nature by:

- Actively advocating with policymakers for an enabling environment that encourages financial sector alignment with a carbon net zero and nature positive economy;
- Participating in target-setting work for nature such as the Science Based Targets Network⁹², and actively encourage their clients and investee companies to set science-based targets for both climate and nature;
- Integrating protection of ecosystems into financial decision making, including areas of particular importance such as Key Biodiversity Areas (KBAs)⁹³ and Ecologically or Biologically Significant Marine Areas (EBSAs)⁹⁴; and
- Scaling up investment needed to fight climate change and protect and restore nature, including i) time-bound commitments to invest in nature-based solutions, designed to help achieve both goals; ii) increasing financing and use of insurance instruments to support adaptation and resilience efforts; and iii) supporting progress towards 350 million hectares of forest restoration under the Bonn Challenge⁹⁵ in the UN Decade on Ecosystem Restoration.

3) Engage with companies to drive change

As a critical enabler of the real economy, the financial sector can exert influence with companies to transform their businesses to be more sustainable and reduce their nature-related risks. Financial institutions including fund managers, lenders, insurance providers, data service providers, rating agencies and exchanges, can engage with their clients, service providers, issuers, and investee companies to encourage real change on the ground, including by:

- Developing a robust and publicly-disclosed engagement strategy towards clients, investee companies, and service providers to achieve targets. These strategies should build upon existing climate-related measures and include time-bound objectives and escalation steps;
- Using their influence as financiers and investors to mobilize corporates:
 - to eradicate deforestation and habitat conversion across their supply chains,

⁹¹ UNEP, "No Harm Rule," accessed November 1, 2021, <https://globalpact.informea.org/glossary/no-harm-rule>.

⁹² Science Based Targets Network, "Science Based Targets Network."

⁹³ Key Biodiversity Areas, "Key Biodiversity Areas: Keep Nature Thriving."

⁹⁴ Convention on Biological Diversity, "Ecologically or Biologically Significant Marine Areas," accessed November 1, 2021, <https://www.cbd.int/ebsa/>.

⁹⁵ International Union for Conservation of Nature, "The Bonn Challenge," accessed November 1, 2021, <https://www.bonnchallenge.org/>.

- especially in agriculture and the food sector;
- to take all possible measures to apply the mitigation hierarchy to their activities and operations, including avoiding, minimizing, protecting and restoring the diversity, productivity, resilience, core functions, value and the overall health of terrestrial, freshwater and marine ecosystems⁹⁶, as well as the livelihoods and communities dependent upon them;
- to disclose their nature-related risks; and
- to set science-based targets for action.

Finance is an essential service, providing credit for companies to grow, investment products to enable households to save, insurance to protect our businesses and homes. As a sector it is a critical lever for economic change, and through these recommendations can help drive the significant economic transition that is needed to protect and restore our natural capital and address the climate crisis.

⁹⁶ UNEP FI, “Sustainable Blue Finance,” accessed November 1, 2021, <https://www.unepfi.org/blue-finance/>.

